

32D12SW0100 2.3141 HARKER

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NOV 30 1979

MINING LANDS SECTION

REPORT ON A GEOLOGICAL SURVEY

MATHESON CLAIMS

HARKER-2

PROJECT 839-24

NTS: 32 D/5

AMAX MINERALS EXPLORATION

Timmins, Ontario

Timmins, Ontario .  
October 1979

Brian Williamson  
Geologist

## SUMMARY

A geological survey was conducted on a group of claims held by Amax Potash Limited. Extensive work has been recorded, but no past drilling is known on the present property. The property appears to be underlain by mafic volcanic rocks, part of thick volcanic pile which extends through most of Harker township.

## INTRODUCTION

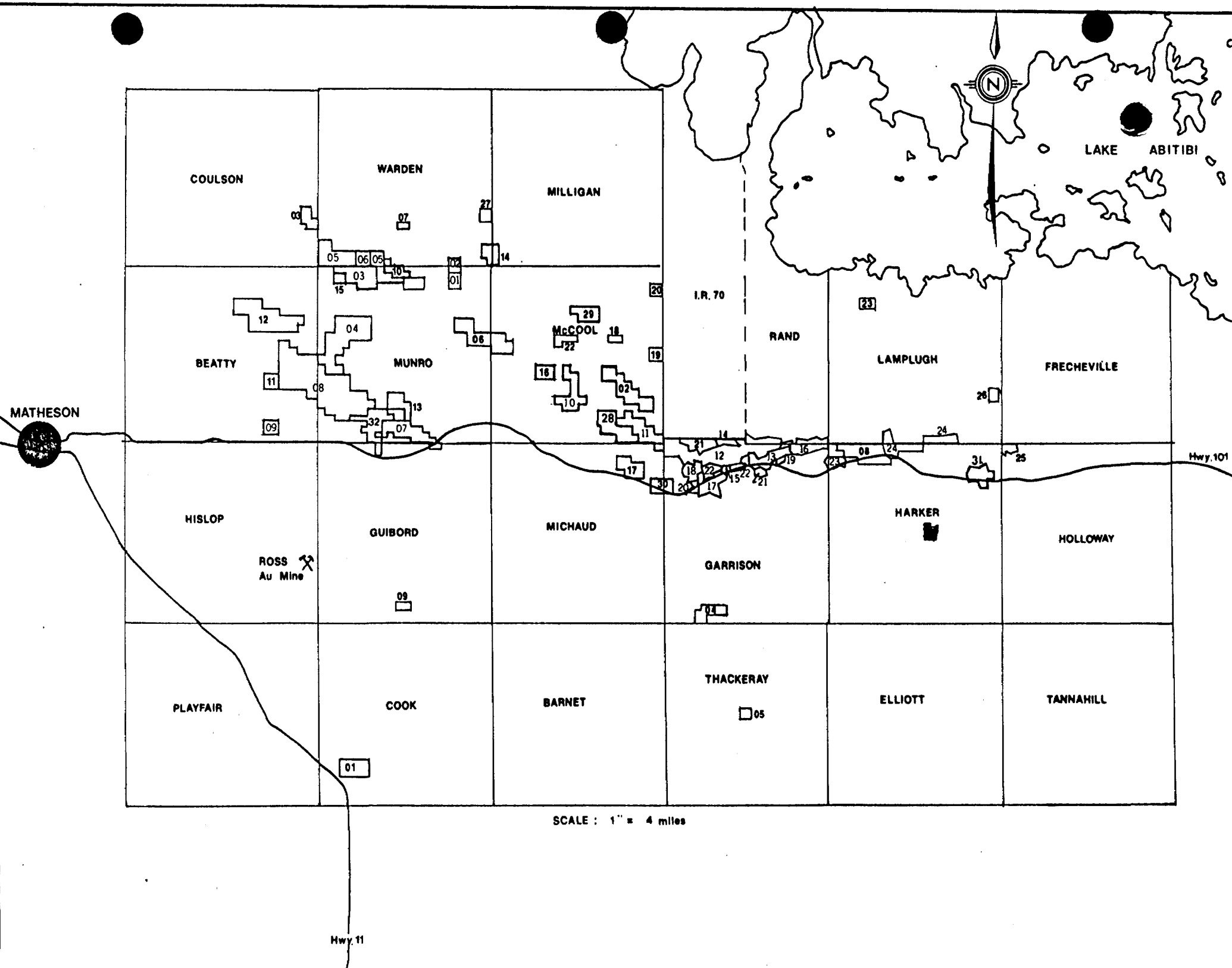
A group of four claims was staked in the name of Amax Potash Limited in December 1978 to cover a conductor located by an earlier (fall 1978) A.E.M. survey. This report describes the methods and findings of a geological and prospecting survey done on the claims in July 1979.

## LOCATION AND ACCESS

The property is located in Harker township, Larder Lake Mining Division, being in the centre of the township, west of the 21 mile post (along the east boundary of the township) and just east of the 9 mile post (along the south boundary). Access is available by an old logging road, running south from Highway 101 at a point 25.3 km (15.8 mi) east of Perry Lake Lodge for a distance of 5.8 km (3.6 mi) to the southern boundary of the claim group.

## TOPOGRAPHY AND RESOURCES

The area of the claim group consists of undulating sand plain. The north part of the property is cut by Teddy Bear Creek (a tributary of the Mattawasaga River), which is surrounded by a large area of grassy, open march, rising with steep hillsides to the sand plain. Imperial Lake lies in the southwest corner of claim L-525474. The area has been recently clear cut by logging companies (except for the legal 200' reservation around Imperial Lake and Teddy Bear Creek), and has partially been reforested with young pine seedlings. Outcrop, as low hills, occur in claim L-525458.



MATHESON

COULSON

WARDEN

MILLIGAN

LAKE ABITIBI

BEATTY

MUNRO

McCOOL

RAND

LAMPLUGH

FRECHEVILLE

HISLOP

GUIBORD

MICHAUD

GARRISON

HARKER

HOLLOWAY

PLAYFAIR

COOK

BARNET

THACKERAY

ELLIOTT

TANNAHILL

ROSS  
Au Mine

I.R. 70

Hwy. 101

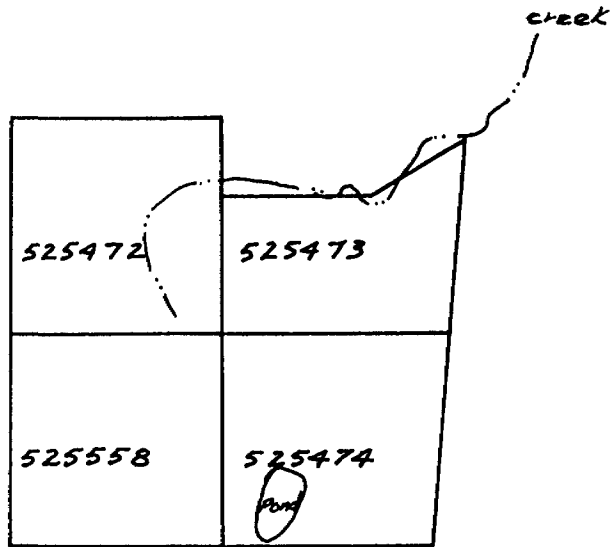
Hwy. 11

SCALE : 1" = 4 miles

5M

2M

3M



CLAIM MAP  
Project 839-24  
HARKER-2  
Harker Township

1" = 1/4 mile

FIG.

## PREVIOUS WORK

### Observed in Field:

No evidence of past drilling or linecutting was seen in the course of the survey, although two generations of past staking were evidenced by old claim posts.

### Assessment Files:

Abstracts of past work filed on the old claims indicate extensive previous work on and around the present property. The ground was held by Martin Shunsky in 1959, and work of an unspecified nature was recorded. Transfer of interest to Valhalla Mines Ltd. in 1960 resulted in eventual drilling of seven holes to the north and west of the present property. The property was later held in part, but no work was recorded. Additional electromagnetic surveys and diamond drilling were done in 1976 by Newmex Gold Resources on property to the north.

Compilation maps of work filed with the mining recorder's office show the property to have been worked in part by Imperial Reserve and Driftex Ltd.

## SURVEY METHOD

The property was traversed at intervals of 125 m by Brian Williamson and Tom Bordignon (as shown on Map 1, Geological Map) using the pace and compass method. All claim posts, geological and topographic features are correctly located. A set of 1:31640 stereo air photographs flown by Amax in the spring of 1978 were used for additional control.

## GENERAL GEOLOGY

Harker township lies in the central part of the Abitibi Greenstone Belt. Extensive overburden cover obscures much of the bedrock geology, but it appears that much of the township is covered by mafic volcanic flows striking roughly east-west, with tops to the south. A horizon of greywackes and argillites, and a pluton of granite are present in the centre of the township, and a few thin horizons of felsic volcanic rocks

31' M  
 2.D.H.  
 avg. ov.  
 avg. TD. 111'  
 py, 2b

36 16 D.H.  
 avg. ov. 2'  
 avg. T.D. 132'  
 1, 1b, 3  
 py, qcv, qv,

36 ov. 125'  
 T.D. 125'

ov 110'  
 TD 110'

Reeves  
 L.

27 ov 42'  
 TD 507'  
 1c, P.

4 DH 27  
 avg ov 17'  
 avg TD 245'  
 1abc, 3 bc, 7, 8  
 qcv, cp, py, 9, ed  
 mag

HARKER-3  
 839-24

Imperial  
 L.

Harker

LEGEND

- EM Conductor
- DDH w direction
- Porphyry
- Pyrite
- Copper
- Zinc
- Outline of 839-24
- Mag high

MATHESON CLAIMS

COMPILATION

HARKER - 2

839-24

NTS: 32-D-12  
 32-D-5

1" = 1/4 mile

TABLE OF FORMATIONS

CENOZOIC

Recent: Swamp and stream deposits  
Pleistocene: Glacial drift, gravel, sand and clay

-----Unconformity-----

PRECAMBRIAN

Proterozoic: Diabase dykes - 2 generations

-----Intrusive Contact-----

Lamprophyre dykes

-----Intrusive contact-----

Archean: Discordant gabbro bodies

-----Intrusive contact-----

: Layered gabbro-peridotite sills

-----Intrusive contact-----

: Volcanics - Rhyolite, rhyolite agglomerate  
and tuff, and associated chert  
- Andesite, basalt; as pillowed and  
massive flows, individual flows  
separated by flow breccia  
- Ultramafic flows - showing  
spinifex texture

-----Faulted contact-----

: Sediments - Greywacke, argillite, arkose,  
conglomerate

occur in the southeast corner. The Destor-Porcupine Fault zone, although poorly defined, appears to make a major break through the northern part of the township (from Satterly, 1951).

#### PROPERTY GEOLOGY

Most of the property is covered with sand overburden, and no outcrop was seen. Fair exposure (approximately 20%) is present in claim L-525458 in the southwest corner of the property, being fine to medium grained andesite and basalt, occurring as massive and pillowed flows. A thick (50 m) fragmental unit of flow breccia, or more likely mafic tuff strikes at 060° across two outcrops, and is traceable off the property to the west. One outcrop was found of porphyritic andesite, containing feldspar phenocrysts 3 to 5 cm across. Mineralization was restricted to minor pyrite and pyrrhotite in a massive, highly magnetic andesite outcrop in claim L-525473.

#### CONCLUSIONS AND RECOMMENDATIONS

The property appears to be underlain by mafic volcanic rocks, part of a thick volcanic pile which exists through most of the township, but due to the scarcity of outcrop, little more information can be drawn. It is suggested that ground geophysics (H.E.M. and magnetometer) be conducted to locate and define the conductor, and that diamond drilling proceed if positive results ensue.

Respectfully submitted,

*Brian Williamson*

Brian Williamson

Geologist

Timmins, Ontario

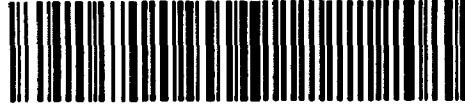
September 1979



LIST OF REFERENCES

Satterly, J. (1951)

The Geology of Harker Township,  
Ontario Department of Mines,  
Vol. LX, Part VII, 47 pp.



32D12SW0100 2.3141 HARKER

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MINING LANDS SECTION

REPORT ON A GEOLOGICAL SURVEY

MATHESON CLAIMS

HARKER-3

PROJECT 839-31

NTS: 32 D/12

AMAX MINERALS EXPLORATION

Timmins, Ontario

Timmins, Ontario

October 1979

Brian Williamson

Geologist

## SUMMARY

A geological survey was conducted on a group of claims held by Amax Potash Limited. The property has been worked previously. It is covered by extensive thick overburden, and appears to be underlain by sedimentary and mafic volcanic rocks. Past drilling has shown graphite to be present, which is a likely explanation of the A.E.M. conductor of interest.

## INTRODUCTION

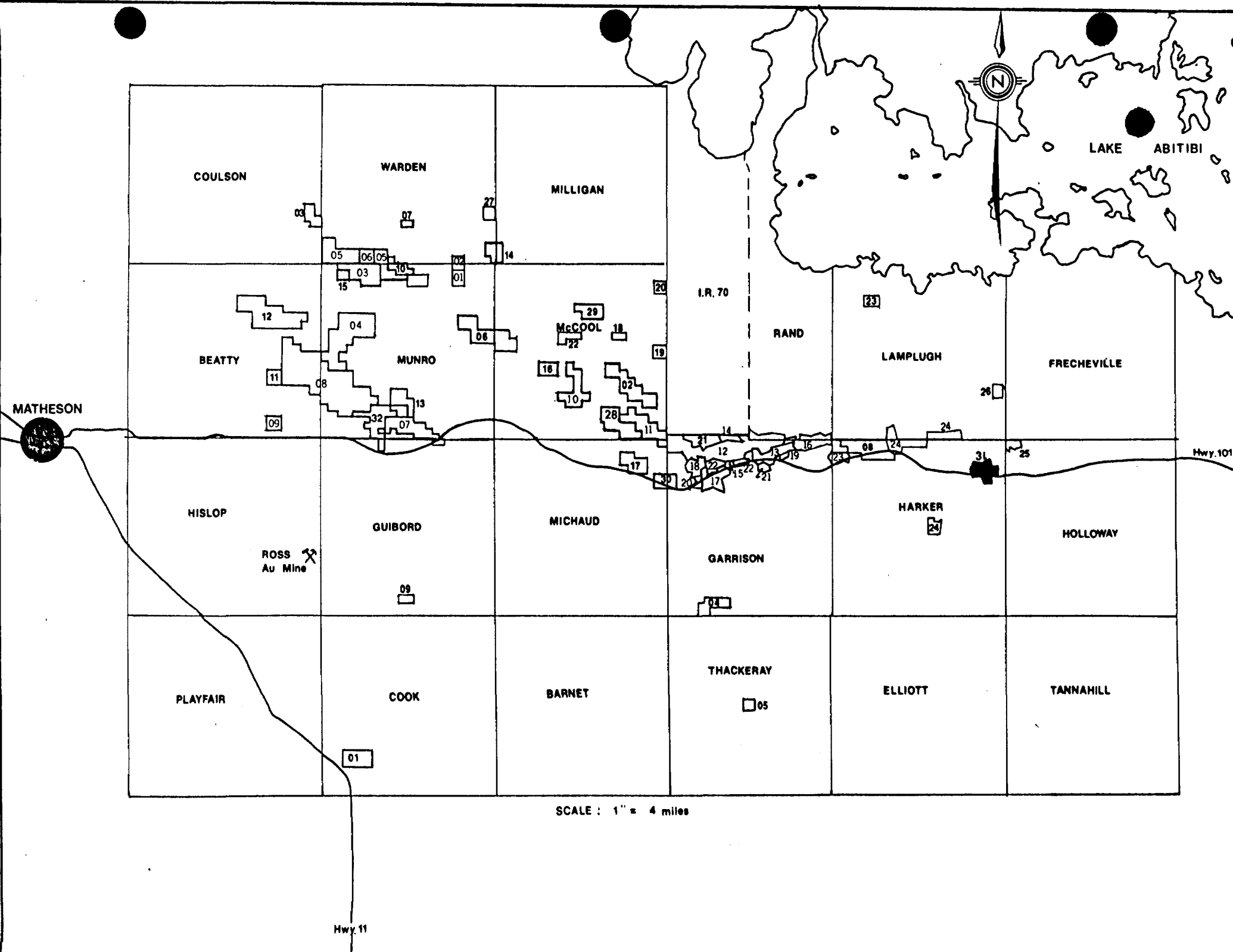
A group of six claims was staked in the name of Amax Potash Limited in April 1979 to cover a conductor located by an earlier (fall 1978) A.E.M. survey. This report describes the methods and findings of a geological and prospecting survey done on the claims in July 1979.

## LOCATION AND ACCESS

The property is located in Harker township, Larder Lake Mining Division, being in the northeast corner of the township, south of the one mile post (on the north boundary), and west of the 23 mile post (on the east boundary). Access is available by Highway 101, which cuts the property at a point 26.7 km (16.7 mi) east of Perry Lake Lodge.

## TOPOGRAPHY AND RESOURCES

The property is covered with extensive thick overburden of sand and clay, with only a few small outcroppings of basement rock. The topography is fairly flat, with a few low hills. The area has been logged over north of Highway 101, about 10-15 years ago, and is covered with thick alder bush and occasional poplar groves. South of the highway, more mature stands of poplar and spruce exist, with areas of alder swamp in depressions. The centre of the claim group is cut by a small intermittent stream (suitable for a source of water for drilling except in dry weather), which is a tributary of the Mattawasaga River.



COULSON

WARDEN

MILLIGAN

LAKE ABITIBI

BEATTY

MUNRO

McCOOL

RAND

LAMPLUGH

FRECHEVILLE

MATHESON

HISLOP

GUIBORD

MICHAUD

GARRISON

HARKER

HOLLOWAY

ROSS Au Mine

PLAYFAIR

COOK

BARNET

THACKERAY

ELLIOTT

TANNAHILL

SCALE: 1" = 4 miles

Hwy. 11

Hwy. 101

I.R. 70

01

03

07

27

05

06

05

03

14

15

03

10

01

12

04

08

29

18

19

23

11

08

13

18

22

10

02

28

11

09

32

07

17

21

14

12

13

16

19

23

08

24

24

26

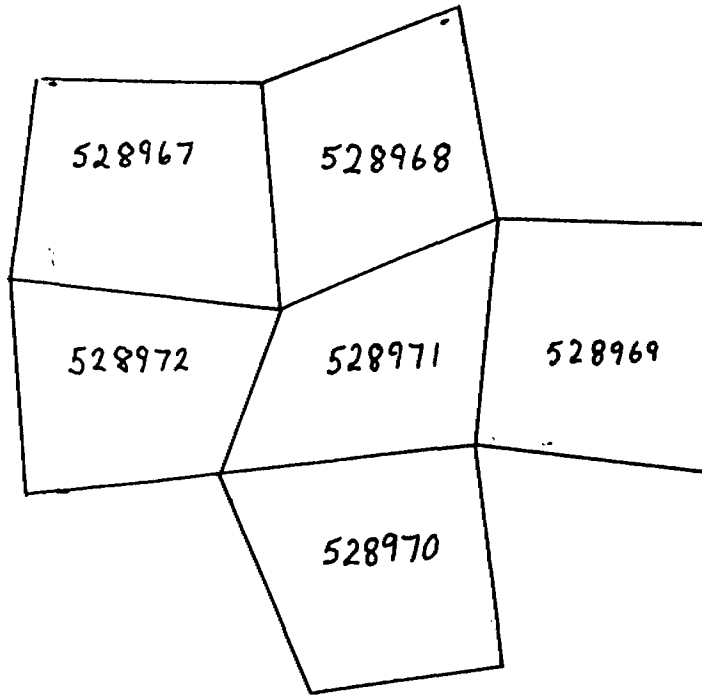
31

25

24

04

05



23 M

Harker  
Holloway

CLAIM MAP  
Project 839-31

HARKER-3  
Harker Township

Scale: 1" = ¼ mile

FIG.

## PREVIOUS WORK

### Observed in Field:

No evidence of old drilling sites or grids was seen, although two old claim posts (representing a single generation of staking) were found. No record of these claims was on file with the mining recorder's office in Kirkland Lake, and they may have been staked but not recorded.

### Assessment Files:

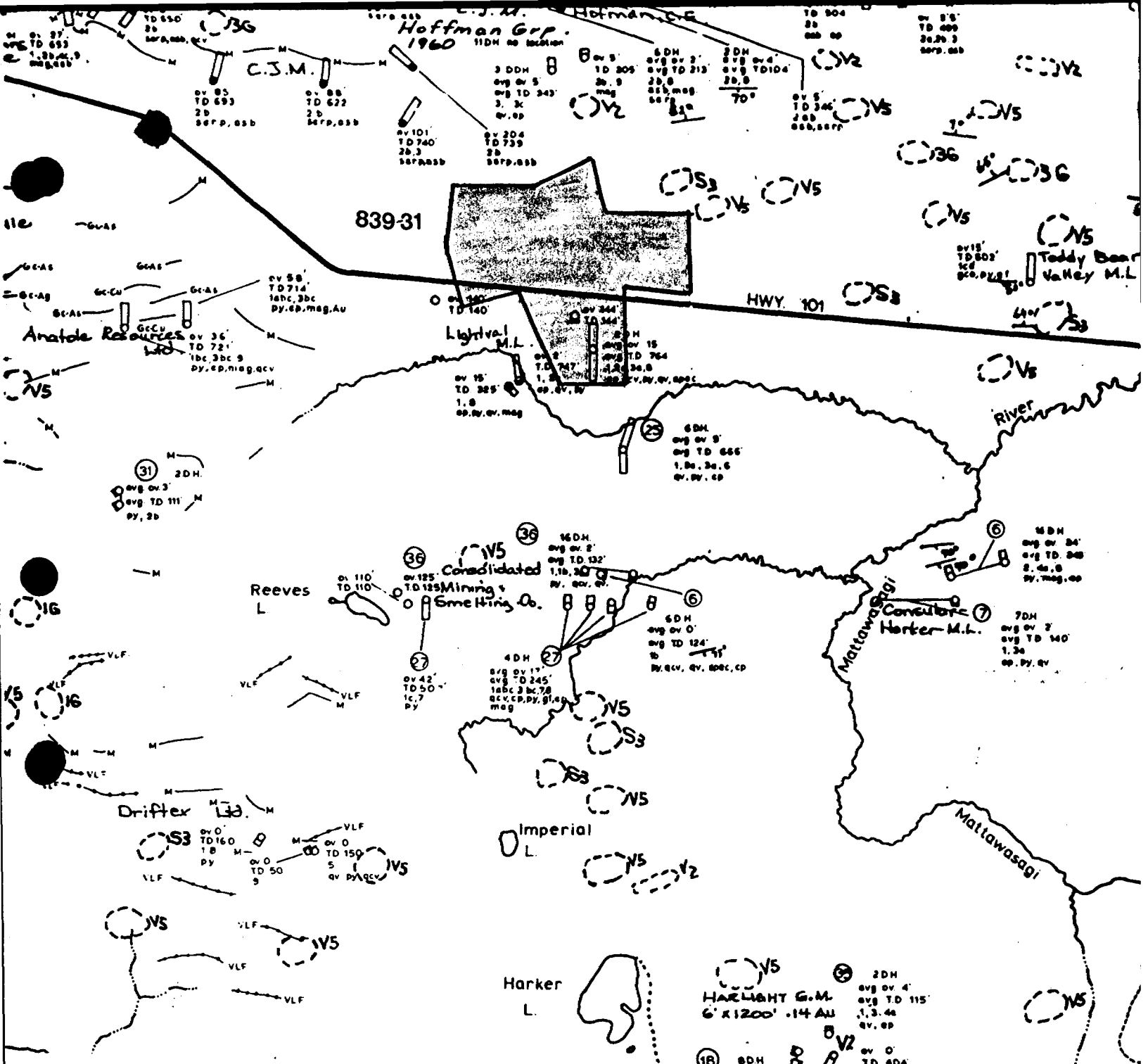
Compilation maps of work filed with the mining recorder's office show the area to have been extensively explored by Teddy Bear Valley Mines Ltd., including one drill hole placed near the north boundary of the present claim L-528971.

## SURVEY METHOD

The property was traversed at intervals of 125m by Brian Williamson and Tony Makuch (as shown on Map 1, Geological Map) using the pace and compass method. All claim posts, geological and topographic features are correctly located. A set of 1:31640 stereo air photographs flown by Amax in the spring of 1978 were used for additional control.

## GENERAL GEOLOGY

Harker township lies in the centre of the Abitibi Greenstone Belt. The geology of the area of the property is dominated by the Ghost Range syncline (the axis of which runs roughly coincident with the north boundary of Harker and Holloway townships), a series of ultramafic, felsic volcanic, and basal mafic volcanic and sedimentary rocks, isoclinally folded and closed to the east of the property; and the Destor-Porcupine Fault zone, which runs roughly coincident with Highway 101 near the property (from Satterly, 1951).



**MATHESON CLAIMS**

**COMPILATION**

HARKER - 3

839-31

NTS: 32-D-12  
32-D-5

1" = 1/4 mile

TABLE OF FORMATIONS

CENOZOIC

Recent: Swamp and stream deposits  
Pleistocene: Glacial drift, gravel, sand and clay

-----Unconformity-----

PRECAMBRIAN

Proterozoic: Diabase dykes - 2 generations

-----Intrusive Contact-----

Lamprophyre dykes

-----Intrusive contact-----

Archean: Discordant gabbro bodies

-----Intrusive contact-----

: Layered gabbro-peridotite sills

-----Intrusive contact-----

: Volcanics - Rhyolite, rhyolite agglomerate  
and tuff, and associated chert  
- Andesite, basalt; as pillowed and  
massive flows, individual flows  
separated by flow breccia  
- Ultramafic flows - showing  
spinifex texture

-----Faulted contact-----

: Sediments - Greywacke, argillite, arkose,  
conglomerate



## PROPERTY GEOLOGY

Only four small outcrops were seen on the property, all of them sedimentary in nature, being massive greywackes and schistose argillites. To the north of the property three small outcrops of massive and schistose andesite were seen. Data from compilation maps indicates that near to one of the above mentioned outcrops of argillite, the underlying rock is mafic lava flows and pyroclastics, with associated graphite and pyrite. A graphitic schist has also been located by Teddy Bear Mines in underground drilling, 900m to the east. Mineralization was restricted to one outcrop along the highway, which in places contained pyrite cubes up to 5 mm across.

## CONCLUSIONS AND RECOMMENDATIONS

The property appears to be underlain by geosynclinal type sedimentary (greywacke and argillite) and mafic volcanic rocks. It appears that a graphite schist striking roughly east-west, approximately coincidental with the A.E.M. conductor, appears to be a likely explanation for the conductor. It is suggested that ground geophysics be done to accurately locate the conductor, the exact location of the past drill hole and graphite layer researched, and the two compared prior to drilling, to check the probability of their coincidence.

The presence of graphite need not exclude the possibility of a mineral deposit (i.e., the Potter Mine, 34 km to the east), and the proximity of the Destor-Porcupine Fault zone makes this property of additional interest as a possible site of gold mineralization.

Respectfully submitted,

*Brian W. Williamson*

Brian Williamson

Geologist

Timmins, Ontario

September 1979

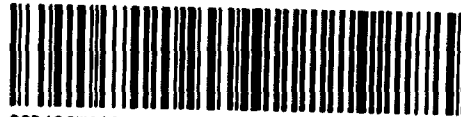
LIST OF REFERENCES

Satterly, J. (1951)

The Geology of Harker Township,  
Ontario Department of Mines,  
Vol. LX, Part VII, 47 pp.



GEOPHYSICAL - GEOLOGICAL TECHNICAL DATA



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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.

Type of Survey(s) Geological
Township or Area Harder
Claim Holder(s) Amax Potash Limited
Survey Company
Author of Report Brian Williamson
Address of Author 255 Algonquin Blvd. W. Timmins Ont.
Covering Dates of Survey August - September 1979
Total Miles of Line Cut

MINING CLAIMS TRAVERSED
List numerically

Table with 2 columns: (prefix), (number). Contains entries: L-528971, L-528972, L-528967, L-528968, L-528969, L-528970. Total Claims: 6

Table with 2 columns: SPECIAL PROVISIONS CREDITS REQUESTED, DAYS per claim. Includes categories: Geophysical (Electromagnetic, Magnetometer, Radiometric, Other), Geological, Geochemical. Value 20 is circled.

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

Magnetometer Electromagnetic Radiometric
(enter days per claim)

DATE: October 3/79 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. Qualifications 2.3109 ✓ m

Table with 4 columns: File No., Type, Date, Claim Holder. Contains one row with handwritten 'file' in the Date column.

If space insufficient, attach list



GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL  
TECHNICAL DATA STATEMENT

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) Geological  
Township or Area Harker  
Claim Holder(s) Amax Potash Limited  
Survey Company \_\_\_\_\_  
Author of Report Brian Williamson  
Address of Author 255 Algouquin Blvd. W. Timmins, Ont.  
Covering Dates of Survey July - September 1979  
(linecutting to office)  
Total Miles of Line Cut \_\_\_\_\_

MINING CLAIMS TRAVERSED  
List numerically

L - 525472 ✓  
(prefix) (number)  
L - 525473 ✓  
L - 525474 ✓  
L - 525558 ✓

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 20 ✓  
Geochemical \_\_\_\_\_

DAYS  
per claim

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

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: October 5/79 SIGNATURE: [Signature]  
Author of Report or Agent

L.D.

Res. Geol. \_\_\_\_\_ Qualifications 23109 J "  
plus file

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 4

If space insufficient, attach list

LAMPLUGH TWP. M-358

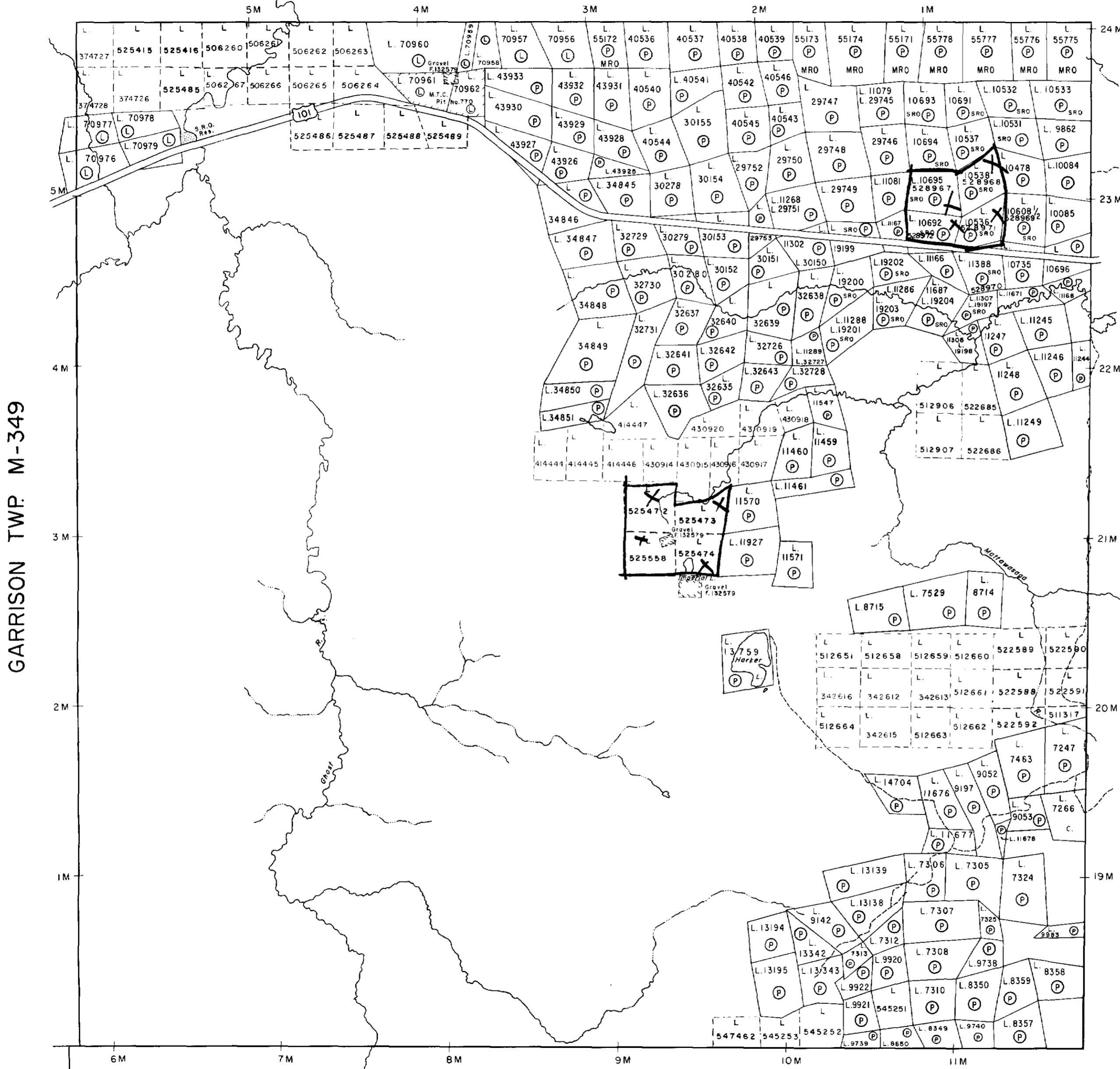
THE TOWNSHIP  
OF 23141

**HARKER**

DISTRICT OF  
COCHRANE

LARDER LAKE  
MINING DIVISION

SCALE: 1-INCH 40 CHAINS



**LEGEND**

- |                       |          |
|-----------------------|----------|
| PATENTED LAND         | ● or (P) |
| CROWN LAND SALE       | C.S.     |
| LEASES                | (L)      |
| LOCATED LAND          | Lac.     |
| 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        |
| PATENTED S.R.O.       | ●        |

**NOTES**

400' Surface Rights reservation along the shores of all lakes and rivers.

DATE OF ISSUE

DEC - 5 1979

SURVEYS AND MAPPING  
BRANCH

PLAN NO. **M-353**

ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH



32D125W0100 2.3141 HARKER

ELLIOTT TWP. M-347



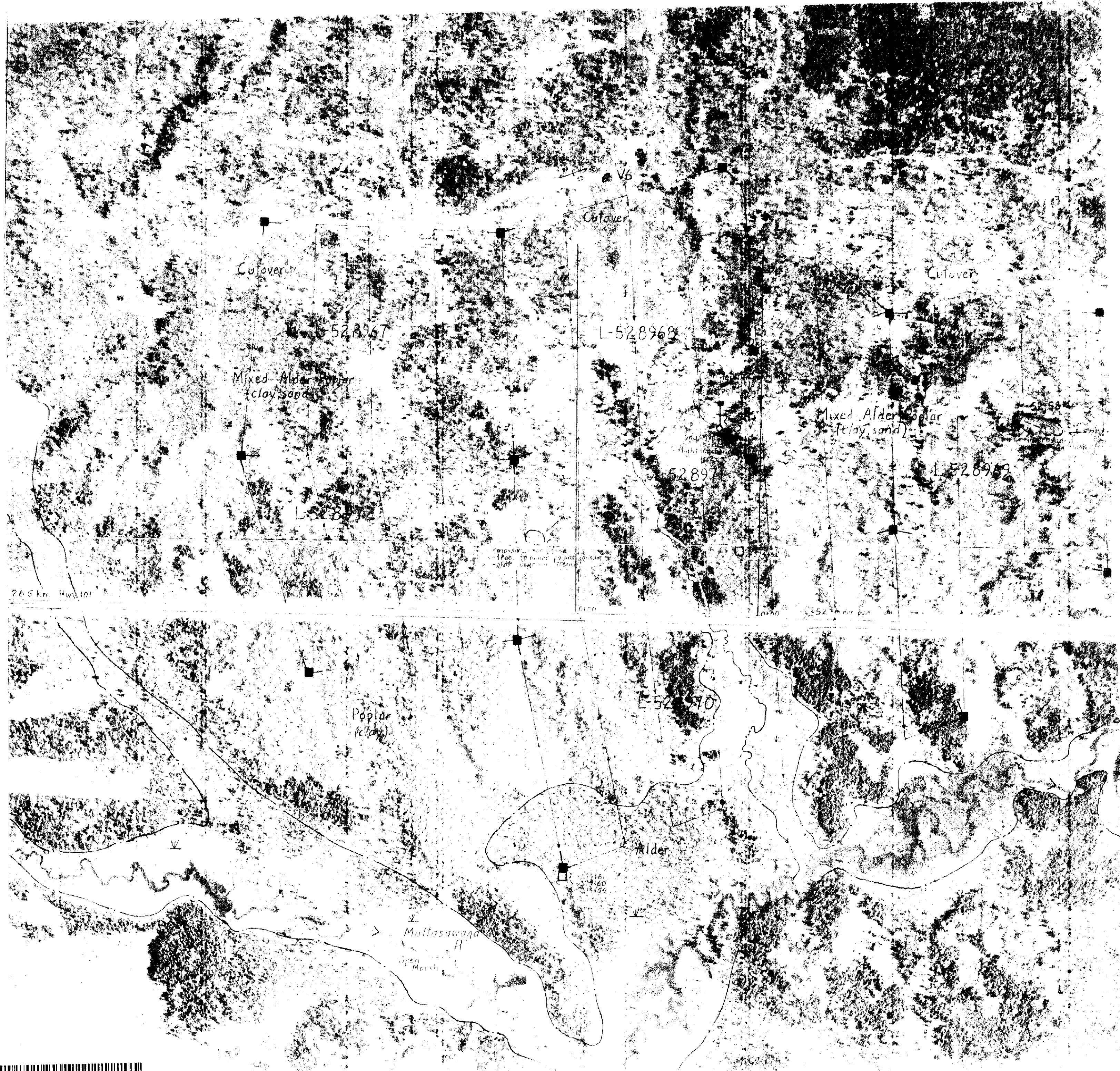
- LEGEND**
- outcrop
  - geological contact
  - inferred geological contact
  - ~ fault
  - ⌋ pillows with top determined - inclined, vertical, overturned
  - road
  - ... old, overgrown road
  - township boundary
  - edge of swamp
  - ∇ swamp
  - claim post located
  - old post
  - ⊗ land survey post
  - ⊕ shaft, pit, trench
  - diamond drill hole - direction unknown
  - ⊕ diamond drill hole (DDH) - direction known
  - Rodem cross-over
  - qcv quartz carbonate veining
  - traverse line
- Scale: 1cm=50m

- V6 - mafic volcanics - predominantly andesite
- V3G - thick gabbroic units interpreted to be flows
- V3E - ultramafic volcanics
- V7 - basalt

AMAX POTASH LIMITED  
 GEOLOGICAL SURVEY  
 MATHESON PROJECT  
 HARKER-2, 839-24

DRAWN BY BW. DATE Oct. 1, 79  
 SCALE 1cm=50m NTS 32-D-12  
 32-D-5





**LEGEND**

- outcrop
- vertical bedding
- schistosity  
- horizontal  
- inclined  
- vertical
- edge of swamp
- swamp
- intermittent creek
- claim post located
- old post
- DDH-diamond drill hole-direction known
- traverse line

Scale: 1cm=50m

- V6 - matic volcanics - predominantly andesite
- V3G - thick gabbroic units interpreted to be flows
- V3E - ultramafic volcanics
- V9F - felsic tuff
- S2 - greywacke
- S8 - argillite

AMAX POTASH LIMITED  
 GEOLOGICAL SURVEY  
 MATHESON PROJECT  
 HARKER-3 839-31

DRAWN BY B.W. DATE Oct. 15, 1979  
 SCALE 1cm=50m NTS 32-D-5  
 32-D-12

