



52L07NE001B 63.1178 REX LAKE

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Nickel Mining and Smelting Corporation,
Suite 1600 - 100 Adelaide Street, West,
Toronto, 1, Ontario.

Gentlemen:-

This report describes the results and interpretation of a magnetometer survey carried out on a 40-claim group property located at Rex Lake, District of Kenora, Ontario, optioned to you by Geo-Technical Development Co. Limited.

PROPERTY, LOCATION AND ACCESS

The 40 claims are listed as follows:

R-33202 to 33241, inclusive.

The 40 claims form a contiguous block located at the west and north parts of Rex Lake and covers the southwest part of Fortune Lake. A small claim, numbered R-25943, not belonging to this block, is located within the north part of the property.

The location is about 6.5 miles to the east of the mine shaft located at Gordon Lake-Werner Lake, and adjoins to the west of the boreo option of Nickel Mining and Smelting Corporation, and a block of claims owned by Calcoubridge Nickel Mines Ltd.

Rex Lake is about 46 miles almost due north of Kenora, Ontario. Access can be readily made by bush plane from Kenora to Rex Lake.

Nickel Mining and Smelting has recently completed

a 12-mile all weather road from Gordon Lake to the Manitoba border. An all weather road leads from the border to Lac Du Bonnet on the C.N.R. line.

TOPOGRAPHY

The topography is typical of the Werner Lake-Rex Lake nickel belt with many rocky cliffs along lake shores and a succession of gentle ridges inland. One of the ridges located along the north shore of west Rex Lake is over 150 feet above lake shore. The intervening valleys are swampy.

More detailed topography noted by the operators are depicted on the Plan accompanying this report.

GENERAL GEOLOGY

General geology is on Map No. 1957-2 and 3, O.D.M.

According to these maps, a series of mineralized small mafic intrusives located along an east-westerly Gordon Lake-Werner Lake fault, which extends from Reynor Lake, near the Manitoba border, east to Gordon Lake-Werner Lake and to the vicinity of Fortune Lake at the north part of the property. This break cuts across a formation of paragneisses and a younger group of granite-granodiorite with some grey quartz diorite. At Gordon Lake and to the east, the break tends to follow a paragneiss-granodiorite contact. It broke in two to the east of Werner Lake. Although Map No. 1957-3 inferred that the interesting break peters-out out toward Fortune Lake,

more recent work between Werner Lake and Fortune Lake showed that the Fortune Lake break corresponds to a north branch of the major break and is characterized by a weak magnetic zone associated with copper mineralization. The south branch, which is marked by an 8 inch or more gouge, runs along the paragneiss-granodiorite contact. The contact zone is also marked by a weak magnetic zone and two small mafic plugs were located along this south zone at the east end of Werner Lake. The small plugs were mineralized with minor amounts of disseminated pyrrhotite, pentlandite, chalcopyrite and pyrite, containing nickel and copper. The two branches separated by a narrow wedge of granite on the Norco Option of Nickel Mining and Smelting, adjoining to the west of the property here concerned.

The band of paragneiss which is actually intruded by the mafic rocks and runs all the way from Gordon Lake to here, splits in two by the narrow wedge of granite. While the north branch appears to have changed into hybrid granite-granodiorite, the south branch turns southeasterly along the boundary of the batholith of granite-granodiorite and grey quartz diorite. The probability is that the main Gordon Lake-Werner Lake fault also turns southwest along this contact zone for a considerable distance, and covered by overburden. The eastern extension of this would run into the southwest part of the property here concerned.

AEROMAGNETIC DATA

Aeromagnetic data of the area is on Map 1189G, G.S.C. and O.D.M. According to this information, the Gordon Lake-Werner Lake fault zone lies along the south edge of a zone of magnetic low. There is no obvious anomaly directly outlined over the small mafic bodies occurring along the fault. There is, however, a weak and small magnetic anomaly outlined at about 1,000 feet to the south of Gordon Lake.

The aeromagnetic information however, shows that the above discussed southeasterly turn of the fault, is likely. Furthermore, there is an aeromagnetic anomaly outlined over the south band of the paragneiss, at the west boundary of the property here concerned. The western part of the anomaly is covered by claims staked for Falconbridge Nickel Mines, after the Government published the aeromagnetic data in 1962. The GeoTeco property was staked in 1961, without the airborne information.

The aeromagnetic data showed also an anomalous condition located at the south part of Fortune Lake where Map 1957-3 shows an occurrence of copper. Axis of this anomalous condition runs east-westerly. According to records in the O.D.M., Stratmat Ltd., which owned Claim K-25943 and a block of another 20 claims to the east and northeast, prior to 1958, had found copper values and nil nickel along this magnetic zone. The geophysical

methods used for the location of drill targets were magnetic and resistivity surveys.

MAGNETOMETER SURVEY METHOD AND INSTRUMENT

The Base-check method was used by the ground magnetometer survey with the base-control station established at 90' E. of L. 48 W, 10 feet south of an old core rack located at the north shore of Rex Lake. This base control station was used for the survey work carried out in last Winter to cover the lake area and the eastern part of the property. The base reading here was tied on to the magnetic station established on the Werner Lake property by Geo-Technical Development Co. Limited.

The base control station established on the Norco Option was used to establish control stations for the survey work carried out on the northwest part of the property. The Norco base control station was also tied on to the base control station located at Werner Lake Nickel.

A Sharpe A-2 magnetometer with a sensitivity of 20 gammas per scale division was used throughout the two periods of survey.

SURVEY RESULTS AND INTERPRETATION

The magnetometer survey encountered readings ranging from about minus 2,000 to plus 4,500 gammas. In correlation with known geology, the general levels of magnetic intensities over different rock formations are listed as follows:

<u>Rock Formation</u>	<u>General level of Magnetic Intensities</u>
	(In gammas)
(4) Granite-granodiorite with hybrid rocks	500 - 1000
(3) Granite-granodiorite and pegmatite	West section: 300-450 East section: 100-250
(3a) Granite-granodiorite and diorite	300 - 700
(2) Paragneiss with some hybrid rocks	600 - 1100
(1) Paragneiss and schist	100 - 250

It appears that the general levels of magnetic intensities of rock formations with hybrid rocks are higher, and that without are lower than that located to the west at Norco Option. As in the case of Norco, the interpretation is hindered to a certain degree by the lack of detailed geology. Nevertheless, the structures inferred to the west appeared to be well traced by the survey into the property.

There are two outstanding magnetic zones, lettered "M-A" and "M-B" on the plan accompanying this report.

"M-A" is apparently the eastern continuation of the magnetic zone with copper showings located at Norco Option. This zone runs into Claim K-25943, at the north part of the property, where Stratmat Ltd. tested an occurrence of copper. Three packsack drill holes were located by the geophysical operators at L. 76 W, in Claim 33208. These packsack drill holes were apparently put down to test the Western extension of the said copper

occurrence but located at points where there is no magnetic indication. Nevertheless, it is no doubt that "M-A" is part of the north - and copper-zone of the area. An electromagnetic check survey would be useful for the detection of any concentration of the chalcopyrite mineralization. There is no record of such having been conducted by previous owners. Furthermore, there are examples of this copper mineralization being found associated with magnetic anomalies to the west and east. One may therefore conclude that anomalies outlined here are choice locations for exploration diamond drilling, if such is desired.

"M-B" is apparently part of the interesting aeromagnetic anomaly outlined between the claims of Falconbridge Nickel and the southwest part of the GeoTeco property. Ground magnetic data encountered at the south part of Norco Option indicate that this zone is the eastern continuation of the B zone of Norco Option. The B zone of Norco Option is inferred by the writer as the choice magnetic zone for the occurrence of Ni-Cu bearing small bodies of ultrabasic intrusives, occurring along a paragneiss-granite-granodiorite fault contact. At GeoTeco, the general geology indicates that "M-B" is outlined over paragneiss. However, there is indication of a fault which runs along the south part of "M-B". It follows that this magnetic zone is considered the choice area for the occurrence of Ni-Cu bearing ultrabasic intrusives. Since the ultrabasic intrusives are expected to be small and there are seven small anomalies

with intensities similar to that encountered at Gordon Lake (2,000-4,000 gammas), the indications are considered favourable.

"M-B" extends for a distance of over three claims and cut-off at the eastern end by several northeasterly structures. It follows that this magnetic zone is inferred as located at the eastern end of the Gordon Lake-Werner Lake Ni-Cu bearing structure. The geological situation here is expected to be a little more complicated than that known at Gordon Lake-Werner Lake. Furthermore, because of the fact that there are ridges along this zone, the writer recommends only close geological examination at this time. Results obtained by the geological examination should be used to further evaluate the anomalies outlined along this zone prior to probable test diamond drilling.

CONCLUSIONS AND RECOMMENDATIONS.

The survey outlined two interesting magnetic zones ("M-A" and "M-B") across the western part of the property. The north zone("M-A") is inferred as a zone with copper mineralization. Electromagnetic survey is the useful method for the location of appreciable concentrations of such mineralization, and should be conducted. However, if diamond drilling is desired, the choice location for such a test is located at L. 84 W, 250 feet north, such as depicted on the plan accompanying this report.

"M-B" is inferred as the eastern end-section of the structure which introduced the Ni-Cu bearing ultra-basics in the area. The anomalies here are favourable

indications for the occurrence of such intrusives. A close geological examination is recommended prior to probable exploration diamond drilling.

SURVEY DATA

A magnetometer survey was carried out by Geo-Technical Development Co. Limited on a 40-claim group property known as the GeoTeco property, located at Rex Lake, Kenora, Ontario.

The survey was carried out during three periods in 1962. One from March 22 to April 18 and the other from June 8 to July 10, 1962. In the period from August 8th to the 15th., 1962, detailed geological survey traverses were carried out as well as E.M. check survey traverses covering magnetic anomalous areas as inferred from the magnetic survey data in the western part of the property. The geophysical survey work covered all but three claims at the northeast part of the property.

Three east-westerly base lines were cut on the property for the turning-off of north-south picket lines. A total of 29.9 miles of picket lines was established on the property for the survey.

A total of 25.9 miles of magnetometer survey was carried out with readings obtained at 100 foot intervals. The number of 50 foot station readings taken over anomalous zones, equals to an additional 2.8 miles of magnetometer survey with 100 foot station readings.

The number of man-days required to complete the survey is as follows:

	<u>8-Hour Man-Days</u>	<u>Attributable to Assessment Work</u>
Line cutting and chaining	70 x 4	280
Operating survey	47 x 4	188
Preparation of report and typing	6 x 4	24
Drafting	<u>16 x 4</u>	<u>64</u>
	<u>139</u>	<u>556</u>

Respectfully submitted,

GEO-TECHNICAL DEVELOPMENT CO. LIMITED,

S.S. Szetu
S.S. SZETU, Ph.D.
Consulting Geologist.

SSS:S

September 1st., 1962.

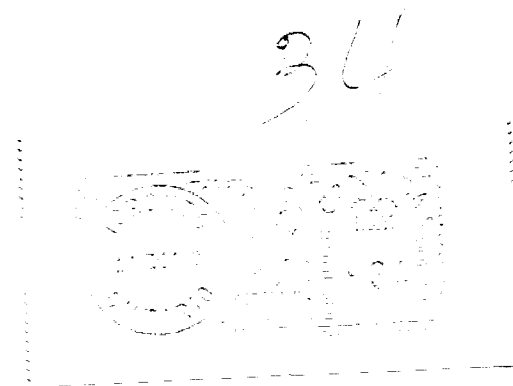
24 Wellington Street West,
Toronto, 1, Ontario.

*1000 to 1006 incl
1000 to 31 incl
33234 to 37 incl
13290-91 / 35*

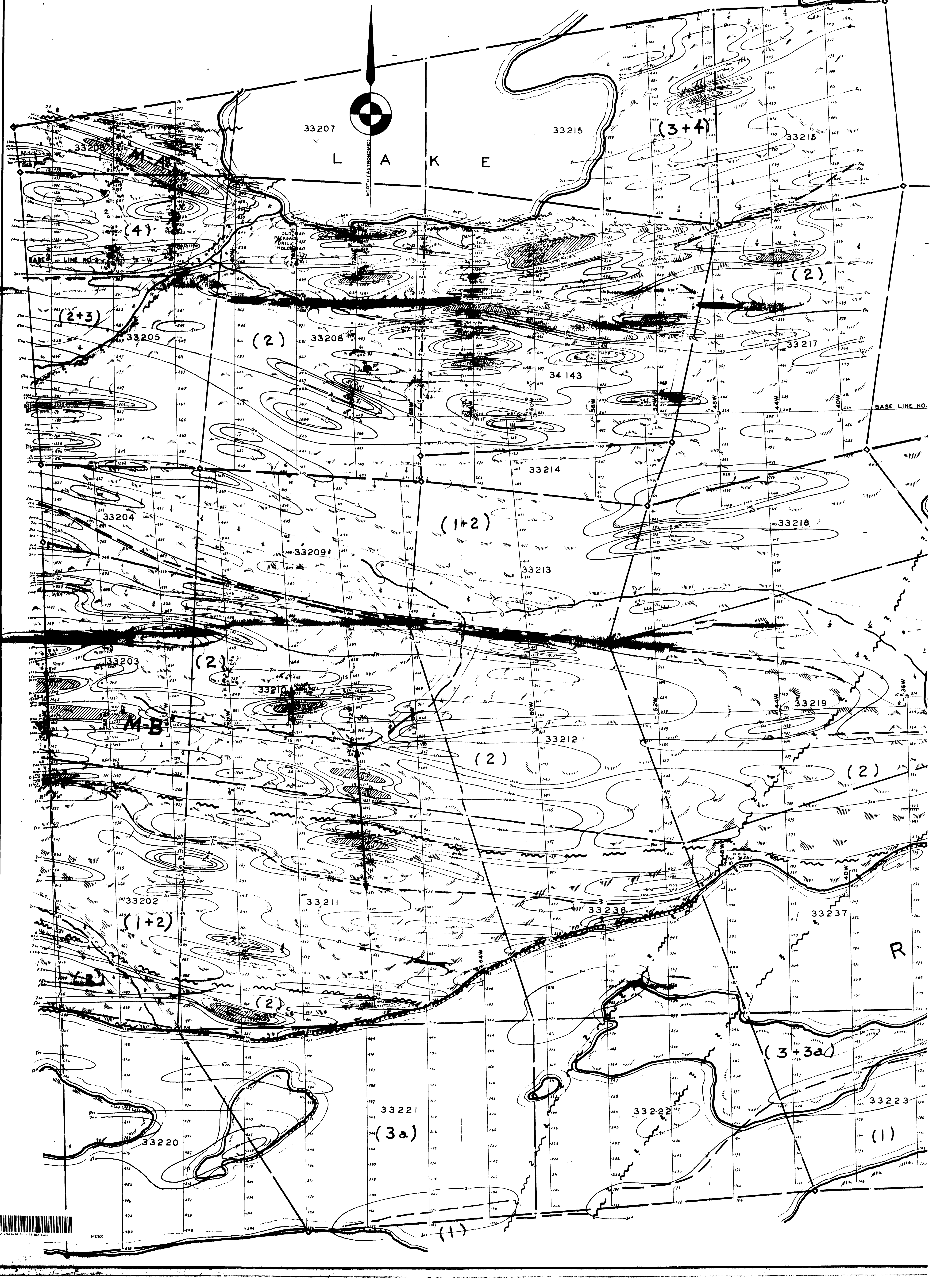
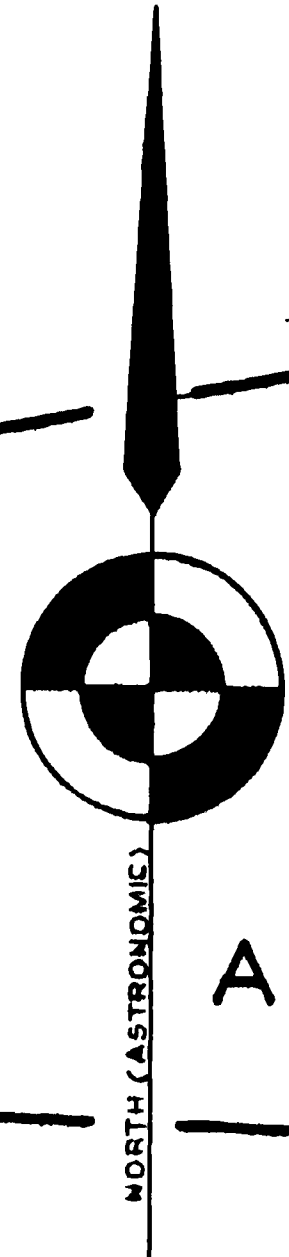
*Tech - 69
Surv - 31
138 x 4 = 552 = 15.7 days
35*

*Volume for 133207
133231
with a record by water*

SUITE 600
250 UNIVERSITY AVENUE
TORONTO 1, CANADA

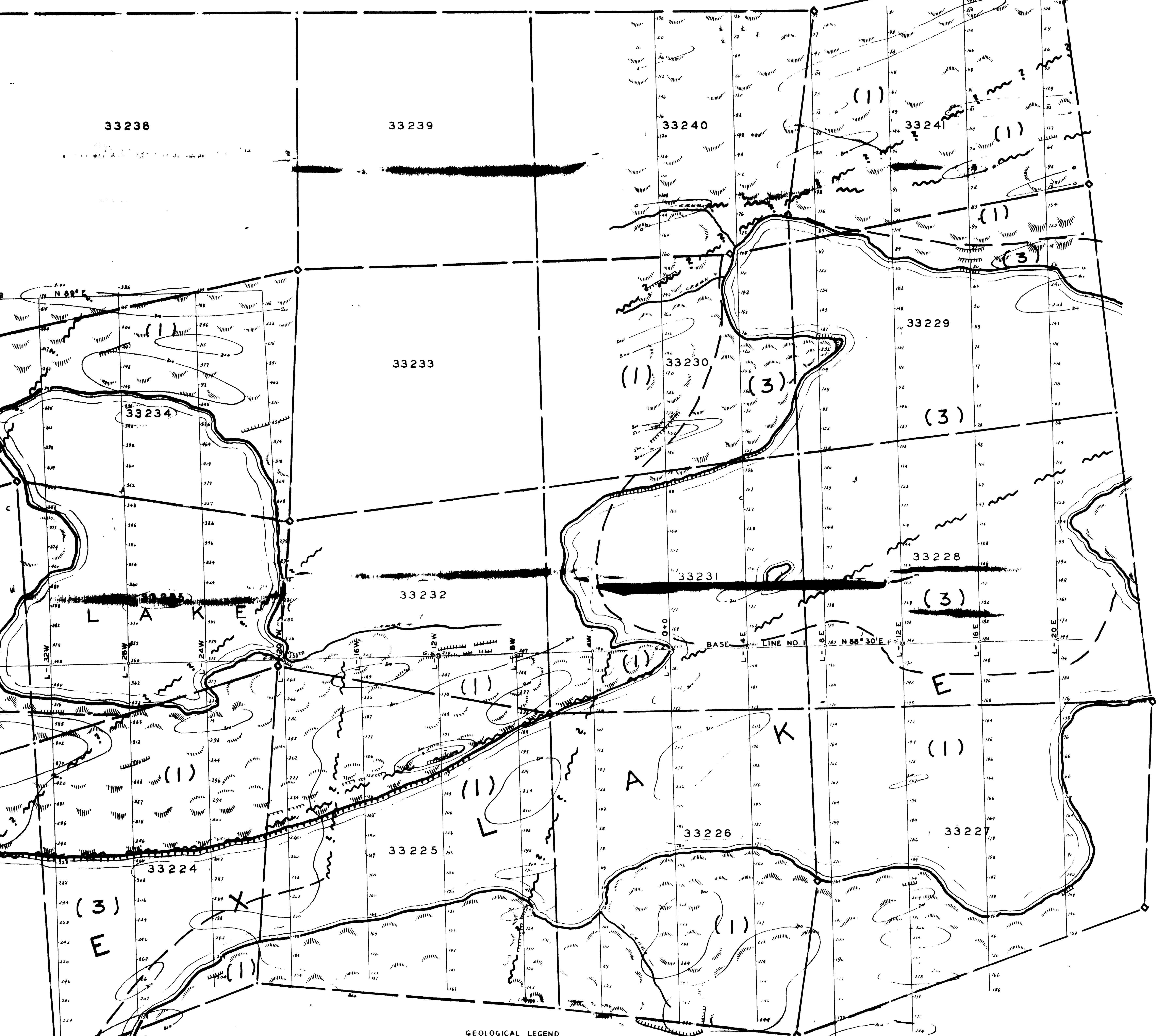
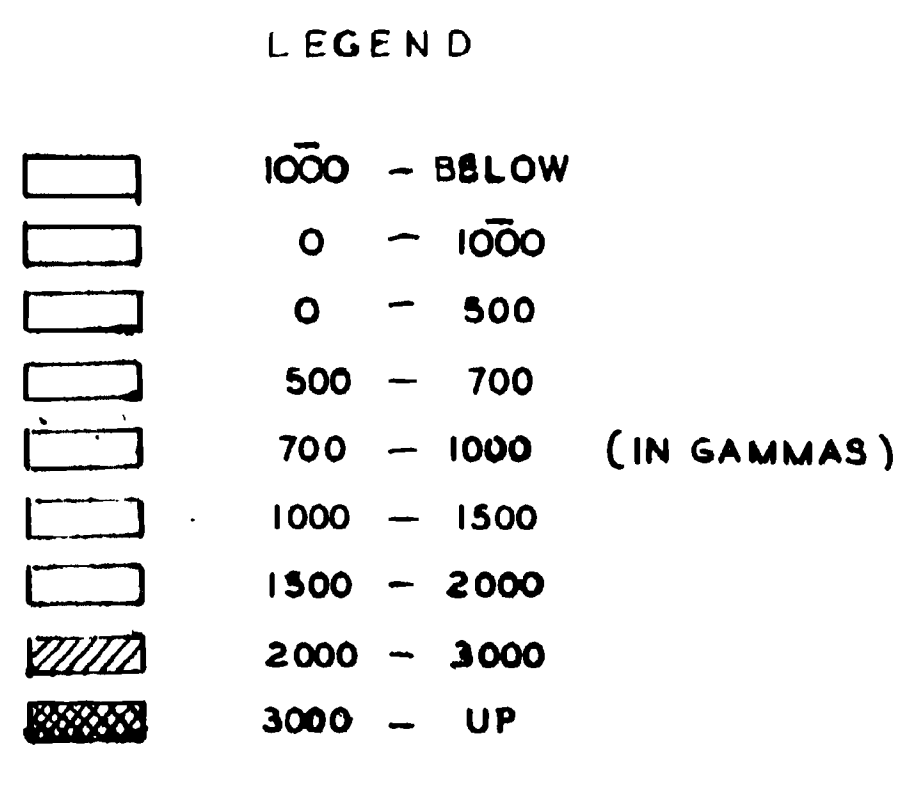
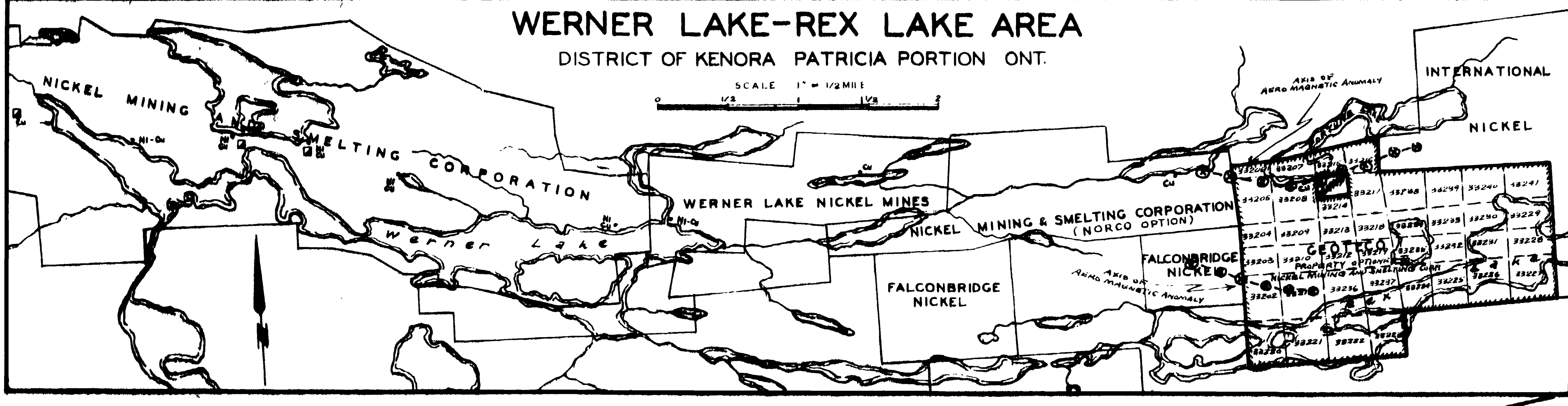


The Department of Mines,
Mining Lands Branch,
Parliament Buildings,
TORONTO 2, Ontario.



WERNER LAKE-REX LAKE AREA
DISTRICT OF KENORA PATRICIA PORTION ONT.

SCALE 1" = 1/2 MILE



- LEGEND**
- LINES CUT AND CHAINED MAGNETIC READINGS OBSERVED AND PLOTTED ON EAST SIDE OF PICKET LINE.
 - B.C.S. MAGNETIC CONTROL STATION.
 - C.S. MAGNETIC CONTROL STATION.
 - SWAMP AND AREA OF LOWER GROUND.
 - OUTLINE OF HIGHER GROUND.
 - CLIFF.
 - CLAIM POST LOCATION AND CLAIM BOUNDARY.
 - OLD PACKSACK DRILL HOLE.
 - (4) GRANITE-GRANODIORITE WITH HYBRID ROCKS.
 - (3) GRANITE-GRANODIORITE AND PEGMATITE (3a) GRANITE-GRANODIORITE AND DIORITE.
 - (2) PARAGNEISS WITH SOME HYBRID ROCKS.
 - (1) PARAGNEISS AND SCHIST.
 - INFERRED FAULT.
 - INFERRED CROSS FAULT.
 - INFERRED GEOLOGICAL BOUNDARY.
 - M-A, M-B INTERESTING MAGNETIC ZONES.
 - CHOICE LOCATION FOR EXPLORATION DIAMOND DRILLING.
 - CHOICE LOCATION FOR CLOSE GEOLOGICAL EXAMINATION AND/OR TRENCHING.

- GEOLOGICAL LEGEND**
- GRANITE (G1), PEGMATITE GRANITE (G2), PEGMATITE (G3), GNEISSIC GRANITE (G4), GRANITE WITH BANDS OF HYBRID ROCKS (G5), GRANITE GNEISS WITH SOME GRANITE AND/OR PEGMATITE (G6).
 - GARNET BEARING GRANITE (G1), GARNET BEARING GNEISSIC GRANITE (G2), GARNET BEARING PEGMATITE (G3).
 - DIORITE ROCK (D1), DIORITE (D2), HORNBLENDIC DIORITE (D3), HORNBLENDIC GNEISS (H3).
 - HORNBLANDITE (H), AMPHIBOLITE (A), META-GABBRO (M), SPECKS OF SULPHIDES (S), PYRITE (P), CHALCOPYRITE (C), EPIDOTE (E).
 - GRANITE GNEISS AND/OR QUANTIFIED SEDIMENTS (G5), GRANITE GNEISS WITH SOME GARNET (G6), TROCTOLITE AND BANDET GNEISS (T), WITH SOME GARNET (Tg), PARAGNEISS OR GNEISS (P), WITH SOME GARNET (Pg), MICA SCHIST (MS).
 - GARNET-RICH GRANITE GNEISS (G7), GARNET-RICH TROCTOLITE GNEISS (Tg), GARNET-RICH PARAGNEISS (P), GARNET ROCK (R).

MAGNETOMETER SURVEY DATA ON PROPERTY OF
GEOTECO 40 CLAIM PROPERTY OPTIONED TO
NICKEL MINING AND SMELTING CORPORATION
ISO - MAGNETIC CONTOURS
AND GEOLOGICAL INTERPRETATION

WERNER LAKE AREA
KENORA MINING DIVISION
ONTARIO

GEOPHYSICAL SURVEY BY:
GEO-TECHNICAL DEVELOPMENT CO. LIMITED

MARCH - JULY - 1962
REVISED: AUGUST - 1962

