

32D04SW0045 2.5701 GAUTHIER

010

REPORT ON
MAGNETOMETER AND VLF-EM SURVEYS
GAUTHIER TOWNSHIP, ONTARIO
by
R.A. MacGregor, P. Eng.
July 18, 1983

RECEIVED

JUL 22 1983

MINING LANDS SECTION

I. INTRODUCTION

Magnetometer and VLF-EM surveys were carried out over previously cut lines in October-November 1981 and July 1983.

II. LOCATION, ACCESS AND OWNERSHIP

The property is located in the central part of Gauthier Township just north of the south boundary, Larder Lake Mining Division, District of Temiskaming, Ontario. The claims are numbered L544734 to 544738 inclusive and L565101 to 565106 inclusive. They are recorded in the name of R.A. MacGregor, 134 Palace Drive, Sault Ste. Marie, Ontario.

Highway 66, a paved highway, passes through the north-east corner of the claims. A bush road passable to 4-wheel drive vehicles extends south from the highway near the east side of the claims. The claims are about 6 miles west of Larder Lake and 12 miles east of Kirkland Lake, both on Highway 66.

III. PREVIOUS EXPLORATION

There are a few old pits and trenches on parts of the claims, and evidence of trenching to reach bedrock in the drift covered areas which cover most of the claims. Previous operators are also reported to have put down a number of diamond drill holes.

IV. TOPOGRAPHY

Nearly all of the property is covered by Pleistocene sand, gravel or swamp. There are two low hills on which there is some outcrop located. In the sandy areas which cover a large part of the property, forest cover consists of jackpine, spruce and some poplar and labrador tea. The swampy areas are covered with

Topography (Continued)

black spruce, alder, willow and some poplar. A stream runs through the east part of the claims, and is flooded for its entire length by a series of beaver ponds.

V. MAPPING PROCEDURE

A grid of picket lines were cut for the geological survey. A base line was cut south 45° east from the north boundary. Crosslines were cut every 400 feet north-east and south-west from the baseline. Two short baselines were cut from the most northerly and southerly crosslines to reach small angles in the claims. The picket lines were chained and picketed every 100 feet. The pickets were marked with fluorescent red paint for easier observation.

Magnetometer readings were taken with a Barringer GM-122 Proton Precession Magnetometer at 100-foot intervals. The looping method was used for control of variation. In this method a base station is selected, and readings taken along lines describing a loop, arriving back at the starting base station in less than two hours. A second loop is then started using either the same base station or another which is tied to the previous loop. Readings are then corrected for diurnal variation by assuming the time between readings is the same and distributing any variation equally among the intervening readings. No correction was applied less than the accuracy of the base station readings.

A VLF-EM survey was run with a Phoenix VLF-2 instrument set to the signal from Cutler, Maine (17.8KHz). Readings were

Mapping Procedure (Continued)

taken at 100-foot intervals along all the lines, using the procedure outlined in Appendix 1. The looping method was used for control of variation as in the magnetometer survey.

VI. GENERAL GEOLOGY

The general geology of Gauthier Township has been described by J.E. Thomson and Q.T. Giffis ⁽¹⁾. The area is underlain by early Precambrian volcanic, sedimentary and intrusive rocks. The area is crossed by the Larder Lake Break, a zone of carbonatization and shearing.

The classification used is the same as that for McVittie Township to the east. The volcanics are classified as Temiskaming or Keewating cut by later Algomian intrusives. The geological succession of the area as proposed by Thomson is given in the "Table of Formations"

VII. DISCUSSION OF RESULTSMagnetometer

Magnetometer readings do not show any great variation over areas known or believed to be underlain by syenite. Two higher than normal readings on lines 40 SE and 44SE are a small diabase dyke. Areas believed underlain by volcanics give a more variable pattern and some higher readings.

VLF-EM

There is one fairly well defined anomaly lying about 500

(1) O.D.M. Report Vol 50 part 8, 1941

Discussion of Results (Continued)

feet south west of the baseline and approximately parallel to it from 4 NW to 12 SE and possibly extending to 20 SE. The anomaly is in an area of extensive drift cover but is believed underlain by volcanics. It could represent a fault, shear zone, or mineralized zone within the volcanics. The balance of the property gives little or no response, but is extensively covered by overburden which may mask the bedrock features.

VII. CONCLUSIONS

The magnetometer survey will be useful in attempting to define the syenite-volcanic contact. The VLF-EM anomaly is worth follow-up particularly since the area is only 1½ miles distant from the McBean Mine.

Respectfully submitted



R.A. MacGregor, P. Eng.

July 18, 1983

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JUL 22 1983

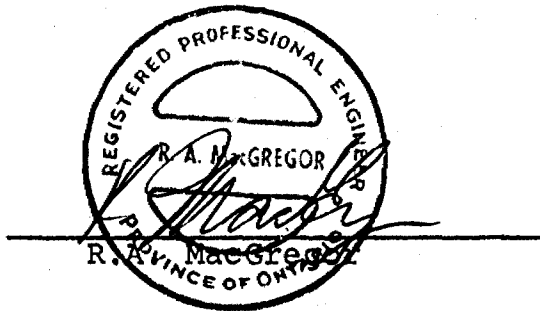
MINING LANDS SECTION

C E R T I F I C A T E

I, Robert A. MacGregor certify:

1. I am a Mining Engineer residing at 134 Palace Drive, Sault Ste. Marie, Ontario. I have worked as a mining engineer and geologist for the past 20 years.
2. I am a member of the Association of Professional Engineers of the Province of Ontario and a member of the Canadian Institute of Mining and Metallurgy.
3. I attended Queen's University for two years in the Mining-Geology course.
4. I personally have knowledge of the field work covered by this report.

July 18/83
Date



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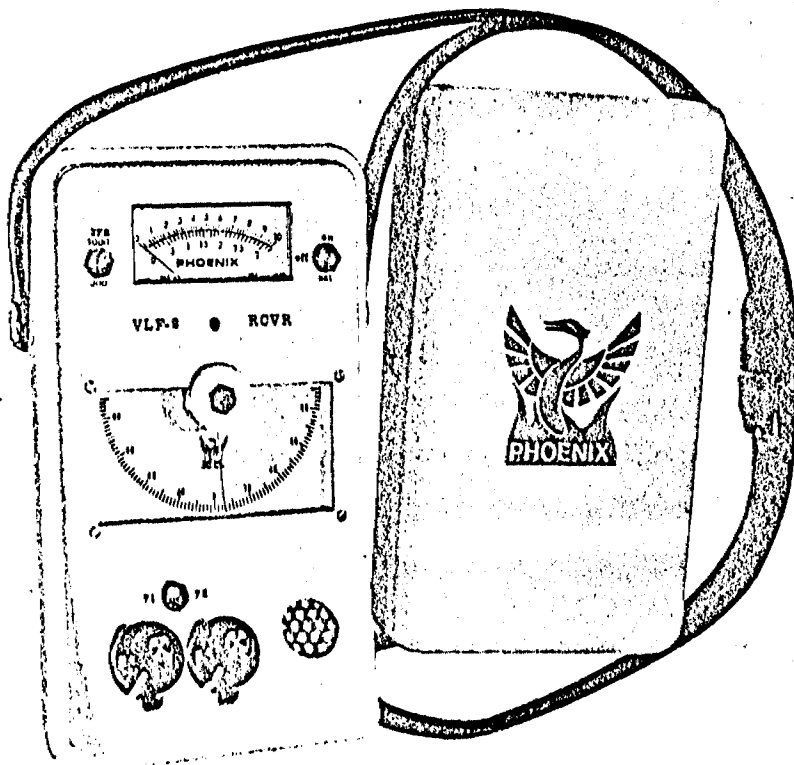
JUL 23 1983

MINING LANDS SECTION

VLF-2

Electromagnetic Unit

- Lightweight, low battery drain, rugged, simple to operate
- Two independent channels
- Each channel may select any station between 14.0 and 29.9 kHz
- Single crystal used for all frequencies
- Locking clinometer provides tilt-angle memory
- Superheterodyne detection and digital filtering provide extremely high selectivity and noise rejection



Military and time standard VLF transmitters are distributed over the world. These stations are used for geophysical EM surveying thus eliminating the need for a local transmitter and permitting one-man operation.

To ensure that a station excites the prospective conductor, two stations at approximately right angles are used during a survey (see data on back).

The choice of 160 frequencies in the range 14.0 to 29.9 kHz permits the use of a local EM transmitter when no suitable regular VLF station is available.



PHOENIX GEOPHYSICS LIMITED

Geophysical Consulting and Contracting, Instrument Manufacture, Sale and Lease.

Head Office: 200 Yorkland Blvd. Willowdale, Ont., Canada, M2J 1R6. Tel: (416) 493-6350
1424 - 355 Burrard St. Vancouver, B.C., Canada, V6C 2G8. Tel: (604) 684-2285
2430 N. Huachuca Dr. Tucson, Arizona, U.S.A. 85705. Tel: (602) 884-8542

Specifications

- Parameter Measured** : Orientation and magnitude of the major and minor axes of the ellipse of polarization.
- Frequency Selection, Front Panel** : Dual channel, front panel selectable (F1 or F2) each with independent precision 10-turn dial gain control.
- Frequency Selection, Internal** : F1 and F2 can be selected by internal switches within the range 14.0 to 29.9 kHz in 100 Hz increments.
- Detection And Filtering** : Superheterodyne detection and digital filtering provide a much narrower bandwidth and thus greater rejection of interfering stations and 60 cycle noise than conventional receivers.
- Meter Display** : 2 ranges: 0 to 300 or 0 to 1000. Background is typically set at 100. Meter is also used as dip angle null indicator and battery test.
- Audio** : Crystal speaker. 2500 Hz used as null indicator.
- Clinometer** : $\pm 90^\circ$, $+0.5^\circ$ resolution. Normal locking, push button release.
- Battery** : One standard 9v transistor radio battery. Average life expectancy - 1 to 3 months (battery drain is 3 mA)
- Temperature Range** : -40° to $+60^\circ$ C.
- Dimensions** : 8 x 22 x 14 cm (3 x 9 x 6 inches).
- Weight** : 850 grams (1.9 pounds).

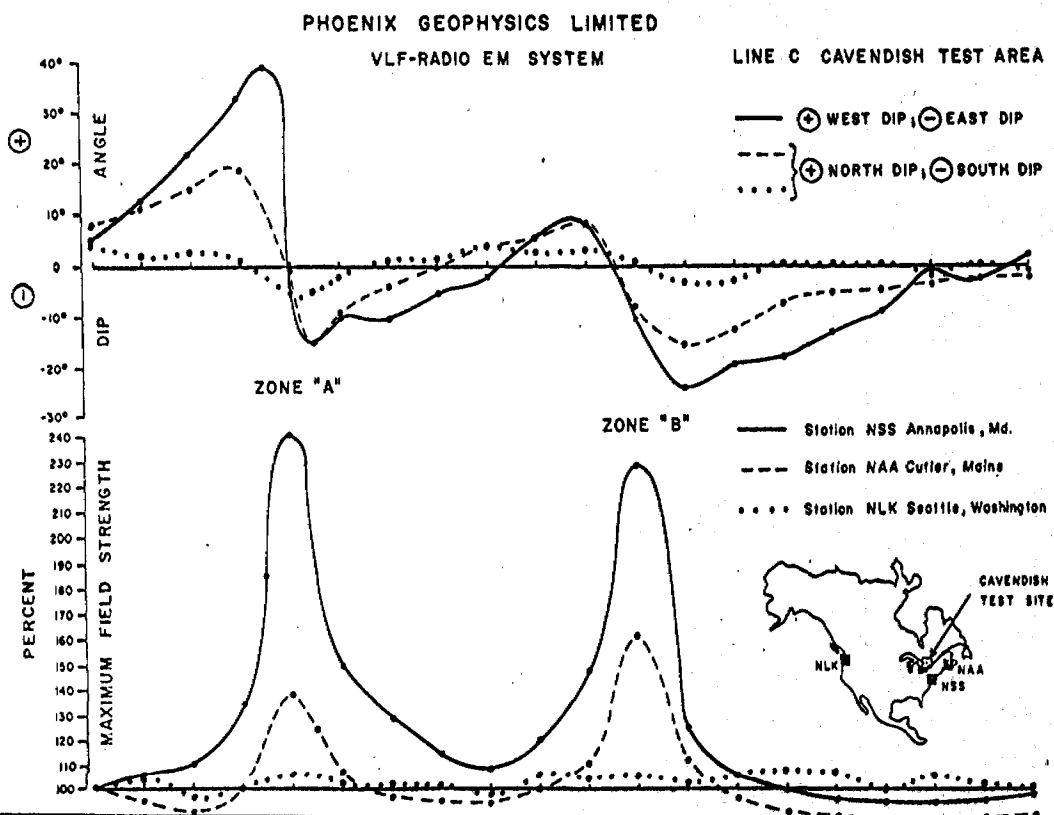
All of the established stations may be selected, or alternatively, a local VLF transmitter may be used which transmits at any frequency in the range 14.0 to 29.9 kHz.

VLF Station	Frequency (kHz)
Bordeaux, France	15.1
Odessa (Black Sea)	15.6
Rugby, U.K.	16.0
Moscow, U.S.S.R.	17.1
Yosama, Japan	17.4
Hegaland, Norway	17.6
Cutler, Maine	17.8
Seattle, Washington	18.6
Malabar, Java	19.0
Oxford, U.K.	19.6
Paris, France	20.7
Annapolis, Maryland	21.4
Northwest Cape, Australia	22.3
Lanulalei, Hawaii	23.4
Buenos Aires, Argentina	23.6
Rome, Italy	27.2

Field Data

The results below illustrate the need for using two orthogonal stations when the strike of the prospective conductor is not well-known. The dip angle and amplitude data measured using station NLK in Seattle, Washington, show only a very weak anomaly associated with the two conductive sulphide zones at Cavendish, Ontario.

The results obtained using Cutler, Maine reveal a more prominent anomaly, but the best response was obtained using Annapolis, Maryland since the station lies almost due south and the transmitted electromagnetic field is thus maximum-coupled with the North-South trending conductors.





32D04SW0045 2.5701 GAUTHIER

900

1984 01 09

Our File: 139

Your File: 2,5701

Mr. George J. Koleszar
Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

RE: Geophysical (Electromagnetic and Magnetometer)
Survey on Mining Claims L 544734 et al in the
Township of Gauthier

The Geophysical (Electromagnetic and Magnetometer) Survey
assessment work credits as listed with my Notice of Intent
dated December 16, 1983 have been approved as of the above
date.

Please inform the recorded holder of these Mining Claims
and so indicate on your records.

Yours very truly,

J.R. Morton
Acting Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416) 965-1380

M.E. Anderson:mc

cc: R.A. MacGregor
134 Palace Drive
Sault Ste. Marie, Ontario
P6B 5H5

cc: Resident Geologist
Kirkland Lake, Ontario

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario



Ontario

Ministry of
Natural
Resources

Technical Assessment Work Credits

File
2.5701

Date
1983 12 16

Mining Recorder's Report of
Work No. 139

Recorded Holder	R.A. MacGREGOR
Township or Area	GAUTHIER TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical _____ days Electromagnetic _____ 20 days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (10) See "Mining Claims Assessed" column Geological _____ days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input type="checkbox"/> <input type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	L 565101 to 06 inclusive L 544734 to 38 inclusive

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey Insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 77 (10)—60:



Ministry of
Natural
Resources

Jan 23/84

Your file: 139

Our file: 2.5701

.1983 12 16

Mr. George J. Koleszar
Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact
Mr. F.W. Matthews at 416/965-1380.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1316

MSA. M.E. Anderson:mc

Encls:

cc: R.A. MacGregor
134 Palace Drive
Sault Ste. Marie, Ontario
P6B 5H5

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontari

845



Ministry of
Natural
Resources

Notice of Intent
for Technical Reports

1983 12 16

2.5701/139

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Lands Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

Ontario Lands Admin Branch

GA-1 (filed 565101) The Mining Act 2.5701

July 25th

Note: - Only days credits calculated in "Expenditures" section may be in the "Expend. Days Cr." - Do not use shaded areas below.

Type of Survey(s) **Magnetometer & VLF-EM W8308-139** Township or Area **Gauthier**

Claim Holder **R.A. MacGregor** Prospector's Licence No. **K-15070**

Address **134 Palace Dr. Sault Ste. Marie, Ontario**

Survey Company **Colex Explorations Inc.** Date of Survey (from & to) Day | **20** | Mo. | **81** | Day | **5** | Mo. | **83** | Total Miles of line Cut

Name and Address of Author (of Geo-Technical report) **R.A. MacGregor, 134 Palace Dr., Sault Ste. Marie, Ontario**

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	20
	- Magnetometer	20
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
Man Days Complete reverse side and enter total(s) here	Geological	
	Geochemical	
	Geophysical	Days per Claim
	- Electromagnetic	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
Airborne Credits	Geochemical	
	Electromagnetic	Days per Claim
	Magnetometer	
	Radiometric	

Mining Claim			Mining Claim		
Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
L	565101				
	565102				
	565103				
	565104				
	565105				
	565106				
	544734				
	544735				
	544736				
	544737				
	544738				

RECEIVED JUN 1 1983

MINING LANDS SECTION

LARDER LAKE MINING DIV. RECEIVED MAY 25 1983 AM 7 18 19 10 11 12 1 2 3 4 5 16 PM

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures \$ + 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date **May 20/83** Recorded (Holder or Agent) (Signature) *R MacGregor*

Total number of mining claims covered by this report of work. **11**

For Office Use Only

Total Days Cr. Recorded **440** Date Recorded **MAY 25 1983** Mining Records *[Signature]*

Date Approved as Recorded **MAY 25 1983** Branch Director *[Signature]*

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying **R.A. MacGregor, 134 Palace Dr., Sault Ste. Marie, Ontario**

Date Certified **May 20/83** Certified by (Signature) *R MacGregor*

November 24, 1983

139

2,6701

R.A. MacGregor
134 Palace Drive
Sault Ste. Marie, Ontario
P6B 5H5

OK Assess

Dear Sir:

RE: Geophysical (Electromagnetic and Magnetometer)
Survey submitted on mining claims L 544734
et al in the Township of Gauthier

Enclosed are the plans for the above-mentioned survey. Please show all claim lines and numbers, and have the maps signed, and return them to this office.

For further information, please contact Mr. F.W. Matthews at (416)965-1380.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-1380

D. Kinvig:mc

Encls:

cc: Mining Recorder
Kirkland Lake, Ontario



Aug 10/82

File
2.5701

Mining Lands Comments

- no claim lines or numbers
- maps not signed

To: Geophysics *Mr. Barlow*

Comments

technical work ok

Approved Wish to see again with corrections Date *Sept 20/83* Signature *[Signature]*

To: Geology - Expenditures

Comments

Approved Wish to see again with corrections Date Signature

To: Geochemistry

Comments

L.D.

Approved Wish to see again with corrections Date Signature

To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

L.565101 #139

2/6701

1983 07 27

Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

We have received reports and maps for a Geophysical
(Electromagnetic & Magnetometer) Survey submitted under
Special Provisions (credit for Performance and Coverage)
on Mining Claims L 565101 et al in the Township of Gauthier.

This material will be examined and assessed and a statement
of assessment work credits will be issued.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1380

A. Barr:sc

cc: R.A. MacGregor
134 Palace Drive
Sault Ste. Marie, Ontario
P6B 5H5

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations 550 Magnetometer 550
Number of Readings VLF 550
Station interval 100 feet Line spacing 400 feet
Profile scale 1" = 40'
Contour interval

MAGNETIC

Instrument Barringer GM -122
Accuracy - Scale constant 1 gamma
Diurnal correction method looping method
Base Station check-in interval (hours) 2 hours or less
Base Station location and value Various along baseline

ELECTROMAGNETIC

Instrument Phoenix VLF-2
Coil configuration N/A
Coil separation N/A
Accuracy +/- 1/2'
Method: [X] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency Cutler, Maine 17.8 KHz
Parameters measured Dip angle of the resultant field

GRAVITY

Instrument
Scale constant
Corrections made
Base station value and location
Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument
Method [] Time Domain [] Frequency Domain
Parameters - On time Frequency
- Off time Range
- Delay time
- Integration time
Power
Electrode array
Electrode spacing
Type of electrode

RECEIVED

MINING LANDS DIVISION

	EM	MAG				2.5701		
L 565101	✓	1/4						
02	✓	✓						
03	✓	✓						
04	✓	1/4						
05	✓	1/4						
06	✓	✓						
L 544734	✓	✓						
35	✓	✓						
36	✓	✓						
37	✓	✓						
38	✓	✓						

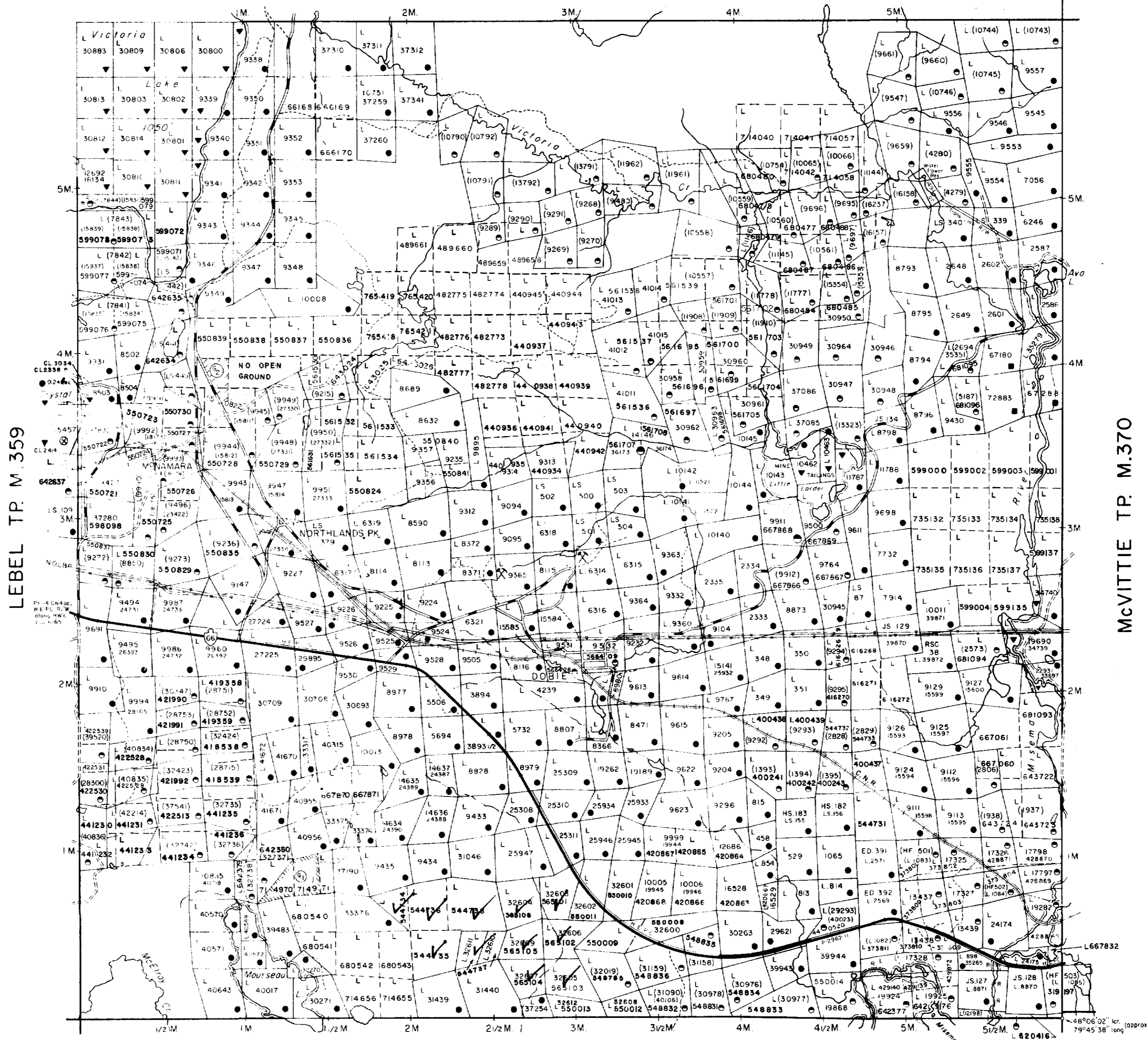
NOTES

400' surface rights reservation along the shores of all lakes and rivers.

SAND & GRAVEL

- ④ M.T.C. PIT No. 1666 FILE 101421
- ⑤ M.T.C. PIT 3F-27

ARNOLD TP. M.321



LEGEND

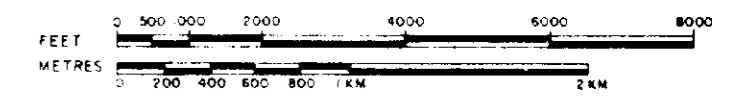
- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES. TOWNSHIPS, BASE LINES, ETC.
- LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES. LOT LINES
- PARCEL BOUNDARY
- MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES

DISPOSITION OF CROWN LANDS

- | TYPE OF DOCUMENT | SYMBOL |
|--------------------------------|--------|
| PATENT SURFACE & MINING RIGHTS | ● |
| SURFACE RIGHTS ONLY | ○ |
| MINING RIGHTS ONLY | ◐ |
| LEASE SURFACE & MINING RIGHTS | ■ |
| SURFACE RIGHTS ONLY | ◼ |
| MINING RIGHTS ONLY | ◻ |
| LICENCE OF OCCUPATION | ▼ |
| CROWN LAND SALE | C.S. |
| ORDER-IN-COUNCIL | OC |
| RESERVATION | ⊙ |
| CANCELLED | ⊖ |
| SAND & GRAVEL | ⊕ |

DATE OF ISSUE
DEC 1 1933
Ministry of Natural Resources
TORONTO

SCALE: 1 INCH = 40 CHAINS



ACRES	HECTARES
40	16

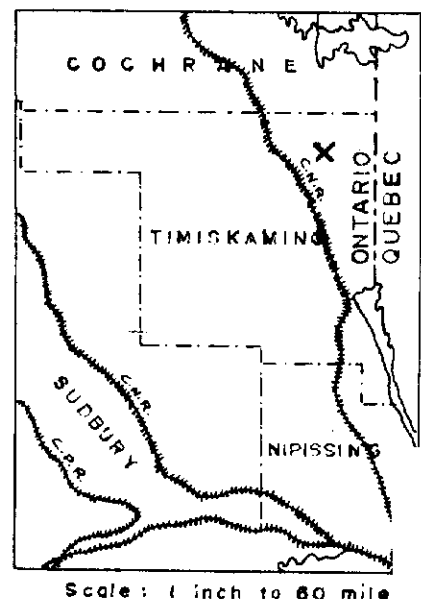
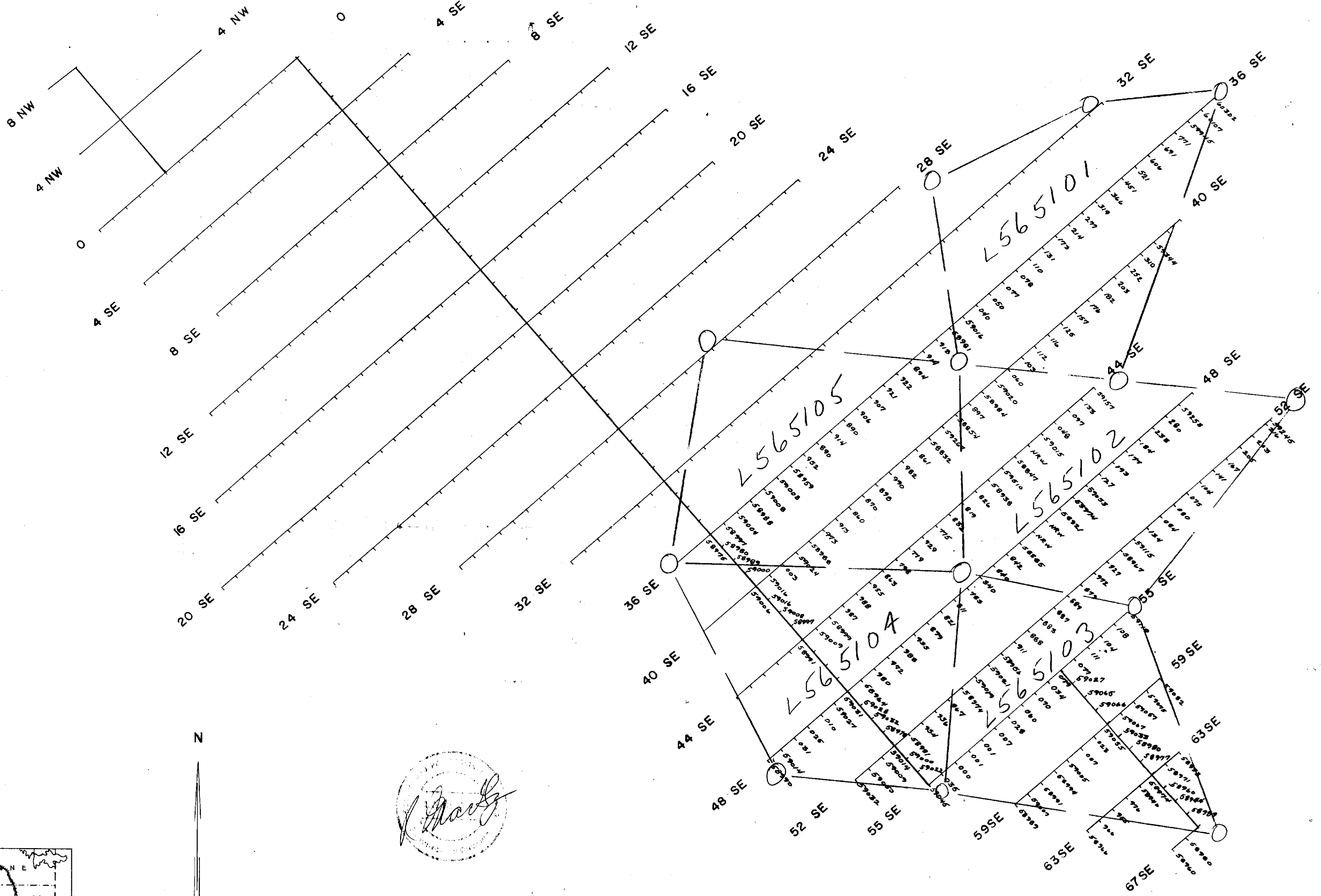
TOWNSHIP
GAUTHIER
DISTRICT
TIMISKAMING
MINING DIVISION
LARDER LAKE

Ministry of Natural Resources
Ontario Surveys and Mapping Branch

Date JAN. 1973 Plan No. M.350
Whitney Block
Queen's Park, Toronto

McELROY TP. M.366





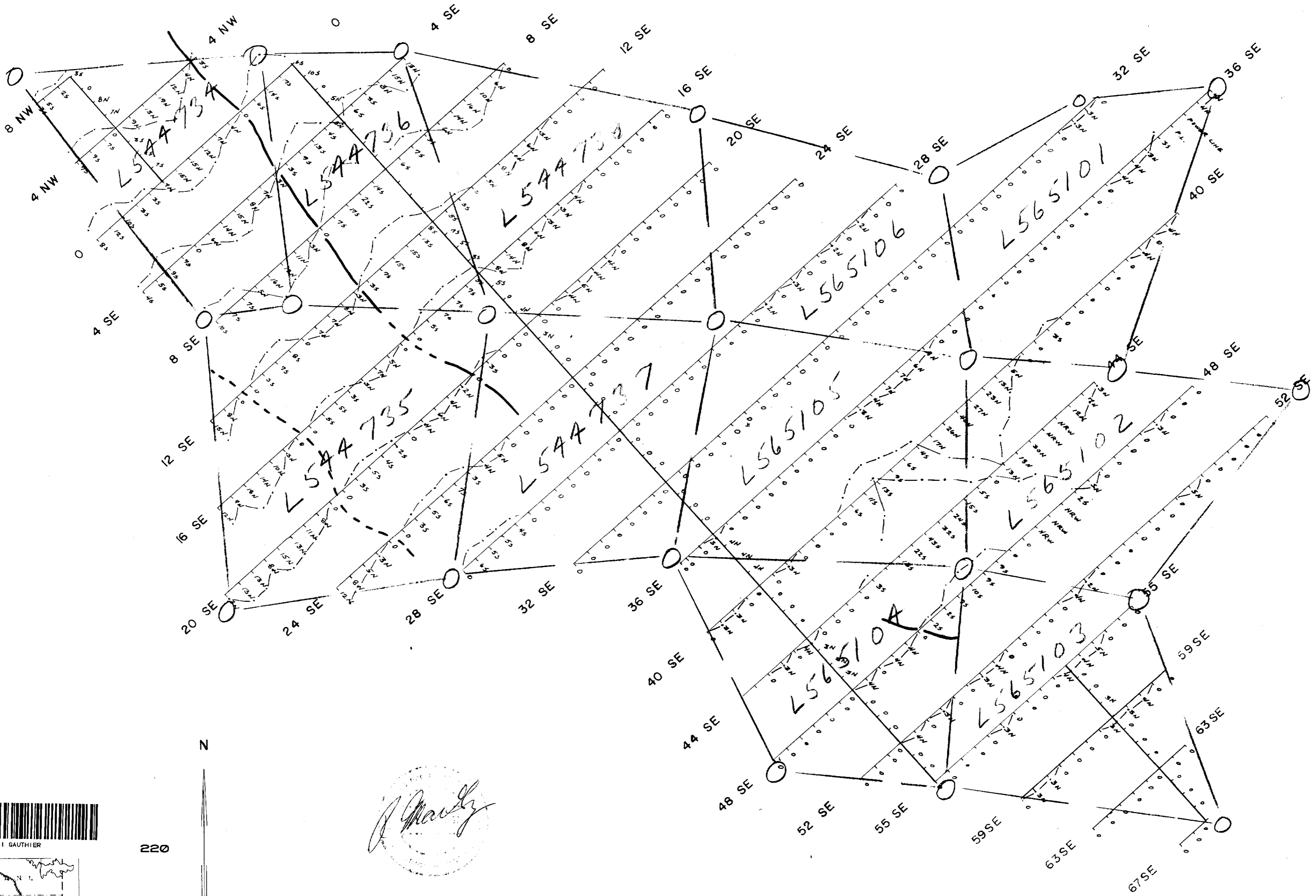
Scale: 1 inch to 60 mile



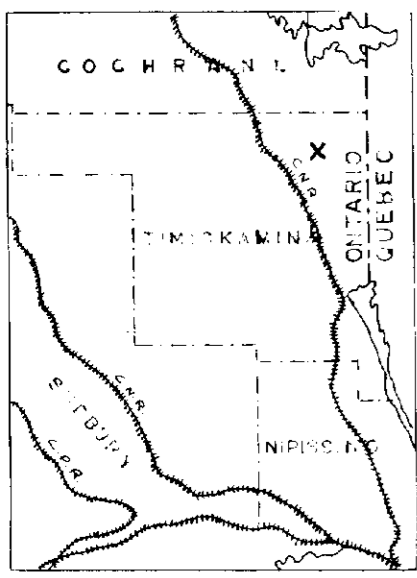
32045W045 2.5701 GAUTHIER

MAGNETOMETER SURVEY
 GAUTHIER SOUTH GRID
 GAUTHIER TOWNSHIP
 SCALE 1" = 400'

2.5701



220



VLF-EM SURVEY
 GAUTHIER SOUTH GRID
 GAUTHIER TOWNSHIP
 SCALE 1"= 400'

INSTRUMENT: PHEONIX VLF-2
 STATION: CUTLER, MAINE (17.8 KH_z)

25701