

42C16SW0014 2.1509 LIZAR

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MAGNETOMETER & ELECTROMAGNETIC SURVEY

PROJECTS UNIT

for

KELTIC MINING CORPORATION

LIZAR TOWNSHIP

PORCUPINE MINING DIVISION

DISTRICT OF ALGOMA, ONTARIO.

INTRODUCTION

A Magnetometer and electromagnetic survey was conducted simultaneously during April, 1974, over the claims which are underlain by Kabinakagami Lake, and which are under option to Keltic Mining Corporation Limited.

The surveys were completed on the lake before the spring break-up in order that the geophysical data would be available, and could be used in conjunction with any exploration work or surveys that may be accomplished during the following months.

LOCATION AND ACCESS

The property is located on the west shore of Kabinakagami Lake in the area of Bear Creek. It stretches in a southwesterly direction from about the middle of Lizar Township, part way to the southwest corner. Lizar Township is about 60 air miles due north of the mining town of Wawa, Ontario.

The property is accessible by charter plane from Wawa or White River, Ont., about 40 miles to the southwest. The claims may also be reached by boat, starting at Oba, on the Algoma Central Railroad. This trip is about twenty-six miles.

The closest road, running from White River to Hornpayne,

passes within 15 miles to the west of Kabinakagami Lake.

PROPERTY

Keltic Mining Corporation has acquired 53 claims by staking and has optioned another 28 claims to make up a group of 81 contiguous forty-acre mining claims, comprising a total of approximately 3240 acres.

This report is concerned with those fifteen claims over which the magnetometer and electromagnetic surveys were conducted.

They are described as follows:

S.S.M 82983 - S.S.M 82984	2 claims
S.S.M 82986 - S.S.M 82989 Incl.	4 "
S.S.M 321645 - S.S.M 321648 "	4 "
S.S.M 321650 - S.S.M 321654 "	5 "
Total	<hr/> 15 claims.

DESCRIPTION OF SURVEY GRID

The base line was extended across the lake, at an approximate azimuth of N. 52 Deg. E., as a continuation of a previous base line that had been established during 1971 for the purpose of conducting a magnetometer survey over the land claims.

The base line on the lake was offset at 2200 east to 200 north and then continued as far as 8400 east.

Another base line at 1000 south was established south of the islands shown on the map. This was to give a control to those lines extending south of the islands.

Picket lines were set up at 400 foot intervals at right angles to the base lines and extended to the boundaries of the claims. Stations were established at 100 ft. intervals along the picket lines.

About 14.25 miles of lines were set up, and 648 magnetometer and electromagnetic readings were taken.

### GEOLOGY

A belt of metavolcanics, about three miles wide, and striking in a northeasterly direction, extends across Lizar Township and for several miles beyond.

The metavolcanic rocks are bounded by a younger granite, the apophyses of which intrude the metavolcanics in many places in the form of dikes and sills. One of these, a quartz-porphry sill, is believed to extend along the length of the property. It is about 400 ft. wide where the mine development has been carried out; and it is along the sheared southeastern contact of this porphyry that a major zone of gold mineralization was opened up by underground development. It was hoped that the geophysical surveys over the lake would reveal some indication of the northeast extension of this mineralized contact.

Several later diabase dikes, presumably of Keeweenawan age, striking approximately N. 20 Deg. W., cut across the metavolcanics at irregular intervals. Those dikes that have been mapped, vary in width from 50 to 150 feet.

### MAGNETOMETER SURVEY

The magnetometer readings were taken with a McPhar M-700 vertical field fluxgate magnetometer. Base stations were established along the base lines and all readings were tied into these base stations for the purpose of making corrections for the diurnal variations. The corrected readings were plotted on a scale of one inch to 400 feet.

The results of this work reveal magnetic trends which conform to the strike of the rock structures. The largest and most intense anomaly, which starts at the line 3600 east and extends beyond the property to the northeast, is located just northwest of, and parallel to the base line. It appears to be part of the magnetic high shown on the aeromagnetic map # 2209G, published by The Geological Survey of Canada. Another elongated anomaly of less intensity parallels the shore of the lake. However, since these anomalies occur under water, the only method of determining whether or not they are associated with minerals of economic importance is by diamond drilling on the ice during the winter.

Southeast of the main base line, the magnetic readings are generally more uniform. A linear of slightly higher magnetic intensity extends across the extreme southeast portion of the survey, but north of this, and south of the main base line, a wide zone of moderately low magnetic intensity extends along the length of the survey. This area appears to represent the continuation of the quartz-porphry which is the host rock for the gold mineralization in the mine workings.

Lines 400 east and 1600 east are areas of slightly higher magnetic intensity and may indicate the presence of diabase dikes whose strike is roughly parallel to the picket lines of this survey. Diabase has been mapped on the end of the island closest to the mainland, - - or near line 400 east.

#### ELECTROMAGNETIC SURVEY

The electromagnetic survey was conducted with a Crone "Radem" unit. The low frequency transmitter at Cutler, Maine, was used to obtain the readings which were plotted on the same scale as the magnetometer survey ( 1" = 400' )

The purpose of the survey was to attempt to determine whether any of the magnetic anomalies have a corresponding conductive anomaly which would indicate the presence of sulphide mineralization, or locate the presence of any large shear zone which might be the locus of gold mineralization.

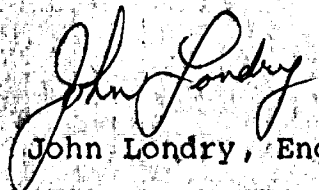
No true conductive zones of any significance were indicated in the area of this survey. The anomolous readings in the bay at the mouth of Bear Creek on lines "0" to 1200 west " are probably caused by conductive lake bottom.

One area of interest may be the small island in the south part of claim S.S.M. 321645. A local high magnetic area on the north side of the island has also what appears to be a corresponding conductive zone. The rock outcrops should be investigated on this island during the summer months.

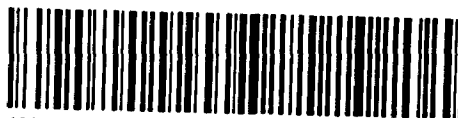
CONCL

While this magnetometer and electromagnetic survey has not definitely delineated any structure or revealed the presence of any conductive zone of important size, the magnetics do suggest a continuation under the lake of the quartz-porphyry sill that is the host rock to an important zone of gold mineralization. This information will undoubtedly be of value as mine development progresses to the north-east.

Respectfully submitted,

  
( John Londry, Eng. )

GEOPHYSICAL - GEOLOG  
TECHNICAL DAT.



900

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT  
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT  
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

RECEIVED  
JUN 26 1974

Type of Survey GEOPHYSICAL  
Township or Area LIZAR TWP. DIST. OF ALGOMA.  
Claim holder(s) KELTIC MINING CORP. LTD.  
17 QUEEN ST. E. SUITE 342. TORONTO, ONTARIO.  
Author of Report John Londry. Prof. Engr.  
Address 77 Howard St. PH.# 3. Toronto, Ont.  
Covering Dates of Survey April - June 1974  
(linecutting to office)  
Total Miles of Line cut 14.25 miles

PROJECTS UNIT

<u>SPECIAL PROVISIONS</u> <u>CREDITS REQUESTED</u>		DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	Geophysical	
	-Electromagnetic	<u>40</u>
	-Magnetometer	<u>20</u>
	-Radiometric	
ENTER 20 days for each additional survey using same grid.	-Other	
	Geological	
	Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)  
Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: June 21st/74 SIGNATURE: [Signature]  
Author of Report or Agent

PROJECTS SECTION  
Res. Geol. \_\_\_\_\_ Qualifications [Signature]

Previous Surveys L.D. 63.E27 assay only  
63.543 airborne

Checked by \_\_\_\_\_ date \_\_\_\_\_

GEOLOGICAL BRANCH \_\_\_\_\_

Approved by \_\_\_\_\_ date \_\_\_\_\_

GEOLOGICAL BRANCH \_\_\_\_\_

Approved by \_\_\_\_\_ date \_\_\_\_\_

MINING CLAIMS TRAVERSED		
List numerically		
<i>Mag</i>	<i>1/3</i>	<i>EM</i>
SSM	82984	1/3
<small>(prefix)</small>	382987	<small>(number)</small> 1/3
	82988	
	82989	
SSM	321645	
	321646	1/3
	321647	
	321648	
SSM	321650	
	321651	
	321652	
	321653	
	321654	
<i>Mining claims</i>		
<i>SSM 82984-87 &amp;</i>		
<i>321646 were only partly</i>		
<i>traversed: credit of</i>		
<i>30 days em &amp; 15 days</i>		
<i>mag. are being allowed</i>		
<i>for these claims</i>		
TOTAL CLAIMS <u>13</u>		

If space insufficient, attach list

OFFICE USE ONLY

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

## GEOPHYSICAL TECHNICAL DATA

### GROUND SURVEYS

Number of Stations 648 Number of Readings 648  
Station interval 100 ft.  
Line spacing 400 ft.  
Profile scale or Contour intervals 1" = 400 ft. ( Mag & Electro. )  
(specify for each type of survey)

### MAGNETIC

Instrument M-700 - Vertical Field Fluxgate Magnetometer.  
Accuracy - Scale constant \_\_\_\_\_  
Diurnal correction method All readings tied into base stations.  
Base station location Azimuth - N. 52 Deg. E.

### ELECTROMAGNETIC

Instrument Crone Radem VLF. EM # 120 Electromagnetometer  
Coil configuration Horizontal - Shoot back.  
Coil separation 400 ft.  
Accuracy \_\_\_\_\_  
Method:  Fixed transmitter  Shoot back  In line  Parallel line  
Frequency Low Creqency at Cutler, Maine.  
(specify V.L.F. station)

Parameters measured \_\_\_\_\_

### GRAVITY

Instrument \_\_\_\_\_  
Scale constant \_\_\_\_\_  
Corrections made \_\_\_\_\_  
Base station value and location \_\_\_\_\_

Elevation accuracy \_\_\_\_\_

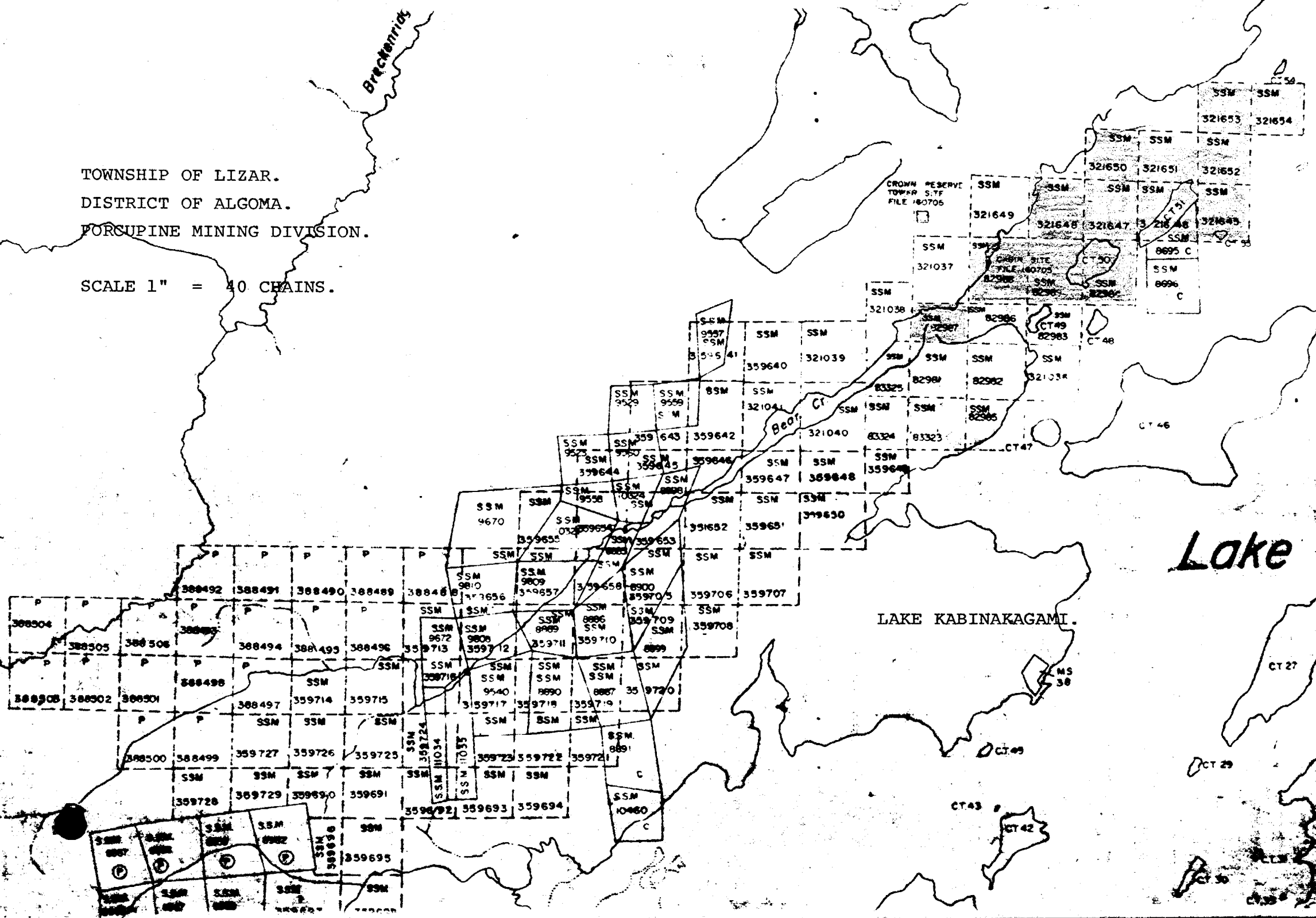
### INDUCED POLARIZATION - RESISTIVITY

Instrument \_\_\_\_\_  
Time domain \_\_\_\_\_ Frequency domain \_\_\_\_\_  
Frequency \_\_\_\_\_ Range \_\_\_\_\_  
Power \_\_\_\_\_  
Electrode array \_\_\_\_\_  
Electrode spacing \_\_\_\_\_  
Type of electrode \_\_\_\_\_

Breckenridge

TOWNSHIP OF LIZAR.  
DISTRICT OF ALGOMA.  
PORCUPINE MINING DIVISION.

SCALE 1" = 40 CHAINS.



Lake

LAKE KABINAKAGAMI.

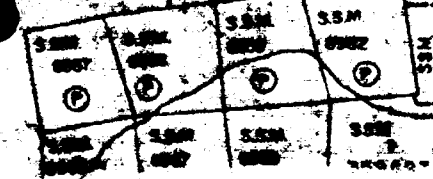
CT 27

CT 29

CT 43

CT 42

CT 30





Lipton Twp. (M-1298)

Derry Twp. (M-1243)

THE TOWNSHIP OF  
OF 2.1509  
**LIZAR**

DISTRICT OF  
**ALGOMA**

PORCUPINE  
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

**LEGEND**

- PATENTED LAND Ⓟ
- CROWN LAND SALE C.S.
- LEASES Ⓛ
- LOCATED LAND Loc.
- LICENSE OF OCCUPATION L.O.
- MINING RIGHTS ONLY M.R.O.
- SURFACE RIGHTS ONLY S.R.O.
- ROADS —
- IMPROVED ROADS —
- KING'S HIGHWAYS —
- RAILWAYS —
- POWER LINES —
- MARSH OR MUSKEG —
- MINES —
- CANCELLED —

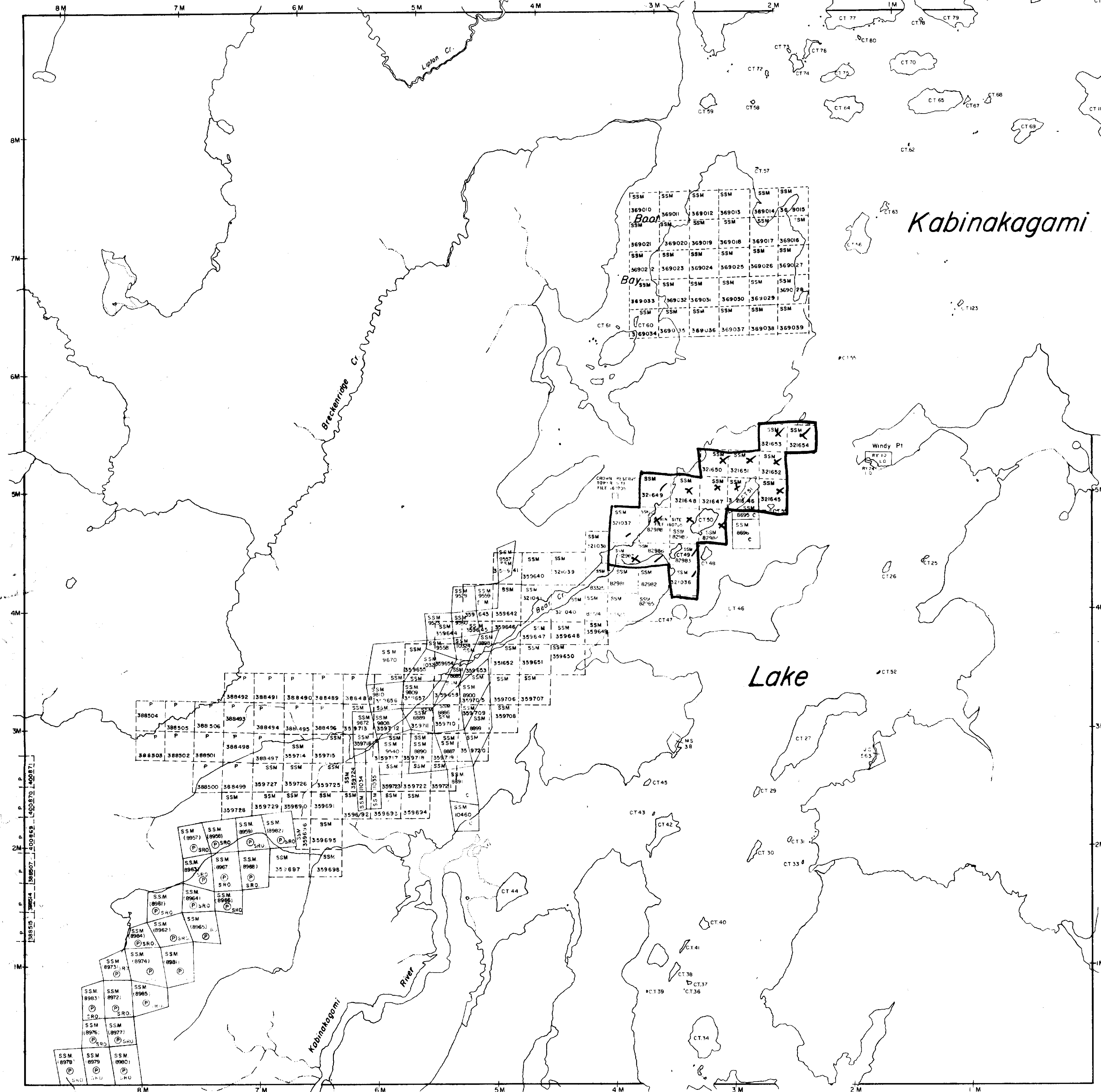
**NOTES**

400 Surface Rights Reservation  
around all Lakes and Rivers.

**MINING LANDS -  
DATE OF ISSUE**  
**JUL - 2 1974**  
**MINISTRY  
OF NATURAL RESOURCES**

Ermine Twp. (M-1249)

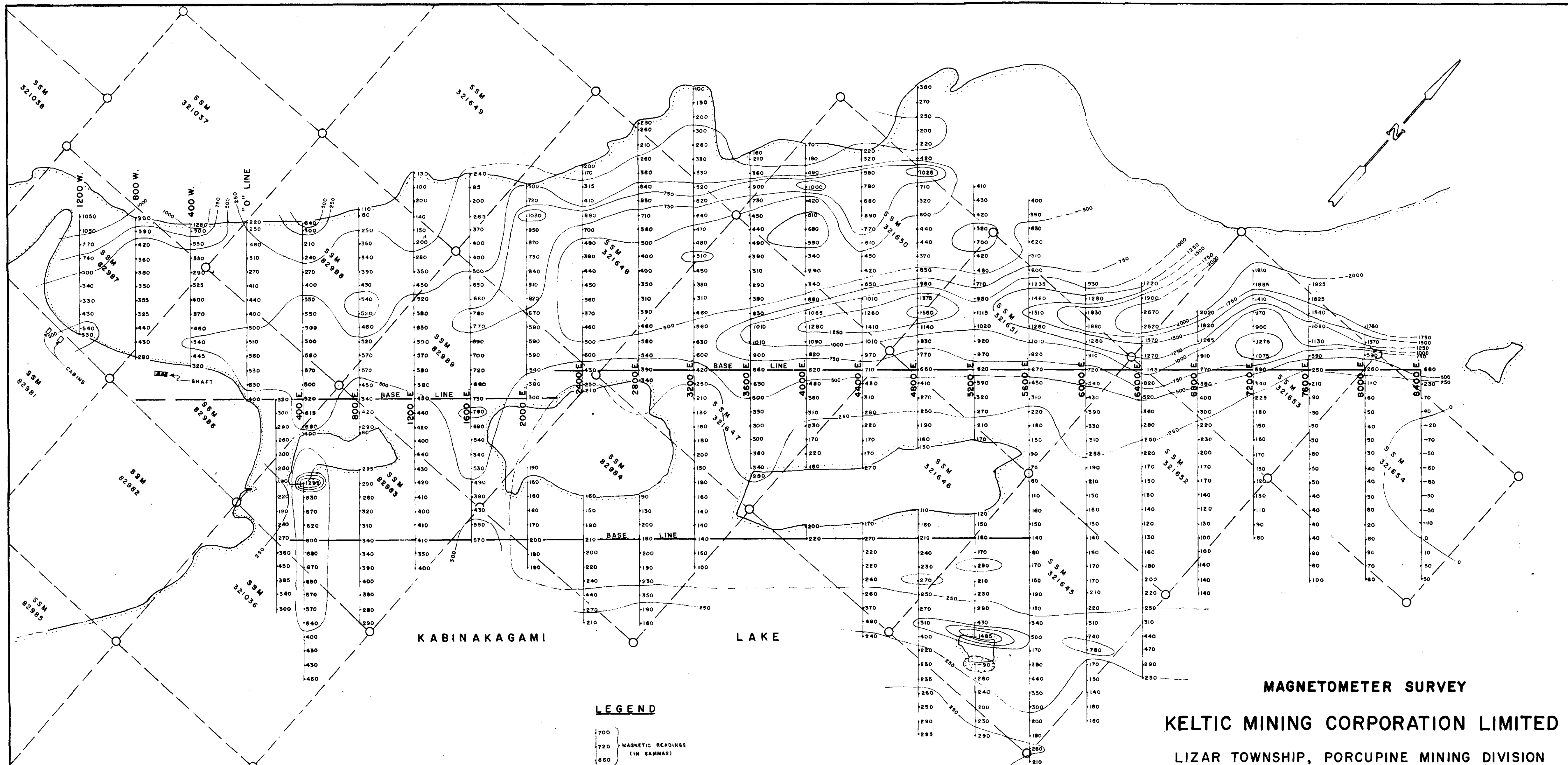
Breckenridge Twp. (M-1225)



Mosambik Twp. (M-1319)

PLAN NO. **M.1299**  
ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH





**MAGNETOMETER SURVEY**  
**KELTIC MINING CORPORATION LIMITED**  
 LIZAR TOWNSHIP, PORCUPINE MINING DIVISION  
 DISTRICT OF ALGOMA, ONTARIO

**LEGEND**

700	}	MAGNETIC READINGS (IN GAMMAS)
720		
660		

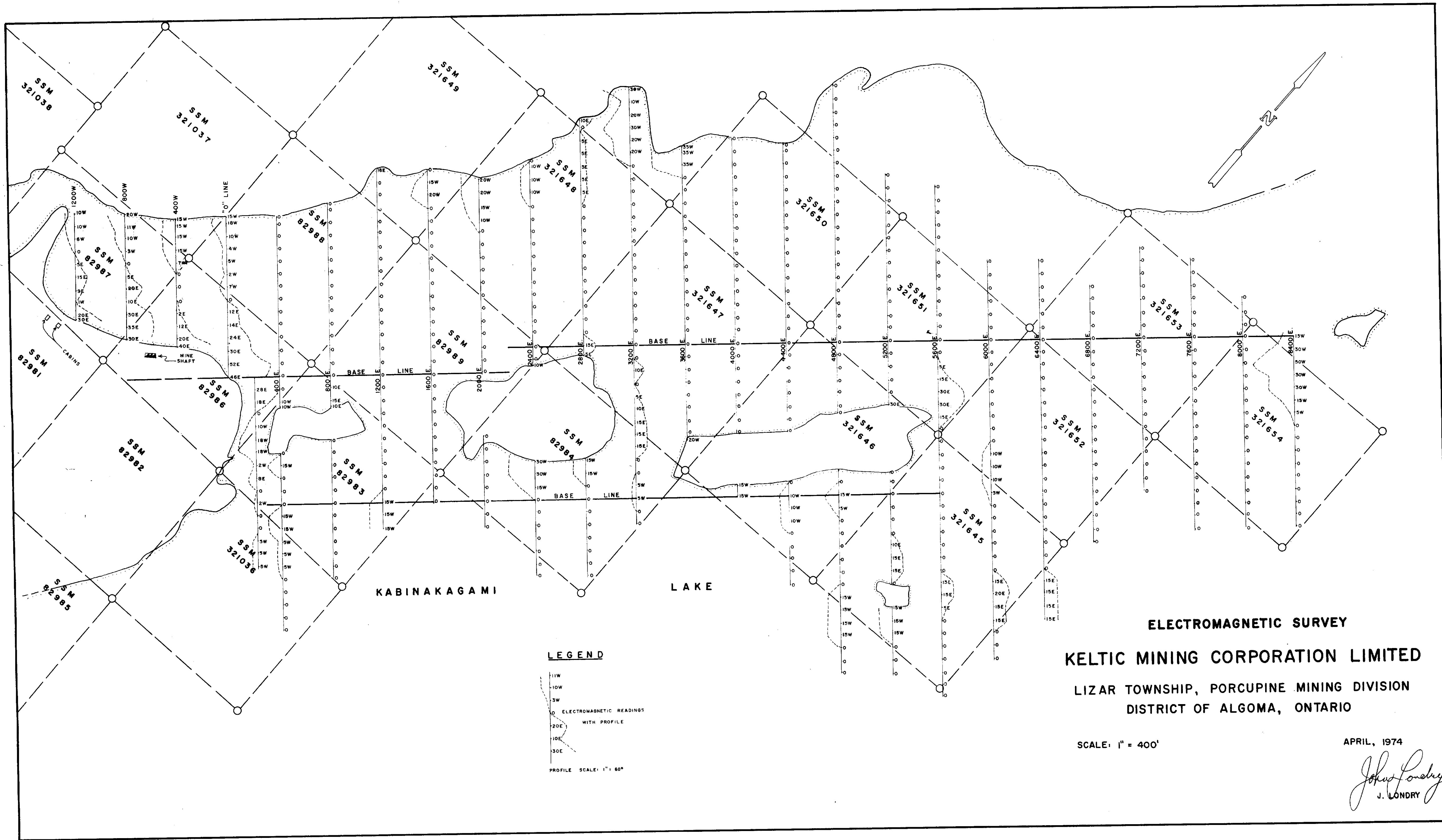
MAGNETIC CONTOURS ARE PLOTTED AT 250 GAMMA INTERVALS

SCALE: 1" = 400'

APRIL, 1974

*John London*  
J. LONDON





**ELECTROMAGNETIC SURVEY**  
**KELTIC MINING CORPORATION LIMITED**  
 LIZAR TOWNSHIP, PORCUPINE MINING DIVISION  
 DISTRICT OF ALGOMA, ONTARIO

SCALE: 1" = 400'

APRIL, 1974

*John Londry*  
 J. LONDROY



2.1509