



41114SE0021 0011B1 KITCHENER

010

REPORT  
of

214/7

SCOTIA MINES LIMITED

Kitchener Township Property,  
Sudbury Mining Division,  
Ontario

*GP: (Nov 11-2001) report*

October 12, 1967

GHD CONSULTANTS LIMITED



41114SE0021 0011B1 KITCHENER

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PROPERTY

The property under consideration covers eighteen unpatented mining claims in Kitchener Township, District of Sudbury, Sudbury Mining Division, Ontario. The claims are numbered as follows:

S135033 to S135041 inclusive

S136146 to S136154 inclusive



LOCATION

The property is located in the southeast quadrant of Kitchener Township of Ontario. The east boundary of the property and the Township coincide with the southeast corner of the former being three quarters of a mile north of the Township corner. The property is three claims wide and extends to the west, beyond Copenhagen Lake, for six claims. The group is some twenty miles northwest of the Town of Capreol as the crow flies.

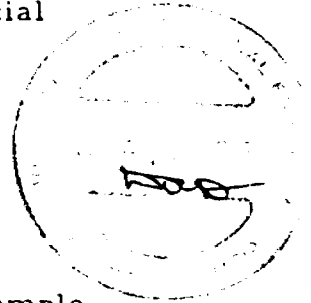
ACCESS

The property is most readily reached from Sudbury or Capreol via bush plane to Bigwood Lake or Copenhagen Lake. A good road is available from Capreol via Milnet on the C. N. R. and to the Lowphos Iron Mine Property from where bush roads are available to Ironside Lake. A good trail extends from Ironside Lake to

the site of the old Copenhagen shaft.

### TOPOGRAPHY

The topography of the area is characterized by widely spaced rock ridges having a northwest-southeast trend. Glacial drift covers the valley bottoms and a few of the hills.



### RESOURCES

The numerous lakes of Kitchener Township give ample assurance of abundant water supplies for both domestic and process purposes.

Logging operations over the years have somewhat depleted timber resources, however sufficient local sources remain.

Hydro electric power is available from the grid of the Ontario Commission.

### HISTORY

Prospectors were first attracted to the area with the discovery of placer in the 1890's. Subsequent prospecting uncovered the magnetite deposits of Moose Mountain together with some gold bearing veins and the sulphide showings of the Copenhagen Property. The Moose Mountain Iron Mine was operated productively between

1908 and 1920 and has more recently been placed in production with the development of concentration and pelleting techniques.

The Copenhagen Sulphide showing was explored by diamond drilling and a shaft prior to 1932.

### GENERAL GEOLOGY

Kitchener Township is underlain by Precambrian rocks described as metavolcanics, meta sediments and granitic, gabbroic, and diabasic intrusives.

The metavolcanics and metasediments are presumed to be pre granite and remain as remnants and/or partly digested portions of the granite gneiss areas.

The predominant rock type is the pink granite, granitic gneiss and porphyritic granite together with the various phases of alteration involving the older sediments and volcanics. These older rocks are intruded by dykes and sills of gabbroic material and olivine diabase.

The claim group under consideration is centred by a mass or remnant of greenstone of the fine grained amphibolite variety enclosed in amphibolite gneiss and pink granite together with a little porphyritic granite. Several test pits have been sunk on a graphitic shear zone mineralized with quartz and sulphides.



### PREVIOUS WORK

There appears to be no record of the results of the early exploration efforts, however it is presumed that the objective at that time was gold, as it was in the area generally.

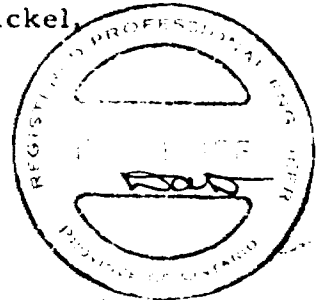
Kindle reports 0.25% Nickel in a sample from the mineralized shear.

Recent samples from a mineralized showing near Copenhagen Lake returned low but interesting values in copper, lead, nickel, palladium, platinum and zinc.

### GEOLOGY OF PROPERTY

In July and August, 1967 during and following line cutting operations, a geological mapping program was carried out on the property. A geological map is included with this Report covering the results of this survey.

The entire rock assemblage within the claim group can be classed as precambrian hybrid and highly metamorphosed throughout. Large areas are drift covered by boulder gravels of moraine origin. The west, southwest and northwest portions of the property are underlain by pink granites characterized by relatively high hills. Elsewhere granites cut through other rock types intimately in shear or stress planes as well as in a lit-par-lit type of impregnation and a



criss- cross of fingers of pegmatite and porphyry with granitization of the original gabbro, diorites, etc.

An area extending from the north shore of the east arm of Copenhagen Lake in a south of east direction is underlain by two types of rock, i. e; a gabbro-diorite generally medium grained and a meta volcanic, andesite to basalt with some suggestion of older sediment inclusions. This complex of more basic intrusive and volcanic swings north to the north boundary of the property and occupies a large portion of the north central portion of the property.

In the area underlain by the volcanics and/or more basic intrusives, several suggestions of shearing were observed with evidence of some pyritization. These occurrences have a general east-west trend and are frequently associated with narrow fingers of granite. As a result of limited outcrop the extent of these sheared structures was undetermined. Two possible additional areas of volcanic rocks are suggested by low swampy ground. One is at the east property boundary north of the baseline and extending up to and along the west side of the small lake. The other is near the south property boundary on line 6+00 W and extending northwest to line 15 +00 W. One outcrop of volcanics is shown near the edge of the swamp on line 12+00 W.



## MAGNETOMETER SURVEY

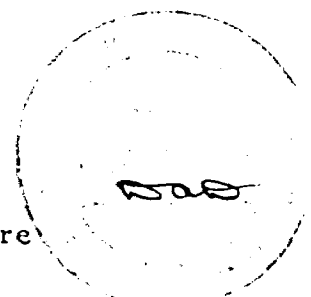
A magnetic survey using a Sharpe MF-1 Fluxgate Magnetometer was conducted on both the east-west baselines and the north-south crosslines. The north-south crosslines were cut at 300 foot intervals and readings were taken at 100 foot intervals on all lines. The usual corrections for instrument drift and diurnal variations were applied and readings reported to the nearest 5 gammas. The results of the magnetic survey are discussed in the following paragraphs and shown on the 1 inch = 200 ft. scale map attached to this Report. Technical details of the instrument used can be found in Appendix I.

## RESULTS OF MAGNETOMETER SURVEY

Several areas of higher than normal readings are indicated within the claim group. The most extensive of these starts at the north shore of the east arm of Copenhagen Lake and continues southeast to the south boundary of the property slightly east of line 21E.

This anomalous belt would appear to correspond closely with the shear zone indicated east of Copenhagen Lake and which received some superficial attention by trenching in earlier years. This shear zone is known to be mineralized with pyrite, pyrrhotite, chalcopyrite and sphalerite.

A second anomalous area on line 0+00 coincides with the location of the old Copenhagen "shaft" however does not extend to the





next line east and is only represented by a marginal reading on the 3+00 W line.

A third magnetic zone enters the property from the north at line 21+00 E and extends to the east boundary at 33+00E at 24+00 N. This area appears to be underlain by the volcanic basic complex and this anomaly could indicate another area of mineralized shearing.

Further magnetic anomalies are noted at the following locations:

27+00 E and 12+00 N  
12+00E and 5+00 S  
12+00 E and 7+00 S  
33+00 E and 3+00 S to 5+00S  
12+00 W and 18+00 S to 0+00 and 21+00 S



The first four of these are somewhat localized as to strike with the fourth anomaly being on the east boundary. The fifth and last appears to coincide with a possible band of volcanics.

#### ELECTROMAGNETIC SURVEY

Electromagnetic readings were taken on specific lines to check areas where the magnetic intensities indicated possible anomalous conditions. A Sharpe SE 250 Unit was used to carry out this check survey. Readings were taken at the 100 foot station intervals.

The procedure used was the parallel or broadside method

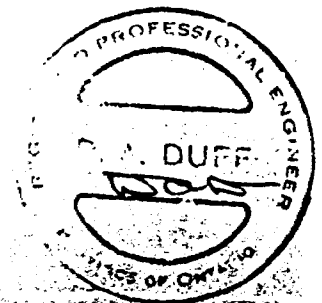
whereby the transmitter travels along a parallel picket line to the one on which the receiver is taking readings. Readings are recorded by the receiver coil in the null position, in degrees. Results of the E-M check work are discussed in the following paragraphs and shown on the 1 inch = 200 ft. scale map accompanying this Report. Technical details of the instrument used can be found in Appendix II.

### ELECTROMAGNETIC RESULTS

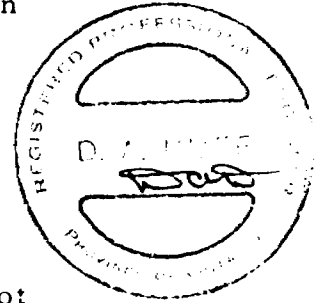
Three areas of interest were located associated with the magnetic locations checked and are designated "A" to "C".

Anomaly "A" is indicated by cross-overs on line 9+00 W and 12+00 W at 5+00 S and 4+00 S respectively. These cross-overs correspond generally to the zone of higher magnetic readings as well as the apparent contact of the basic and granitic rocks.

Anomaly "B" is indicated by cross-overs on line 30+00 E and 33+00 E at 24+00 N and 23+00 N respectively. These again coincide with the trend of the indicated magnetic zone in this location and in an area of basic volcanics.



Anomaly "C" is indicated by a cross-over on line 27+00 E and 12+00 N coinciding with the higher magnetics in this area. This is an area of low ground and no outcrop so that although apparently surrounded by granite, an area of volcanic rock could be involved.



### CONCLUSIONS AND RECOMMENDATIONS

The three conductive areas outlined, while not exceptionally outstanding, are associated with magnetic anomalies and in at least one instance with a known condition of mineralized shearing.

Conductors can be the result of various conditions including rapid changes in bedrock elevations, overburden variations, water-bearing shears, mineralized shears, graphitic shears and concentrations of sulphide minerals. It may also be pointed out that it is not always the strongest and most typical conductive pattern that characterizes the economic deposits of a given location.

The results of this geophysical program suggest the advisability of checking the three conductors by means of minimum diamond drilling. This work however should be delayed pending results of other exploration now in progress in the immediate area.

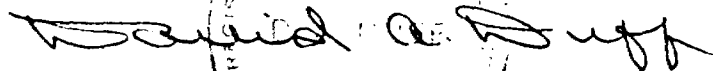
When this work is carried out, conductors "A" and "B" should get priority with conductor "C" drilling dependent on results of the other two.

RECOMMENDED PROGRAM

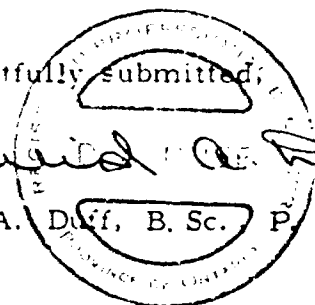
A minimum program of 1000 to 1500 feet of diamond drilling to test the conductors as suggested. These holes should be drilled from south to north from locations as indicated on the accompanying geophysical map. The cost of this program is estimated to be as follows:-

Diamond Drilling, approximately 1500 feet	\$10,500.00
Engineering and Supervision	2,000.00
Contingencies	<u>1,875.00</u>
	<u>\$14,375.00</u>

Respectfully submitted;



David A. Duff, B.Sc. P. Eng.



ACKNOWLEDGEMENTS

Ontario Department of Mines 41st Annual Report  
L. F. Kindle - Vol. XLI, Part IV, 1932.

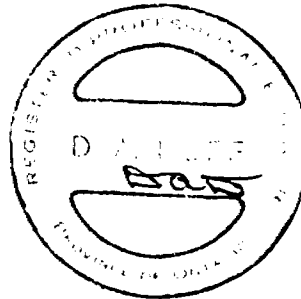
Ontario Department of Mines, Preliminary Geological  
Map P. 250.

Aeromagnetic Map 1519, (Venetian Lake).

Report - Scotia Mines Limited - June 16th, 1967,  
David A. Duff.

Geological Mapping of Property - W. Boyes, September 1967.

Geophysical Survey of Property - September 1967.

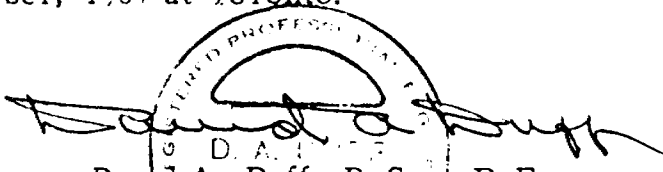
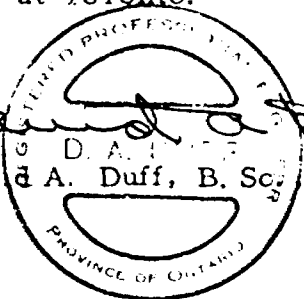


CERTIFICATE

I, David A. Duff of the City of Toronto, in the County of York, in the Province of Ontario, hereby certify:

1. That I am a mining engineer and reside at 274 Lawrence Ave. East, Toronto 12, Ontario.
2. That I am a graduate of McGill University and have been practicing my profession as a mining engineer for over forty years.
3. That I have no direct or indirect interest whatsoever in the mining claims covered by this report nor have I direct or indirect interest whatsoever in the shares of Scotia Mines Limited. I do not expect to receive any direct or indirect interest in the shares of Scotia Mines Limited
4. The accompanying report is based on personal knowledge of the area and on government reports and maps. (See acknowledgements)
5. That I am a member of the Professional Engineers Association of Ontario and the Canadian Institute of Mining and Metallurgy.

DATED this 12th day of October, 1967 at Toronto.

  
David A. Duff, B. Sc. P. Eng.  


APPENDIX I

Vertical Intensity Fluxgate Magnetometer MF-1



SPECIFICATIONS

Model MF-1 Standard surveying and prospecting magnetometer with self-levelling sensor.

<u>Ranges:</u>	Plus or minus-		
	1,000 gammas f. sc.	<u>Sensitivity:</u>	20 gammas per div.
	3,000 "		50 "
	10,000 "		200 "
	30,000 "		500 "
	100,000 "		2000 "

Meter: Taut-band suspension, 1,000 gamma scale: 1 7/8" long - 50 div.  
3,000 " " 1 11/16" long - 60 div.

Accuracy: 1,000 to 10,000 gamma ranges  $\pm 0.5\%$  of full scale  
30,000 to 100,000 " "  $\pm 1\%$  of full scale

Operating Temperature:  
-40° C to 40°  
-40° F to 100° F

Temperature Stability: Less than 2 gammas per °C (1 gamma/° F)

Bucking Adjustments: 10,000 to 75,000 gammas by 9 steps of approximately 8,000 gammas and fine control by 10-turn potentiometer. Convertible for Southern Hemisphere or  $\pm 30,000$  gammas equatorial.

Batteries: 12 x 1.5 V - flashlight batteries ("C" cell type)  
(AC Power supply available)

Consumption: 50 Milliamp res

Dimensions: Instrument: 6 1/2" x 3 1/2" x 12 1/2" - 165 x 90 x 320 mm  
Battery Pack: 4" x 2" x 7" -- 100 x 50 x 180 mm  
Shipping Container: 10" dia. x 16" - 255 mm dia. x 410 mm

Weights: Instrument: 5 lbs. 12 oz. - 1.6 kg.  
Battery Pack: 2 lbs. 4 oz. - 1 kg.  
Shipping: 13 lbs.

APPENDIX II

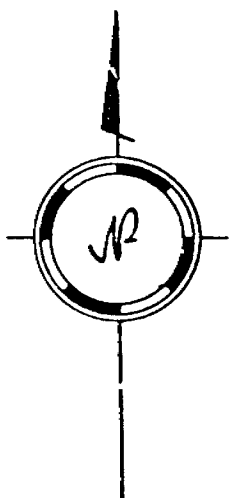
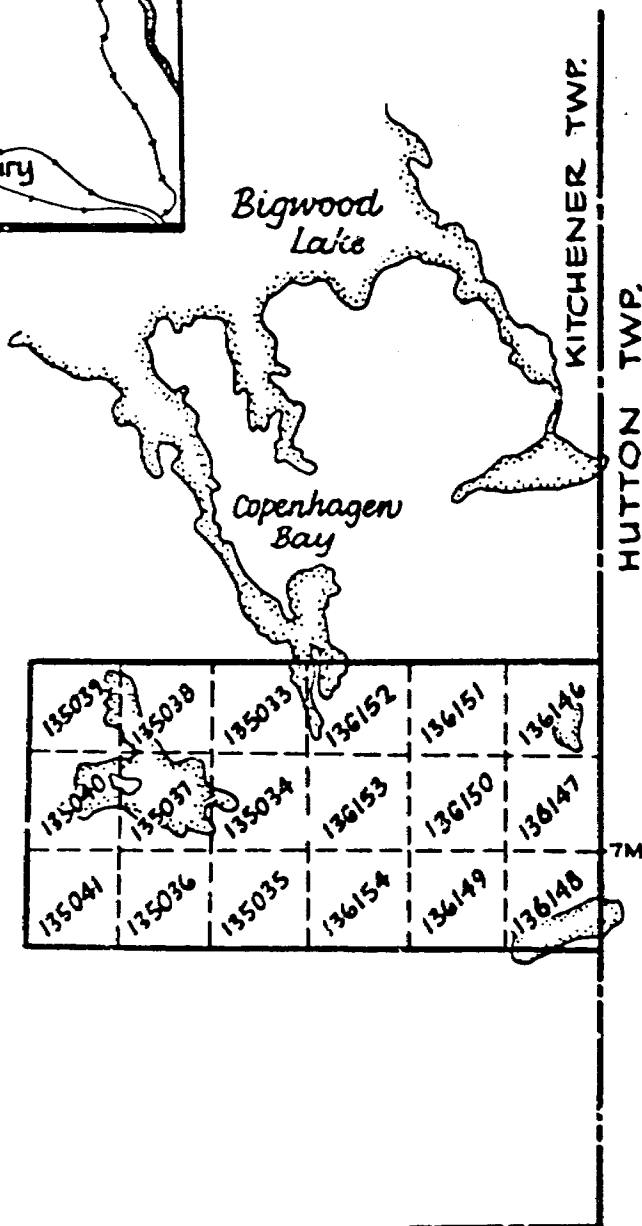
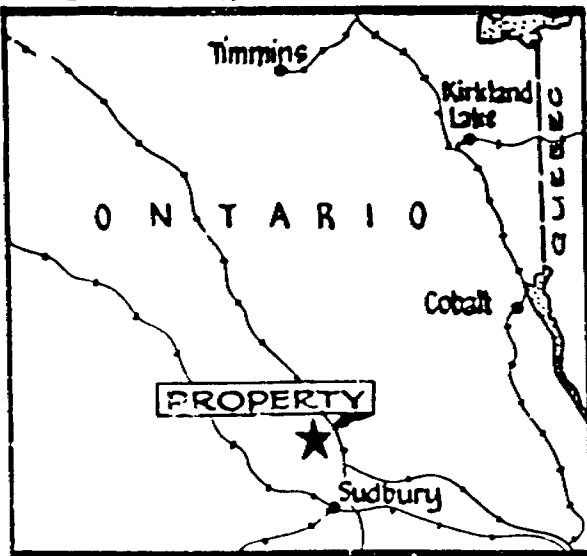
SPECIFICATIONS OF THE SE - 250 ELECTROMAGNETIC UNIT

Frequency Range:	1,000 CPS $\pm 2\%$
Frequency Stability:	Better than $\pm 2\%$ over extended periods at normal ambient temperatures.
Frequency Tracking:	Receiver versus transmitter better than 1% over temperatures from - 40° F to 104° F.
<u>Transmitter output:</u>	Approximately 150 NI at 1000 CPS, higher outputs optional.
Separation:	Up to 1200 feet for $\pm 5^\circ$ deflection.
Receiver Loop:	Electrostatically shielded.
Receiver Sensitivity:	50 Millimicrovolts.
Battery:	2 x No 731 Eveready lantern batteries or Neda 918.
Battery Life:	Approximately 10 days.
Weight:	Transmitter and coil overall 10 1/2 lbs. - 7.5 kgs. Coil 6 lbs. , 2.7 kg. Transmitter 10 1/2 lbs. 4.75 kg. Receiver weight overall 11 lbs. - 5 kg. Receiver 3 lbs. - 1.4 kg. Coil - 8 lbs. - 3.6 kg.





### KEY MAP



*Claims location map*

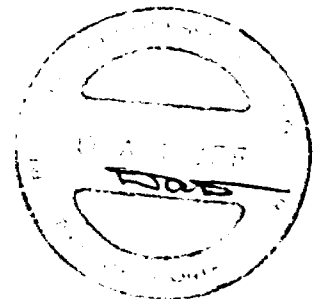
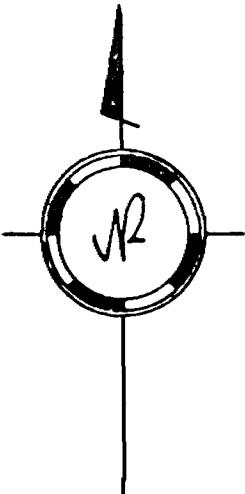
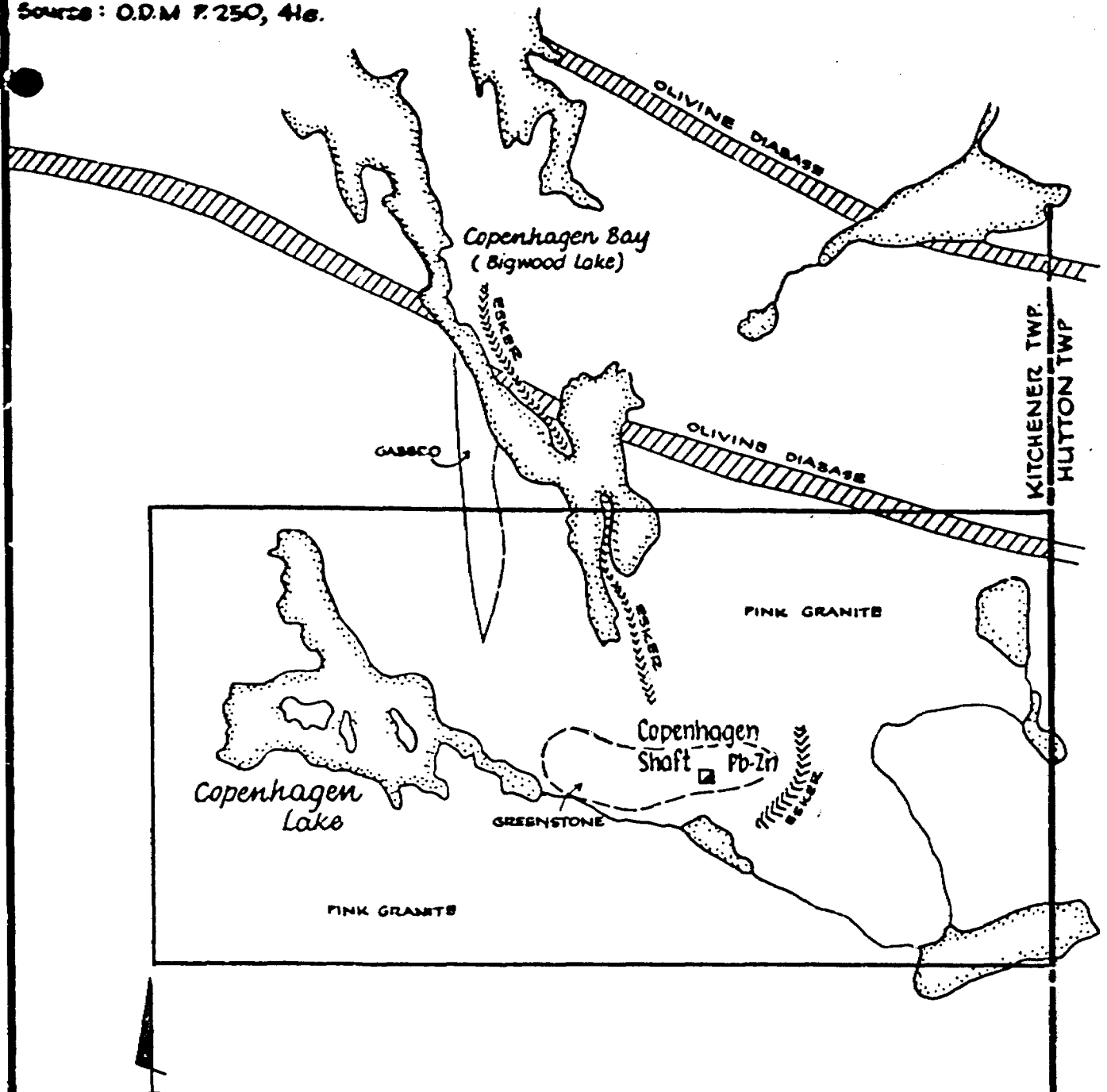
# SCOTIA MINES LIMITED

KITCHENER TWP. PROPERTY - SUDBURY MINING DIVISION



Scale: 1 in to 1/2 mile

Source: O.D.M. F.250, 41s.



*Geological Map*

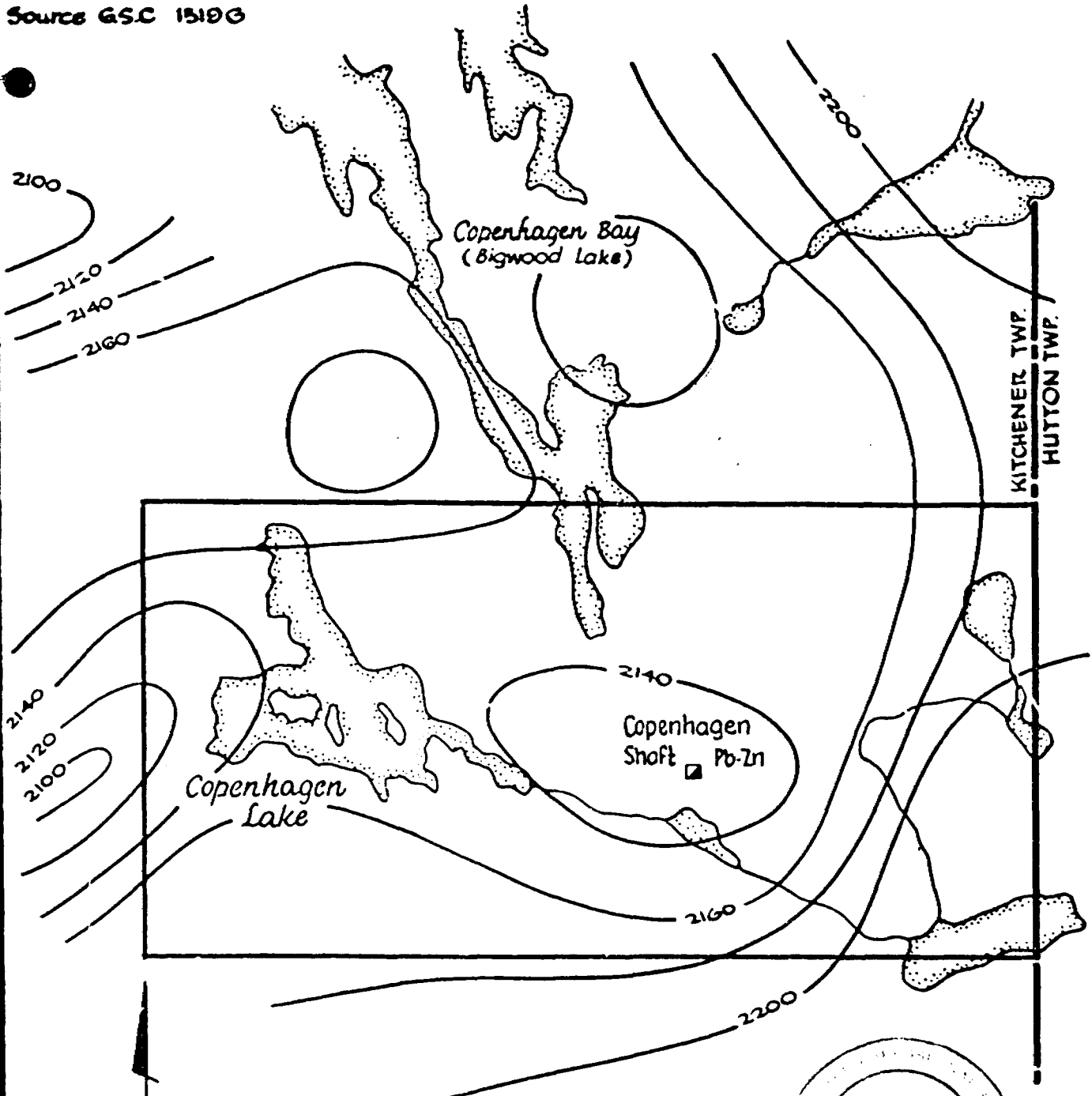
# SCOTIA MINES LIMITED

KITCHENER TWP. PROPERTY - SUDBURY MINING DIVISION

Scale: 1 in to 1/4 mile

G.H.D CONSULTANTS LTD.

Source G.S.C 15193



*Magnetic Map*

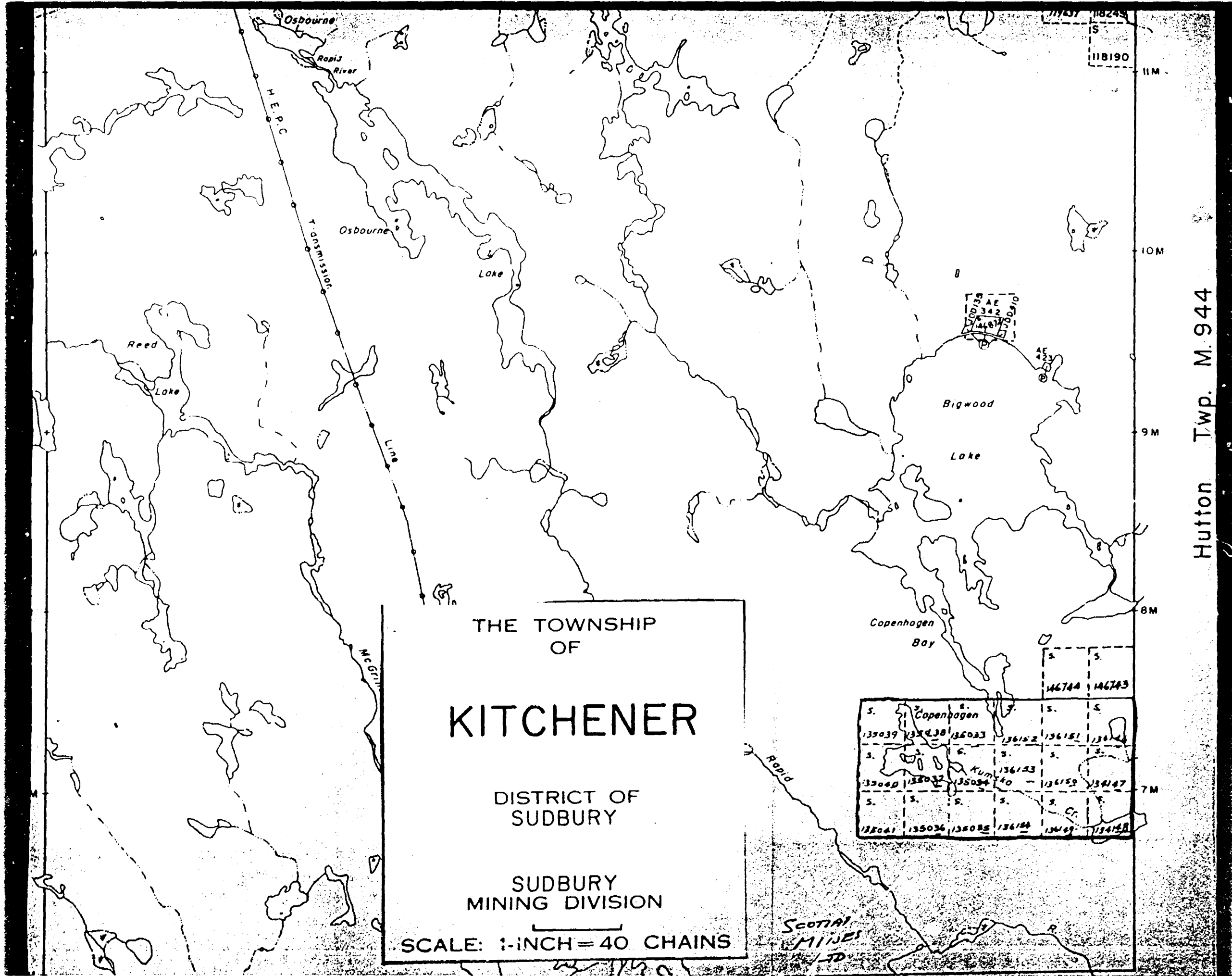
# SCOTIA MINES LIMITED

KITCHENER TOWNSHIP PROPERTY - SUDBURY M. D.

Scale: 1 in to 1/4 mile



G.H.D CONSULTANTS LTD.

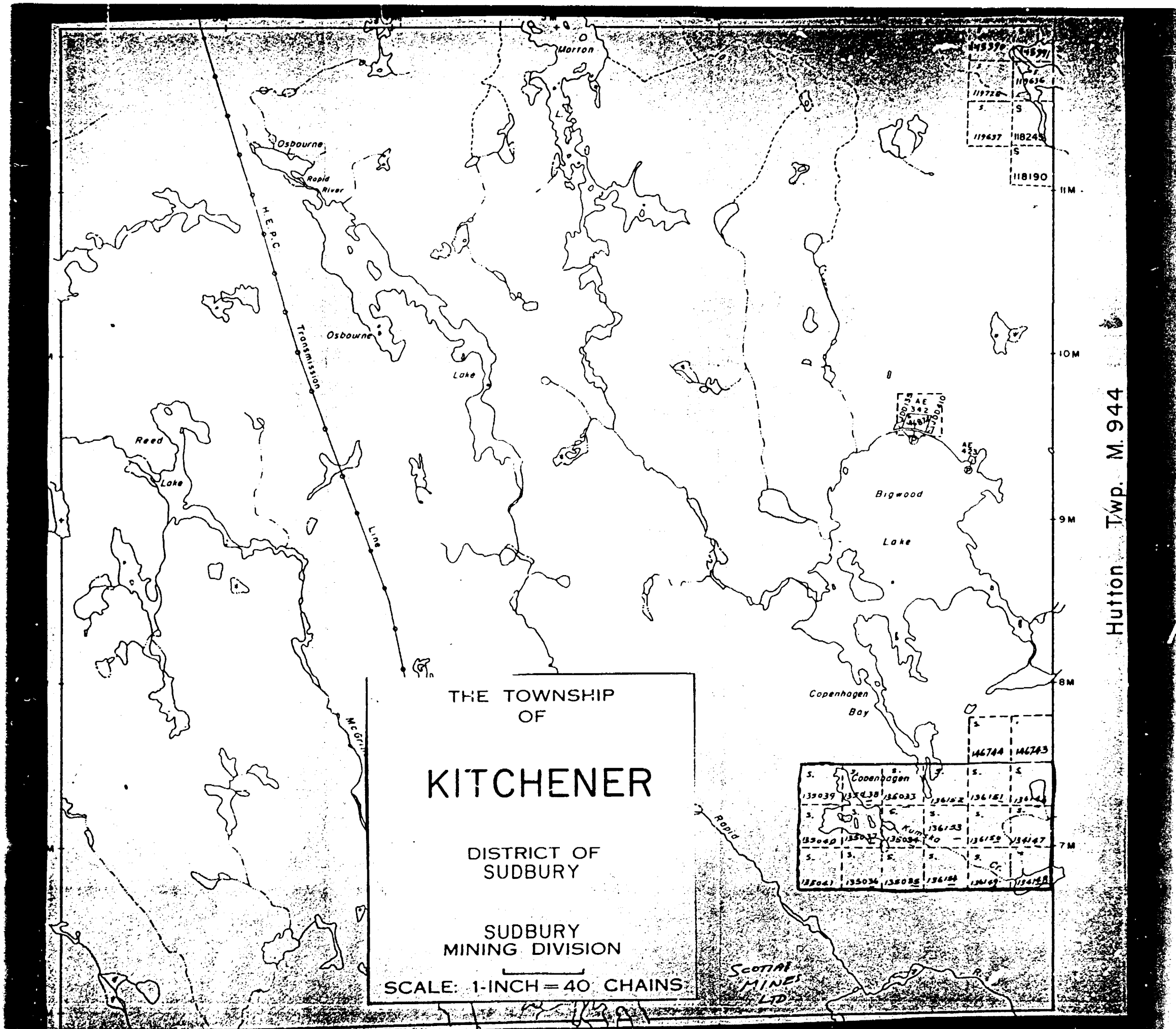


Hutton Twp. M. 944

THE TOWNSHIP  
OF  
**KITCHENER**  
DISTRICT OF  
SUDBURY  
SUDBURY  
MINING DIVISION  
SCALE: 1-INCH = 40 CHAINS

S.	1	2	3	S.	S.
139039	139438	135023	136152	136151	136144
S.	S.	6.	S.	S.	S.
139040	135032	135094	136153	136159	136147
S.	S.	S.	S.	S.	S.
135041	135036	135085	136154	136149	136148

SCOTIA  
MINES  
-TD



THE TOWNSHIP  
OF  
**KITCHENER**

DISTRICT OF  
SUDBURY

SUDBURY  
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

SCOTIA  
MINES  
LTD.

Hutton Twp. M. 944

11M

10M

9M

8M

7M

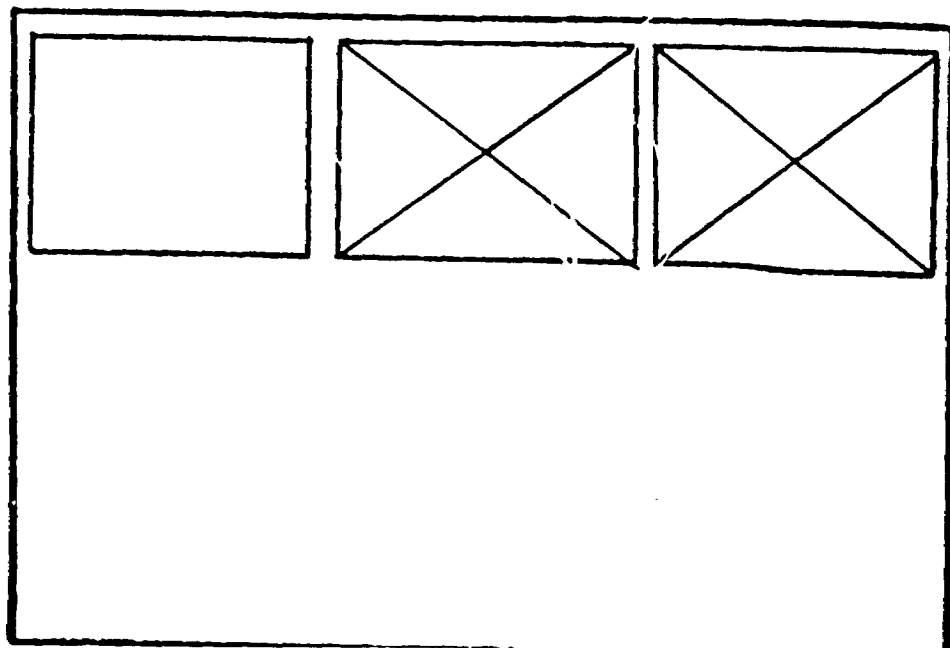
SEE ACCOMPANYING  
MAP(S) IDENTIFIED AS

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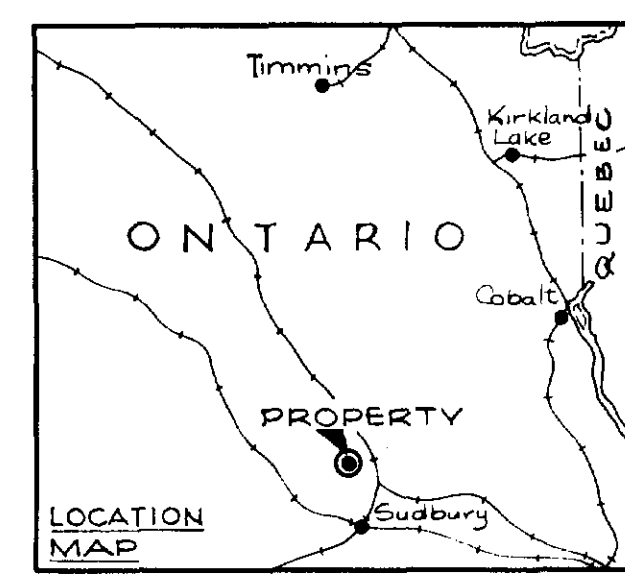
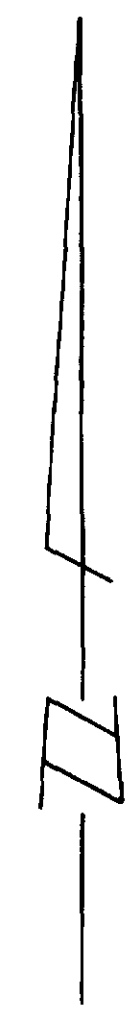
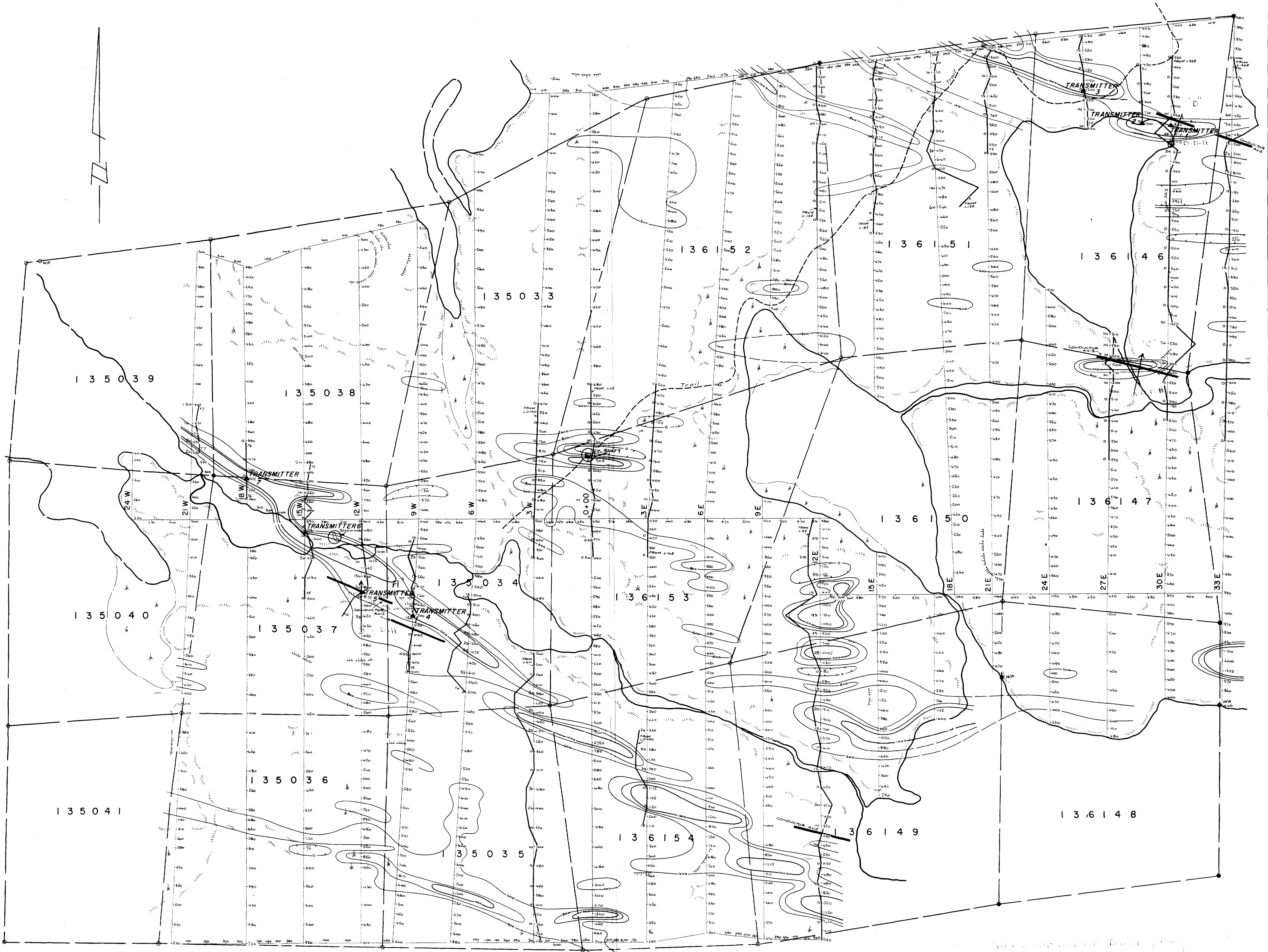
KITCHENER-0011-B1, #1, #2

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LOCATED IN THE MAP  
CHANNEL IN THE FOLLOWING  
SEQUENCE (X)







- LEGEND**
- MAGNETOMETER READINGS IN GAMMAS
  - CONTOUR OF MAGNETOMETER READINGS
  - PROFILE OF E.M. READINGS (SCALE 1" = 10° OF DIP)
  - SWAMP
  - RISING GROUND
  - RIDGE OR CLIFF
  - ELECTRO-MAGNETIC CONDUCTOR

PLAN OF MAGNETOMETER SURVEY OF  
AND ELECTRO-MAGNETIC SURVEY OF PART OF  
**SCOTIA MINES LIMITED**

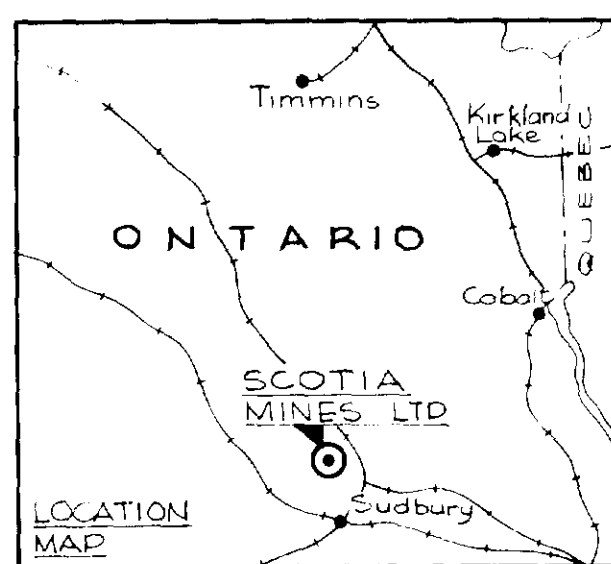
KITCHENER TOWNSHIP ONTARIO  
SCALE 1" = 200'  
SEPTEMBER 1967  
SURVEY BY  
**G. H. D. CONSULTANTS LIMITED**



63-2258

KITCHENER-0011-B1, #2





- LEGEND**
- a. a PREDOMINANTLY GRANITE, GRANODIORITE
  - b. b GABBRO, DIORITE, ALTERED GNEISS
  - c. c VOLCANICS - ANDESITE, BASALT
  - OUTCROP
  - - - - - ASSUMED GEOLOGICAL CONTACT
  - MUSKEG

PLAN OF GEOLOGICAL SURVEY OF  
**SCOTIA MINES LIMITED**

KITCHENER TOWNSHIP ONTARIO

SCALE 1" = 200' SEPTEMBER 1967

SURVEY BY  
**G.H.D. CONSULTANTS LIMITED**

