

2.2585



42A11NW0615 2.2585 MACDIARMID

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PROJECTS UNIT

REPORT ON

AEROMAGNETIC SURVEY

MacDiarmid Township

Ontario

AMAX MINERALS EXPLORATION

Timmins, Ontario

Timmins, Ontario

December 1977

R. J. Roussain

INTRODUCTION

During the period May 9 and 10, 1977, an aeromagnetic survey was carried out on behalf of Amax Potash Limited by Questor Surveys of Toronto.

The survey was carried out in order to provide an insight into the underlying geology in an area characterized by heavy overburden cover.

Two blocks of ground were covered in the present survey, each located in the east central portion of Macdiarmid township. A total of 92 line miles of survey were completed in the two blocks flown.

SURVEY SPECIFICATION

The aeromagnetic survey was flown in May 1977 by Questor Surveys using a Geometrics G-803 proton precision magnetometer installed in their Shorts Skyvan survey aircraft C-FQSL.

Flight line spacing was a nominal 1/8 mile, mean terrain clearance was 400' with the towed bird at 150'.

The magnetometers which measure the total magnetic field have a sensitivity of 1 gamma and a range from 20,000 to 100,000 gammas.

Because of the high intensity field produced by the Input transmitter, the magnetometer results are recorded on a time-showing basis.

The magnetometer head is energized while the transmitter is on, but the read-out is obtained during a short period when the transmitter is off.

Using this technique, the head is energized for 1.15 seconds and then the transmitter is switched off for 0.15 seconds while the precision frequency is being recorded and converted to gammas. Thus, a magnetic reading is taken every 1.3 seconds.

DATA PRESENTATION

The base map is an uncontrolled mosaic constructed from Ontario Ministry of Natural Resources 1" = 1/4 miles aero photographs. The mosaic was reproduced at a scale of 1" = 1320' on stable transparent film from which white prints can be made.

1 M

LOVELAND



MACDIARMID TWP.

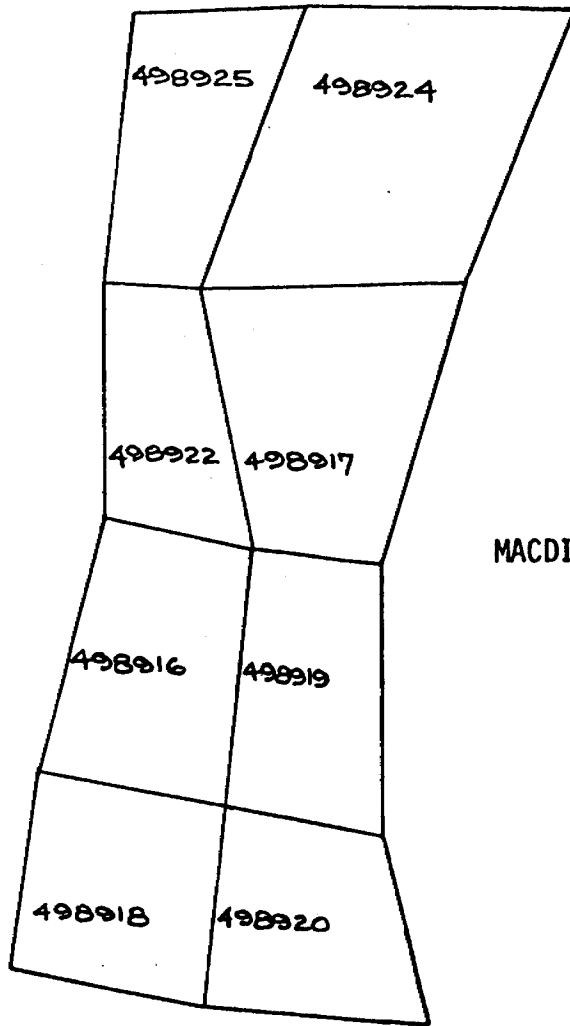
498921

CLAIM MAP
PROJECT 824-01

MACDIARMID-01
Macdiarmid Township

Scale: 1" = 1/4 mile

2 M



16 M

MACDIARMID TWP.

CLAIM MAP
PROJECT 324-02

MACDIARMID-02
Macdiarmid Township

Scale: 1" = 1/4 mile

REID

499431	499432	499433	499434
499496	499495	499494	499435
499497	499498	499499	499436

KIDD

MACDIARMID TWP.

CLAIM MAP

PROJECT 824-03

MACDIARMID-03

Macdiarmid Township

Scale: 1" = 1/4 mile

Flight path recovery was accomplished by comparisons of the prints of the 35 mm film with the mosaic in order to locate the fiducial points. These points are approximately 4500' apart.

SURVEY PROCEDURE

Terrain clearance was maintained as close to 400 feet as possible with the E.M. Bird at approximately 150 feet above the ground. A normal S-pattern flight path using approximately one mile turns was used. The equipment operator logged the flight details and monitored the instruments.

GENERAL GEOLOGY

The area flown lies along the western margins of that portion of the Abitibi Greenstone Belt located north of Timmins.

It is characterized by a tightly folded sequence of interbedded felsic and mafic volcanics and sediments which form a southeasterly plunging synclinorium. The stratified rocks are intruded by and interbedded with ultramafic plugs and flows which occupy the axes of the larger structures.

PREVIOUS WORK

The area flown has been worked extensively in the past with many A.E.M. surveys followed by ground geophysical surveys and diamond drilling.

Within the area covered by the aero magnetic survey, the following work was recorded near the present Amax claim groups.

(A) MACDIARMID-01

Detailed ground work has been submitted for assessment credit by Mistango River Mines (Timmins assessment file #T-906), Geophysical

Engineering (T-1756), Canadian Johns Manville (T-1539), Noranda (T-1275) and Phelps Dodge Corp. (T-1710) on or near the Amax claims. Phelps Dodge completed EM and Mag surveys and drilled one hole on the Amax claims in 1975.

(B) MACDIARMID-02

A.E.M. surveys were flown by Hollinger in 1970 (T-560), Mattagami Lake Mines in 1971 (T-1514) and Chance in 1964 (T-840). Follow-up assessment credit was filed by Hollinger.

It is probable that other work has been done in the immediate area but not filed for assessment credit.

(C) MACDIARMID-03

A.E.M. surveys covering at least part of our claims have been flown by Hollinger in 1970, Mattagami Lake Mines in 1971 and Tex-Sol in 1971. Other surveys were flown in the 1960's.

Detailed follow-up on our ground was done by Norlex in 1964 (E.M., Mag and 4 drill holes - T-891), Hollinger in 1971 (E.M. - T-681) and Phelps Dodge in 1975 (E.M.17 - T- 1710).

Detailed ground work was also completed immediately south and west of our group. This work included: H.E.M., Mag and 13 drill holes by Silver Men in 1964 (T-876) and V.E.M. and 7 drill holes by R. S. Hunt (Copper Valley Mines) in 1972 (T-252).

Newmont also covered the group with a detailed I.P. survey but never staked claims nor recorded the work.

DISCUSSION OF RESULTS

The magnetic results over the MacDiarmid Group-01 are highly anomalous with the claim group occupying the core of a north trending magnetic unit with a maximum intensity of 61600 gammas.

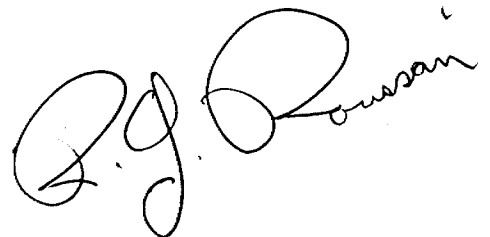
This magnetic unit may represent an extension of the ultramafic body previously drilled to the south of the survey by Johns Manville.

A similar although much weaker magnetic feature strikes north through the MacDiarmid-02 group. This feature has its most magnetic portion located in the extreme south-east corner of the claim group. Once again, the magnetic unit is probably caused by magnetite within a serpentinized peridotite.

Results of the aeromagnetic survey over the MacDiarmid group-03 are uniform with the subtle indication of a north-south strike to the underlying rocks. There are no prominent magnetic features contained within the claim group.

SUMMARY AND CONCLUSIONS

The aeromagnetic survey carried out over claim groups 01 and 02 has defined north-south trending magnetic units extending north from a magnetite bearing ultramafic body previously drilled by Johns Manville. No magnetic units other than a suggestion of a north-south strike direction was revealed in the survey over the 03 group.

A handwritten signature in black ink, appearing to read 'R. J. Roussain', written in a cursive style.

R. J. Roussain

APPENDIX A
SCHEDULE OF CLAIMS
PROJECT 824-01, 02 and 03

Claim No.	Township	Range	Lot	Acres	Staking Date
<hr/>					
<u>824-01</u>					
498921	MacDiarmid			40	February 7, 1977
<u>824-02</u>					
498916	MacDiarmid			40	February 7, 1977
498917	MacDiarmid			40	February 7, 1977
498918	MacDiarmid			40	February 7, 1977
498919	MacDiarmid			40	February 7, 1977
498920	MacDiarmid			40	February 7, 1977
498922	MacDiarmid			40	February 7, 1977
498924	MacDiarmid			40	February 7, 1977
498925	MacDiarmid			40	February 7, 1977
<u>824-03</u>					
499431	MacDiarmid			40	April 5, 1977
499432	MacDiarmid			40	April 5, 1977
499433	MacDiarmid			40	April 5, 1977
499434	MacDiarmid			40	April 5, 1977
499435	MacDiarmid			40	April 5, 1977
499436	MacDiarmid			40	April 5, 1977
499494	MacDiarmid			40	April 5, 1977
499495	MacDiarmid			40	April 5, 1977
499496	MacDiarmid			40	April 5, 1977
499497	MacDiarmid			40	April 5, 1977
499498	MacDiarmid			40	April 5, 1977
499499	MacDiarmid			40	April 5, 1977



GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX. FACTS SHOWN HERE NEED NOT BE REPEATED IN TECHNICAL REPORT MUST CONTAIN INTENT



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900

Type of Survey(s) Aeromagnetic
Township or Area MacDiarmid
Claim Holder(s) Amax Potash Limited
Survey Company Questor Surveys Limited
Author of Report R. J. Roussain
Address of Author 255 Algonquin Blvd. West, Timmins, Ont.
Covering Dates of Survey May 9 and 10, 1977
Total Miles of Line Cut

MINING CLAIMS TRAVERSED List numerically

- List of mining claims with prefixes (P) and numbers (498916 to 499499) and checkmarks.

If space insufficient, attach list

SPECIAL PROVISIONS CREDITS REQUESTED

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

DAYS per claim

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

Magnetometer 20 Electromagnetic Radiometric
(enter days per claim)

DATE: January 9, 1978 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. L.D. Qualifications 63.2531

Previous Surveys

Table with columns: File No., Type, Date, Claim Holder

TOTAL CLAIMS 21

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) _____ Aeromagnetic

Instrument(s) _____ Geometrics G-803 - Proton Magnetometer
(specify for each type of survey)

Accuracy _____ 1 gamma
(specify for each type of survey)

Aircraft used _____ Shorts Skyvan C-FQSL

Sensor altitude _____ 150'

Navigation and flight path recovery method _____ Visual reference to flight path photo strips

Aircraft altitude _____ 400' Line Spacing _____ 1/8th mile

Miles flown over total area _____ 92 Over claims only _____ Approximately 15

$15 \times 40 = 600 \div 21 = 28.12$

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 _____

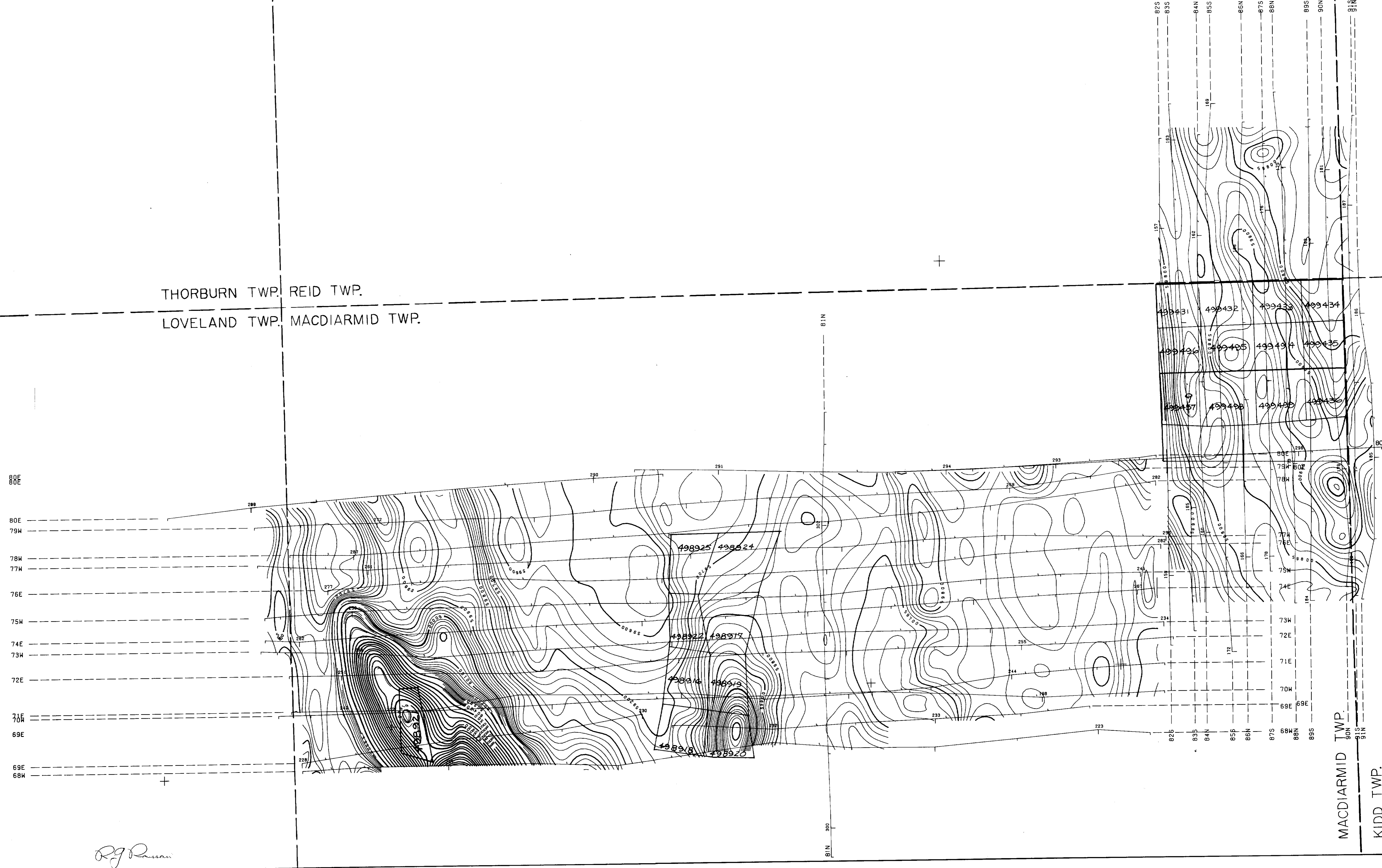
Analytical Method _____

Reagents Used _____

General _____

2, 2585

THORBURN TWP. REID TWP.
LOVELAND TWP. MACDIARMID TWP.



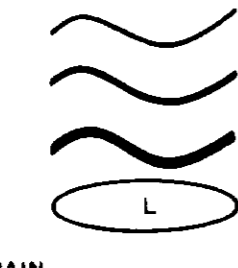
R.G. Ross

AMAX EXPLORATION INC.

MACDIARMID TWP. AREA

Map 1 of 2
ISOMAGNETIC INTERVAL
(TOTAL FIELD)

- 20 GAMMA CONTOUR LINE
- 100 GAMMA CONTOUR LINE
- 500 GAMMA CONTOUR LINE
- MAGNETIC DEPRESSION
- FLIGHT ALTITUDE 400' ABOVE TERRAIN



Date drawn: May, 1977



210

MACDIARMID TWP.
REID TWP.
LOVELAND TWP.
KIDD TWP.
CARNegie TWP.

22585

THE TOWNSHIP OF

MACDIARMID

DISTRICT OF COCHRANE

PORCUPINE MINING DIVISION

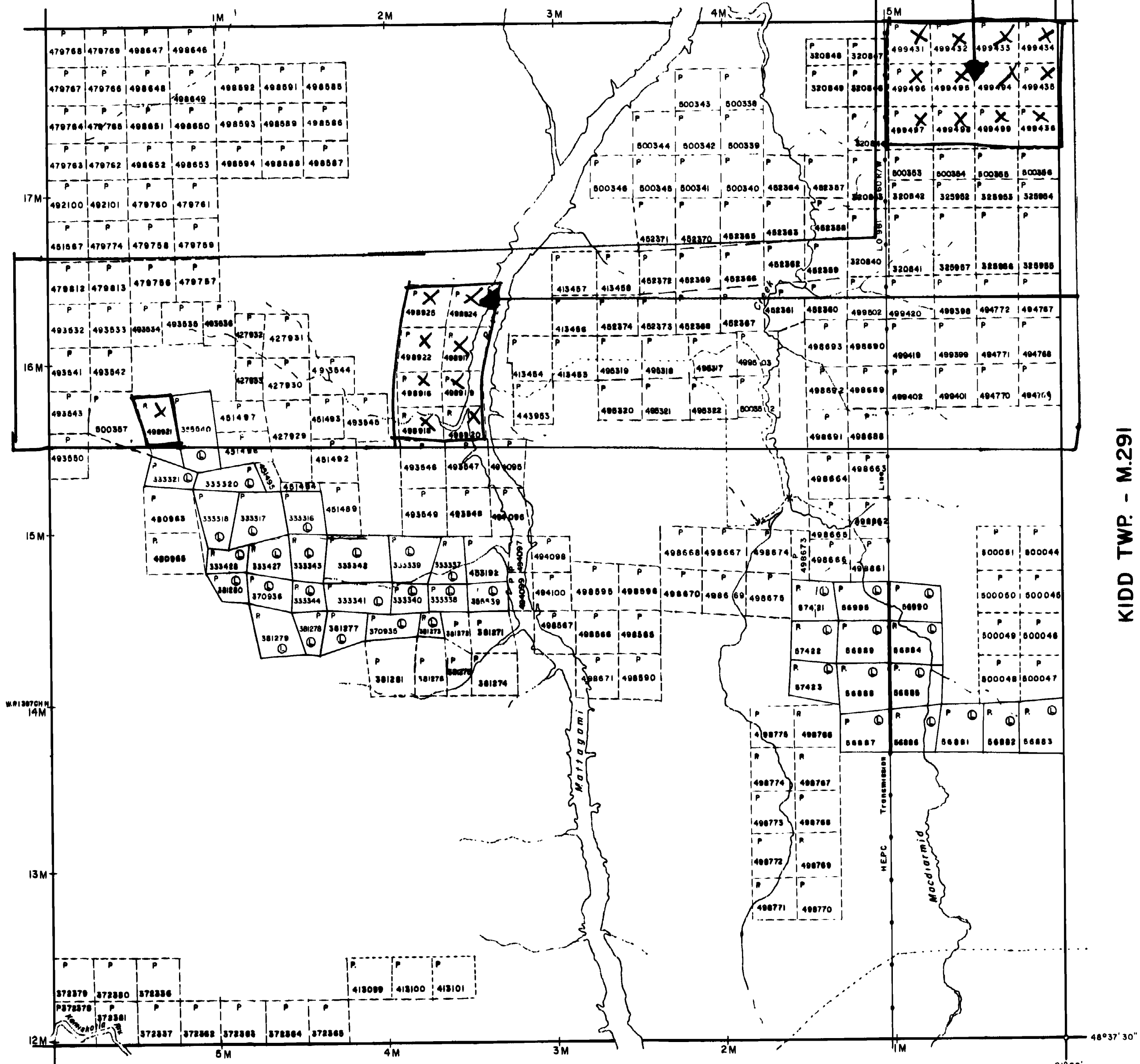
SCALE: 1-INCH 40 CHAINS

REID TWP. - M.575

LOVELAND TWP. - M.293

KIDD TWP. - M.291

JAMIESON TWP. - M.288



LEGEND

- PATENTED LAND (P)
- CROWN LAND SALE (C.S)
- LEASES (L)
- 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 (C)

NOTES

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

Flooding rights to areas along Mattagami River reserved to H.E.P.C - L O 70B5.

This township lies within the Municipality of CITY of TIMMINS.

DATE OF ISSUE
 JAN 17 1978
 SURVEYS AND MAPPING

PLAN NO. **M.294**

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH



42A11NW0615 2 2585 MACDIARMID