



42G04SE0200 2.4286 LEGGE

010

REPORT

ON AN

AEROMAGNETIC SURVEY

BYNG AND PUSKUTA TOWNSHIPS

FOR

AMAX MINERALS EXPLORATION

FIRE RIVER PROJECT

1187

RECEIVED

NOV - 5 1981

October, 1981

MINING LANDS SECTION

A. Watts
Geophysicist

h. D.

INTRODUCTION

During the month of April, 1981, Aerodat Limited of Malton, Ontario undertook an aeromagnetic survey on behalf of Amax Minerals Exploration, Suite 1302, 7 King Street East, Toronto, Ontario, over parts of Byng and Puskuta Townships, Hearst District, Northern Ontario.

The survey, carried out in conjunction with an airborne electromagnetic survey, was undertaken for the purpose of delineating the eastern extension of a narrow, EW trending "greenstone belt", previously covered by an Amax survey of Minnipuka and Walls Townships. Primary exploration targets anticipated within the survey area are massive sulphide, base metal deposits, recognized by their distinctive airborne EM signatures, and/or gold mineralization associated with oxide-facies iron formation, which respond magnetically. A total of 1093 line-kilometres was flown during the course of the survey, at an interval between flight-lines of 150 metres. The survey was divided into two flight blocks, differing in flight-direction by approximately 10 degrees, so as to maintain orthogonality to anticipated geologic strike.

The following personnel were present for the survey;

Amax representative: A. Watts, B. Groves

Party chief and equipment operator: P. Moisan

Helicopter pilot: M. Stockton, B. Healey

GENERAL GEOLOGY

Very little has been published on the geology of the survey area, and what geological formations are indicated on ODM Map P-672 are mostly implied from government aeromagnetic mapping of the district in the 60's.

By extrapolation from known geology in Minnipuka Township to the west of the survey area, a narrow belt of intermediate to mafic volcanics, passes through Puskuta Township, striking in a NE direction, and is encompassed by intrusive igneous and/or metamorphic rocks (migmatites). A major fault dislocation of this volcanic belt is noted close to the eastern edge of Minnipuka Township, where the EW trending Minnipuka volcanic belt meets the NE trending Puskuta volcanics.

Several N-S striking diabase dykes have been noted in the southern portion of Puskuta Township. Minimal prior exploration by the mining industry is evident in the survey area, probably due to the lack of outcrop, narrowness of the volcanic belt as implied from government aeromagnetics, and the distinct lack of felsic volcanic environment, favourable "hunting-ground" for massive sulfide targets.

SURVEY PROCEDURE

The survey was flown at a line spacing of 150 metres. Survey airspeed averaging 120 km/h, and the aircraft - (Bell 206 Jet-Ranger helicopter) maintained an average terrain clearance of 70 metres, with the magnetometer sensor located 15 metres below the helicopter, approximately 55 metres above ground.

Survey equipment consisted of a Barringer AM-104 proton precession magnetometer, an Aerodat-Perle data acquisition system, a Hoffman radar altimeter, a Geocam 35 mm flight path camera, and a Barringer 8-channel analogue recorder. All geophysical data were also recorded digitally on magnetic tape.

Flight path was recorded manually by an experienced navigator, and also automatically by 35 mm Geocam continuous strip camera. A base station magnetometer was established in the area to monitor local diurnal fluctuations.

DATA PRESENTATION

The aeromagnetic data are presented in computer contoured plan form. The data have been contoured at a nominal 20 gamma interval. Where steep magnetic gradients are encountered, over iron-formation for instance, the contour interval is 100 gammas. The survey area was flown in two blocks of differing flight-line direction and the results are accordingly presented in two separate maps, labelled North and South Block.

DISCUSSION OF RESULTS

The aeromagnetic survey has revealed a wealth of structural and lithologic detail within the survey area, and these geologic elements are outlined individually below.

I. FAULTING

The NNW trending fault indicated by the ODM geology map at the eastern edge of Minnipuka Township is evident in the present survey as a sinuous magnetic low passing directly through North Dishnish Lake and into the NW corner of Amax's previous Walls-Minnipuka survey block. This fault appears to displace to the north the extensive iron-formation which runs across the northern boundary of the Walls-Minnipuka survey.

South of Byng Lake two parallel NE trending faults appear to displace the main meta-volcanic/iron-formation assemblage slightly to the south.

II. DIABASE DYKES

Diabase dykes are manifested in the aeromagnetic data as narrow, linear, and relatively continuous positive anomalies of approximately 150 gammas above background (59,400 gammas). They generally exhibit a northerly strike, though some north-east striking linear features are noted in the east half of the South Block.

III. IRON FORMATION

The iron-formation(s) within the survey area can be distinguished from diabase by the greater width, structural complexity, and amplitude which they exhibit. The dominant iron-formation horizon locates in the centre of both survey blocks, exhibiting a north-westerly strike. This is the unit classified as a intermediate to mafic volcanics, passing diagonally through Puskuta Township, on ODM Map P-672. This assemblage is notable more complex structurally, west and south of Byng Lake, than any similar horizon detected by Amax's previous Walls-Minnipuka survey. Several East to South-East trending iron-formations are noted in the northern half of the North Block.

IV. GRANITE

Rocks of granite composition, characterized by their low magnetic susceptibility, occupy as much as 60 percent of the survey area.

CONCLUSIONS AND RECOMMENDATIONS

The survey has provided substantial geological insight to an area which heretofore has received little attention. Geologic inferences from the magnetic data should be checked on the ground wherever possible i.e. lake edges and streams. West of Byng Lake the main meta-volcanic assemblage reaches maximum thickness, and the possibility of a felsic environment, more likely than elsewhere along strike, should be examined for at this location.

Respectfully Submitted,

A. Watts

A. Watts

AW/apmw

2.29.10

SCHEDULE OF CLAIMS

Project 1187

<u>GROUP NO.</u>	<u>CLAIM NO.</u>	<u>TOWNSHIP</u>	<u>GROUP NO.</u>	<u>CLAIM NO.</u>	<u>TOWNSHIP</u>		
<u>1187-01</u> (Legge-1)	P. 591527	Legge (M.1295)	<u>1187-06</u> (Puska-5, continued)	P. 591523	Puskuta (M.2122)		
	P. 591528			P. 591524			
	P. 591529			P. 591525			
	P. 591530			P. 591526			
<u>1187-02</u> (Puska-1)	P. 591531	Puskuta (M.2122)	<u>1187-07</u> (Puska-6)	P. 591527	Puskuta (M.2122)		
	P. 591532			P. 591528			
	P. 591533			P. 591529			
	P. 591534			P. 591530			
<u>1187-03</u> (Puska-2)	P. 591458	Puskuta (M.2122)		<u>1187-08</u> (Puska-7)		P. 591531	Puskuta (M.2122)
	P. 591459					P. 591532	
	P. 591460					P. 591533	
	P. 591461					P. 591534	
	P. 591462					P. 591535	
	P. 591463					P. 591536	
<u>1187-04</u> (Puska-3)	P. 591541	Puskuta (M.2122)		<u>1187-09</u> (Puska-8)		P. 591537	Puskuta (M.2122)
	P. 591542					P. 591538	
	P. 591543		P. 591539				
	P. 591544		P. 591540				
	P. 591545		P. 591541				
<u>1187-05</u> (Puska-4)	P. 617856	Puskuta (M.2122)	<u>1187-10</u> (Puska-9)	P. 591542	Puskuta (M.2122)		
	P. 617857			P. 591543			
	P. 617858			P. 591544			
	P. 617859			P. 591545			
<u>1187-06</u> (Puska-5)	P. 591507	Puskuta (M.2122)	<u>1187-11</u> (Puska-10)	P. 591546	Puskuta (M.2122)		
	P. 591508			P. 591547			
	P. 591509			P. 591548			
	P. 591510			P. 591549			
	P. 591511			P. 591550			
	P. 591512			P. 591551			
	P. 591513			P. 591552			
	P. 591514			P. 591553			
	P. 591515			P. 591554			
	P. 591516			P. 591555			
	P. 591517			P. 591556			
<u>1187-12</u> (Byng-1)	P. 591518	Byng	<u>1187-12</u> (Byng-1)	P. 591557	Byng		
	P. 591519			P. 617852			
	P. 591520			P. 617853			
	P. 591521			P. 617854			
	P. 591522			P. 617855			

SCHEDULE OF CLAIMS

Project 1187

Page 2

<u>GROUP NO.</u>	<u>CLAIM NO.</u>	<u>TOWNSHIP</u>	<u>GROUP NO.</u>	<u>CLAIM NO.</u>	<u>TOWNSHIP</u>
<u>1187-13</u> (Byng-2)	P. 591486 P. 591487 P. 591488 P. 591489 P. 591490 P. 591491 P. 591492 P. 591493	Byng	<u>1187-18</u> (Minni-12)	P. 618805 P. 618806 P. 618813 P. 618814 P. 618815 P. 618816	Minnipuka (M.1316)
<u>1187-14</u> (Byng-3)	P. 591480 P. 591481 P. 591482 P. 591483	Byng			
<u>1187-15</u> (Byng-4)	P. 591454 P. 591455 P. 591456 P. 591457	Byng			
<u>1187-16</u> (Byng-5)	P. 591535 P. 591536 P. 591537 P. 591538 P. 591539 P. 591540	Byng			
<u>1187-17</u> (Minni-11)	P. 618249 P. 618250 P. 618251 P. 618252 P. 618253 P. 618256 P. 618257 P. 618258 P. 618259 P. 618260 P. 618261 P. 618808 P. 618809 P. 618810 P. 618811	Minnipuka (M.1316)			

TOTAL - 127 claims



42G04SE0200 2.4286 LEGGE

900

1982 11 12

2.4286

Mr. William L. Good
Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

Enclosed is an Airborne Geophysical Certificate covering Mining Claims P 591454 et al in the Townships of Legge, Puskuta, Byng and Minnipuka.

Please note that application for this certificate was made to this office on November 20, 1981 and that all requirements of the Mining Act with respect to the completeness of the reports and maps were met at that time.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1380

F.W. Matthews:sc

Encls:

cc: Anax Minerals Exploration
of Canada Limited
Toronto, Ontario.

cc: Resident Geologist
Timmins, Ontario



Ministry of
Natural
Resources

Airborne
Geophysical
Certificate

Ontario

The Mining Act

This is to certify that Amax Minerals Exploration has met the requirements of Section 87 of The Mining Act,
with respect to the following mining claims in the Township (or Area) of Legge, Puskuta, Byng and Minnipuka.

Mining Claims (Please list)

P 591454 to 65 inclusive
591480 to 83 inclusive
591486 to 503 inclusive
591507 to 70 inclusive
617852 to 59 inclusive
618249 to 53 inclusive
618256 to 61 inclusive
618805-06
618808 to 11 inclusive
618813 to 16 inclusive

7/20

Date <i>2007-11-10</i>	Signature of Regional Director <i>[Signature]</i>
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L.D.

Mining Lands Comments

Certificate (A) Rush please!

- need outside boundaries of claim groups
- number of corner claims

To: Geophysics

Mr. Basler

Comments

Approved Wish to see again with corrections

Date
Oct 30/82

Signature
[Signature]

To: Geology - Expenditures

Comments

Approved Wish to see again with corrections

June 15th
1981

Forfeited on
Aug. 12th/82

~~Can~~ Cancelled
on June 15th

To: Geochemistry

Comments

Approved Wish to see again with corrections

Date

Signature

November 20, 1981

2.4286

Office of the Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We have received reports and maps for an Airborne Geophysical (Magnetometer) Survey on Mining Claims P.591480 et al, in the Townships of Legge, Puskuta, Byng and Minnipuka.

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: 416/965-1380

J. Skura/bk

cc: AMAX of Canada Limited
Toronto, Ontario
Attention: Elizabeth A. Barclay



MINERALS EXPLORATION
(A Division of AMAX OF CANADA LIMITED)

TORONTO, ONTARIO
7 KING STREET EAST
M5C 1A2
(416) 364-6188

November 3, 1981

Mr. W. F. Matthews,
Ontario Ministry of Natural Resources,
W 1617 Whitney Block,
Queen's Park,
Toronto, Ontario
M7A 1W3

Dear Sir:

Re: Airborne Geophysical Certificate
Our Project: 1187-01 - 18, incl.
Townships of Legge, Puskuta, Byng
and Minnipuka

Pursuant to Section 87 of the Ontario Mining Act, please accept this letter as our application for an Airborne Geophysical Certificate.

Enclosed are two copies of the Report and Plans covering the Airborne Geophysical Survey conducted over the claims listed on the attached schedule. These claims were recorded on June 13, 15 and 18, 1981.

Yours truly,

Elizabeth A. Barclay

E
encls.

cc: J. Roth
cc: A. Watts
cc: Timmins Office

RECEIVED

NOV - 5 1981

MINING LANDS SECTION

SCHEDULE OF CLAIMS

Project 1187

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	P. 591528			P. 591524	
	P. 591529			P. 591525	
	P. 591530			P. 591526	
<u>1187-02</u> (Puska-1)	P. 591531	Puskuta (M.2122)	P. 591559	P. 591560	
	P. 591532		P. 591561		
	P. 591533		P. 591562		
	P. 591534		P. 591563		
<u>1187-03</u> (Puska-2)	P. 591458	Puskuta (M.2122)	P. 591564	P. 591565	
	P. 591459		P. 591566		
	P. 591460		P. 591567		
	P. 591461		P. 591568		
	P. 591462		P. 591569		
	P. 591463		P. 591570		
	P. 591464				
P. 591465					
<u>1187-04</u> (Puska-3)	P. 591541	Puskuta (M.2122)	<u>1187-07</u> (Puska-6)	P. 591500	Puskuta (M.2122)
	P. 591542		P. 591501		
	P. 591543		P. 591502		
	P. 591544		P. 591503		
<u>1187-05</u> (Puska-4)	P. 617856	Puskuta (M.2122)	<u>1187-08</u> (Puska-7)	P. 591494	Puskuta (M. 2122)
	P. 617857		P. 591495		
	P. 617858		P. 591496		
	P. 617859		P. 591497		
			P. 591498		
<u>1187-06</u> (Puska-5)	P. 591507	Puskuta (M.2122)	<u>1187-09</u> (Puska-8)	P. 591499	
	P. 591508		P. 591547		
	P. 591509		P. 591548		
	P. 591510		P. 591549		
<u>1187-07</u> (Puska-6)	P. 591511	Puskuta (M.2122)	<u>1187-10</u> (Puska-9)	P. 591550	Puskuta (M. 2122)
	P. 591512		P. 591551		
	P. 591513		P. 591552		
	P. 591514		P. 591553		
	P. 591515		P. 591554		
	P. 591516				
	P. 591517				
	P. 591518				
	P. 591519				
	P. 591520				
<u>1187-08</u> (Puska-7)	P. 591521	Puskuta (M. 2122)	<u>1187-11</u> (Puska-10)	P. 591555	Puskuta (M. 2122)
	P. 591522		P. 591556		
			P. 591557		
			P. 591558		
<u>1187-09</u> (Puska-8)		Byng	<u>1187-12</u> (Byng-1)	P. 617852	
			P. 617853		
			P. 617854		
			P. 617855		

SCHEDULE OF CLAIMS

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TOTAL - 127 claims

4-1582 LEGGE MB

M.1295

ONTARIO

MINISTRY OF NATURAL RESOURCES

SURVEYS AND MAPPING BRANCH

DATE OF ISSUE
FEB 25 1982
Ministry of Natural Resources
TORONTO

PLAN OF LEGGE TWP.

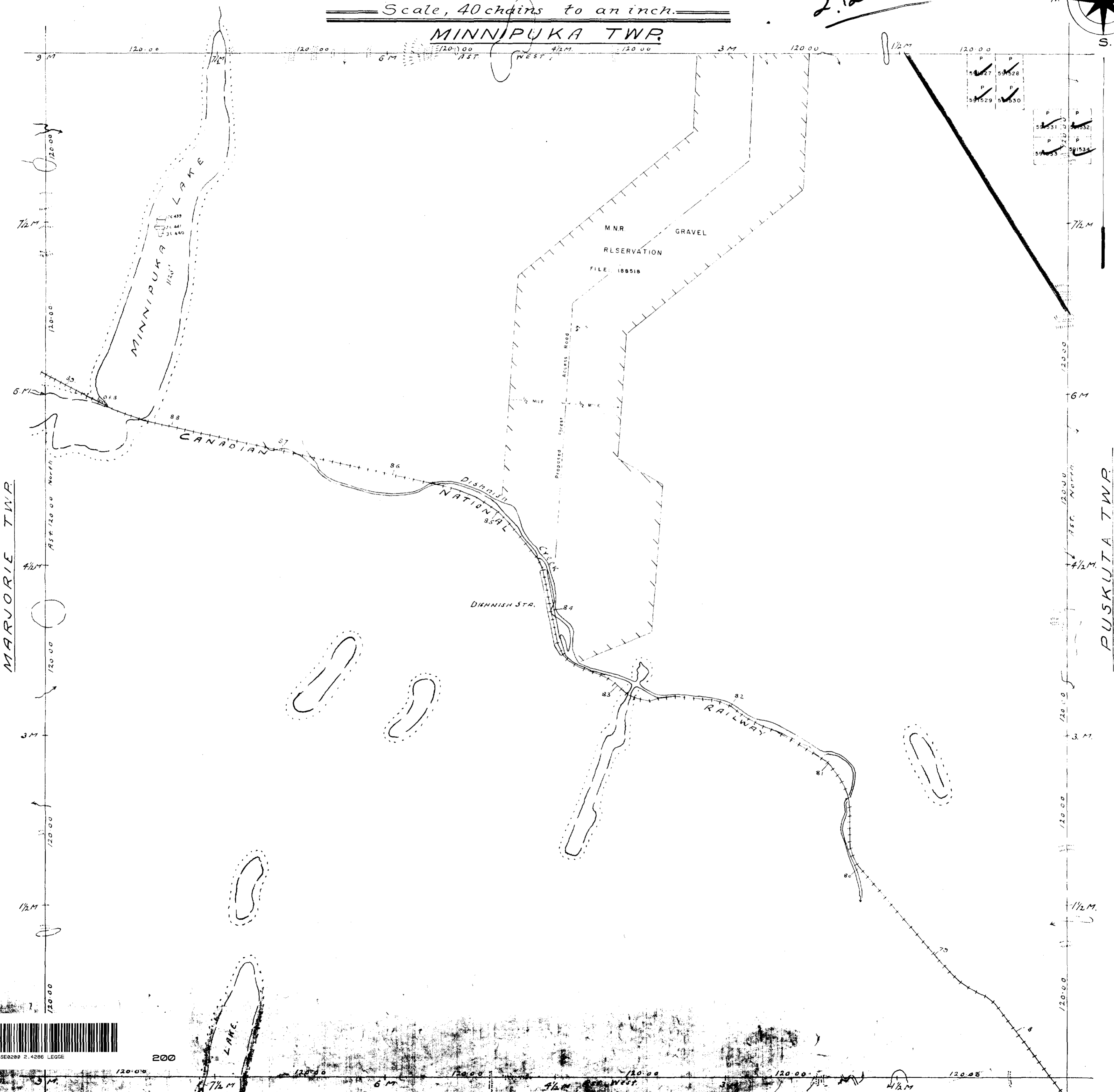
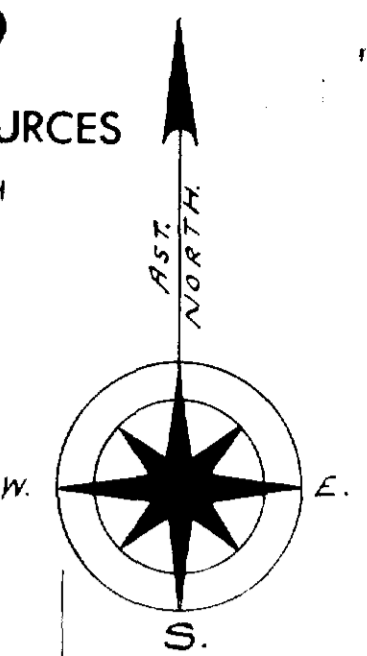
PORCUPINE MINING DIVISION

DISTRICT OF ALGOMA

Scale, 40 chains to an inch.

MINNIPUKA TWP.

24286



P	581527	P	581528
P	581529	P	581530
P	581531	P	581532
P	581533	P	581534



200

NOTE: Boundary between Marjorie and Puskuuta Twp.

400 Surface rights reservation reserved for the Rivers

Location of lakes where indicated by broken lines is approximate only.

PELLETIER TWP.

THE TOWNSHIP OF

MINNIPUKA

DISTRICT OF ALGOMA

PORCUPINE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE LEASES	C.S.
LOCATED LAND	Ⓛ
LICENSE OF OCCUPATION	Loc.
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 around 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.9/81 NR	188518	MAR. 6/81	S.R. & M.R.
W.10/81 NR	188518	FEB. 12/81	S.R.O.

SAND AND GRAVEL

Ⓢ QUARRY PERMIT

DATE OF ISSUE
FEB 25 1982
Ministry of Natural Resources
TORONTO

2.4286

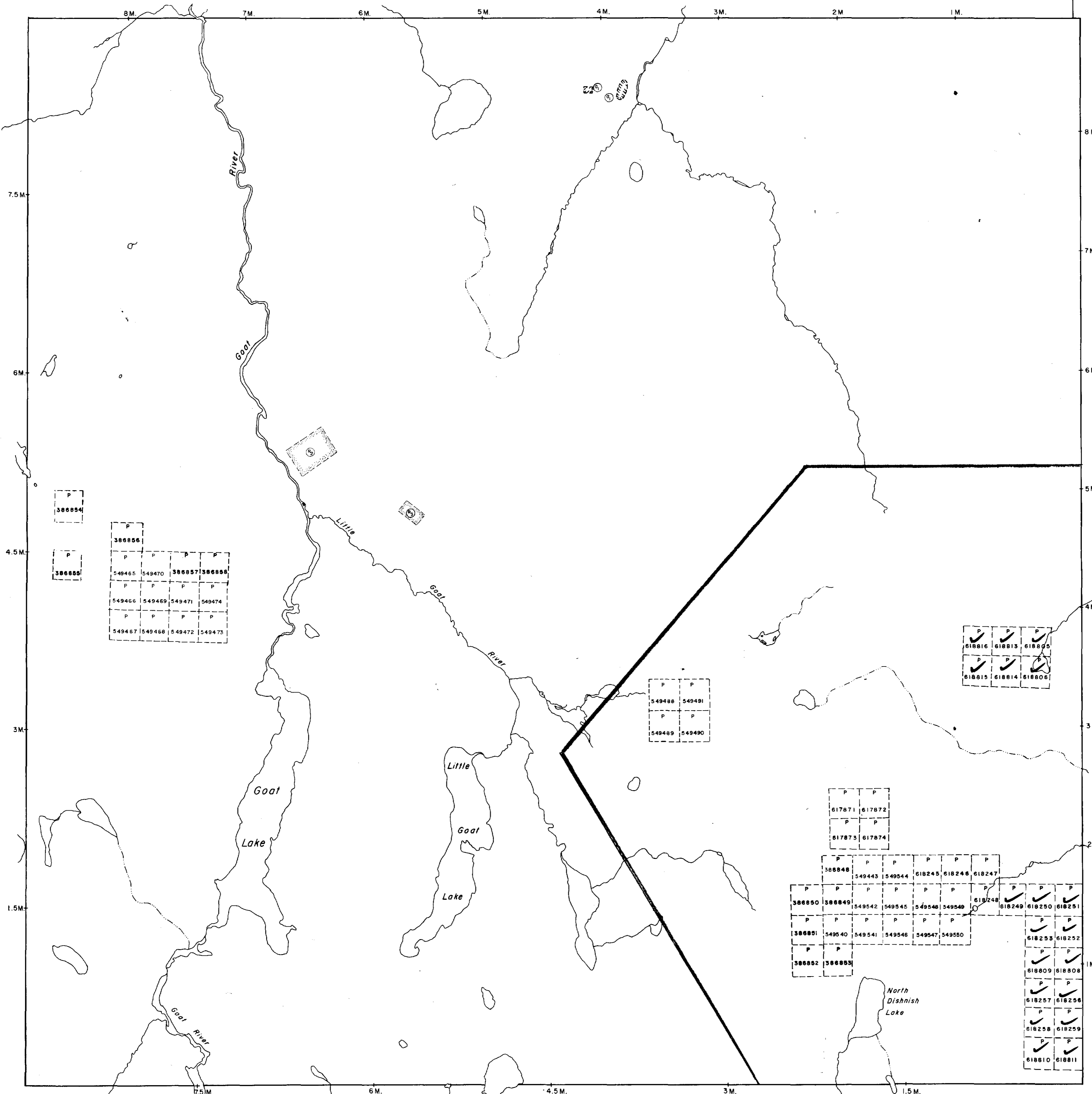
PLAN NO.- M-1316

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

WALLS TWP.

BYNG TWP.

LEGGÉ TWP.



AREAS WITHDRAWN FROM DISPOSITION

S.R. - SURFACE RIGHTS M.R. - MINING RIGHTS

Description	Order No.	Date	Disposition	File

DATE OF ISSUE
FEB 25 1982
 Ministry of Natural Resources
 TORONTO

SAND & GRAVEL

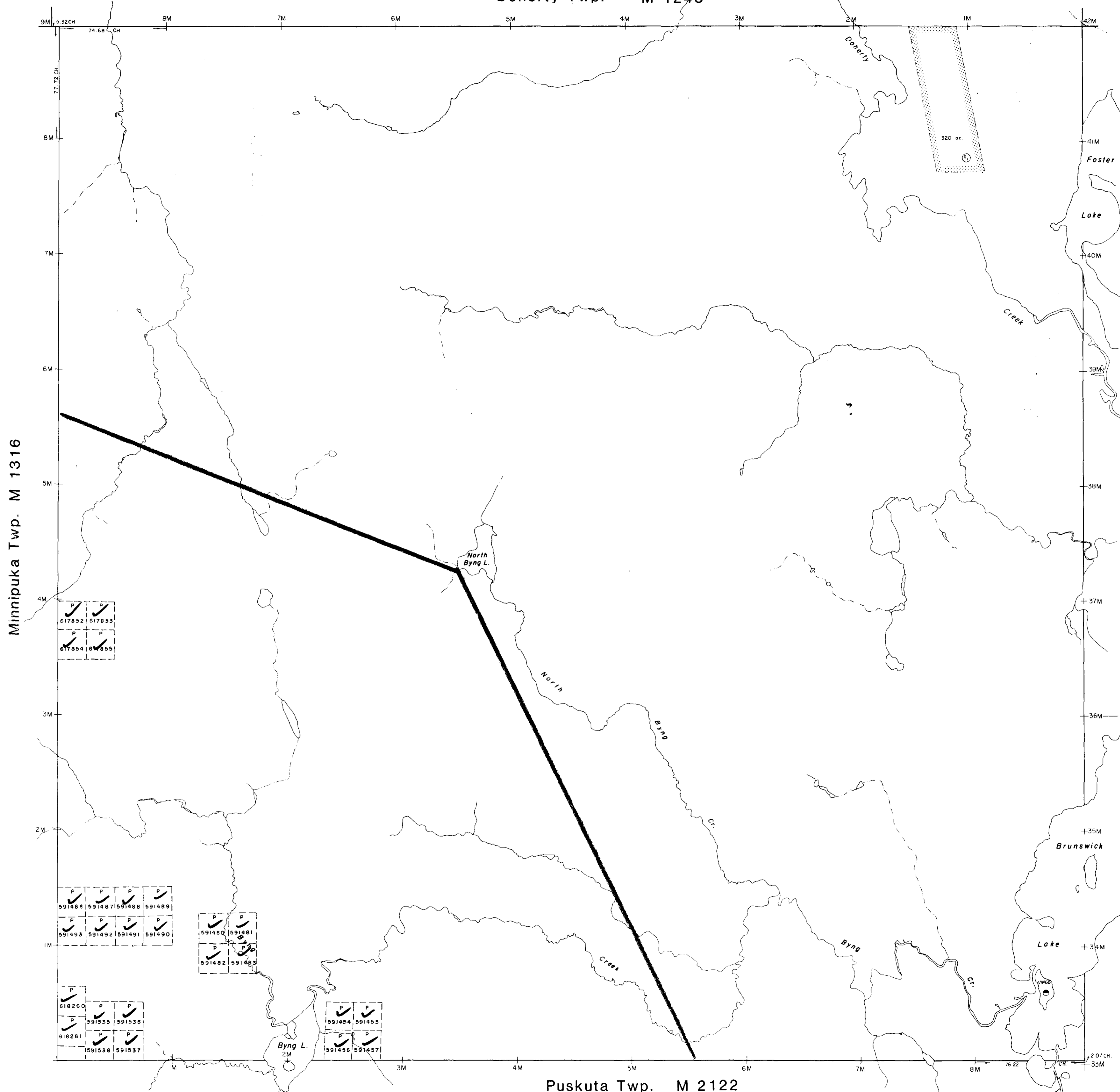
MNR GRAVEL RESERVE FILE 188518



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220

Doherty Twp. M 1245



LEGEND

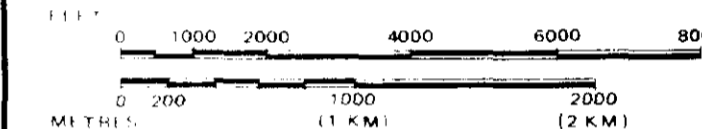
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- OTHER ROADS
- TRAILS
- SURVEYED LINES:
 - TOWNSHIPS, BASE LINES, ETC.
 - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
 - LOT LINES
 - PARCEL BOUNDARY
 - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- 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	●
" SURFACE RIGHTS ONLY	○
" MINING RIGHTS ONLY	◐
LEASE, SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	□
" MINING RIGHTS ONLY	◑
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	Ⓞ
CANCELLED	⊖
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

SCALE: 1 INCH = 40 CHAINS



24286

TOWNSHIP
BYNG
 M.N.R. ADMINISTRATIVE DISTRICT
HEARST
 MINING DIVISION
PORCUPINE
 LAND TITLES / REGISTRY DIVISION
ALGOMA

Ministry of Natural Resources
 Land Management Branch
 Ontario

Date MAY 29, 1981

Number

M-3559

Byng Twp.

THE TOWNSHIP OF

PUSKUTA

DISTRICT OF ALGOMA

PORCUPINE 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	Ⓧ

NOTES

400' Surface Rights Reservation around all lakes and rivers.

Areas withdrawn from staking under Section 42 of the Mining Act.

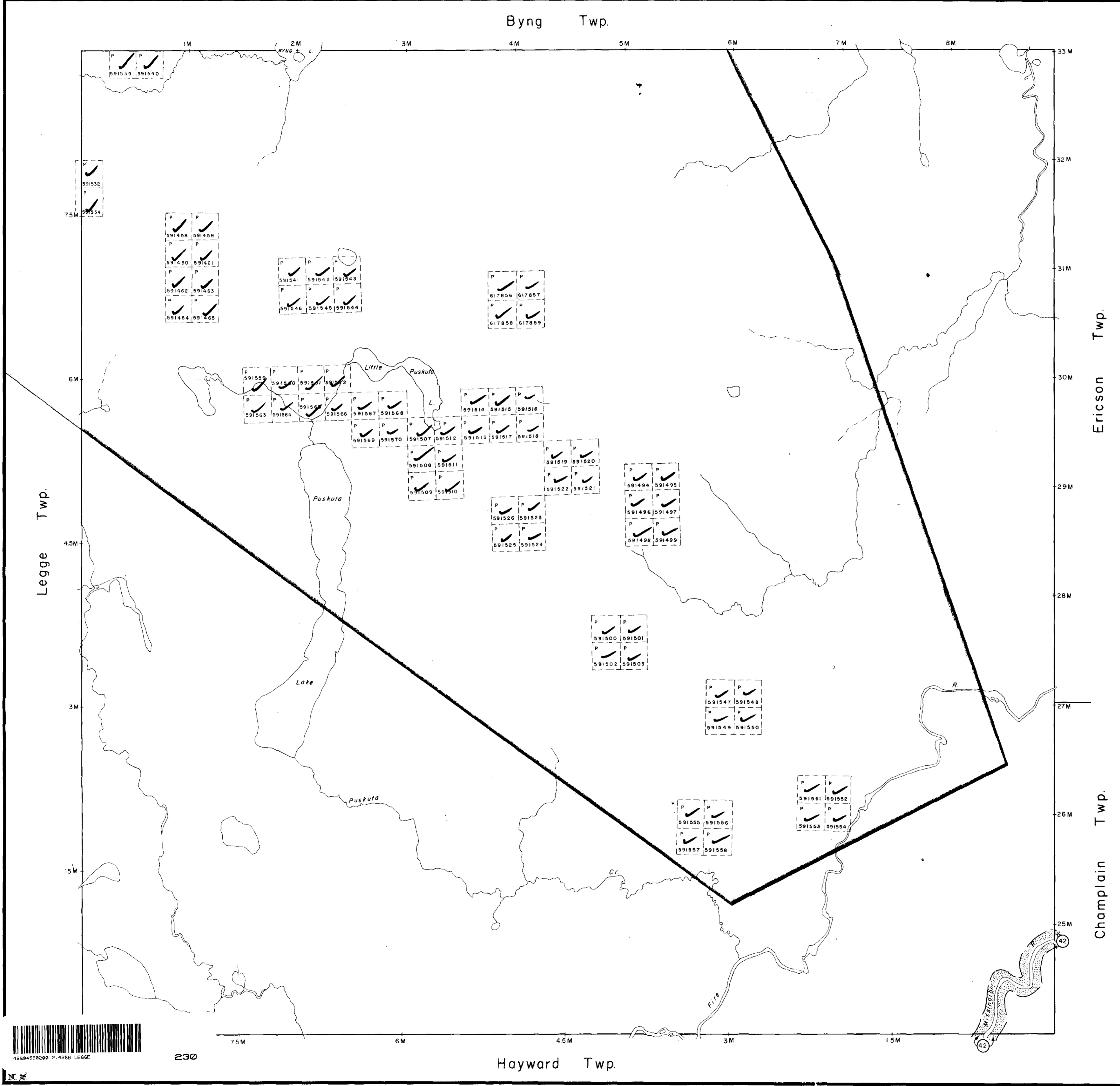
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Ⓣ	183199	Oct. 8/70	SR&MR.

DATE OF ISSUE
FEB 25 1982
 Ministry of Natural Resources
 TORONTO

2.4286

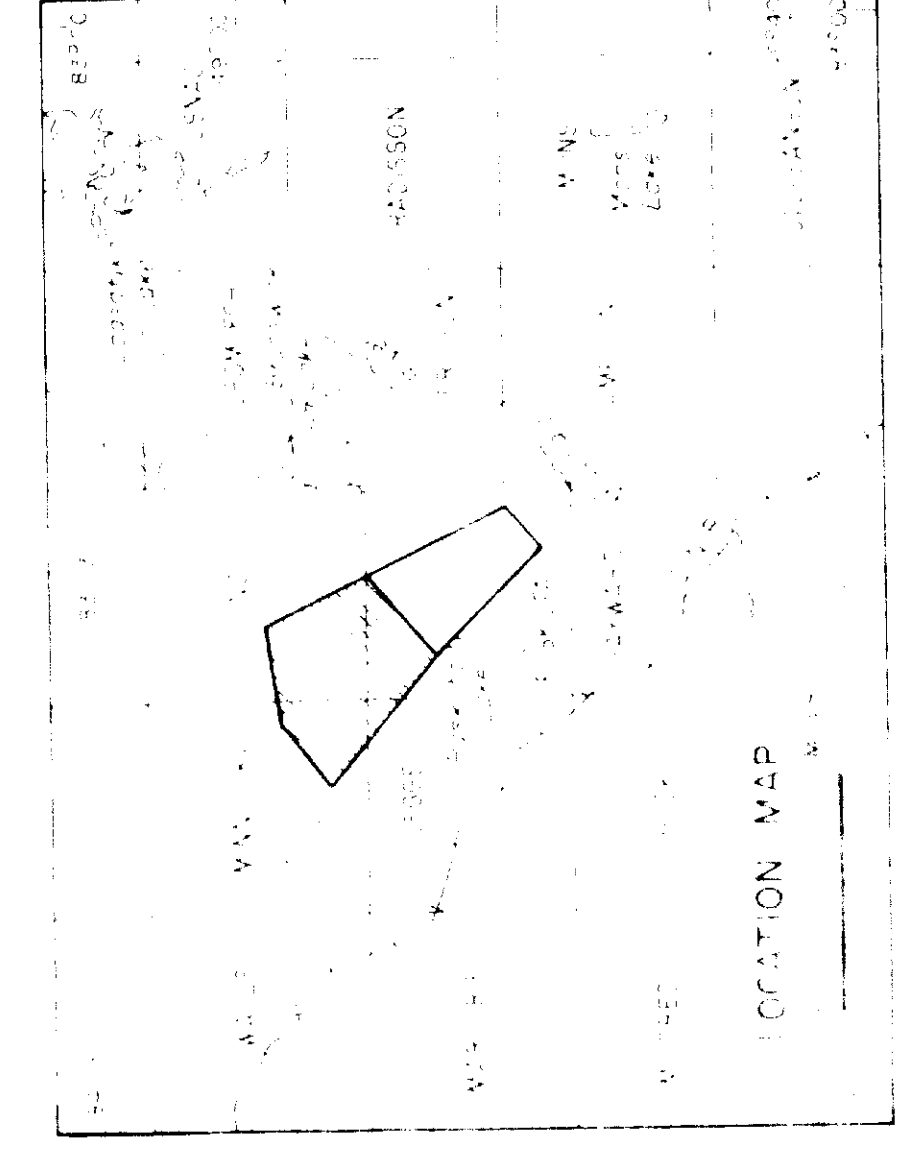
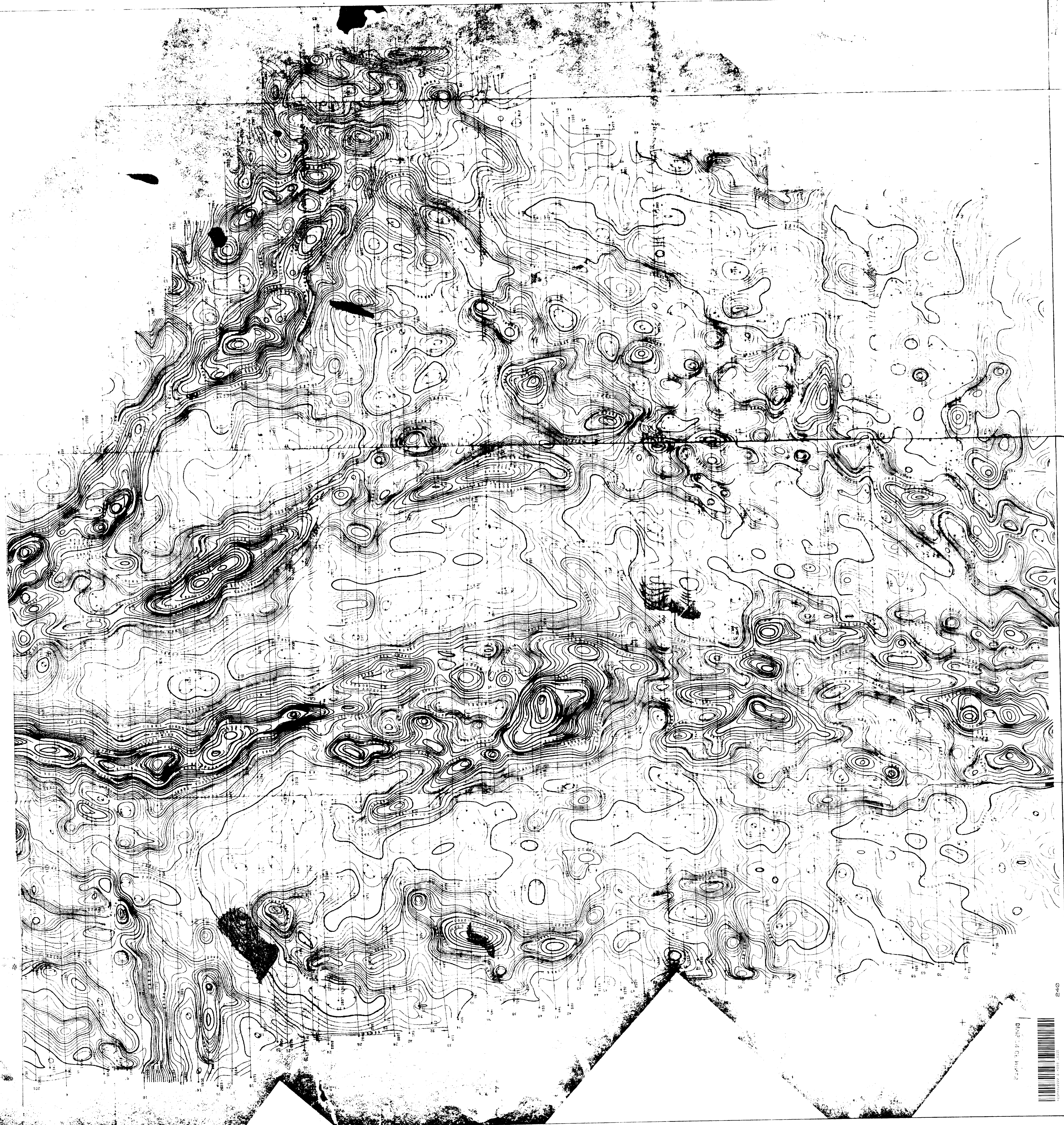
PLAN NO. M-2122

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH



230

Hayward Twp.



AMAX MINERALS EXPLORATION
BYNG - PUSKUTA T.W.P.S.
ONTARIO

TOTAL FIELD MAGNETIC MAP
NORTH SHEET
1:25,000

AERODAT