



32D04SE0144 2.13024 HEARST

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DEC 15 1990

MINING LANDS SECTION

2.13024

MAGNETOMETER & VLF-EM SURVEYS

HEARST TOWNSHIP, Ontario

by

R.A. MacGregor, P. Eng.

December 30, 1989

I. INTRODUCTION

Magnetometer and VLF-EM surveys were carried out over cut lines in October 1989.

II. LOCATION, ACCESS AND OWNERSHIP

The claims are located in the southwest corner of Hearst Township. The claims are numbered L891861 to 891864 inclusive. They are recorded in the name of R.A. MacGregor, 28 Ford Street, Sault Ste. Marie, Ontario.

Access to the property is by bush roads from Highway 624 about 8 miles south of Larder Lake, Ontario.

III. PREVIOUS EXPLORATION

The claims have been previously explored by linecutting and geophysical surveys. There are a number of old pits and trenches on the claims, but no record of this work.

IV. GEOLOGY

According to ODM Map 1947-1 by Jas. E. Thomson, the claims are underlain by Temiskaming sediments cut by Algoman syenite with some Keewatin volcanics in the south. Drift is extensive and almost entirely covers the most easterly claim.

Recent mapping shows the claims underlain by Larder Lake group ultramafic volcanoclastics and sediments cut by syenite and hornblende syenite dykes or sills. There is an outcrop of felsic volcanics on the south part of the line between claims L891862 and L891863, which may be part of the Skead Group. Lamprophyre outcrops on claim L891861. It is probably a dyke.

V. MAPPING PROCEDURE

Lines were recut following an old survey grid about 5 to 6 years old. The lines were still visible but much overgrown with brush and fallen trees. The baseline trends about N 55° W.

Mapping Procedure (Continued)

Magnetometer readings were taken with a Sharpe MF-1 Fluxgate 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 (24.0 KHz). Readings were 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. DISCUSSION OF RESULTS

Magnetometer

The magnetometer survey has indicated magnetic high readings in the east and south east part of the claims and a local high in the south west part. The anomalies probably indicate ultramafic rocks. Lower magnetic readings in the north west are underlain by sedimentary rocks. Low magnetic readings in the south central part of the claims may indicate areas of alteration or syenite intrusion within the mafic-ultramafic volcanics.


VLF-EM

There are no significant cross-overs shown by the VLF-EM survey. The area is heavily drift covered, so that some of the weak cross-overs may be more significant than indicated.

VII. CONCLUSIONS

The magnetic survey has indicated ultramafic to mafic volcanics and sedimentary rocks. Prospecting is warranted along this contact, and in areas where magnetic lows indicate the possibility of alteration zones.

Respectfully submitted



December 30, 1989

R.A. MacGregor, P. Eng.

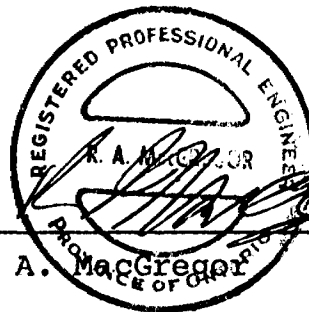
CERTIFICATE

I, Robert A. MacGregor, Certify:

1. I am a Mining Engineer residing at 28 Ford Street, 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 am the recorded holder of the mining claims in this report and have personal knowledge of the work performed.

Dec 30/89

Date



Robert A. MacGregor

M.L.



32D04SE0144 2.13024 HEARST

900



Ministry of Northern Development and Mines Ontario

DOCUMENT No. W8908-373

- Please type or print.
- Refer to Section 77, the Mining Act for assessment work requirements and maximum credits allowed per survey type.
- If number of mining claims traversed exceeds space on this form, attach a list.
- Technical Reports and maps in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch:

Report of Work (Geophysical, Geological and Geochemical Surveys)

Type of Survey(s) Magnetometer & VLF-EM	Mining Division Larder Lake	Township or Area Hearst Township
Recorded Holder(s) R.A. MacGregor	Prospector's Licence No. 2.13024 K-15070	
Address 28 Ford Street, SAULT STE. MARIE, Ontario P6A 4N4		Telephone No. 949-5928
Survey Company Colex Exploration Inc..		
Name and Address of Author (of Geo-Technical Report) R.A. MacGregor, 28 Ford St., Sault Ste. Marie, Ont.		Date of Survey (from & to) 02 10 89 06 10 89

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

Special Provisions	Geophysical	Days per Claim
Enter 40 days. (This includes line cutting)	- Magnetometer	20
For each additional survey using the same grid:	- Other	
Enter 20 days (for each)	Geological	
	Geochemical	

Man Days	Geophysical	Days per Claim
	- Magnetometer	
	- Other	
	Geological	
	Geochemical	

Airborne Credits	Electromagnetic	Days per Claim
	Other	

Mining Claim		Mining Claim		Mining Claim	
Prefix	Number	Prefix	Number	Prefix	Number
L	891861				
	891862				
	891863				
	891864				

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DEC 07 1989

MINING LANDS SECTION

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

4

Total miles flown over claim(s)	Date Oct. 16/89	Recorded Holder or Agent (Signature) <i>[Signature]</i>
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Certification Verifying Report of Work

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

Name and Address of Person Certifying R.A. MacGregor, 28 Ford Street, Sault Ste. Marie, Ontario P6A 4N4	Ontario Geological Survey ASSESSABLE FILES OFFICE 705-949-5928	Date Oct. 16/89	Certified By (Signature) <i>[Signature]</i>
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For Office Use Only

Total Days Cr. Recorded 320	Date Recorded Oct. 16/89	Mining Recorder <i>[Signature]</i>
	Date Approved as Recorded March 9/90	Provincial Manager, Mining Lands <i>[Signature]</i>

RECEIVED MAR 14 1990

LARDER LAKE MINING DIV. RECEIVED OCT 16 1989 AM 7 18 19 10 11 12 13 14 15 6 PM



File _____

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.

Type of Survey(s) MAGNETOMETER & VLF-EM

Township or Area Hearst Township

Claim Holder(s) R.A. MacGregor

Survey Company Colex Exploration Inc.

Author of Report R.A. MacGregor,

Address of Authority P.O. Box 1110, Sault Ste. Marie, Ont.

Covering Dates of Survey Oct. 1989 - Dec. 30/89
(linecutting to office)

Total Miles of Line Cut _____

MINING CLAIMS TRAVERSED
List numerically

L891861

(prefix)

(number)

L891862

L891863

L891864

SPECIAL PROVISIONS
CREDITS REQUESTED

DAYS
per claim

ENTER 40 days (includes
line cutting) for first
survey.

ENTER 20 days for each
additional survey using
same grid.

Geophysical

--Electromagnetic 20

--Magnetometer 20

--Radiometric _____

--Other _____

Geological _____

Geochemical _____

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: Dec. 30/89 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. _____ Qualifications 2.1102

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 4

If space insufficient, attach list


OFFICE USE ONLY



In the matter of mining claims: L 891861 to 891864 inclusive as shown on Report of Work W8908-373 in the Township of Hearst.

On consideration of an application from the recorded holder, R.A. MacGregor
under Section 77 Subsection 22 of the Mining Act, I hereby order that the time for filing reports and plans in support of Geophysical (Magnetometer & Electromagnetic) assessment work recorded on October 16, 19 89
be extended until and including January 15, 19 89.

December 7, 1989
Date


Provincial Manager, Mining Lands Section
R.S.

Copies: Mining Recorder
Kirkland Lake, Ontario

M.L.



DOCUMENT No. W8908.313

- Instructions
- Please type or print.
 - Refer to Section 77, the Mining Act for assessment work requirements and maximum credits allowed per survey type.
 - If number of mining claims traversed exceeds space on this form, attach a list.
 - Technical Reports and maps in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch.

Report of Work
 (Geophysical, Geological and Geochemical Surveys)

Mining Act

Type of Survey(s) Magnetometer & VLF-EM	Mining Division Larder Lake	Township or Area Hearst Township
Recorded Holder(s) R.A. MacGregor	Prospector's Licence No. K-15070	
Address 28 Ford Street, SAULT STE. MARIE, Ontario P6A 4N4		Telephone No. 949-5928
Survey Company Colex Exploration Inc..		
Name and Address of Author (of Geo-Technical Report) R.A. MacGregor, 28 Ford St., Sault Ste. Marie, Ont.		Date of Survey (from & to) 02 10 89 06 10 89

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)	- Other	
	Geological	
	Geochemical	
Man Days Complete reverse side and enter total(s) here	Geophysical	Days per Claim
	- Electromagnetic	
	- Magnetometer	
	- Other	
	Geological	
	Geochemical	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	Days per Claim
	Magnetometer	
	Other	
Total miles flown over claim(s)		
Date Oct. 16/89	Recorded Holder or Agent (Signature) <i>[Signature]</i>	

Mining Claim		Mining Claim		Mining Claim	
Prefix	Number	Prefix	Number	Prefix	Number
L	891861	✓			
	891862	✓			
	891863	✓			
	891864	✓			
RECEIVED					
DEC 07 1989					
MINING LANDS SECTION				Total number of mining claims covered by this report of work.	
				4	

Certification Verifying Report of Work

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

Name and Address of Person Certifying
R.A. MacGregor, 28 Ford St., Sault Ste. Marie, Ontario P6A 4N4

Telephone No. **705-949-5928** Date **Oct. 16/89** Certified By *[Signature]*

For Office Use Only

Total Days Cr. Recorded 320	Date Recorded Oct. 16/89	Mining Recorder <i>[Signature]</i>
	Date Approved as Recorded	Provincial Manager, Mining Lands

**LARDER LAKE
MINING DIV.**

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OCT 16 1989

AM 7 18 19 10 11 12 1 2 3 4 5 6 PM

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M+S. - MINING AND SURFACE RIGHTS

Description Order No. Date Disposition File

① SURFACE RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W 14/80

② Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 65/84

③ MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36 / 80 ORDER NO. W 9 / 85

④ Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 17/85

⑤ W 37 / 85 OPENS W 17 / 85.

⑥ Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 36/85

⑦ W 22 / 85 OPENS W 36 / 85

⑧ Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 38/85

- ⑨ 24 / 85 OPENS PART OF W 38 / 85.
- ⑩ 25 / 85 OPENS PART OF W 38 / 85.
- ⑪ 26 / 85 OPENS PART OF W 38 / 85.
- ⑫ 27 / 85 OPENS PART OF W 38 / 85.
- ⑬ 28 / 85 OPENS PART OF W 38 / 85.

⑭ Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 39/85

- ⑮ 34 / 86 OPENS PART OF W 7 / 86.
- ⑯ 35 / 86 OPENS PART OF W 7 / 86.
- ⑰ 36 / 86 OPENS PART OF W 7 / 86.

⑱ Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 8/86

- ⑲ 64 / 87 OPENS PART OF W 8 / 86.
- ⑳ 23/88 OPENS PART OF W 8/86.

⑳ Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 9/86

PART ⑳ REOPENED BY ORDER NO. O-13/89L

㉑ Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 61/86


⑳ 75 / 86 OPENS W 61 / 86.

㉒ Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 50/86

- ⑳ 8/88 OPENS PART OF W 50/86.
- ⑳ 60 / 87 OPENS PART OF W 50 / 86.

NOTES

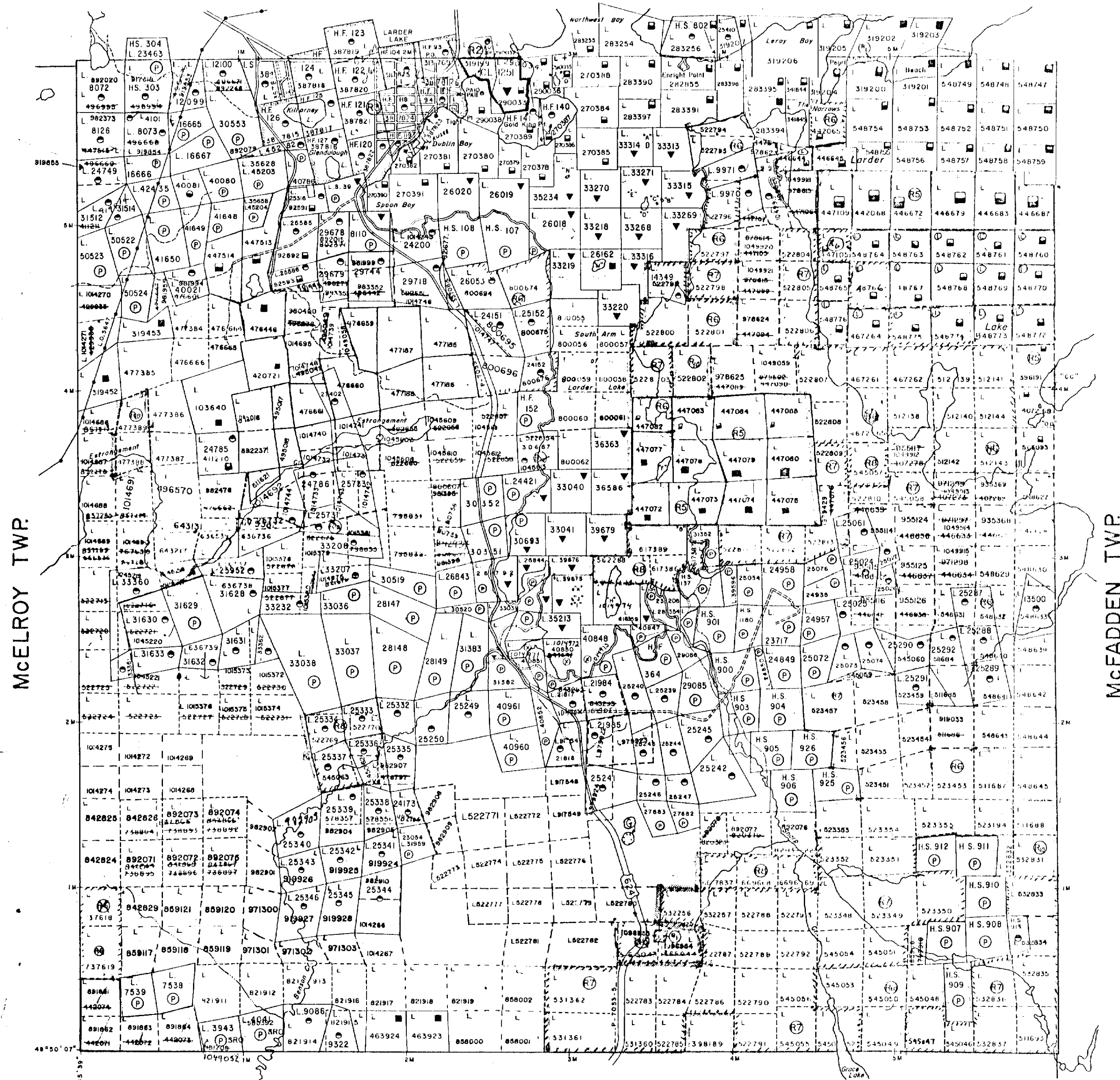
Township of Hearst lies entirely within the CORPORATION of the TOWNSHIP of LARDER LAKE File 29282

Staking of mining claims within the Town of Larder Lake shown thus  subject to Sec 37(b) of the Mining Act (R.S.O.1970)



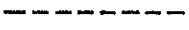



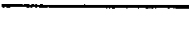
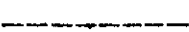
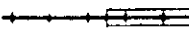
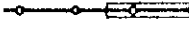

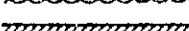


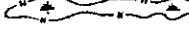



NOTICE OF FORESTRY ACTIVITY

THIS TOWNSHIP / AREA FALLS WITHIN THE

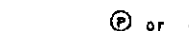
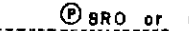
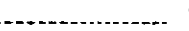
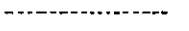







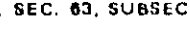
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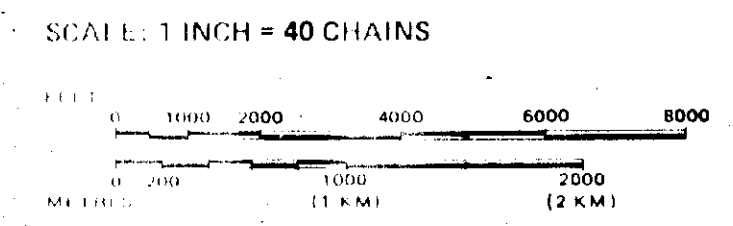
LEGEND

- 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 OR COMPOSITE PLAN 
- RESERVATIONS 
- ORIGINAL SHORELINE 
- MARSH OR MUSKEG 
- MINES 
- TRAVERSE MONUMENT 

DISPOSITION OF CROWN LANDS

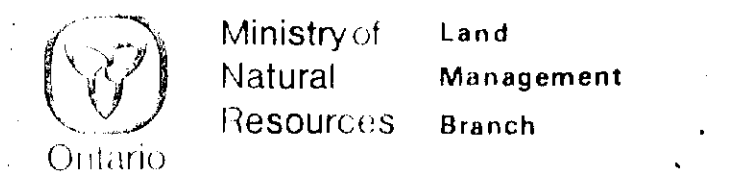
TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	 of 
" SURFACE RIGHTS ONLY	 of 
" MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER IN COUNCIL	OC
RESERVATION	
CAMP LOTS	
SAND & GRAVEL	

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.



Replaced on Aug 19, 1987.

TOWNSHIP
HEARST
 M.N.R. ADMINISTRATIVE DISTRICT
 KIRKLAND LAKE
 MINING DIVISION
 LARDER LAKE
 LAND TITLES / REGISTRY DIVISION
 TIMISKAMING



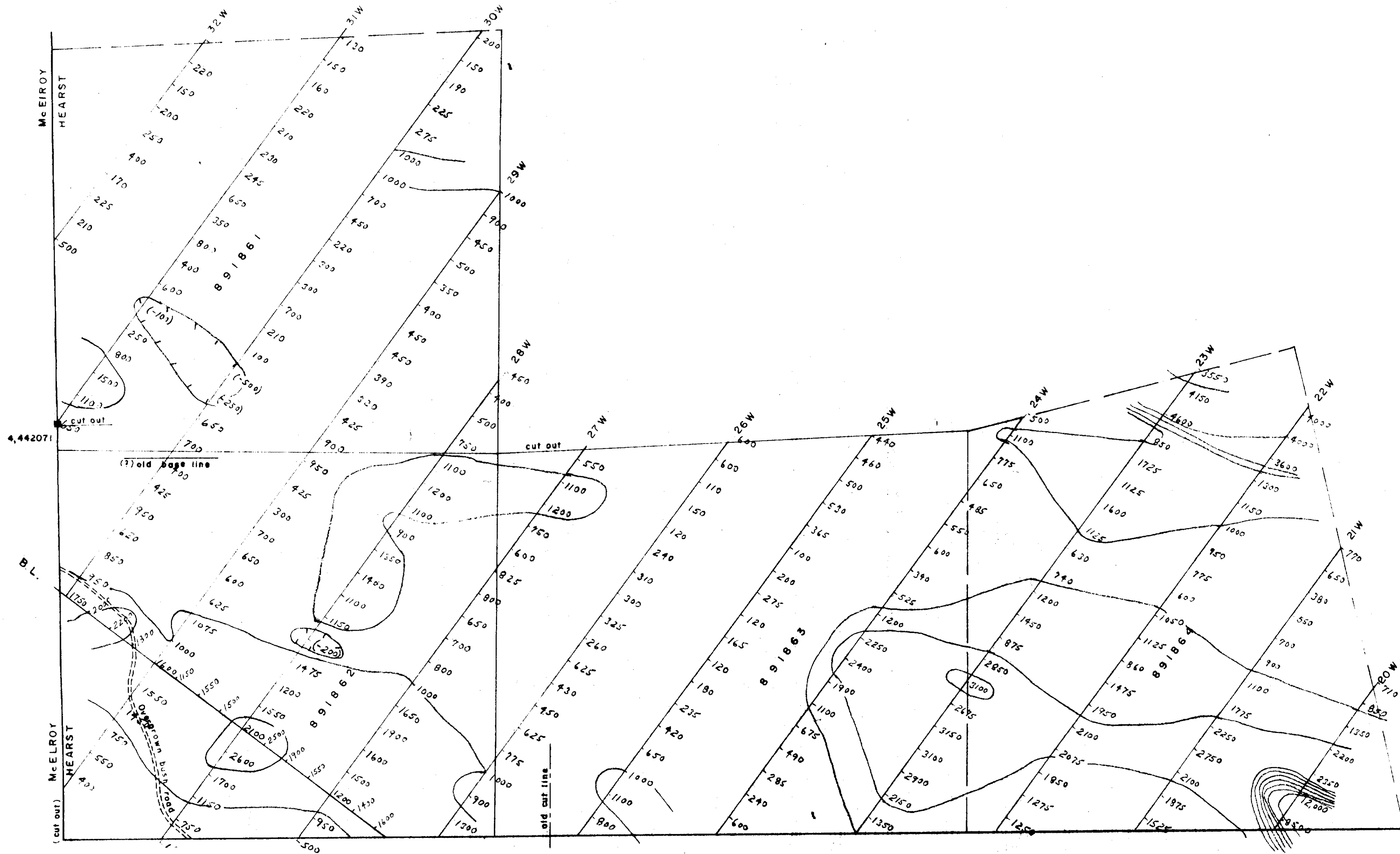
Date: FEBRUARY, 1985
 Number: **G-3213**

SKEAD TWP

DATE OF ISSUE
 JUL 5 1988

TOWNSHIP SUBJECT





MAGNETOMETER SURVEY
HEARST TOWNSHIP
ONTARIO RECEIVED

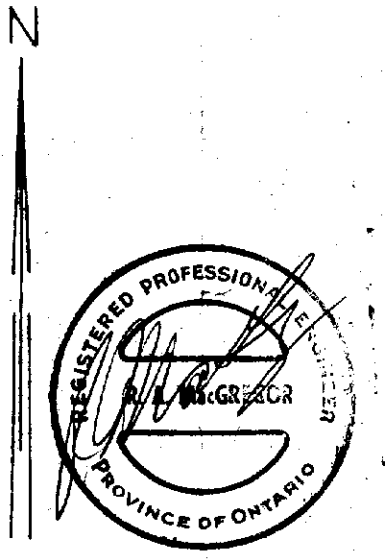
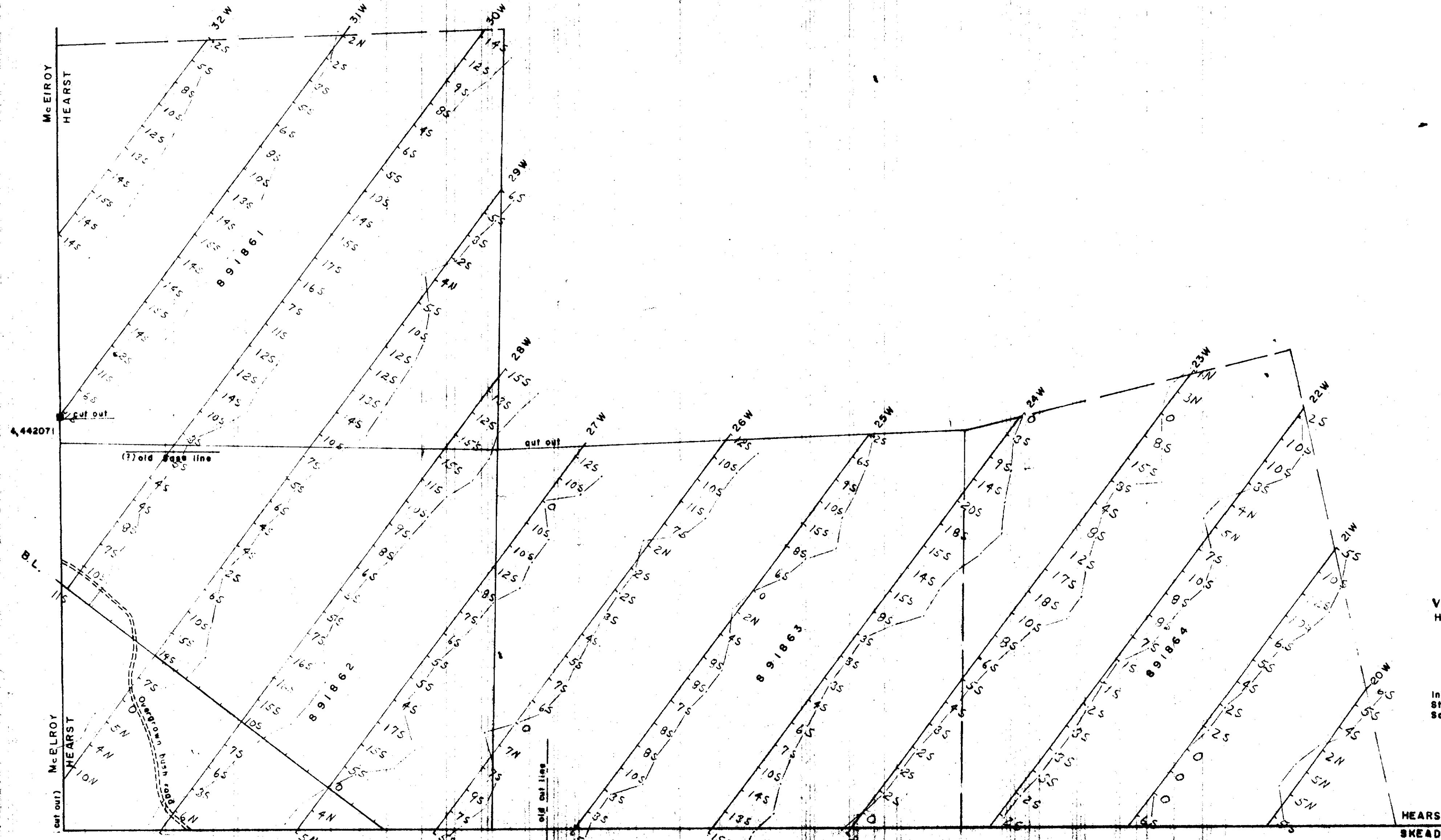
Scale 1: 2500 1: 1000

Instrument: **MINING LANDS SECTION**
 Contour Interval: 1000 gammas

2.13024

HEARST
 SKEAD





VLF-EM SURVEY
 HEARST TOWNSHIP
 ONTARIO RECEIVED

Scale 1:2500 15 1990

MINING LANDS SECTION
 Instrument: Phoenix
 Station: Cutler, Maine (24.0 KHz)
 Scale 1mm = 1'

2.13024

HEARST
 SKEAD

