



42A04NW0160 2.1666 KENOGAMING

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RECEIVED

DEC 12 1974

PROJECTS UNIT

MAGNETOMETER SURVEY

IN

KENOGAMING TOWNSHIP

Submitted

for

Amoco Canada Petroleum Co. Ltd.

Mining Division, Toronto

December 9, 1974

by M. Konings

Marcel Konings

INTRODUCTION

A ground magnetometer survey was carried out on a claim group held by Amoco Canada Petroleum. The survey was contracted to Jean Alix Co. Ltd. who completed 35 line miles by October 13, 1974. Several anomalous zones were indicated. Most could be correlated to ultrabasic intrusions lying conformable to felsic meta-volcanic pyroclastics.

LOCATION AND ACCESS

The property consists of 41 claims in Kenogaming Township, in the Porcupine Mining District. Kenogaming Township can be reached by following highway 101 30 miles west from Timmins. Numerous lumber roads cut through Sewell Township from Highway 101, however only tractor roads extend down to the claim group. An abandoned lumber road to Deerfoot Lake was used to gain access to that lake, which can be crossed by canoe. From southern Deerfoot Lake a trail was cut to the northern boundary of the claim group. Hanrahan Lake is not suitable for float planes, and no other lakes are available for landing.

PROPERTY

A group of claims were staked by Jean Alix Co. Ltd. of Val d'Or from September 12 to 16, 1974. It consists of 41 mining claims numbered P 374558 to 374598 inclusive. All interest in the claim group is held by Amoco Canada Petroleum Co. Ltd., Mining Division, Toronto. Lines were cut by Jean Alix Co. in a north-south direction on all claims. A total of approximately 35 miles of grid lines were cut.

GEOLOGY

The property lies in a belt of isoclinally folded metavolcanic and metasedimentary schists and gneisses. This belt trends in an easterly direction and is bounded by granitic intrusives. The volcanics and sediments have themselves been intruded by sills, pods and dykes of basic and ultrabasic intrusives.

The survey area has been mapped in detail by the Ontario Division of Mines. The local geology is included in the geological report by V.G. Milne (GR 97; 1972). It is suggested that the property is underlain by felsic agglomerates, tuffs, lapilli tuffs and flows. At the top of this volcanic sequence (near the north claim boundary) the felsic volcanics make contact with basic metavolcanics. An iron formation (the Nat River I.F.) forms an excellent marker horizon between the two units. The geological map also indicates the presence of several ultramafic intrusives within the survey area. These have been mapped as serpentinites. These run sub-parallel to the volcanic sequence, and rare banding in the intrusives suggests a conformable nature of these intrusives with their hosts. Amphibolite

and dioritic intrusives seem to be a segregated phase of the ultrabasic intrusives. Proterozoic diabase dykes cut all rock types and strike north, normal to the regional strike.

The geological strike and dip information indicate that the property lies on the south limb of an east-west trending synform. The foliation planes dip to the north consistently at 65° . In the survey area, aeromagnetic data does not seem to indicate many discontinuities; faulting probably has not been an important factor in local geology.

PREVIOUS EXPLORATION

Previous geological and geophysical exploration has been aimed at locating extensions of the Radio Hill iron deposit along strike on the Nat Hill Iron Formation, locating asbestos mineralization in serpentinites similar to the Reeves Mine of Johns Manville, exploration for nickel in peridotites and exploration for base metal sulphides in felsic volcanics.

Canadian Johns Manville

Since 1957, Canadian Johns Manville has investigated mostly ultrabasic occurrences north of Hanrahan Lake and along the Nat River iron formation between Benbow Lake and Akweskwa Lake. Geological, ground magnetic and horizontal loop electromagnetic surveys were run over most claims. Some asbestos mineralization was noted in serpentinites, however almost all claims in the immediate Amoco survey area were dropped.

Kukatush Mining Corporation (Radio Hill Mines Company)

Most of the Nat River Iron Formation was

investigated by this company after the discovery of its magnetite I.F. deposit in Reeves Township. Some claims are still held.

Delmico Mines Limited

A 15 claim group between Akweskwa Lake and the Crawford River was staked south of the Nat River I.F.. Ground magnetic and horizontal loop electromagnetic surveys were run on the group. Magnetic anomalies were reported to be related to mafic volcanic rocks. This same property was previously worked by Little Long Lac Gold Mines Limited (1947) for gold, Dunvegon Mines (1952, 1957) for nickel, 1953 by Norduna Mines, and Falconbridge Nickel Mines (1967). Three diamond drill holes were sunk by Dunvegon Mines, 1000 feet north of Napier Lake. Low nickel values from .18 to .30% were intersected. Several small nickel at zinc showing were also uncovered, east of the survey area, however mineralization was found to be uneconomical and sporadic.

Jade Oil and Gas Company Incorporated

This property covered the entire Amoco Claim group. Vertical loop electromagnetic surveys, total

intensity nuclear procession magnetometer survey and
gravimeter survey was run over a grid. No conductors or
anomalous areas favourable to base metals were located.

MAGNETOMETER SURVEY

The magnetometer survey was contracted to Jean Alix Co. Ltd. of Val d'Or, Quebec. The survey was run between October 6 and 13, 1973 using a McPhar MF-Z fluxgate magnetometer with a one gamma sensitivity. Sixteen base stations were used, one every 2 lines with check-in times of approximately one hour. The normal correction techniques were applied to data. Stations were 100' apart on grid lines cut at 400' intervals covering the entire claim group. A total of 35 miles of grid lines were surveyed. Where anomalous magnetic results were encountered, 50' stations were read.

RESULTS

The results of the magnetometer survey indicated several linear trends of magnetic highs that seem to follow the local strike direction. The regional background for the survey was interpreted as 300 gammas. Relief on the northern anomalous zone averages 3000 gammas, peaking at 10,000 gammas locally. The southern linear anomalous trend commonly has relief up to 5000 gammas. Between the two linear trends are several irregularly shaped anomalous zones which can be related to diabase and other basic intrusives. The high magnetic relief in the linear anomalous zones has been interpreted as serpentized peridotites. Their high magnetite content is thought to have been formed by the exclusion of iron during the serpentization of olivine crystals in the peridotite.

CONCLUSIONS

Ground followup of the magnetic survey substantiated the geological interpretation of the claim group as suggested by ODM Geological Map 2231. There do not seem to be any magnetic anomalies related to base metal deposits related with felsic volcanics. Diabase dykes are clearly outlined by magnetometer readings.

SEWELL TWP.

Gm

DEERFOOT L.

BENBOW L.

RIVER

71/2

PERMORWOOD TWP.

374558	374559	374560	374561	374562	374563	374564	374565	
374566	374567	374568	374569	374570	374571	374572	374573	
374574	374575	374578	374579	374580	374581	374582	374583	374584
374585	374586	374587	374588	374589	374590	374591	374592	374593
374594	374595	374596	374597	374598	374599	374600	374601	374602

HAWKMAN LAKE

CRAWFORD

CRAWFORD L.

CLAIMS STAKED FOR:

AMOCO CANADA PETROLEUM CO. LTD

TWP: KENO GAMING

DATE SEP. 12 TO SEP. 16 1973

Scale: 1" = 40 chains



P. PROUX - P. 374578 TO 598
L. PROUX - P. 374558 TO 577

JEAN ALIX CO. LTD.

LEGEND

CENOZOIC^a

RECENT

Swamp and stream deposits.

PLEISTOCENE



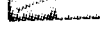


Glacial drift, boulders, gravel, sand.

UNCONFORMITY

PRECAMBRIAN^b

PROTEROZOIC










LATE MAFIC INTRUSIVE ROCKS

-  10 Diabase, unsubdivided.
-  10a Olivine diabase (dikes) Abitibi-type.
-  9 Diabase, unsubdivided.
-  9a Quartz diabase (dikes).
-  9b Porphyritic quartz diabase (dikes).

INTRUSIVE CONTACT








ARCHEAN

LATE FELSIC INTRUSIVE ROCKS

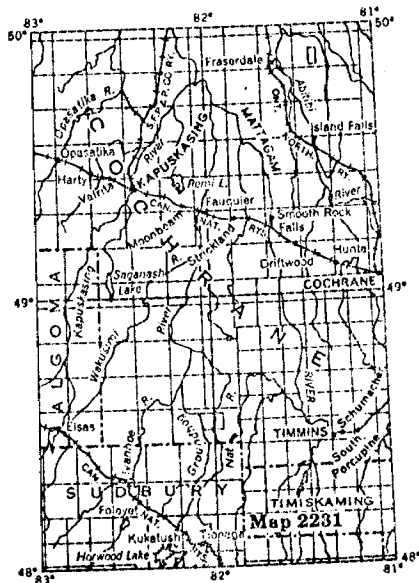
-  8 Granitic rocks.
-  8a Biotite-hornblende granodiorite.
-  8b Biotite granodiorite, biotite quartz monzonite.
-  8c Xenolithic granodiorite.
-  8d Diorite, hybrid diorite, syenite.
-  8e Muscovite-albite trondhemite.
-  8f Leucocratic trondhemite.
-  8g Pegmatite.
-  8h Migmatite.

INTRUSIVE CONTACT

EARLY FELSIC INTRUSIVE ROCKS

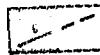
-  7a Granitic rocks.
-  7b Biotite trondhemite gneiss.
-  7c Feldspar porphyry, quartz-feldspar porphyry.
-  7d Quartz porphyry.
-  7e Hybrid granodiorite gneiss.
-  7f Migmatite.
-  7g Hornblende-chlorite-feldspar porphyry.

INTRUSIVE CONTACT



Scale 1 inch to 50 miles
N.T.S. reference 42A/4, 42B/1

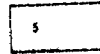
ULTRAMAFIC INTRUSIVE ROCKS



- 6 Unsubdivided.
- 6a Grey to green-grey serpentinite.
- 6b Dark grey to black serpentinite.
- 6c Coarse blade textured serpentinite (chicken track rock).
- 6d Mineralogically layered serpentinite.
- 6e Sheared serpentinite.
- 6f Asbestos-bearing serpentinite.
- 6g Chloritic tremolitic serpentinite.†
- 6h Talcose serpentinite.
- 6k Rusty carbonatized serpentinite.

INTRUSIVE CONTACT

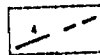
EARLY MAFIC INTRUSIVE ROCKS



- 5 Unsubdivided.
- 5a Tremolitic actinolitic amphibolite.
- 5b Actinolitic hornblende amphibolite.
- 5c Sheared amphibolite.
- 5d Porphyritic amphibolite.
- 5e Garnet amphibolite.
- 5f Dioritic amphibolite.

INTRUSIVE CONTACT

IRON FORMATION



- 4 Unsubdivided.
- 4a Magnetite-chert iron formation.
- 4b Carbonate-chert iron formation.
- 4c Amphibole-chert iron formation.
- 4d Garnet-magnetite amphibolite.
- 4e Chert.
- 4f Pyritic slate, graphitic slate.

DETRITAL METASEDIMENTS



- 3 Unsubdivided.
- 3a Greywacke.
- 3b Conglomerate.
- 3c Slate, argillite.
- 3d Phyllite, sericite schist, chlorite schist.
- 3e Sandstone.

FELSIC TO INTERMEDIATE METAVOLCANICS^c



- 2 Unsubdivided.
- 2a Felsic agglomerate, mafic agglomerate.
- 2b Felsic tuff, felsic lapilli tuff.
- 2c Mafic tuff, mafic lapilli tuff.
- 2d Felsic flows.
- 2e Felsic flow breccia.†
- 2f Garnet amphibolite.

MAFIC TO INTERMEDIATE METAVOLCANICS^c



- 1 Unsubdivided.
- 1a Light coloured chlorite-tremolite metavolcanics.
- 1b Dark coloured actinolite-hornblende schistose and gneissose metavolcanics.
- 1c Chloritic metavolcanic schist, sericite-carbonate metavolcanic schist.
- 1d Pillowed metavolcanics.
- 1e Epidotized metavolcanics.†



Breccia.

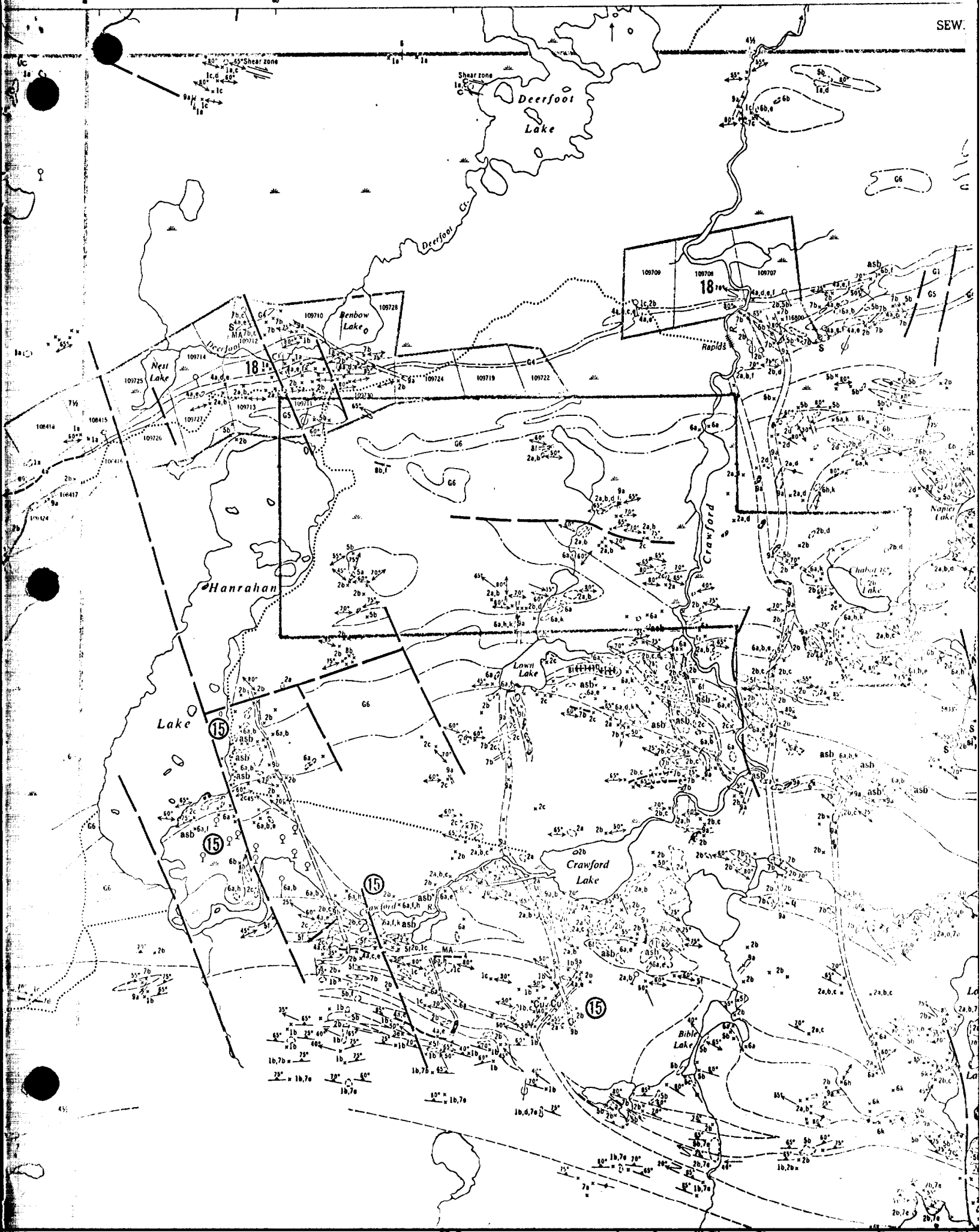


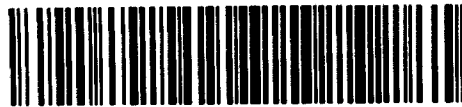
Carbonatized rock.



Silicified rock.

- Ag Silver.
- asb Asbestos.
- Au Gold.
- ba Barite.
- Cu Copper.
- gf Graphite.
- Ni Nickel.
- Pb Lead.
- q Quartz.
- S Sulphide mineralization.
- si Silica.
- Zn Zinc.





Recorded Holder Amoco Canada Petroleum Company Limited
Township or Area Kenogaming Township

Type of survey and number of Assessment days credit per claim	Mining Claims
Geophysical Electromagnetic _____ days Magnetometer <u>0</u> _____ days Radiometric _____ days Induced polarization _____ days Section 86 (18) _____ days Geological _____ days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	P. 374558 to 98 inclusive NOTE: Insufficient data/material was submitted for this Magnetometer Survey, therefore, <u>NO CREDITS</u> have been allowed for this work on the above forty-one mining claims.
Notice of Intent to be issued: <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. <input checked="" type="checkbox"/> No credits have been allowed for the following mining claims as they were not sufficiently covered by the survey: See across _____ _____ _____ _____ _____	

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;

Sewell Twp. M.1102

THE TOWNSHIP OF

2.1666

KENO GAMING

DISTRICT OF SUDBURY

PORCUPINE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

- RESERVED LAND C.S.
- CROWN LAND, SALE C.L.
- LEASES L.O.
- LOCATED LAND M.R.O.
- LICENSE OF OCCUPATION S.F.R.
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- ROADS
- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKIE
- MINES CANCELLED

NOTES

400' Surface Rights reservation around Lakes & Rivers.

MINING LANDS
 DATE OF ISSUE
 DEC 13 1974
 MINISTRY OF NATURAL RESOURCES

PLAN NO. M.967

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

