



52011SW9322 2.296 MCVICAR LAKE

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ONTARIO DEPARTMENT
OF MINES
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SEP 20 1971
OFFICE OF THE
RESIDENT GEOLOGIST

THE HANNA MINING COMPANY
THE HANNA MINING COMPANY

ELECTROMAGNETIC SURVEY

LANG LAKE CLAIM GROUP

RED LAKE MINING DIVISION, ONTARIO

January 19th, 1971

NOT TO BE REMOVED
FROM THE OFFICE OF THE
RESIDENT GEOLOGIST
ONTARIO DEPARTMENT OF MINES
RED LAKE

PROJECTS SECTION
TORONTO
RECEIVED
FEB 3 - 1971
AM 7:00, 10:00, 12:12, 3:46 PM

INTRODUCTION

During 1970, an electromagnetic survey was done by The Hanna Mining Company on its Lang Lake claim group. Some conductive areas were found, of which, five may be bedrock conductors.

I OWNERSHIP

The Lang Lake claim group is 124 claims: 239126 to 239186, 239188 to 239206, 239208 to 239212, 239215 to 239250, and 251707 to 251709. They are held by The Hanna Mining Company, 100 Erieview Plaza, Cleveland, Ohio 44114.

II LOCATION AND ACCESS

The claim group is within the Stoughton Lake and McVicar Lake claim map areas of the Red Lake Mining Division. It is 100 miles north of Sioux Lookout, and 55 miles west of Pickle Lake.

Access is by float plane from Sioux Lookout, Pickle Lake, or Red Lake.

III PREVIOUS WORK

A report of a magnetic survey, and line cutting, was submitted January 4th, 1971.*

IV PROCEDURE

A) Personnel

Nelson Hogg, Consultant, 805-69 Yonge St., Toronto 215, Ontario
February 10 - November 30

Field Work

				<u>Days</u>
C. W. Harpur, Party Chief, 7 Linden St., Toronto, Ontario	March	1 - March	29	11
	July	1 - October	17	28
L. Fritz, 581 Balloil Ave., Toronto, Ontario	March	1 - March	29	14
	August	25 - September	12	11
G. Bosshart, 805 - 69 Yonge St., Toronto 215, Ontario	March	7 - March	29	10

*B. Hodgins, Magnetic Survey - Hanna Claim Group, submitted as assessment.

		<u>Days</u>
L. Ori, 174 Glen Cedar Rd., Toronto, Ontario	August 20 - September 8	16
H. Giroux, P.O. Box 94, Warren, Ontario	August 20 - September 8	13
E. Crowe, Fort Severn, Ontario	August 23 - September 30	7
J. Dresna, Box 553, Sioux Lookout, Ontario	September 19 - September 30	4
T. Keil, 33 Ezra Avenue, Waterloo, Ontario	August 23	1
P. Hibbins, 2 Minden Crescent, Toronto, Ontario	August 23	1

Preparation of Reports and Maps

C. W. Harpur	April - May	7
D. Sannes	October - December	7
L. Fritz	April - May	3
	January - 1971	3
G. Bosshart	April - May	2

B) Instrument

A Craelius ABEM Gun was used for this survey. Its frequencies are 3,520 cycles per second and 880 cycles per second.

C) Grid

The electromagnetic survey covered this property, and the MacMillan* and Bochawna properties which adjoin it to the west. Lang, Andy, Lull, and Shonia Lakes were surveyed during March, 1970. Baseline No. 3 was established on Lang Lake, east-west to line 200+00E, from there N73°E along Lang and Andy lakes to line 472E. Baselines were also established, east-west along Lull Lake, and N73°E along Shonia Lake. Picket lines were normal to their baseline, at 400 foot intervals. Line 108E was extended to Lull Lake, and line 376E was extended to Shonia Lake. The other picket lines were cut 150 feet beyond the shoreline.

The land portion was surveyed during the summer of 1970. Baseline No. 1, north of Lang Lake, was cut east-west to line 264E. Baseline No. 4, south of Lang Lake, was cut east-west to line 200E, then N73°E to line 468E. Land picket lines were normal to their baseline, at 400 foot intervals.

Seventy-one miles of picket line, and 11 miles of baseline, cross the Lang Lake claim group.

*D. Sannes, Electromagnetic Survey - MacMillan Claim Group, submitted as assessment.

C) Readings

On the lakes, a 300 foot instrument separation was used, on the land, a 200 foot separation. Readings were taken every 100 feet, with the high frequency. If an anomaly was suspected, readings were taken every 50 feet, both high and low frequencies.

3,598 stations were read, and 3,927 readings were taken, on the Lang Lake claim group.

Elevation corrections were made according to a chart supplied with the instrument. Staff separation was kept constant, and the operator estimated the elevation difference.

V INTERPRETATION

A) Geology

No detailed geological mapping was done by The Hanna Mining Company.

According to the Ontario Department of Mines geologic map*, the claim group is underlain by volcanic rocks of Archean age. They strike about N70°E. Dips taken on foliation are all 70° or steeper, nearly all are vertical. Both north and south dips are recorded.

The lavas are mafic north of Lang Lake and around Andy Lake. They are intermediate under Lang Lake and along its south shore, west of Shonia Lake, and north of Lull Lake. They are felsic along the south margin of the claim group. There are numerous small iron formations, all of them within the mafic lavas.

The edge of an Archean granitic batholith is under Lull Lake. A granodiorite boss cuts the lavas east of Lull Lake.

Lineaments are shown parallel to the north and south shores of Lang Lake. These could reflect the strike of the formations. There are also two lineaments through the Lang Lake narrows. Offsets in the magnetic trends suggest that these are faults.**

The magnetic survey also detected that the granodiorite boss extends north of its outcrop almost across Lang Lake.

*K. G. Fenwick, Preliminary Geological Map No. P 581, Lang-Cannon Lakes Area (West Half), Ontario Department of Mines, 1969

**B. Hodgins, Magnetic Survey - Hanna Claim Group, submitted as assessment.

3) Anomalous Readings

1. Surficial Conductors

Some conductors have characteristics that suggest flat lying deposits close to surface. These are described and listed below:

- a) Near the south boundary of the claim group, on lines 144E and 148E, and lines 160E through 172E, and in Lang Lake, line 204E, 4+00N to 12+00N, and 208E, 12+00N to 16+00N. These give high values for the in phase component (104 to 124), and erratic values for the out of phase component (+8 to -4). This is caused by a thin, flat lying conductor. All these taken on land were in swampy areas. These are probably conductive sediment.
- b) On Lang Lake, from line 308E to 400E, along the north shore of the lake, and between 2+00S and 6+00S. These are zones of low values which are the edges of another thin, flat conductor. This is interpreted to be lake bottom sediment.
- c) Also in Lang Lake, from line 372E to 408E, from 18+00S to 24+00S. This gives low values, but it is a particularly poor conductor. The ratio of in phase deviation to out of phase deviation is 1:3. This is sediment filling a trough like depression in the lake bottom.
- d) Lines 224E and 228E, in the inlet north of Lang Lake. The in phase: out of phase ratio here is 1:2. The bay is another sediment filled trough.
- e) All across the east half of Shonia Lake. The conductors are very weak. Their pattern indicates bars of sediment which came from the river which flows from Lang Lake.

2. Bedrock Conductors

Five anomalies could be bedrock conductors. These are marked by crosshatching on the maps, or a heavy dashed line if very narrow.

Line 156E and 160E, at baseline No. 3. If this is a bedrock conductor it is a weak one, but it cannot be rejected with certainty.

Line 168E, from baseline No. 3, 0+10N to 0+60S. The long drawn out high on the north limb of this suggests a gently dipping conductor, as a lake bottom mud. Unfortunately, the line ends without reading the south limb. The ratio of in phase to out of phase deviation is 2:1; this one can not be rejected easily either.

Line 216E, from baseline No. 3, 33+05N to 33+27N. This conductor was not found on adjacent lines, although the line to the west is only 150 feet away, yet a conductor 20 to 25 feet wide is indicated. The shape of the curve is that of a steeply dipping conductor, or several tiny ones less than 50 feet apart. The in phase to out of phase ratio is 9:5.

All of the preceding anomalies are questionable.

Line 248E, from baseline No. 1, 1+30N, and line 252E, from baseline No. 1, 3+35N. This is an extremely narrow conductor. Its location, as determined from its EM profiles, is exactly parallel to the magnetic trend in that location. The profile of each line is asymmetrical, with a distinctly larger high on the north than on the south indicating that the conductor dips to the north.*

Line 256, from baseline No. 1, 2+40S to 2+80S. This conductor also appears to dip north.

Respectfully submitted,

Leonard Fritz

Leonard Fritz,
Geologist

*D. S. Parasnis, Principles of Applied Geophysics, Methuen and Co., London, 1962



SUBMISSION OF GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL SURVEYS
AS ASSESSMENT WORK

In order to simplify the filing of geological, geochemical and ground geophysical surveys for assessment work, the Minister has approved the following procedure under Section 84 (8a) of the Ontario Mining Act. This special provision does not apply to airborne geophysical surveys.

If, in the opinion of the Minister, a ground geophysical survey meets the requirements prescribed for such a survey, including:

- (a) substantial and systematic coverage of each claim
- (b) line spacing not exceeding 400 foot intervals
- (c) stations not exceeding 100 foot intervals or
- (d) the average number of readings per claim not less than 40 readings

it will qualify for a credit of 40 assessment work days for each claim so covered. It will not be necessary for the applicant to furnish any data or breakdown concerning the persons employed in the survey except for the names and addresses of those in charge of the various phases (linecutting contractor, etc.). It will be assumed that the required number of man days were spent in producing the survey to qualify for the specified credit.

Each additional ground geophysical survey using the same grid system and otherwise meeting these requirements will qualify for an assessment work credit of 20 days.

A geological survey using the same grid system, and meeting the requirements for submission of geological surveys for maximum credits will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geological survey a credit of 40 days per claim will be allowed for the survey.

Similarly, a geochemical survey using the same grid system with the average number of collected samples per claim being not less than 40 samples, and meeting the requirements for the submission of geochemical surveys for maximum credits, will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geochemical survey a credit of 40 days per claim will be allowed for the survey.

Credits for partial coverage or for surveys not meeting requirements for full credit will be granted on a pro-rata basis.

If the credits are reduced for any reason, a fifteen day Notice of Intent will be issued. During this period, the applicant may apply to the Mining Commissioner for relief if his claims are jeopardized for lack of work or, if he wishes, may file with the Department, normal assessment work breakdowns listing the names of the employees and the dates of work. The survey would then be re-assessed to determine if higher credits may be allowed under the provisions of subsections 8 and 9 of section 84 of the Mining

If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.

PERFORMANCE & COVERAGE CREDITS

ASSESSMENT WORK DETAILS

Township or Area Stoughton Lake & McVicar Lake

Type of Survey Electromagnetic
A separate form is required for each type of survey

Chief Line Cutter _____
 or Contractor _____
Name

Address

Party Chief C. W. Harpur
Name
581 Balloil Avenue, Toronto, Ontario
Address
581 Balloil Avenue

Consultant Nelson Hogg
Name
805 - 69 Yonge Street, Toronto 215, Ont.
Address

COVERING DATES

Line Cutting _____

Field Feb. 26 - April 15/70 and August 1 - October 15/70
Instrument work, geological mapping, sampling etc.

Office December 1 - 1970 to January 19, 1971
1970 January 19, 1971

INSTRUMENT DATA

Make, Model and Type ABEM GUN 35/88

Scale Constant or Sensitivity _____
Or provide copy of instrument data from Manufacturer's brochure.

Radiometric Background Count _____

Number of Stations Within Claim Group 3,598

Number of Readings Within Claim Group 3,927

Number of Miles of Line cut Within Claim Group 82 82

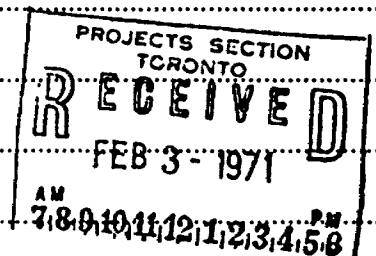
Number of Samples Collected Within Claim Group _____

MINING CLAIMS TRAVERSED

List numerically

SEE ATTACHED LIST

If space insufficient, attach list



TOTAL _____

CREDITS REQUESTED	20 DAYS per claim	40 DAYS per claim	Includes (Line cutting)
Geological Survey	<input type="checkbox"/>	<input type="checkbox"/>	
Geophysical Survey	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Show Check ✓
Geochemical Survey	<input type="checkbox"/>	<input type="checkbox"/>	

DATE 3 Feb 1971

SIGNED Leonard Fritz

Send in duplicate to:
 FRED W. MATTHEWS
 SUPERVISOR-PROJECTS SECTION
 DEPARTMENT OF MINES &
 NORTHERN AFFAIRS
 WHITNEY BLOCK
 QUEEN'S PARK
 TORONTO, ONTARIO

List of Claims Hanna
 List of Claims held by The Hanna Mining Company

(Coughton Lake
 Coughton Lake (M 2043) and McVicar Lake Area (M 2741)

To accompany
 To accompany Report of Work -

TOTAL 124 claims
 TOTAL - 124 claims

KRL 239126 20 days
 KRL 239127 20 days
 239128 20
 239129 20
 239130 20
 239131 20
 239132 20
 239133 20
 239134 20
 239135 20
 239136 20
 239137 20
 239138 20
 239139 20
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 239169 20
 239170 20

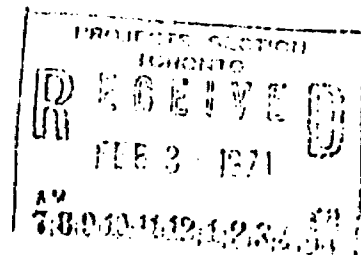
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 239172 20
 239173 20
 239174 20
 239175 20
 239176 20
 239177 20
 239178 20
 239179 20
 239180 20
 239181 20
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 239183 20
 239184 20
 239185 20
 239186 20
 61 claims

KRL 239188 20 days
 239189 20
 239190 20
 239191 20
 239192 20
 239193 20
 239194 20
 239195 20
 239196 20
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 239205 20
 239206 20
 19 claims
 19 claims

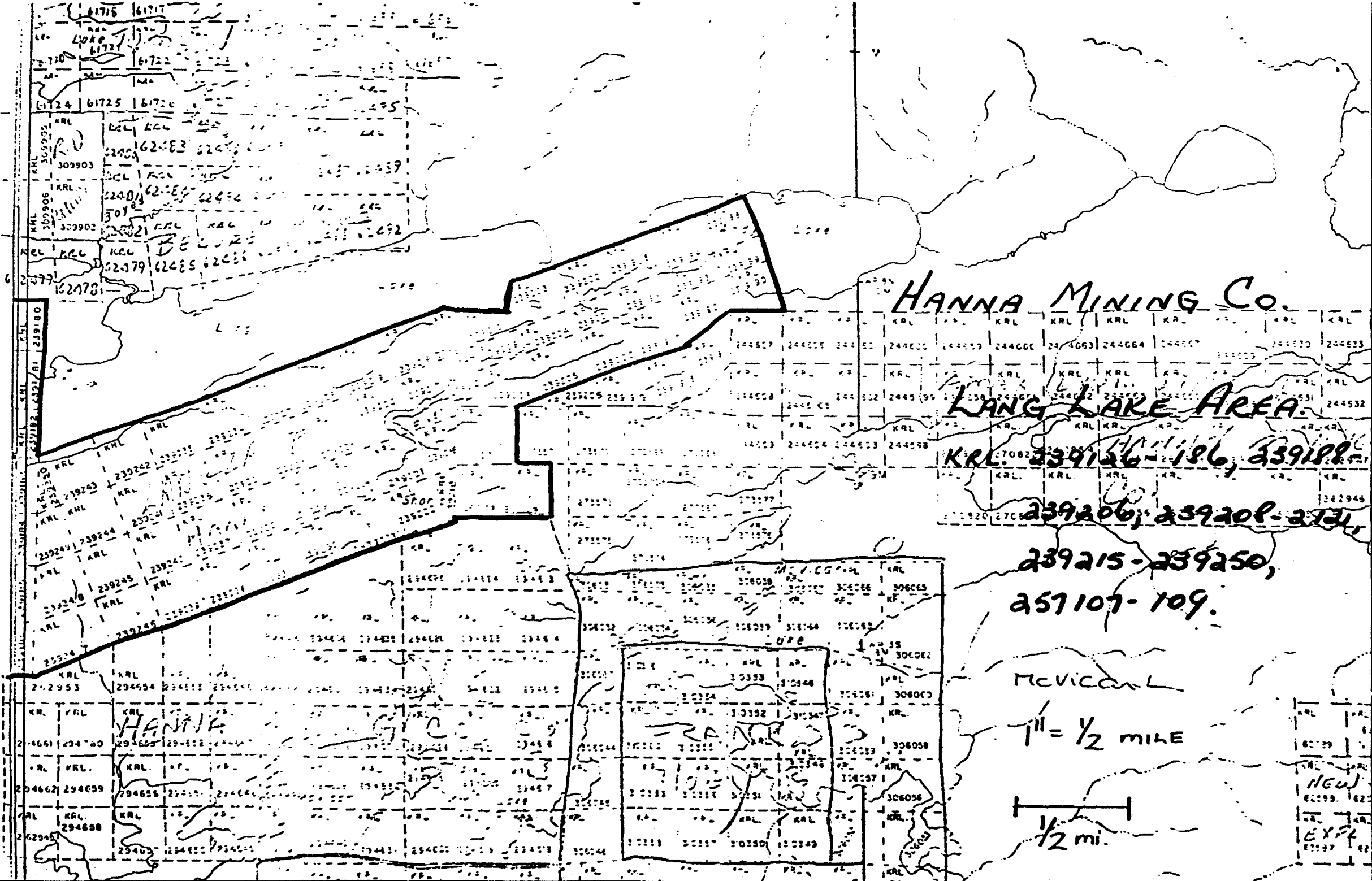
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 239209 20
 239210 20
 239211 20
 239212 20
 5 claims

239215
 KRL 239215 20 days
 239216 20
 239217 20
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 239220 20
 239221 20
 239222 20
 239223 20
 239224 20
 239225 20
 239226 20
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 239248 20
 239249 20
 239250 20
 36 claims

KRL 251707 20 days
 251708 20
 251709 20
 3 claims



FLYING LANE (W. 2069)

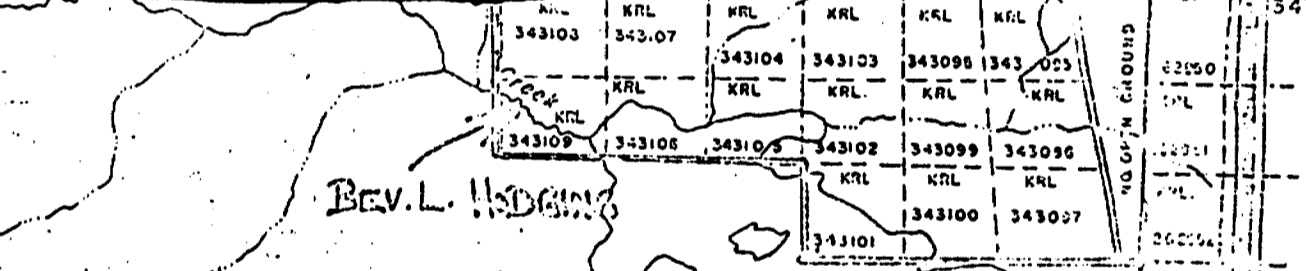
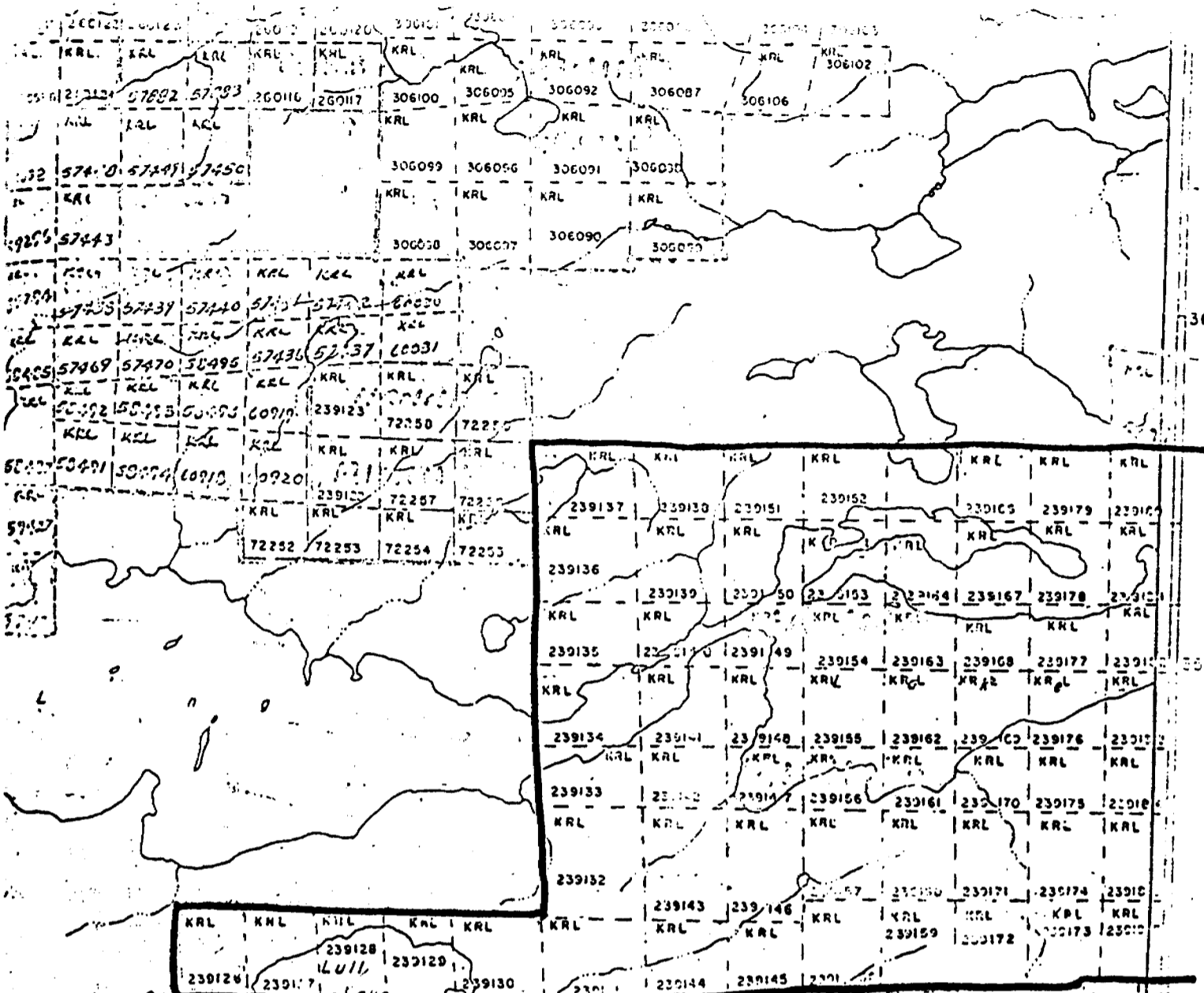


MEVICAL

1/2 = 1/2 MILE

1/2 mi.

NEW
EXPT



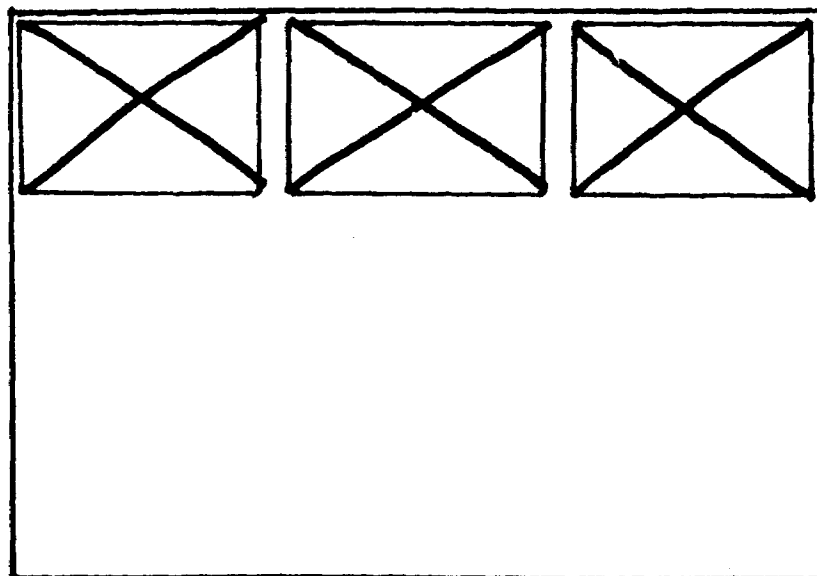
N
 ↑
HANNA MINING Co.
LANG LAKE AREA.
 KRL. 239126-186, 239188-206,
 239208-212, 239215-250,
 257107-109.
 Stoughton L.
 1" = 1/2 MILE
 1/2 mi.
 Stoughton

SEE ACCOMPANYING
MAP(S) IDENTIFIED AS

520/11SW-0035 # 1-3

LOCATED IN THE MAP
CHANNEL IN THE
FOLLOWING SEQUENCE

(X)

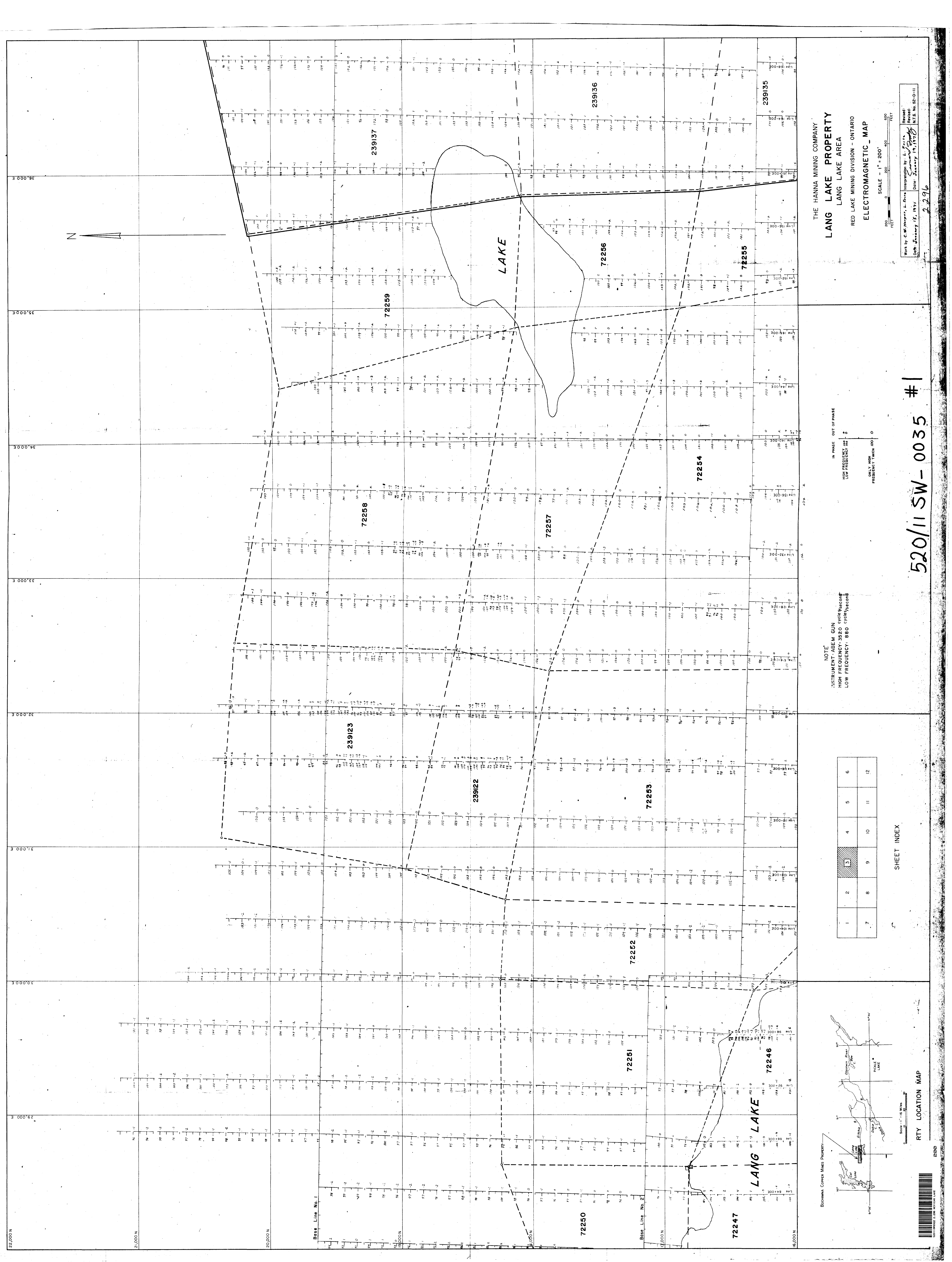


FOR ADDITIONAL

INFORMATION

SEE MAPS:

520/11 SW- 0035 # 4-9



THE HANNA MINING COMPANY
LANG LAKE PROPERTY
 LANG LAKE AREA
 RED LAKE MINING DIVISION - ONTARIO
 ELECTROMAGNETIC MAP

Work by C. W. Murray, L. Price Interpretation by L. Price
 Date: January 15, 1971 Date: January 19, 1970
 N.T.S. No. 92-0-11
 2296

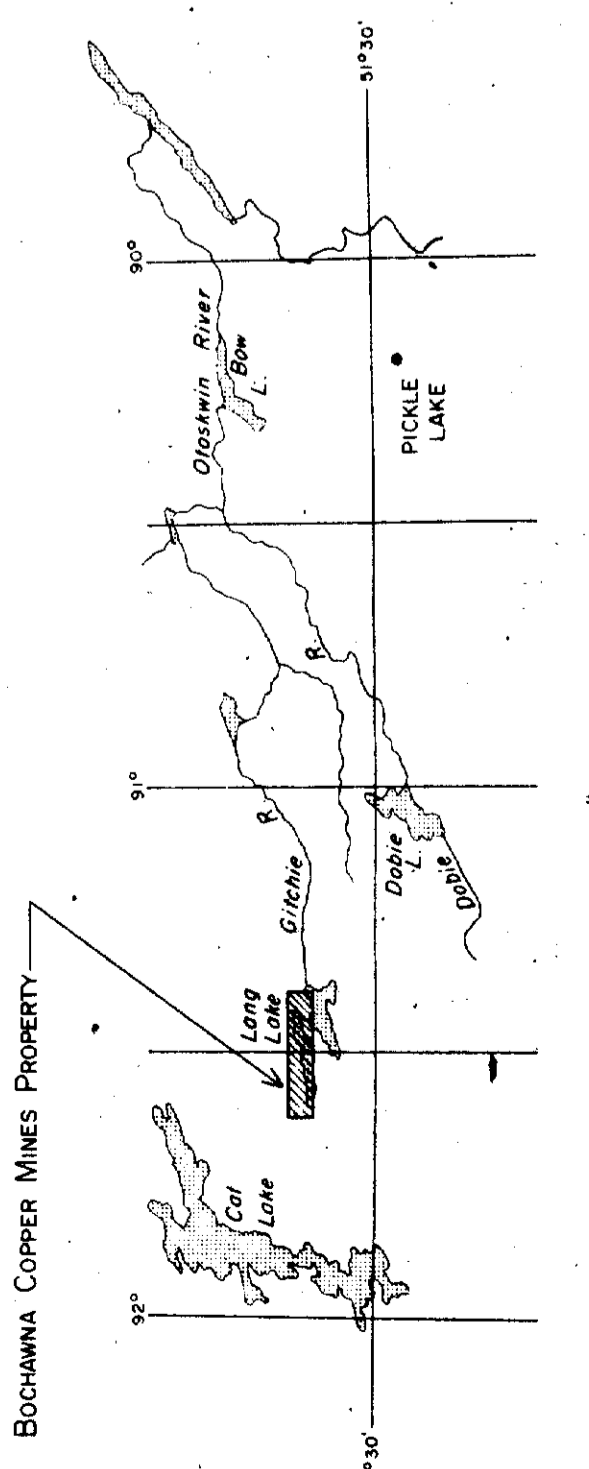
SCALE - 1" = 200'
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 FEET

NOTE
 INSTRUMENT - ABEM GUN
 HIGH FREQUENCY - 3820 cycles/second
 LOW FREQUENCY - 880 cycles/second
 IN PHASE OUT OF PHASE
 HIGH FREQUENCY 100 5
 LOW FREQUENCY 100 5
 ONLY WITH FREQUENCY 1000 0

NOTE
 INSTRUMENT - ABEM GUN
 HIGH FREQUENCY - 3820 cycles/second
 LOW FREQUENCY - 880 cycles/second

1	2	3	4	5	6
7	8	9	10	11	12

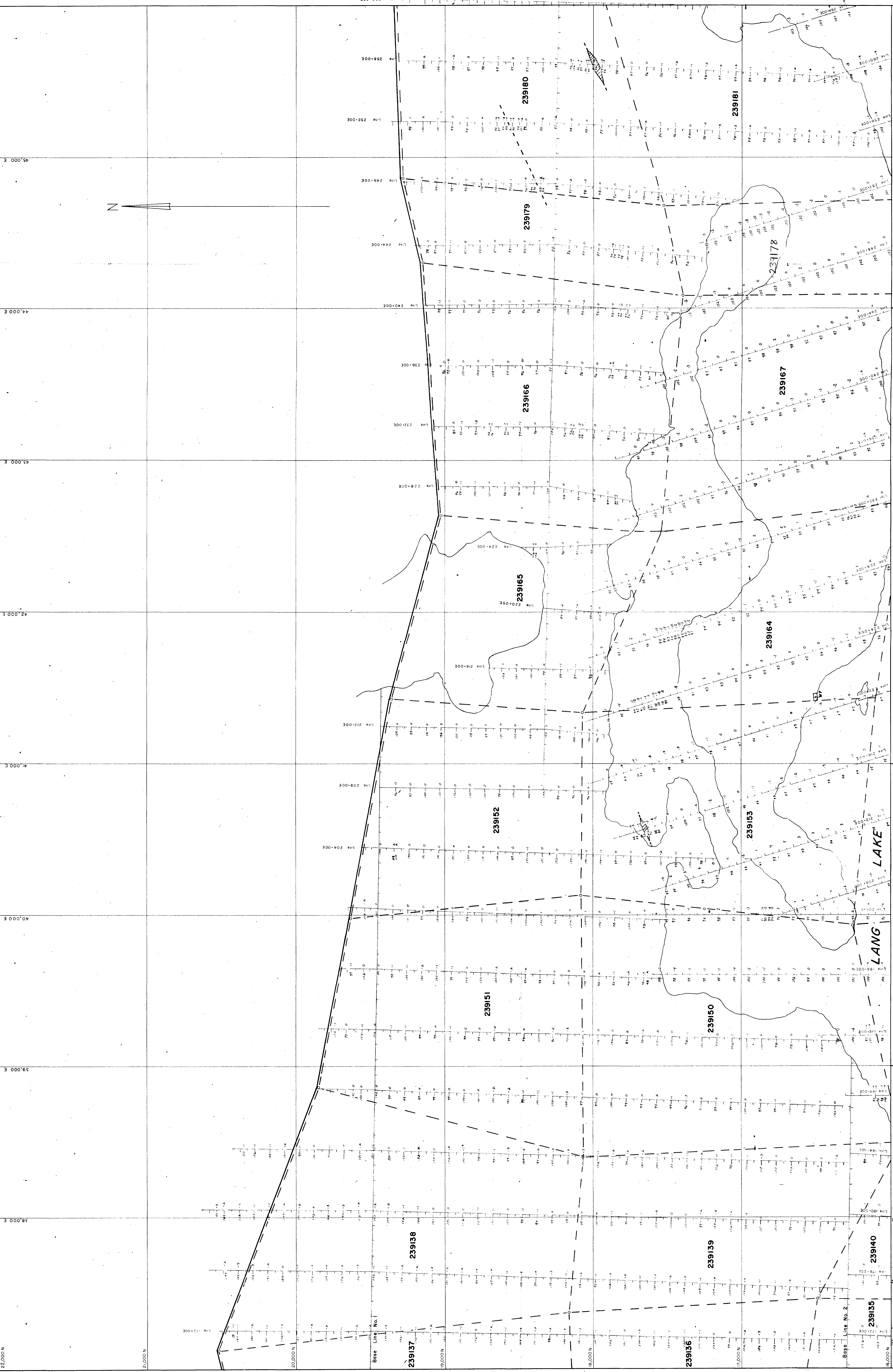
SHEET INDEX



RTY LOCATION MAP

#1
 520/11 SW-0035





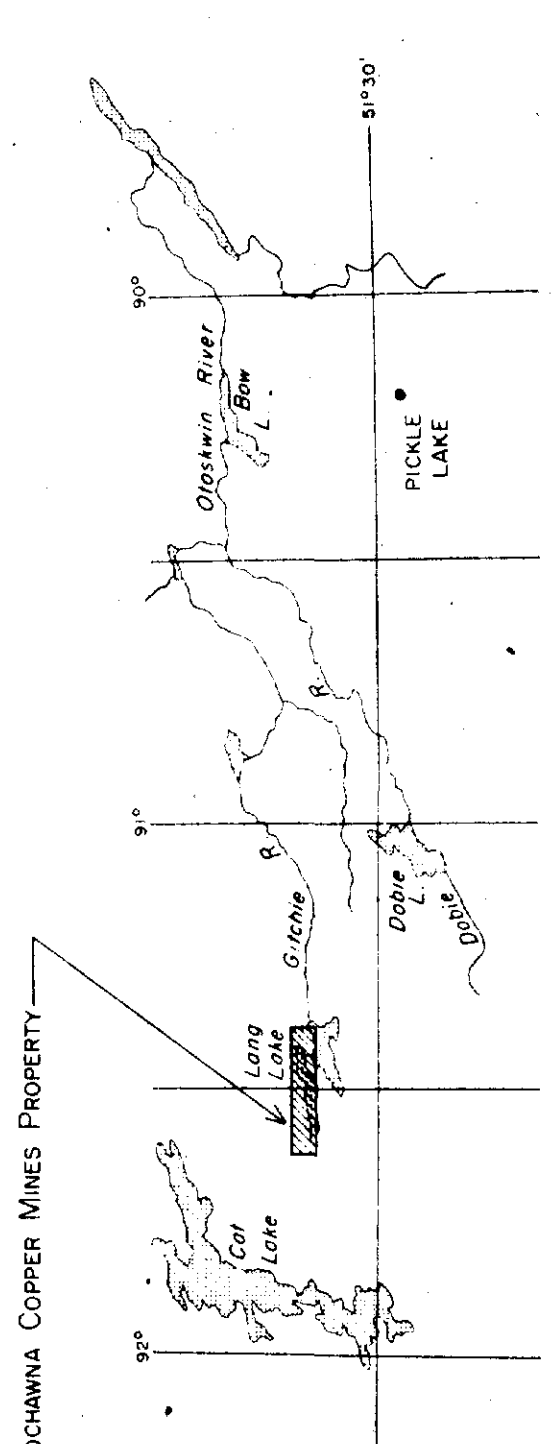
THE HANNA MINING COMPANY
LANG LAKE PROPERTY
 LANG LAKE AREA
 RED LAKE MINING DIVISION - ONTARIO
ELECTROMAGNETIC MAP

Scale - 1" = 200'
 0 200 400 600 FEET
 Work by C.W. Harper, L. P. P. Interpretation by L. P. P. Revised
 Date: January 15, 1971 Data Source: 7-7-70 N.T.S. No. 52-0-11

NOTE
 INSTRUMENT: AEM GUN
 HIGH FREQUENCY: 350 CYCLES/SECOND
 LOW FREQUENCY: 380 CYCLES/SECOND
 IN PHASE OUT OF PHASE
 ONLY WITH FREQUENCY TAKEN 90°

1	2	3	4	5	6
7	8	9	10	11	12

520/11SW - 0035 #2



RTY LOCATION MAP

SHEET INDEX



THE HANNA MINING COMPANY
LANG LAKE PROPERTY
 LANG LAKE AREA
 RED LAKE MINING DIVISION - ONTARIO
ELECTROMAGNETIC MAP

Scale: 1" = 200'
 0 200 400 600 FEET

Work by: C.W. Murray, L. Price, Integration by: J. G. ...
 Date: January 15, 1973. Date of Survey: 1971. N.T.S. No. 52-0-11

#3
520/11SW-0035

NOTE:
 INSTRUMENT: ABEM GUN
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 LOW FREQUENCY: 880 CYCLES/SECOND

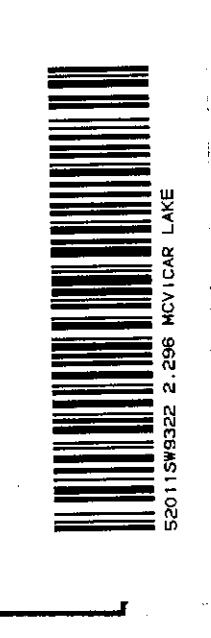
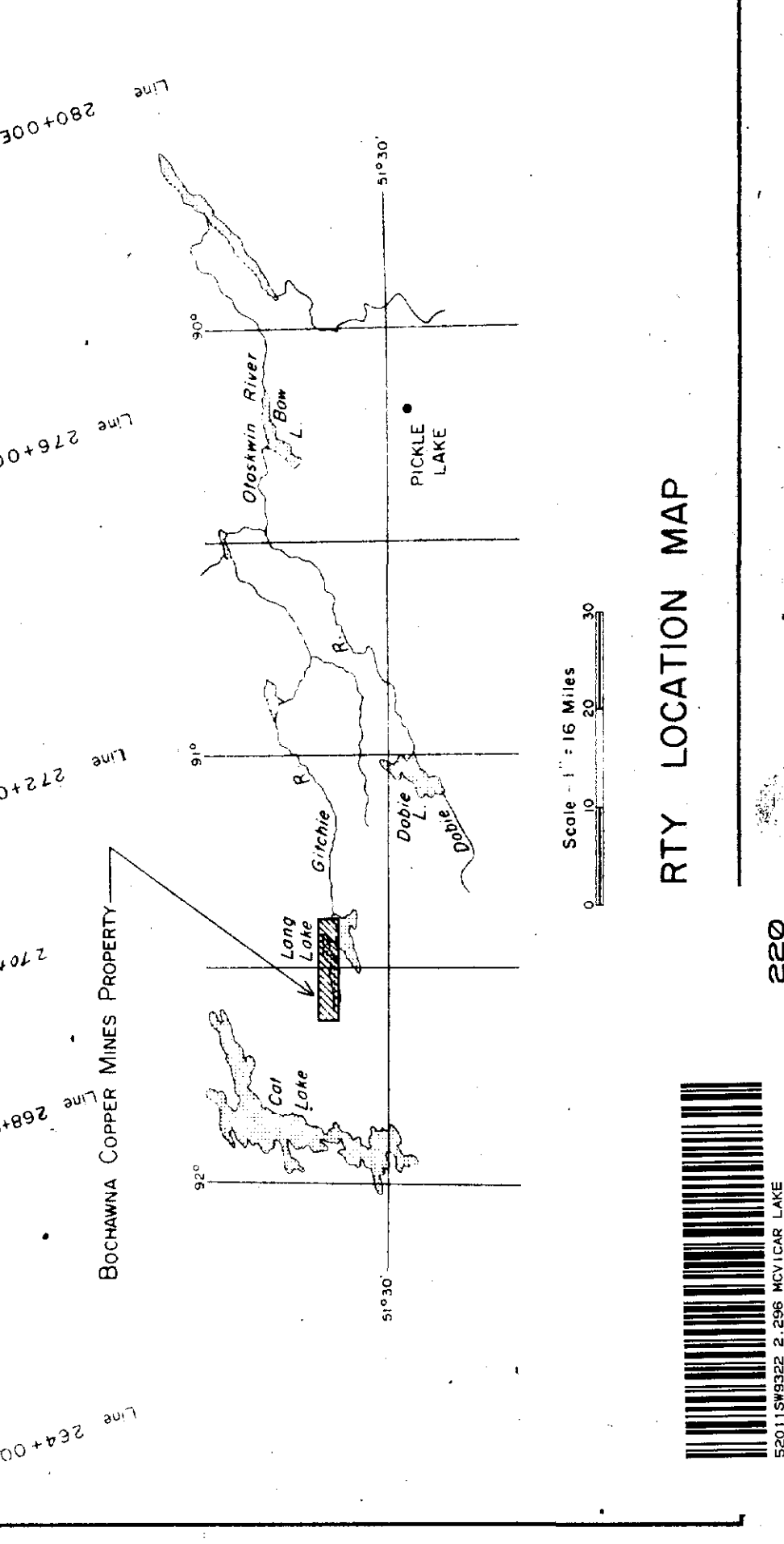
IN PHASE, OUT OF PHASE
 HIGH FREQUENCY
 LOW FREQUENCY

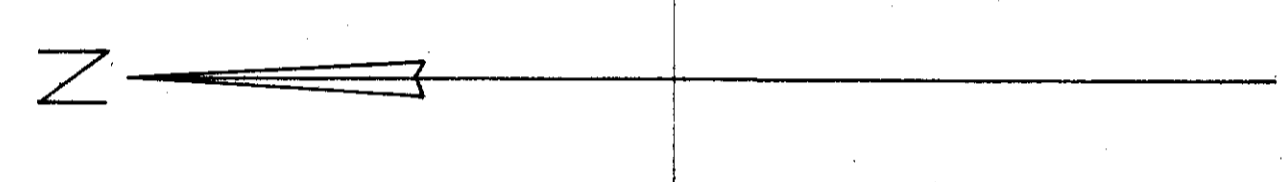
ONLY HIGH FREQUENCY TAKEN ON P

NOTE:
 INSTRUMENT: ABEM GUN
 HIGH FREQUENCY: 3520 CYCLES/SECOND
 LOW FREQUENCY: 880 CYCLES/SECOND

1	2	3	4	5	6
7	8	9	10	11	12

SHEET INDEX





THE HANNA MINING COMPANY
 LANG LAKE PROPERTY
 LANG LAKE AREA
 RED LAKE MINING DIVISION - ONTARIO
 ELECTROMAGNETIC MAP

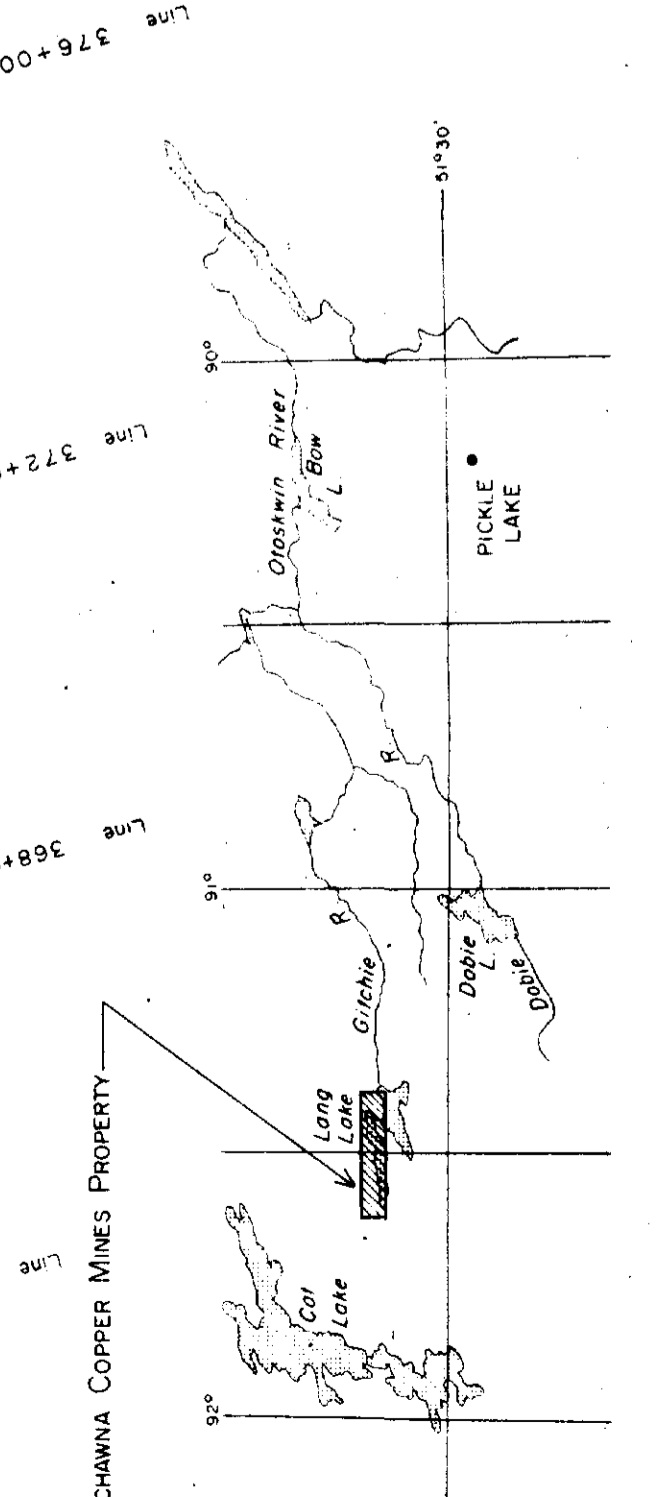
SCALE - 1" = 200'
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 FEET
 Work by C.W. Meyer, L. Price
 Interpreted by L. Price
 Date: January 17, 1971
 N.I.S. No. 52-0-11

NOTE
 INSTRUMENT USED: GUN
 HIGH FREQUENCY: 850 CYCLES/SECOND
 LOW FREQUENCY: 880 CYCLES/SECOND
 ONLY HIGH FREQUENCY TAKEN
 IN PHASE OUT OF PHASE
 HIGH FREQUENCY LOW FREQUENCY
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6	7	8	9	10
11	12			

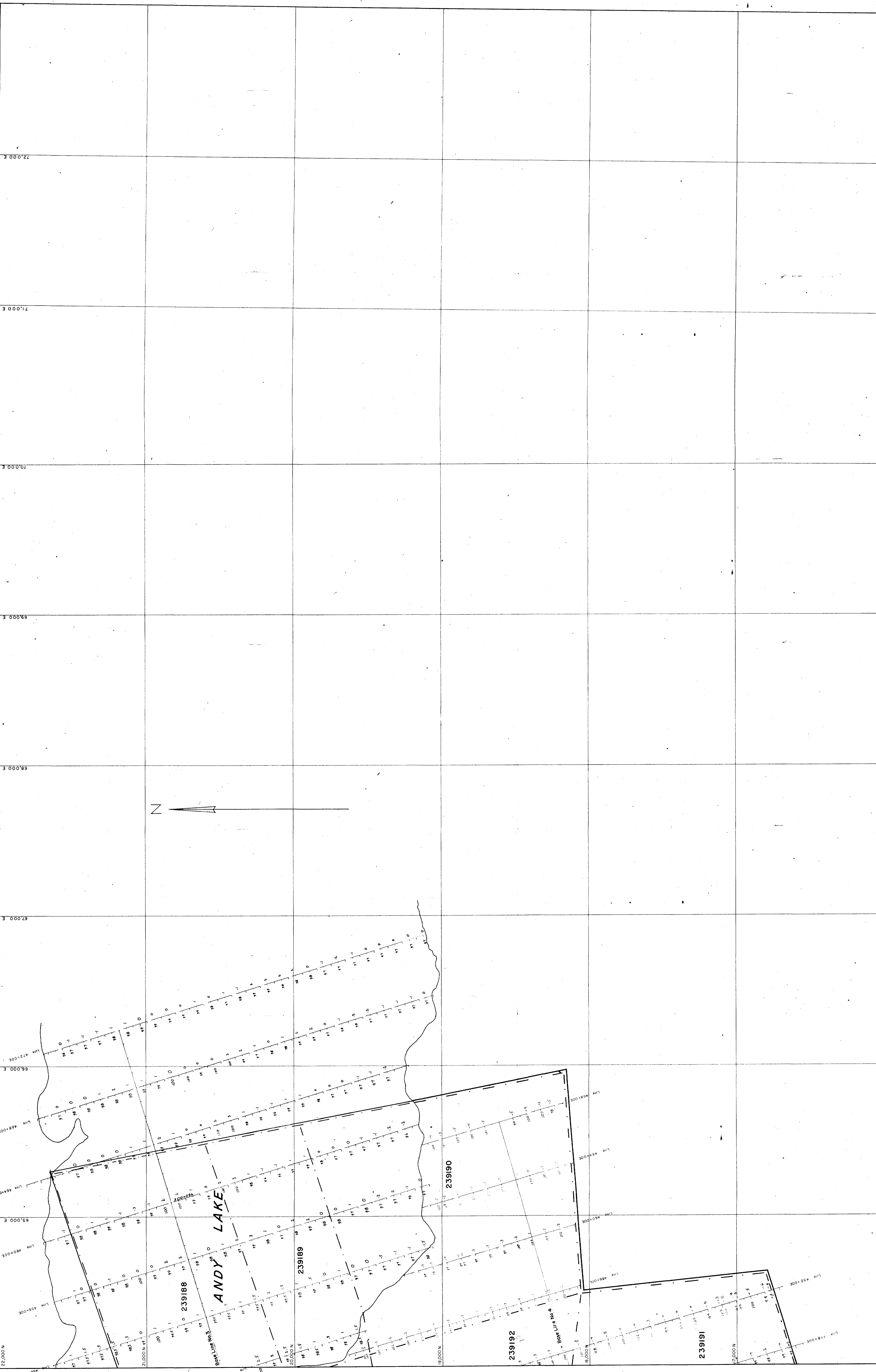
#4
 520/11SW-0035

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PROPERTY LOCATION MAP





THE HANNA MINING COMPANY
 LANG LAKE PROPERTY
 LANG LAKE AREA
 RED LAKE MINING DIVISION - ONTARIO
 ELECTROMAGNETIC MAP

SCALE - 1" = 200'
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 FEET
 Work by C.W. Murray, L. Fries, Interception by L. Fries
 Date January 15, 1971 Date Summary 11/1971 M.S. No. 32-D-11

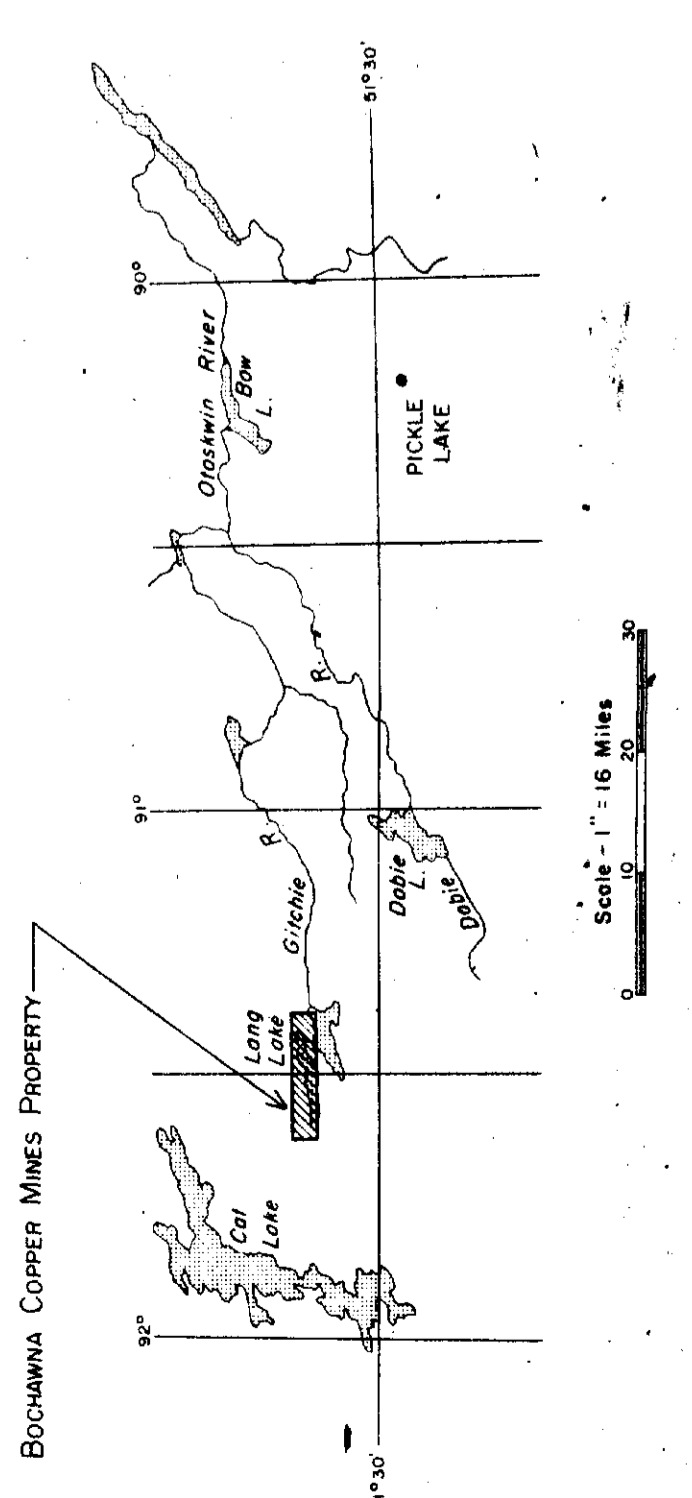
NOTE
 INSTRUMENT: ABEM GUN
 HIGH FREQUENCY: 3200 CYCLES/SECOND
 LOW FREQUENCY: 980 CYCLES/SECOND

IN PHASE OUT OF PHASE
 HIGH FREQUENCY LOW FREQUENCY
 ONLY HIGH FREQUENCY TAKEN

520/11SW-0035 #5

1	2	3	4	5	6
7	8	9	10	11	12

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PROPERTY LOCATION MAP



THE HANNA MINING COMPANY
LANG LAKE PROPERTY
LANG LAKE AREA
RED LAKE MINING DIVISION - ONTARIO

ELECTROMAGNETIC MAP
SCALE - 1" = 200'
Work by C.W. Murray, L.P.M. (Interpreted by J. J. ...)
Date: Jan. 15, 1971
Revised: N.T.S. No. 55-0-11

520/11 SW-0035 #6

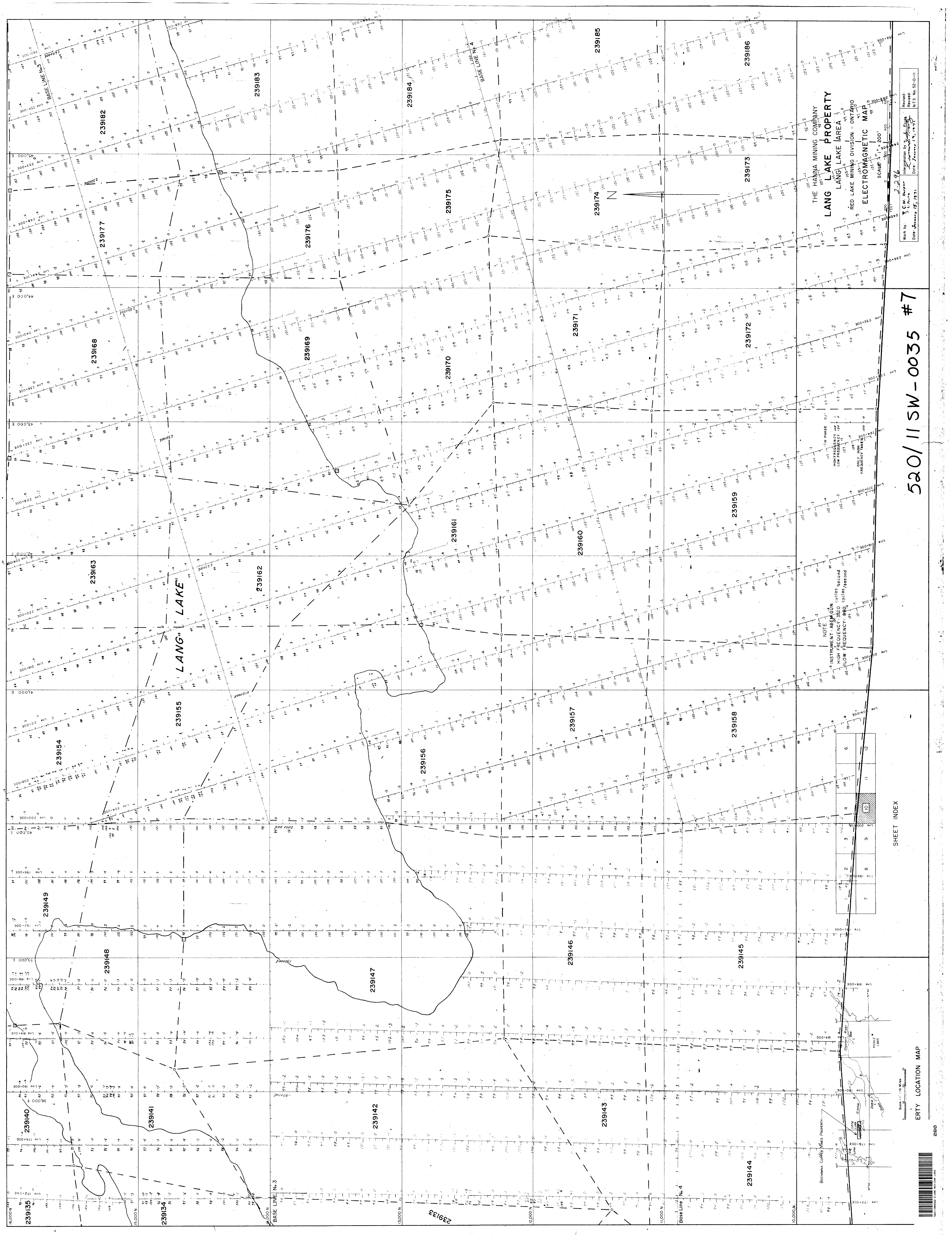
NOTE:
INSTRUMENT: ABEM GUN
HIGH FREQUENCY: 3350 cycles/second
LOW FREQUENCY: 880 cycles/second

SHEET INDEX

31 MAP



ES0

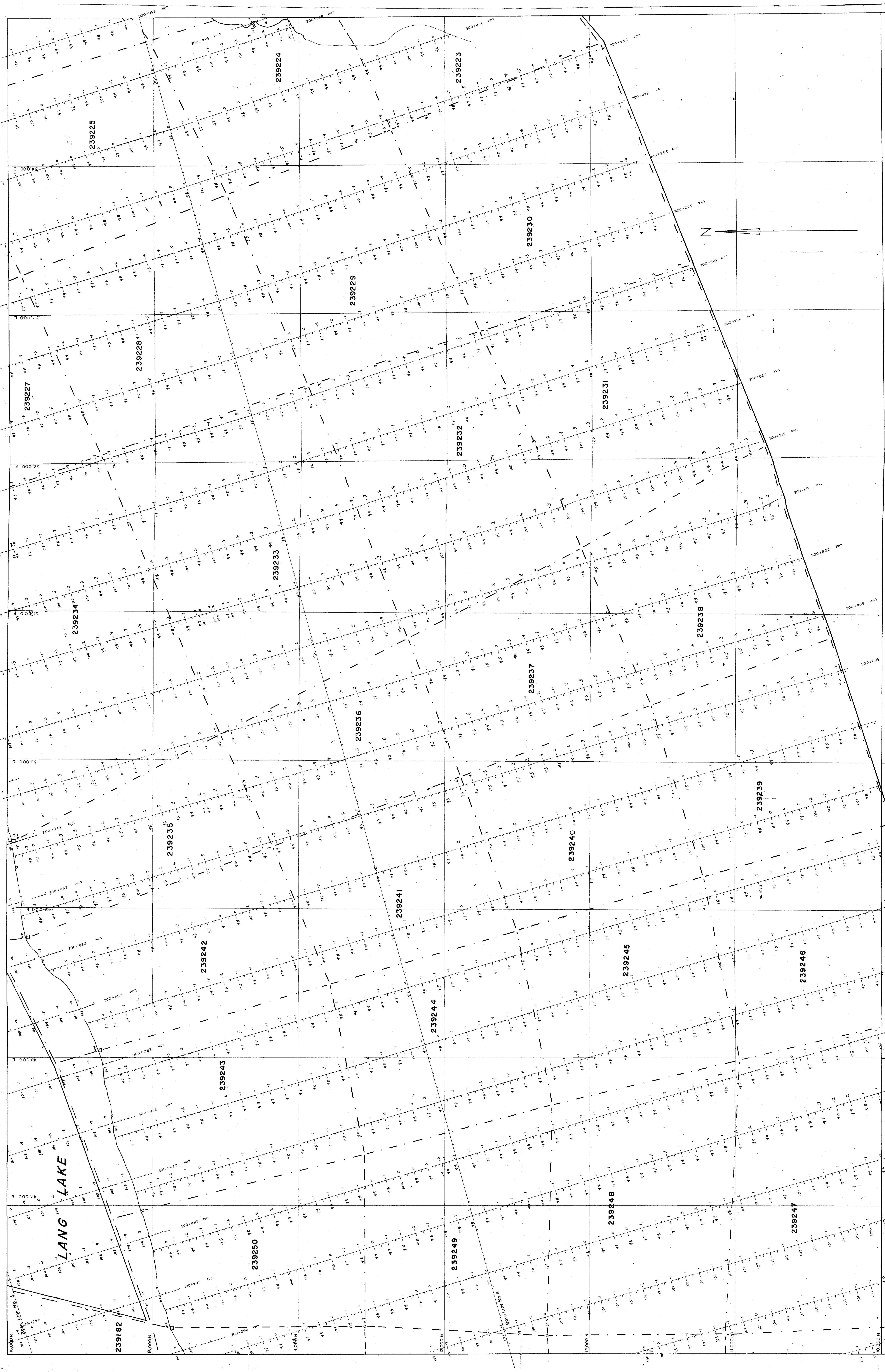


Work by E. W. ...
 Date January 15, 1971
 NTS No 52-0-11

SHEET INDEX

ERY LOCATION MAP

520/11 SW-0035 #7



THE HANNA MINING COMPANY
 LANG LAKE PROPERTY
 LANG LAKE AREA
 RED LAKE MINING DIVISION - ONTARIO
 ELECTROMAGNETIC MAP

Scale: 1" = 200'
 0 200 400 600 FEET

Work by: C. W. Harvey, L. P. [Signature]
 Date: Jan 17, 1971
 N.T.S. No. 52-D-11

NOTE
 INSTRUMENT: ABEM GUN
 HIGH FREQUENCY: 3520 cycles/second
 LOW FREQUENCY: 880 cycles/second

IN PHASE OUT OF PHASE
 HIGH FREQUENCY 0
 LOW FREQUENCY 0

FREQUENCIES TAKEN 100.0

1	2	3	4	5	6
7	8	9	10	11	12

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RTY LOCATION MAP

520/11SW-0035 #8



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 THE HANNA MINING COMPANY
 AND IS NOT TO BE REPRODUCED
 OR TRANSMITTED IN ANY FORM
 OR BY ANY MEANS, ELECTRONIC
 OR MECHANICAL, INCLUDING
 PHOTOCOPYING, RECORDING,
 OR BY ANY INFORMATION
 STORAGE AND RETRIEVAL
 SYSTEM, WITHOUT THE
 WRITTEN PERMISSION OF
 THE HANNA MINING COMPANY
 1810 22ND ST. S.E.
 CALGARY, ALBERTA
 T2C 1A5 CANADA

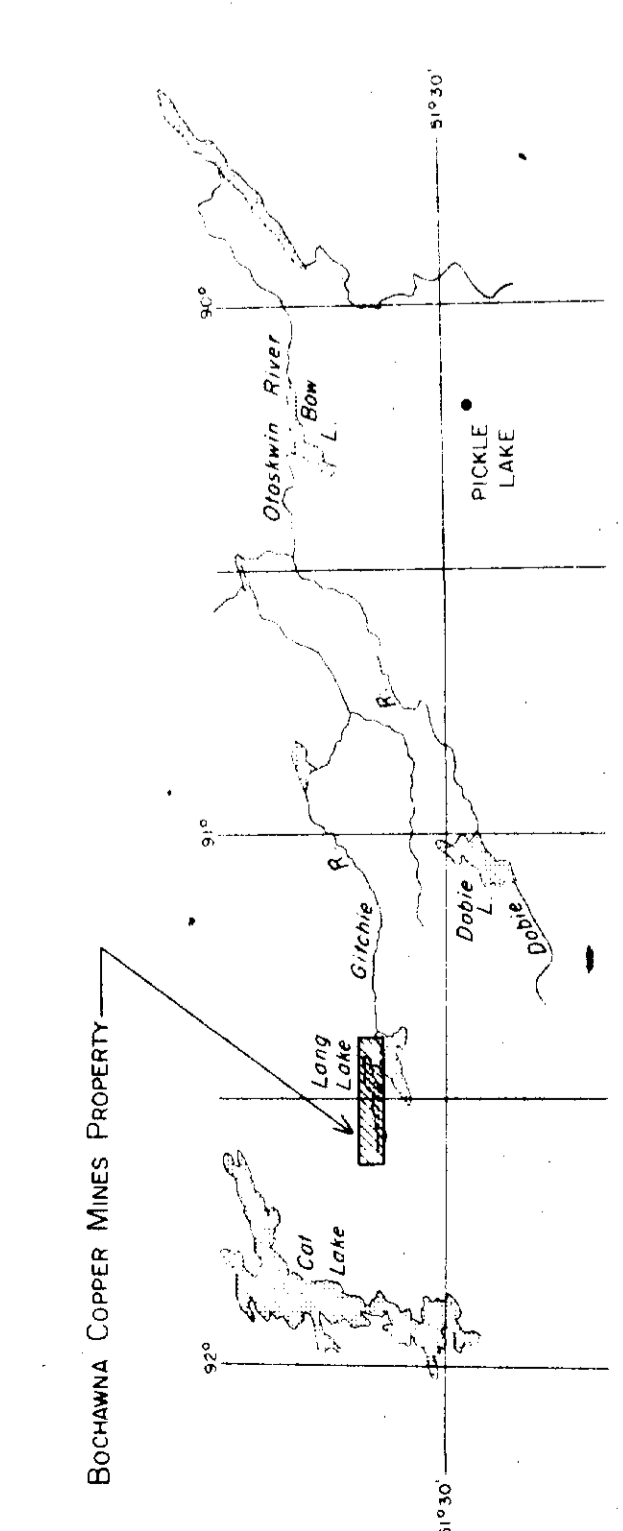
THE HANNA MINING COMPANY
LANG LAKE PROPERTY
 LANG LAKE AREA
 RED LAKE MINING DIVISION - ONTARIO
ELECTROMAGNETIC MAP-
 SHEET 12

SCALE - 1" = 200'
 0 200 400 600 800 1000
 FEET METERS
 Work by C. McHenry, A. Paris
 Integrated by L. Paris
 Date Jan. 15, 1971
 Revised
 N.T.S. No. 52-0-11

NOTE
 INSTRUMENT - ABEM GUN
 HIGH FREQUENCY - 3520 cycles/second
 LOW FREQUENCY - 880 cycles/second
 ONLY HIGH FREQUENCY TAKEN ON

1	2	3	4	5	6
7	8	9	10	11	12

SHEET INDEX



PROPERTY LOCATION MAP

520/11SW-0035 #9

