

31M04SW0057 63.1906 STRATHCONA

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DOUGLAS BURTON
GEOPHYSICAL SURVEYS
CORALY, ONT.

REPORT ON THE MAGNETIC SURVEY
ON THE PORTIONS OF THE PROPERTIES OF
NICKEL RIM MINES LIMITED AND
CANDORE EXPLORATIONS LIMITED
IN STRATHCONA TOWNSHIP, TIMAGAMI AREA
ONTARIO

DIGEST

The magnetic survey on portions of the property of Nickel Rim Mines Limited and Candore Explorations Limited including Ferguson Island and Timagami Lake to the west has outlined several magnetic anomalies.

On the west end of Ferguson Island a showing of disseminated sulphides in altered rhyolite has encouraging values of copper and nickel. The magnetic survey was carried out in order to locate magnetic bodies that might be caused by similar and larger bodies of pyrrhotite with copper and nickel sulphides in association.

One drill hole completed before this report was written on the anomaly designated "B" intersected basic inclusions with minor quantities of magnetite.

The anomaly designated "A" at the sulphide showing on Ferguson Island is recommended to be examined by drilling. This magnetic anomaly is rather weakly magnetic.

Depending upon the results obtained the other anomalies may be drilled.



DOUGLAS BURTON
GEOPHYSICAL SURVEYS
COBALT, ONT.

REPORT ON THE MAGNETIC SURVEY
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NICKEL RIM MINES LIMITED AND
CANDORE EXPLORATIONS LIMITED
IN STRATHCONA TOWNSHIP, TIMAGAMI AREA
ONTARIO

INTRODUCTION

Through the dates January 6th and 21st, 1966, a magnetic examination was carried out on Timagami lake in Strathcona Township including Ferguson Island and the area to the west for 8,000 feet.

Mr. Ralph Benner, your consulting geologist, arranged for this survey, and the preliminary layout of the lines to position the geophysical observations. Huntco Limited carried out an electromagnetic horizontal loop examination with ratio comparison determinations of the vertical electromagnetic field. Prior to the completion of the examination the results were shown to and discussed with Mr. Benner, who assisted in the interpretation of the magnetic results into geological terms and possibilities. A drilling examination was started in the area.

The weather was normal for January in this area. Bright cold days (-40° F. at night) and overcast days with snow were usual. The extreme cold delayed the field work somewhat.



Location, Area, Accessibility and Topography

The 740 acres examined by the magnetic survey are located on Lake Timagami about four miles west of Temagami station on the Ontario Northland Railroad and Highway No. 11.

It is readily accessible by boat in the summer time and on the ice in the winter.

There are a number of small and large islands in the area surveyed. These are usually rocky, and covered by pine, birch and poplar trees and low-growing brush. In places there are 20-foot cliffs.

The lake water in the area is generally shallow, seldom more than 50 feet to the bottom. In places rocks outcrop or they are just below the present lake surface.

The Land Survey

The land survey was carried out by local men under the supervision of Mr. Benner.

Just south of Ferguson Island a base line was laid out with an azimuth direction 70° east of true north. It was extended to the west for 8,000 feet.

Lines 200 feet apart were turned off at right angles and extended north and south. A few lines were 100 feet apart.

Wooden lath marked with the coordinate designation from a zero origin were placed at 100 foot intervals along the



lines to mark the geophysical observation points.

The total length of line is 173,400 feet (about
32.9 miles).



THE GEOLOGY

General

"The Northeastern Portion of the Timagami Lake Area", by W. W. Moorhouse, is the title of Part VI of Volume LI, 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, show the lakes and the geology of this large area.

The aeromagnetic map No. 1491G, "Timagami, Ontario", drawn on the same scale of one inch equals one mile shows the relative magnetic recording of the total magnetic field at an altitude of about 1,000 feet above the ground level.

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. The base metals located so far are iron, copper, nickel and molybdenum.

These basement 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 with diverse strikes. The general geological strike is northeast-southwest but with large variations from north-south to east-west



and overfolding. Faults complicate the solution of geological problems, and the pronounced topographic lineaments indicate extensive movement.

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 remarkably straight lines.

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

The Local Geology

Parallel folds of the Keewatin complex, with a vertical attitude, strike in a general northeast-southwest direction. The formations examined in the area surveyed vary from acid to intermediate lavas with interbedded agglomerate and breccias. Considerable shearing and alteration of the exposed rocks are obvious.

On the west end of Ferguson Island, disseminated sulphides are found in an altered rhyolite. Grab samples gave assays of 1.11% copper and 0.16% nickel, and 0.44% copper and 0.28% nickel.

The rocks are quite altered encouraging the idea that larger bodies of sulphides similar to those on Ferguson Island



may be found in the general area, especially along strike where similar formations and structure may be favorable for deposition.



THE MAGNETIC SURVEY

General

An accurate magnetic survey is helpful for the solution of many geological problems where magnetic mineral 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 or deduced.

A tripod-mounted magnetic zero balance was used for this examination. Its sensitivity is adjusted to ten gammas per scale division. The readings are converted to 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 Accompanying Map No. 66-39-1

Accompanying this report is one map drawn on a scale of one inch equals 200 feet and numbered 66-39-1.

The lines laid out for positioning the geophysical survey measurements are shown, and the corresponding magnetic observations are shown in gammas. During the course of the magnetic survey field work topographic notes were made, and on this map the nearby shore line and the islands are sketched in.

Lines of equal magnetic intensity are drawn, and areas of higher than average intensity are colored blue. The areas of less



than average intensity are tinted in red.

Anomalous areas referred to in this report are designated by letters from "A" to "J".

A Key Map drawn on a scale of one inch equals 2,640 feet shows the position of the area surveyed in Strathcona Township. Mining claim locations and numbers are shown on both the Key Map and the map showing the results of the magnetic survey.

The Magnetic Survey Results

During thirteen field days some 33 miles of line were magnetically examined by taking magnetic measurements at 50 foot intervals or less, on lines 200 feet apart. A few intermediate lines at 100 foot intervals were also examined.

The magnetic force varies from a low of 7260 gammas to a high of 8980 gammas, some 1720 gammas in the area surveyed.

A number of magnetic anomalies with diverse strikes are found and outlined. These are shown on the accompanying map.

The original showing of copper and nickel sulphides in an altered rhyolite is indicated by the rather weak anomaly at "A" on Ferguson Island. It is about 200 feet long.

The magnetic anomaly at "B" to the west of Ferguson Island has a strike azimuth of 160° and a length of about 700 feet. Drilling indicates that this anomaly is caused by a magnetic basic inclusion with magnetite.



The anomalies at "C" and "D" are more or less circular with a dimension of several hundred feet.

The anomalies designated "E", "F" and "G" are lenticular with a considerable length, a thousand feet or more. Their strike varies between 100° and 120° from north.

The magnetic zone at "H" consists of two weak isolated anomalies of limited extent.

Anomalies at "I" and "J" are magnetic anomalies of reversed polarity with the magnetic force less than the normal for the region. They have a strike more or less parallel to the regional topographic lineaments.

Geological and Geophysical Considerations

A number of magnetic anomalies are found in the area examined. Their strike direction seldom parallels the regional strike. This indicates the extreme folding and movements of the Keewatin beds.

The sulphide showing on Ferguson is quite strongly magnetic directly over the mineralized outcrops. It is associated with a weakly magnetic anomaly on the next line to the east, indicating an east-west strike.

Six hundred feet to the west of the sulphide exposure a stronger magnetic anomaly is recorded over the lake. The strike is N. 20° W, about normal to the regional strike, and the length is about 700 feet. The association of the sulphides and the magnetic



anomaly on strike encouraged the idea that the magnetic anomaly under the lake could be a concentration of magnetic sulphides. The anomaly was drilled and was found to be caused by a magnetic basic inclusion.

The electromagnetic survey gives no strong indication of conductive sulphides of any extent. Near the sulphide showing only a weak electromagnetic anomaly is obtained.

It seems likely that most of the magnetic anomalies are due to magnetic basic inclusions in the Keewatin lavas and beds. Limited drilling will quickly show the cause of the anomalies.



CONCLUSIONS AND RECOMMENDATIONS

The magnetic survey has outlined several anomalous sections.

The original showing of copper and nickel sulphides on Ferguson Island is . . . in an area of altered rhyolite. Here the shearing is approximately parallel to the regional topographic lineament striking N. 40° to 50° E. A magnetic anomaly at this location is designated "A" on the accompanying map No. 66-39-1.

The magnetic anomaly designated "B" when drilled is found to be caused by a magnetic basic inclusion with magnetite.

It seems likely that the other magnetic anomalies are caused by similar basic inclusions or dikes with magnetite. Of course the only way of determining the cause of the magnetic anomalies would be by drilling.

The eight anomalies designated "A", "B", "C", "D", "E", "F", "G" and "H", are all normal magnetic indications. The two anomalies at locations "I" and "J" have reversed polarity with less than normal magnetic values.

The horizontal loop electromagnetic ratio method of geophysical prospecting for conductive sulphides carried out by Huntco Limited has not located conductive zones of large extent that could be caused by continuous deposits of sulphides at any of the magnetic anomalies nor at other places in the area surveyed.

The anomaly at "A" is to be examined at depth by drilling.



It is recommended that the area farther along the regional strike be examined geophysically (magnetically and electromagnetic-ally) when these properties may be inexpensively acquired. In the winter time on the ice large areas may be prospected at minimum expense.

In the meantime, this report is,

Respectfully submitted,

Douglas Burton
Geophysicist

Cobalt, Ontario
February 3rd, 1966



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File 63.1906

THE MINING ACT

Assessment Work Credits

Name: MID-NORTH ENGINEERING SERVICES LTD.

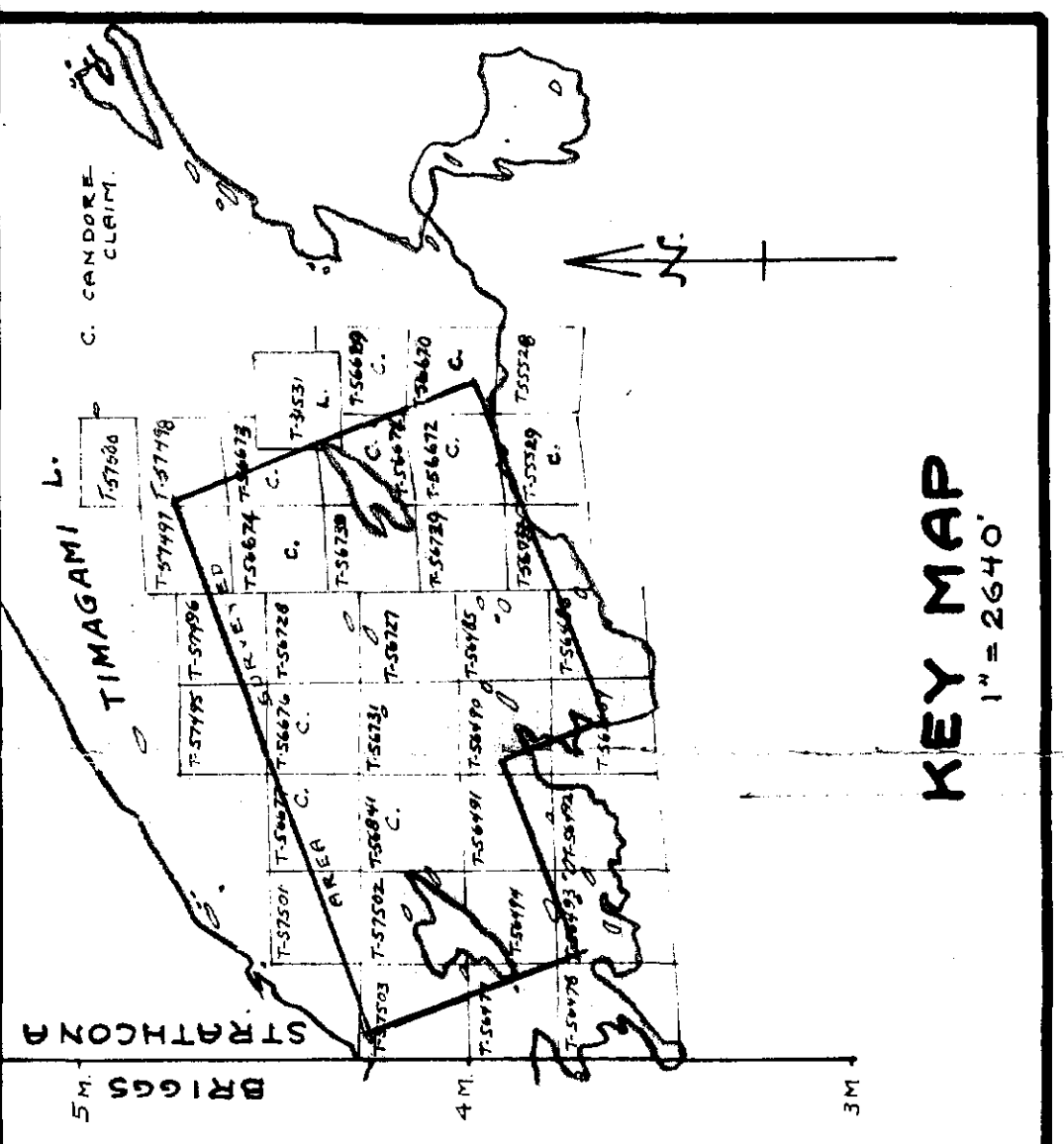
Township or Area: STRATHCONA TWP.

Number of Assessment work days per claim

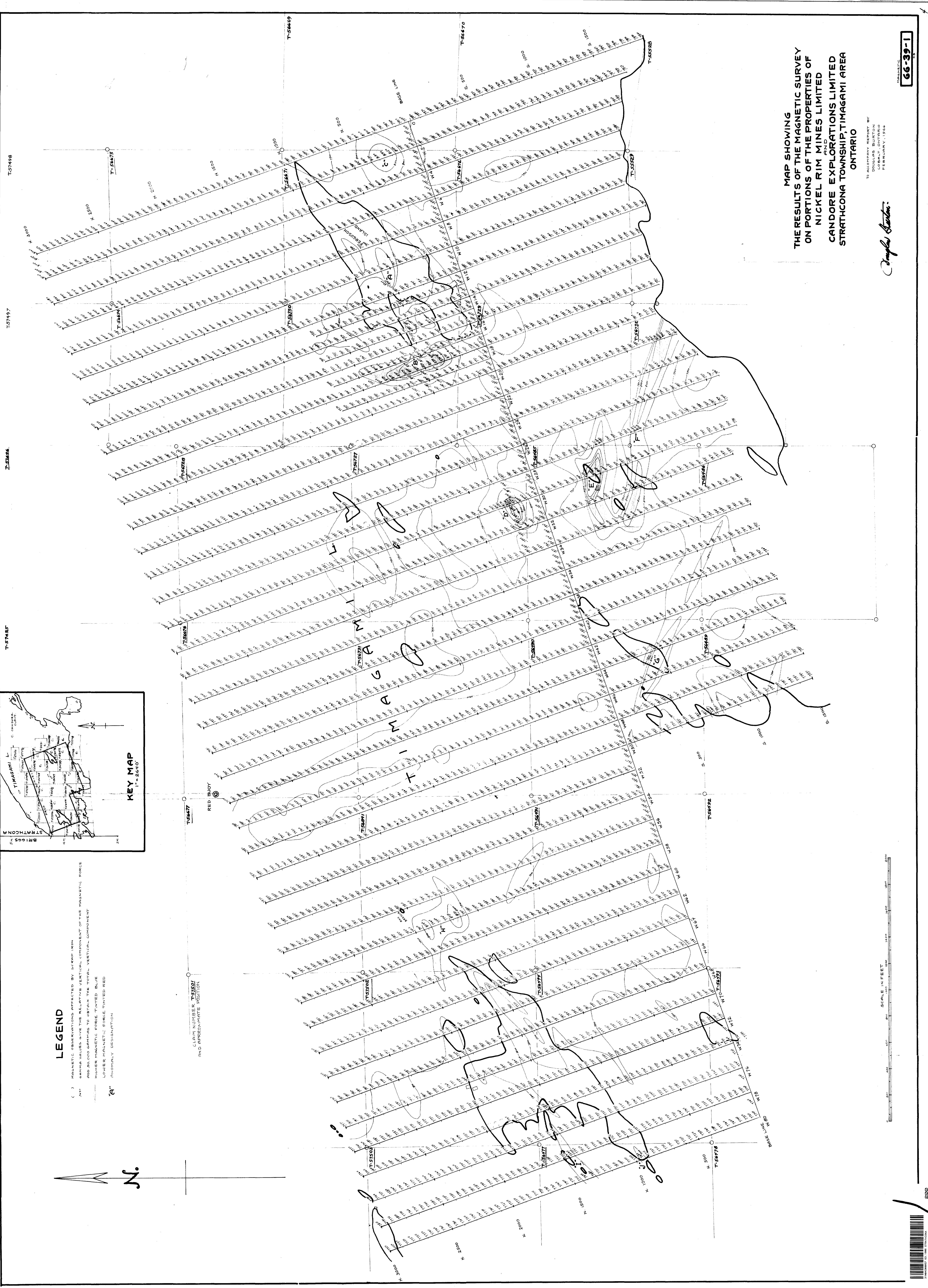
Geophysical 8.4 Magnetometer Geological nil

Mining Claims: T 55529,
T 56485 & 56486
T 56489 to 56491 inclusive
T 56493 & 56494
T 56669 to 56674 inclusive
T 56676 & 56677
T 56727 to 56732 inclusive
T 56841
T 57497 & 57498
T 57503,
T 56477
T 57501 & 57502

NOTE: T 55528, 55530 and 55533 were not covered by the survey therefore no credits have been allowed.



- LEGEND**
- () MAGNETIC OBSERVATIONS AFFECTED BY SCRAP IRON
 - ▲▲▲ VALUES GIVE THE RELATIVE VERTICAL COMPONENT OF THE MAGNETIC FORCE
 - ▲▲▲▲▲ VALUES TO OBTAIN THE TOTAL VERTICAL COMPONENT
 - HIGHER MAGNETIC FORCE, TINTED BLUE
 - LOWER MAGNETIC FORCE, TINTED RED
 - 'A' ANOMALY DESIGNATION



MAP SHOWING
THE RESULTS OF THE MAGNETIC SURVEY
ON PORTIONS OF THE PROPERTIES OF
NICKEL RIM MINES LIMITED
AND
CANDORE EXPLORATIONS LIMITED
STRATHCONA TOWNSHIP, TIMAGAMI AREA
ONTARIO

TO ACCOMPANY REPORT BY
CANDORE EXPLORATIONS LIMITED
LOCAL OFFICE
FEBRUARY, 1966

Compass Station

66-39-1

