



42A03SE0214 2.5380 BEEMER

010

REPORT ON
COMBINED HELICOPTER-BORNE
MAGNETIC AND ELECTROMAGNETIC
SURVEY
MUSKASENDA LAKE, ONTARIO

PRICE PROJECT

035

RECEIVED
FEB - 1 1983
MINING LANDS SECTION

AMAX MINERALS EXPLORATION

January, 1983
Timmins, Ontario

A. Watts
Geophysicist



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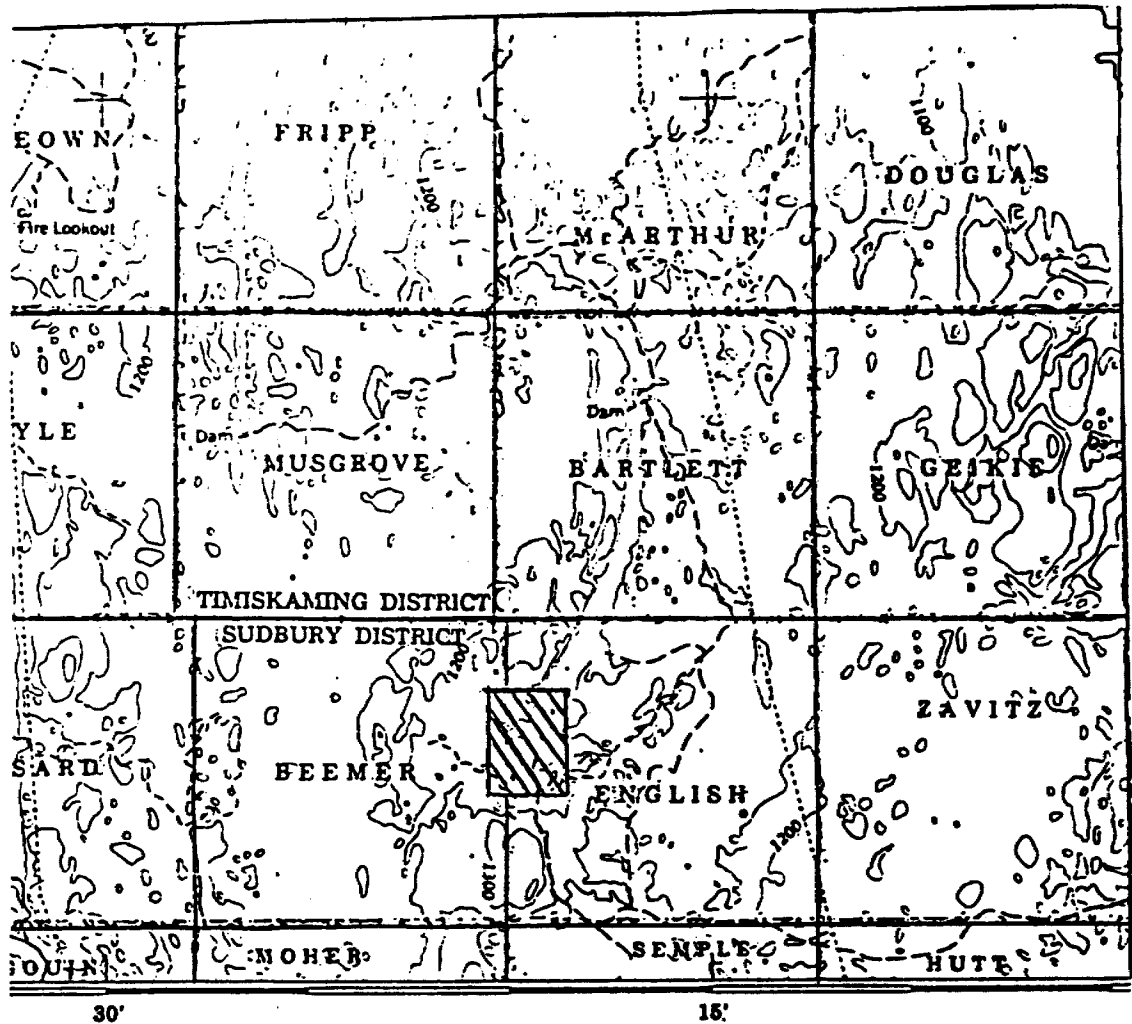


SUMMARY

A multi-frequency helicopter E.M. and magnetic survey was conducted over the southern extremity of Muskasenda Lake in English township.

The survey was flown to evaluate a group of twenty-four (24) claims (see Appendix A) which Amax has staked on the basis of some old Au showings in the area. Magnetically, the claim group is dominated by high amplitude responses from a pervasive gabbro intrusion.

The electromagnetic survey did not detect any conductor which can be considered bedrock-derived.



Scale: 1:250,000

Boundary of Aerodat Helicopter-Borne



E.M. and Mag. Survey

Muskasenda Lake Area

INTRODUCTION

This report describes a combined helicopter magnetic and electromagnetic survey carried out on November 1, 1982, over a portion of English township, by Aerodat Limited for Amax of Canada. A total of sixty (60) line kilometres were flown at a nominal line spacing of 150 metres, of which twenty-four (24) kilometres were flown directly over the claim group under consideration.

The objective of the survey was to provide further information on the geology of the area which had been mapped the previous summer using the magnetic method and also to detect any accumulation of massive sulphides through the electromagnetic method. Taking into account that the area under investigation is primarily being explored for Au, no major conductive zones were anticipated.

Personnel involved with the survey were as follows:

Pilot:	John Levesque
Equipment Operator/Technician:	Pierre Moisan

SURVEY EQUIPMENT

Survey equipment consisted of an Aerodat/Geonics 3-frequency system. Two (2) vertical coaxial coil pairs were operated at 940Hz and 4540Hz and a horizontal coplanar coil pair at 4250Hz. The magnetometer was a Geometrics G-803 proton precession type.

Ancillary equipment was:

1. IFG base station magnetometer
2. Hoffman HRA-100 radar altimeter
3. Geocam tracking camera
4. RMS dot-matrix data recorder
5. Perle DAC/NAV digital data acquisition system

SURVEY PROCEDURE

The survey was flown at a nominal line spacing of 150 metres. Survey airspeed averaged 100 km/hr. and the aircraft maintained an average terrain clearance of 75 metres with the E.M. bird approximately 40 metres off the ground.

GENERAL GEOLOGY

Archean metavolcanics and plutonic rocks underlie the survey area. A large, layered gabbro sill occupies 60% of the area covered by the claim group.

A wide shear, close to the gabbro-metavolcanic contact, at the south end of Muskasenda Lake has returned up to 0.24 oz/ton Au in grab samples.

DISCUSSION OF RESULTS

I Magnetics

The aeromagnetic map is dominated by a response which appears to arise from portions of the gabbro intrusive which are anomalously enriched with magnetite. That the gabbro on the claim group is not universally magnetic can be ascertained by the lack of magnetic response from the gabbro outcropping extensively on the two large islands in Muskasenda Lake.

There is a suggestion of a west-north-west structural break crossing the claim group immediately north of the Au bearing shear zone mentioned previously.

II Electromagnetics

The electromagnetic survey failed to produce any anomalies which can be classified as legitimate bedrock conductors.

All the anomalous E.M. response appears to be derived from the lake-bottom sediments in Muskasenda Lake.

CONCLUSIONS AND RECOMMENDATIONS

The aeromagnetic survey has responded to highly magnetic portions of gabbroic rock on the claim group.

A ground magnetic survey, designed to cover the possible structural break just north of the Au showing, should be carried out this winter.

Timmins, Ontario
January, 1983

Respectfully submitted,

A. H. Watts

A. H. Watts, B.Sc.
Geophysicist

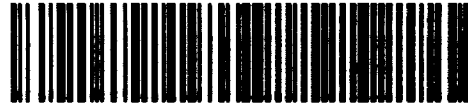


Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

035-01

File # L 530645

The Min



42A035E0214 2.5380 BEEMER

900

Type of Survey(s) Magnetic and Electromagnetic Helicopter Borne		English + Beemer	
Claim Holder(s) Amax of Canada Limited		Prospector's Licence No. A-38495	
Survey Company Aerodat Limited		Survey Dates (linecutting to office) 01 Day 11 Mo. 82 Yr.	Total Miles of line Cut
Name and Address of Author (of Geo-Technical report) A. Watts, 255 Algonquin Blvd. West, Timmins, Ontario. P4N 2R8 2.5380			

Special Provisions Credits Requested

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

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
	530645	40			
	530685	40			
	530689	40			
	530690	40			
	530691	40			
	530692	40			
	530693	40			
	530694	40			
	571587	40			
	571588	40			
	571589	40			
	571590	40			
	571591	40			
	571592	40			
	571593	40			
	571624	40			
	571625	40			
	571626	40			
	571627	40			
	571628	40			
	571629	40			
	571630	40			
	571631	40			
	571632	40			

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Man Days

Instructions	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits

Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	Days per Claim
		20
	Magnetometer	20
	Radiometric	

Expenditures (excludes down-hauling)

TYPE OF WORK PERFORMED

PERFORMED ON CLAIM(S)

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

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.

Report Completed

Date of Report: **January 25, 1983**

Recorded Holder or Agent (Signature): *Rosemary Pelly*

For Office Use Only

Total Days Cr. Recorded: **960**

Date Recorded: **FEB - 2 1983**

Date Approved or Recorded: *Aug 4/83*

Mining Recorder: *[Signature]*

Regional/Field 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.

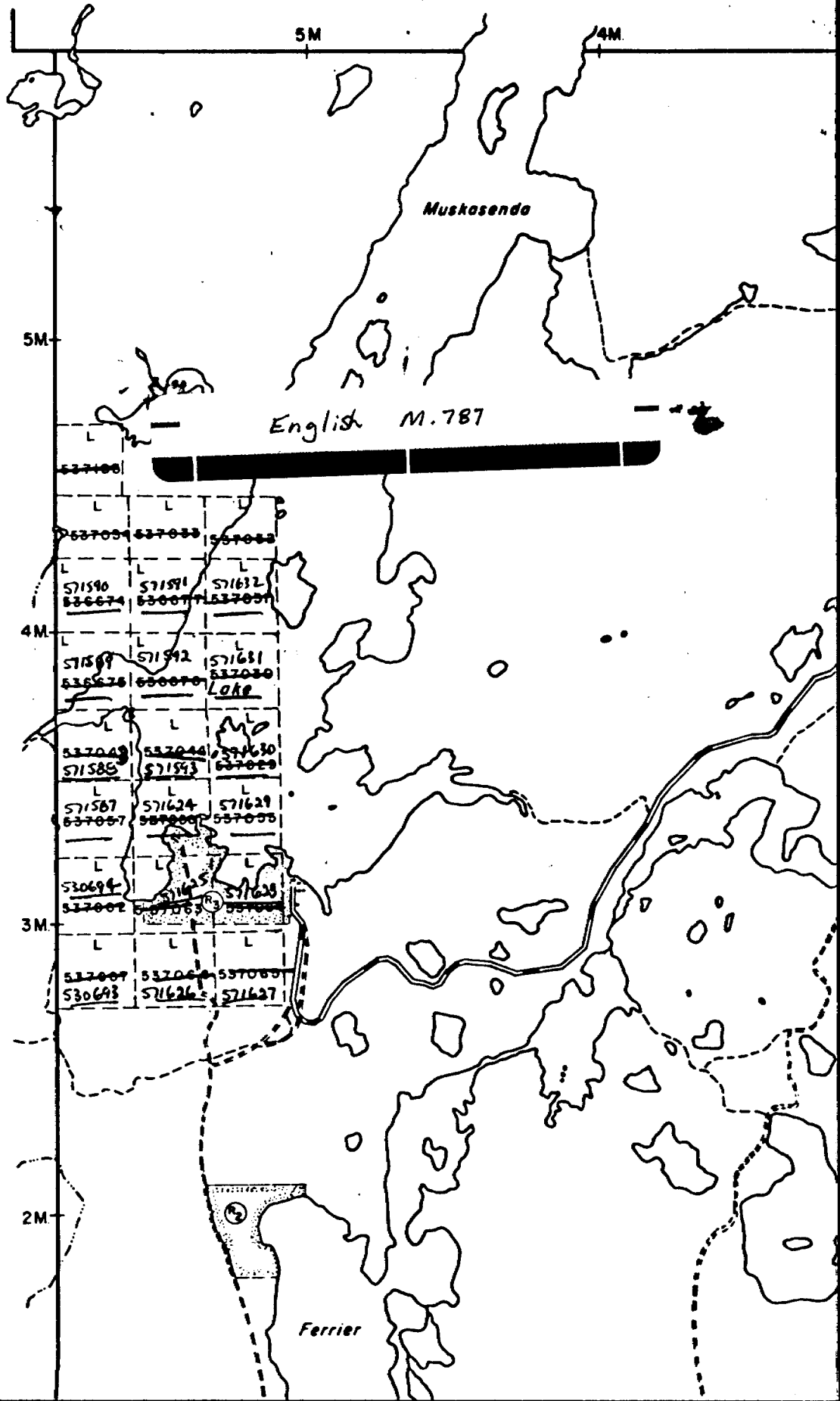
Name and Postal Address of Person Certifying: **A. Watts**

255 Algonquin Blvd. W., Timmins, Ontario. P4N 2R8

Date Certified: **Jan. 25, 1983**

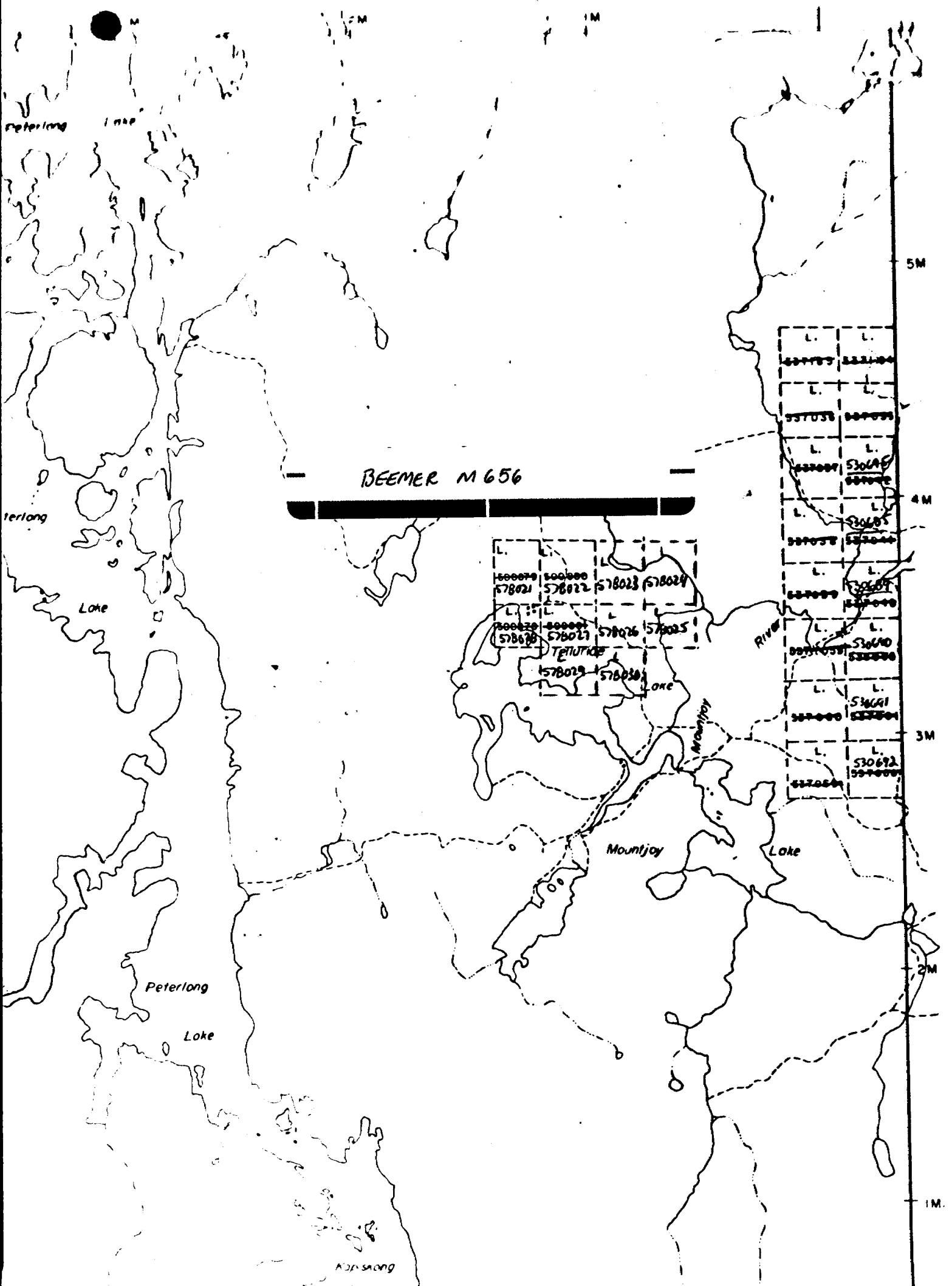
Certified by (Signature): *A. Watts*

Bartlett



Beemer Twp. - M. 656

Musgrove Twp. M 304





Mining Lands Comments

May 24/93

OK!

To: Geophysics TO: Roger Barlow

Comments

Approved Wish to see again with corrections Date July 26/83 Signature Douglas D. Kitcher

To: Geology - Expenditures

Comments

Approved Wish to see again with corrections Date Signature

To: Geochemistry

Comments

Approved Wish to see again with corrections Date Signature

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

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2.5380

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

Dear Sir:

We have received reports and maps for an Airborne
(Electromagnetic and Magnetometer) survey submitted
on mining claims L571587 et al in the Township
of English.

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 416/965-1316

D.Wice:jh

cc: A. Watts
255 Algonquin Blvd. W.
Timmins, Ontario



MINERALS EXPLORATION
(A Division of AMAX OF CANADA LIMITED)

255 Algonquin Blvd. West
Timmins, Ontario
P4N 2R8

Telephone: (705) 264-5247

Our File: 035-01

January 28, 1983

Mr. F. W. Matthews,
Ontario Ministry of Natural Resources,
W1617, Whitney Block,
Queen's Park,
Toronto, Ontario.
M7A 1W3

Dear Sir:

Re: Mining Claims L-530645 et al.,
English and Beemer Townships

Enclosed herewith please find two (2) sets of a report concerning a combined helicopter-borne Magnetic and Electromagnetic survey which was carried out over a group of twenty-four (24) contiguous mining claims located in English and Beemer townships.

A Report of Work was filed with Mr. George Koleszar, Mining Recorder for the Larder Lake Mining Division.

Thank you.

Yours truly,
AMAX OF CANADA LIMITED

Rosemary Tittley
Rosemary Tittley (Mrs.)
Land Recorder

Encs. 2

c.c. G. Koleszar, Kirkland Lake
K. Clemis/E. Barclay, Toronto

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Ministry of Natural Resources

File _____

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT

RECEIVED

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.

FEB - 1 1983

MINING LANDS SECTION

035-01

Type of Survey(s) Magnetic and Electromagnetic

Township or Area English

Claim Holder(s) Amax of Canada Limited

Survey Company Aerodat Limited

Author of Report A. Watts

Address of Author 255 Algonquin Blvd. W., Timmins, Ont.

Covering Dates of Survey November 1, 1982
(linecutting to office)

Total Miles of Line Cut _____

MINING CLAIMS TRAVERSED
List numerically

L	571587
L	571588
(prefix)	(number)
L	571589
L	571590
L	571591
L	571592
L	571593
L	571624
L	571625
L	571626
L	571627
L	571628
L	571629
L	571630
L	571631
L	571632
L	530693
L	530694
L	530645
L	530685
L	530689
L	530690
L	530691
L	530692

If space insufficient, attach list

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 _____
- Magnetometer _____
- Radiometric _____
- Other _____
- Geological _____
- Geochemical _____

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

Magnetometer 20 Electromagnetic 20 Radiometric _____
(enter days per claim)

DATE: January 25, 1983 SIGNATURE: A. Watts
Author of Report or Agent

Res. Geol. _____ Qualifications 22110

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 24

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations _____ Number of Readings _____
Station interval _____ Line spacing _____
Profile scale _____
Contour interval _____

MAGNETIC

Instrument _____
Accuracy - Scale constant _____
Diurnal correction method _____
Base Station check-in interval (hours) _____
Base Station location and value _____

ELECTROMAGNETIC

Instrument _____
Coil configuration _____
Coil separation _____
Accuracy _____
Method: Fixed transmitter Shoot back In line Parallel line
Frequency _____
(specify V.L.F. station)
Parameters measured _____

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 _____

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

Corrections made _____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth - include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

Additional information (for understanding results) _____

AIRBORNE SURVEYS

Type of survey(s) Magnetic and Electromagnetic

Instrument(s) Aerodat/Geonics 3 frequency electromagnetic system; Geometrics G-803 magnetometer
(specify for each type of survey)

Accuracy Electromagnetic < 1 ppm; Magnetics ± 1 gamma
(specify for each type of survey)

Aircraft used Aerospatiale A-Star

Sensor altitude 40 metres

Navigation and flight path recovery method Visual navigation, with strip film flight path
recovery

Aircraft altitude 75 metres Line Spacing 150 metres

Miles flown over total area 60 kilometres Over claims only 24 kilometres

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

ANALYTICAL METHODS

Values expressed in: per cent
p. p. m.
p. p. b.

Cu, Pb, Zn, Ni, Co, Ag, Mo, As, -(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

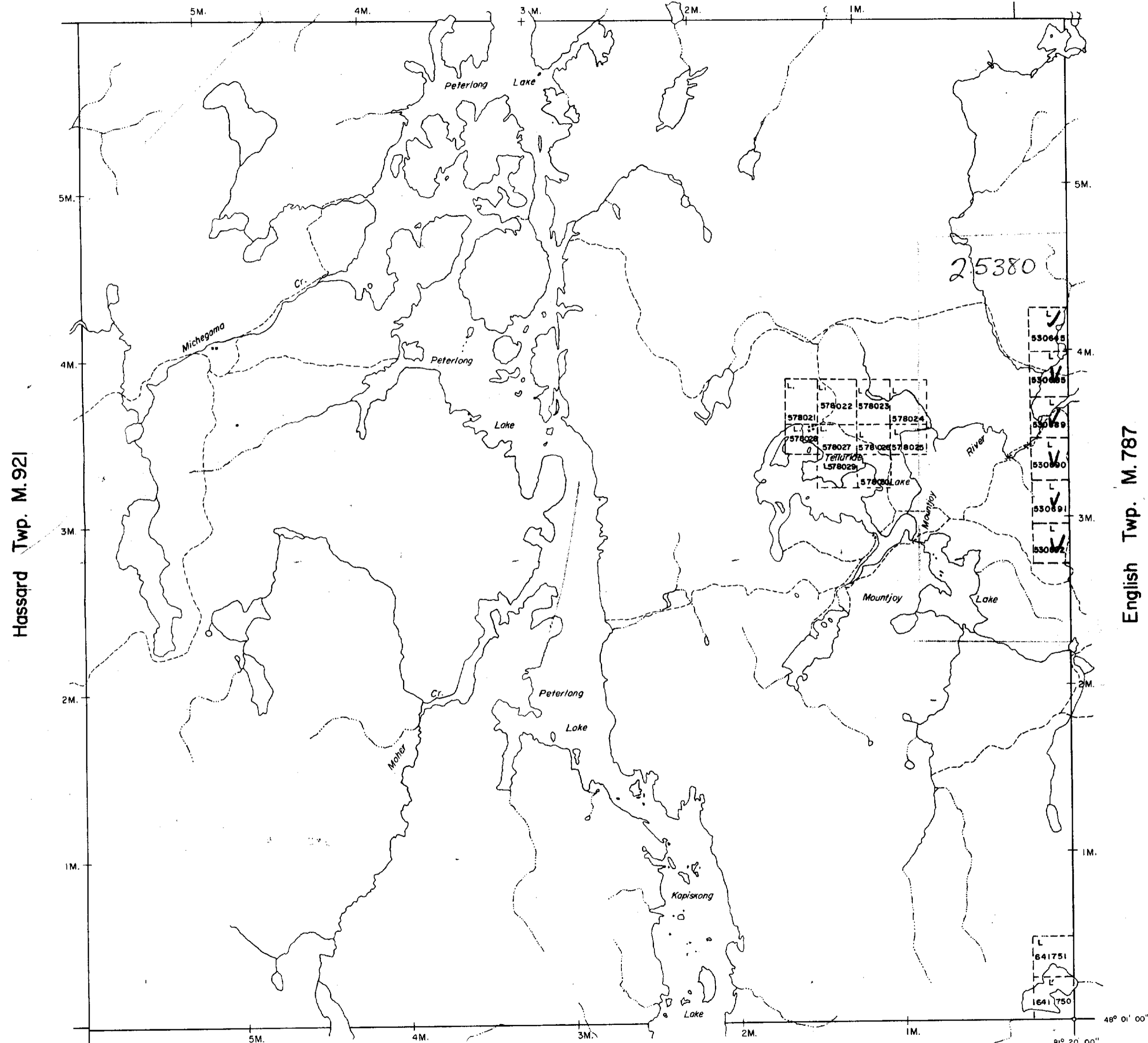
Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

Musgrove Twp. M.304



THE TOWNSHIP OF

BEEMER

DISTRICT OF
SUDBURY

LARDER LAKE
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 MUSKOG	—
MINES	Ⓜ
CANCELLED	C.

NOTES

400' Surface Rights Reservation around all lakes and rivers.

Flooding Rights in Peterlong & Kapiskong lakes assigned to H.E.P.C. L.O 7191 File No. 1162 Vol. 4.

DATE OF ISSUE
AUG - 3 1983
Ministry of Natural Resources
TORONTO

PLAN NO. M. 656

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH



42A03SE0214 2.5380 BEEMER

Moher Twp. M.868

Bartlett Twp. - M.262

Beemer Twp. - M.656

Zavitz Twp. - M.1189

Semple Twp. - M.1100

THE TOWNSHIP OF
OF

ENGLISH

DISTRICT OF
SUDBURY

LARDER LAKE
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	Ⓧ
PATENTED S.R.O.	Ⓧ

NOTES

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

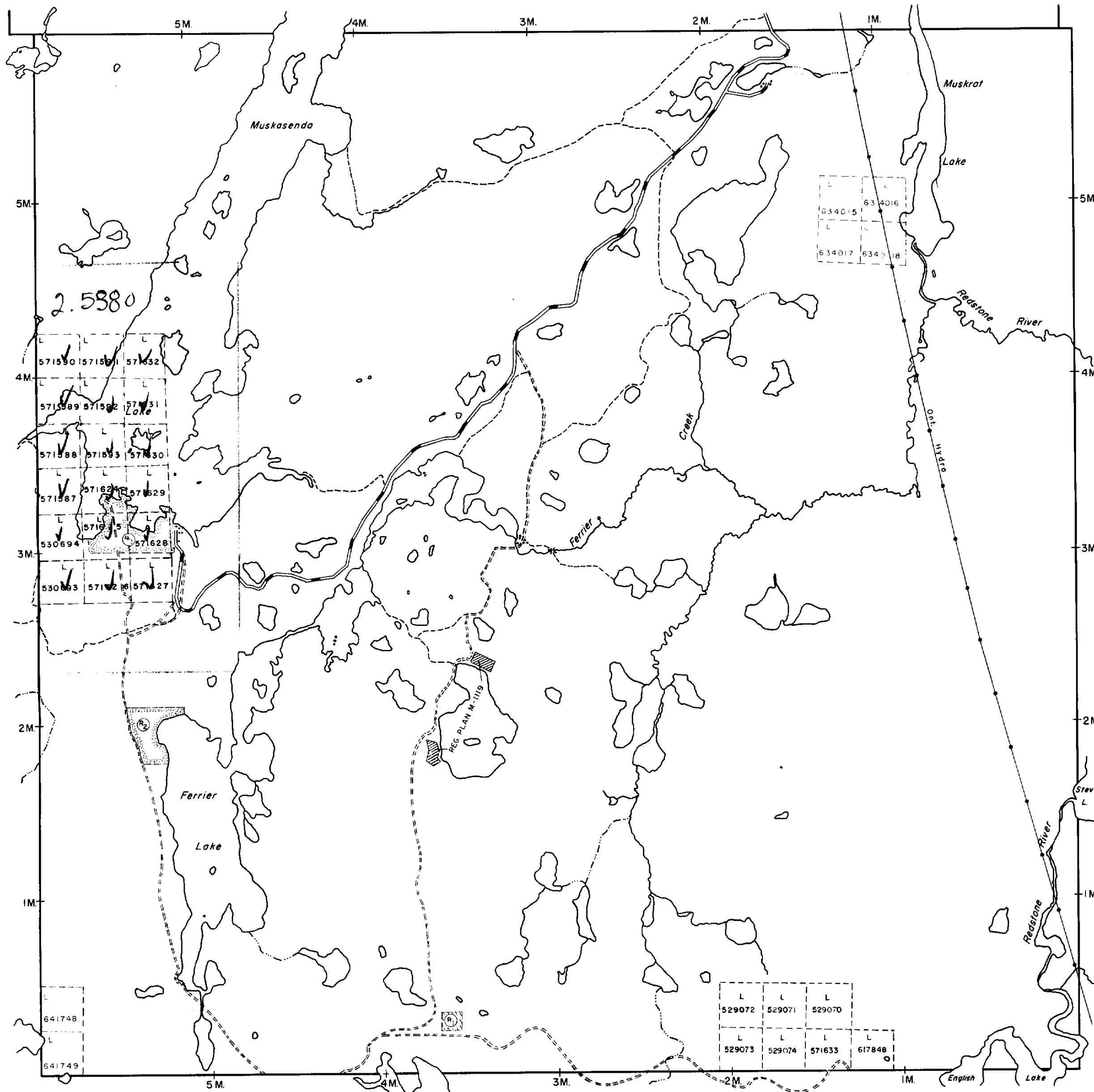
Areas withdrawn from staking under Section 43 of the Mining Act (R.S.O. 1970).

Order No.	File	Date	Disposition
Ⓜ	W.18/77 83582	28/2/77	S.R.O.
Ⓜ	W.19/78 188543	10/4/78	S.R.O.
Ⓜ	W.30/78 192219	2/6/78	S.R.O.

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PLAN NO. - **M.787**

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH



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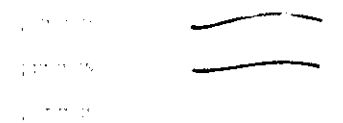


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LEGEND



AMAX of CANADA LIMITED

TOTAL FIELD MAGNETIC MAP

PRICE PROJECT, 035-01

TIMMINS, ONTARIO

C. Walth



November, 1982

42 A

4

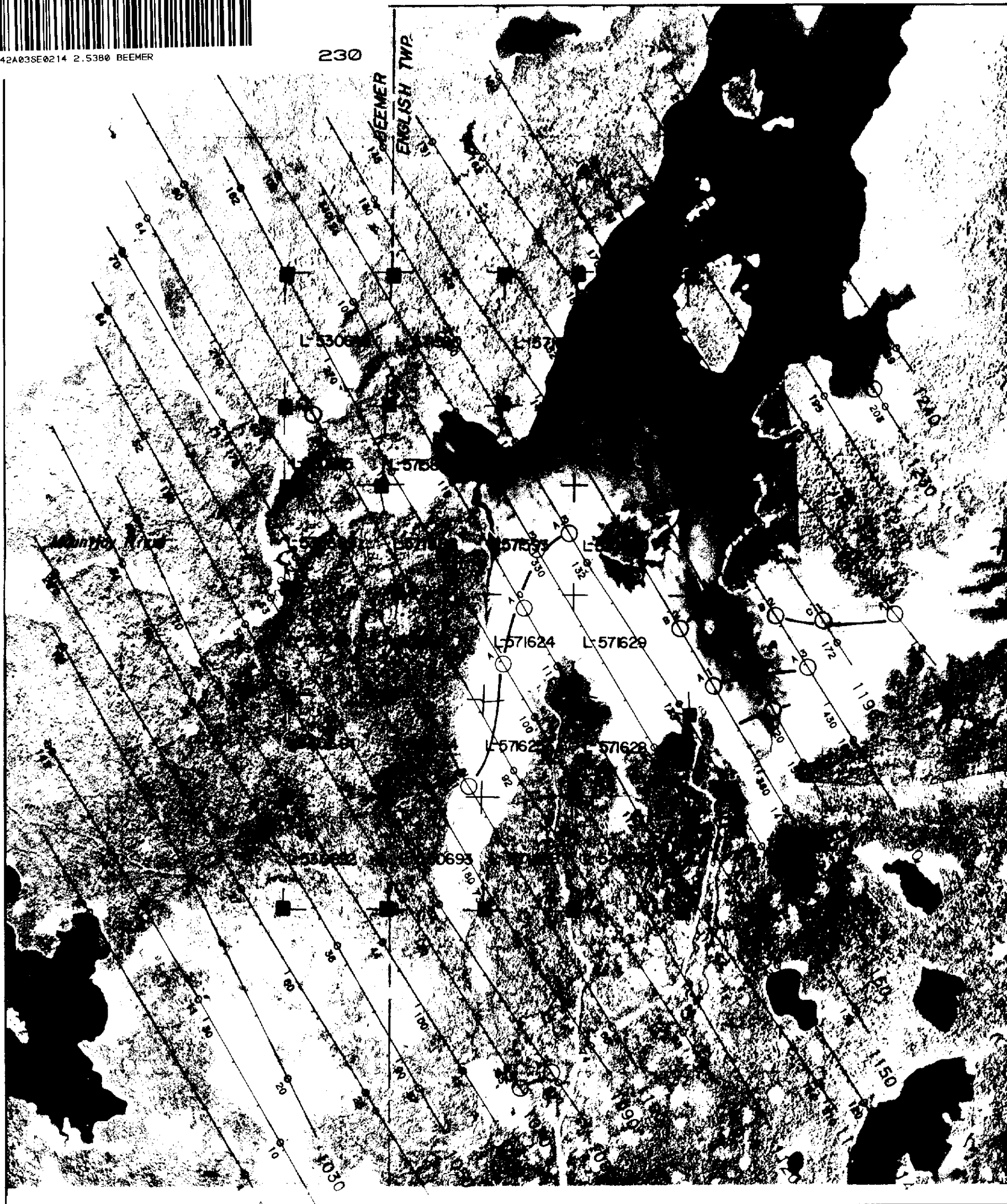


AERODAT

25380



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EM RESPONSE

Symbol, thickness, etc.

- (1) 100
- (2) 110
- (3) 120
- (4) 130
- (5) 140
- (6) 150
- (7) 160
- (8) 170
- (9) 180
- (10) 190
- (11) 200
- (X) phase response

Horizontal scale: 1 cm = 50 metres
 Average line height: 50 metres
 Line spacing: 50 metres

EM ANOMALY SYMBOLS

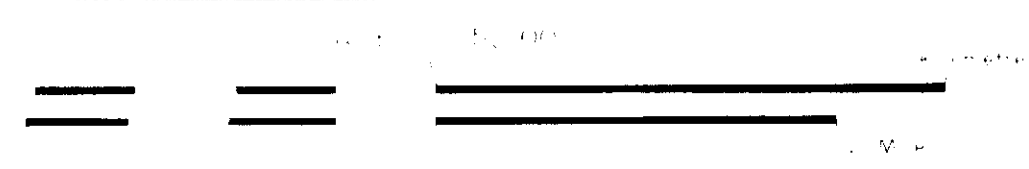


AMAX of CANADA LIMITED
**AIRBORNE ELECTROMAGNETIC SURVEY
 INTERPRETATION MAP**

PRICE PROJECT, 035-01

TIMMINS, ONTARIO

G. Watts



AERODAT

November, 1982

42 A

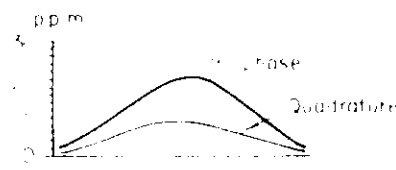
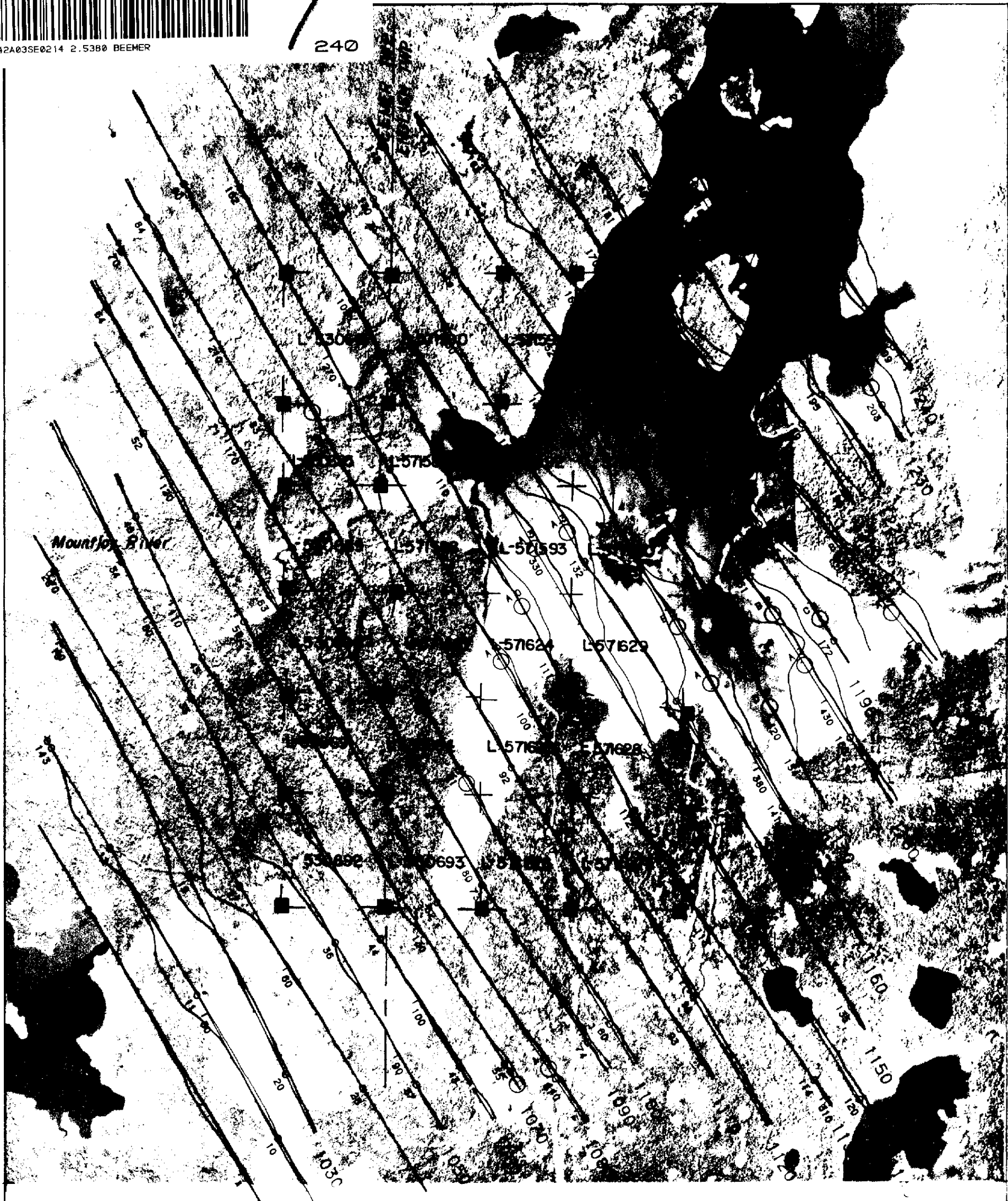
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0.5380



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AMAX of CANADA LIMITED
AIRBORNE ELECTROMAGNETIC SURVEY
PROFILES - 940 Hz. (coaxial)

PRICE PROJECT, 035-01

TIMMINS, ONTARIO

A. Watts



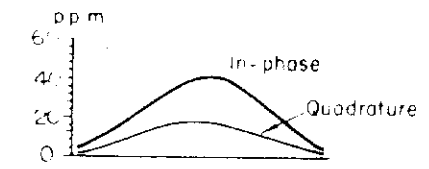
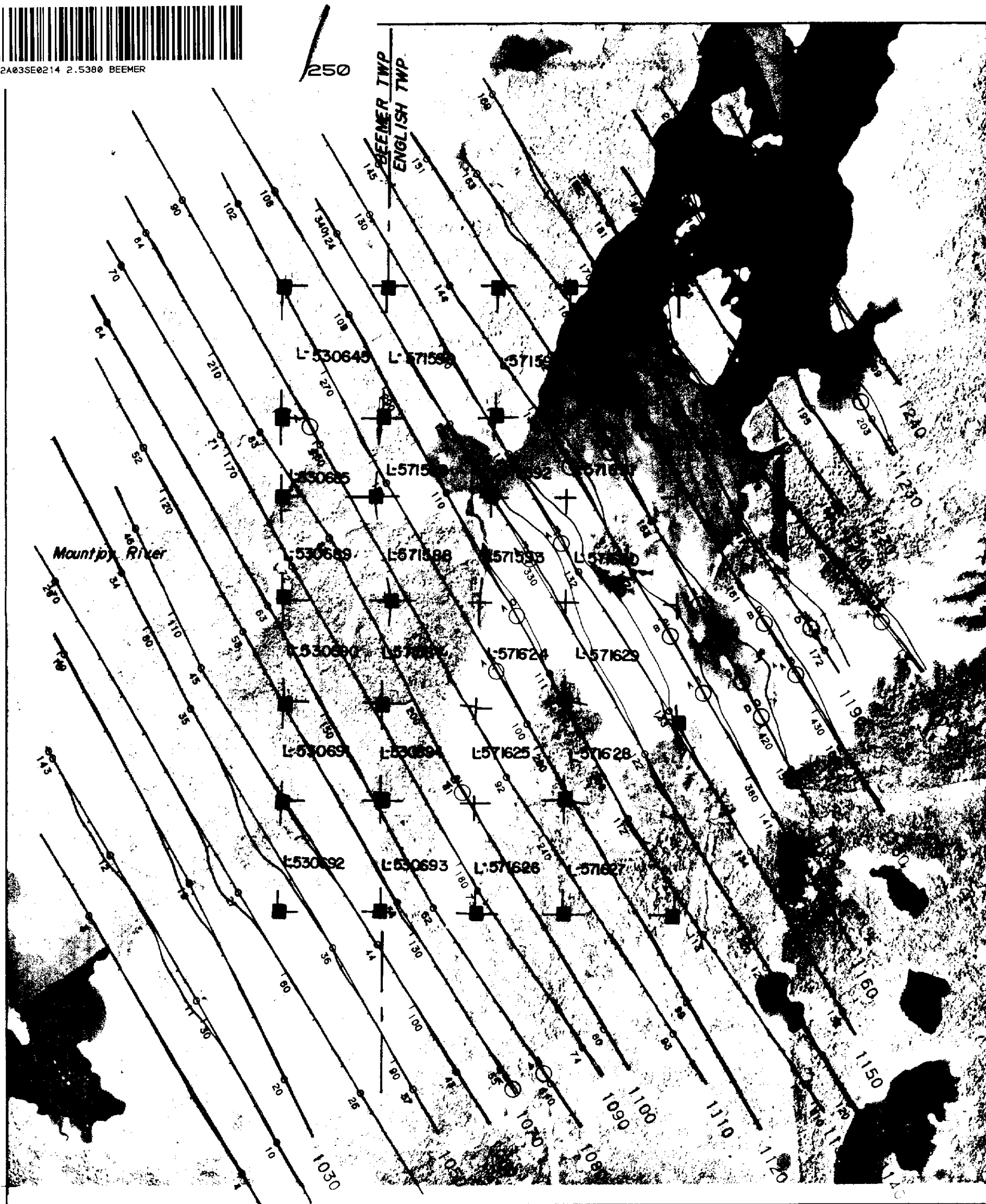
DATE November, 1982
 N.T.S. No 42 A
 MAP No 2



AERODAT



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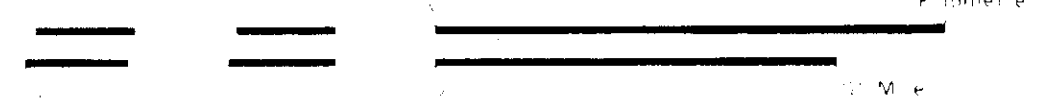
AMAX of CANADA LIMITED
AIRBORNE ELECTROMAGNETIC SURVEY
PROFILES - 4250 Hz. (coplanar)

PRICE PROJECT, 035-01

TIMMINS, ONTARIO

A. Watts

SCALE 1:15,000



DATE November, 1982

VOLUME No 42 A

MAP No 3



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