

2-1163

RECEIVED

MAR 7 1973

PROJECTS SECTION

REPORT ON A MAGNETIC SURVEY
ON THE SAS LAKE PROPERTY
OF ST. JOSEPH EXPLORATIONS LIMITED



31M05NE0081 2.1163 BUCKE

010

LOCATION AND ACCESS

The property covers approximately 3 square miles (including patented land), lying immediately west of the Town of Cobalt, in the townships of Bucke and Coleman. Access is principally by a gravel road along Clear Lake, west from the town, to the south boundary of the claim group. Further along this road, a small road runs north along Sharp Lake. Several trails or old winter roads occur on the property.

PROPERTY DETAILS

The property is composed of 43 contiguous mining claims, 5 of which are odd sizes of 20 acres or less. They were staked in 1971 by Vangulf Exploration Company, and later transferred to St. Joseph. Figure 1 shows the claims, numbers and recording dates.

The survey work also covered the S- $\frac{1}{2}$ of lot 5, concession I, Bucke Twp. This patented parcel is held under agreement by St. Joseph Explorations Limited.

LINE-CUTTING

A control grid was cut on most of the property, with pickets every 100 feet. Three parallel east-west

LINE-CUTTING continued

(90°) base lines were used, with cross lines every 400 feet.
A total of 31.8 line-miles was cut, including 2.7 line miles
on the patented land.

GEOLOGY

The bedrock geology of the property is shown in Figure 2. Steeply-dipping, east-striking Archean volcanic rocks are overlain unconformably by conglomerate and greywacke of the Proterozoic Gowganda Formation. The homoclinal sequence of Archean rhyolitic rocks includes some bedded siliceous tuffs and a distinctive unit here called the Adit Breccia. The latter consists of angular fragments of massive, buff rhyolite in a finely comminuted dark matrix. To the south, massive and poorly-pillowed andesites outcrop; they are believed to be younger than the rhyolites. Graphitic bands, with sulphides, occur in both rock groups.

The Gowganda rocks form a cuesta striking roughly north-east across the property. They generally dip gently westward, and their thickness is locally highly variable because they were apparently deposited on a rugged palaeosurface.

A further description of the geology of the area is contained in a report by R. Thomson (Ontario Department of Mines, PR 1960-3).

MAGNETIC SURVEY

Most of the property was covered by a magnetic survey, between July 21/71 and January 27/72. Some additional work was done in June 1972. Claims L317888 and L317889, in the remote north-east corner, were unexamined because of low priority.

The survey was carried out with a Scintrex MF-2 fluxgate magnetometer (specifications appended). Readings were taken at 50 foot intervals along the lines. A prime base station was first established beside the road to Sharp Lake, just off the west side of the grid; it was given the arbitrary value of 600 gammas. Secondary base stations were set along each base line at every cross line, and each base station was tied to the prime base station value by the looping method. To minimize insignificant fluctuations, the magnetic data were treated statistically by a simple "3-point rolling average" calculation, and these values were contoured on the maps.

The isomagnetic lines reveal a greater relief over the southern part of the property, underlain by andesite, as compared to the northern part, underlain by rhyolite (interpreted, in part). The magnetic highs in the andesite are apparently caused by pyrrhotite in graphitic tuffs and slates. The magnetic pattern is locally of assistance in tracing the andesite/rhyolite contact in the area west of Pretty Lake and along the western arm of Sas Lake.

The magnetic anomaly at about 52W/10S was drilled in 1964 by Flobelle Mines Limited, and found to be caused by pyrrhotite in andesite and in graphitic bands. This is believed to be the cause of the similar anomalies at 61W/10S and 80W/23S.

MAGNETIC SURVEY continued

The large positive and negative anomalies on Line 68W do not extend to adjacent lines. The readings were well controlled at a series of base stations immediately before and after reading this line; also, the same results were obtained several months later. The anomalies may be related to the contact of a diabase dike, about 150 feet wide, which lies between Lines 65W and 68W in this area.

The discrete positive anomaly at 84W/21S was considered an attractive target for drilling, because of its apparent coincidence with the mapped andesite/rhyolite contact and with a short E.M. conductor ("A"). Detailed survey work (Lines 82W and 86W) later reduced the size of the anomaly and showed it to be unrelated to conductor A. Small amounts of pyrrhotite occur within andesite in hole SL-1.

A narrow, positive magnetic anomaly at the south end of Lines 61W and 65W may be related to a narrow, cherty interflow band in andesite; it outcrops on the lake shore at about 68W/26S and strikes parallel to the magnetic trend.

Near 68W/10S, a small magnetic high apparently coincides with conductor C. Interpretation from the profile indicates a depth of about 150 feet to the top of this magnetic body. This implies a narrow width, in agreement with the E.M. interpretation.

The positive magnetic feature at about 20N on Lines 76W and 80W appears caused by magnetic material below the Gowganda Formation. A depth of burial of

MAGNETIC SURVEY continued

about 150 feet is indicated from profiles. An I.P. survey detected a buried, low-resistivity feature at about 80W/20N.

Near the west side of the survey area is a broad, weakly positive magnetic feature trending slightly east of north (normal to the assumed strike of the basement volcanic rocks). The size, continuity and location of this feature suggest that it may be due to weakly disseminated pyrrhotite and/or magnetite, in a feeder pipe cutting up through the volcanic pile.

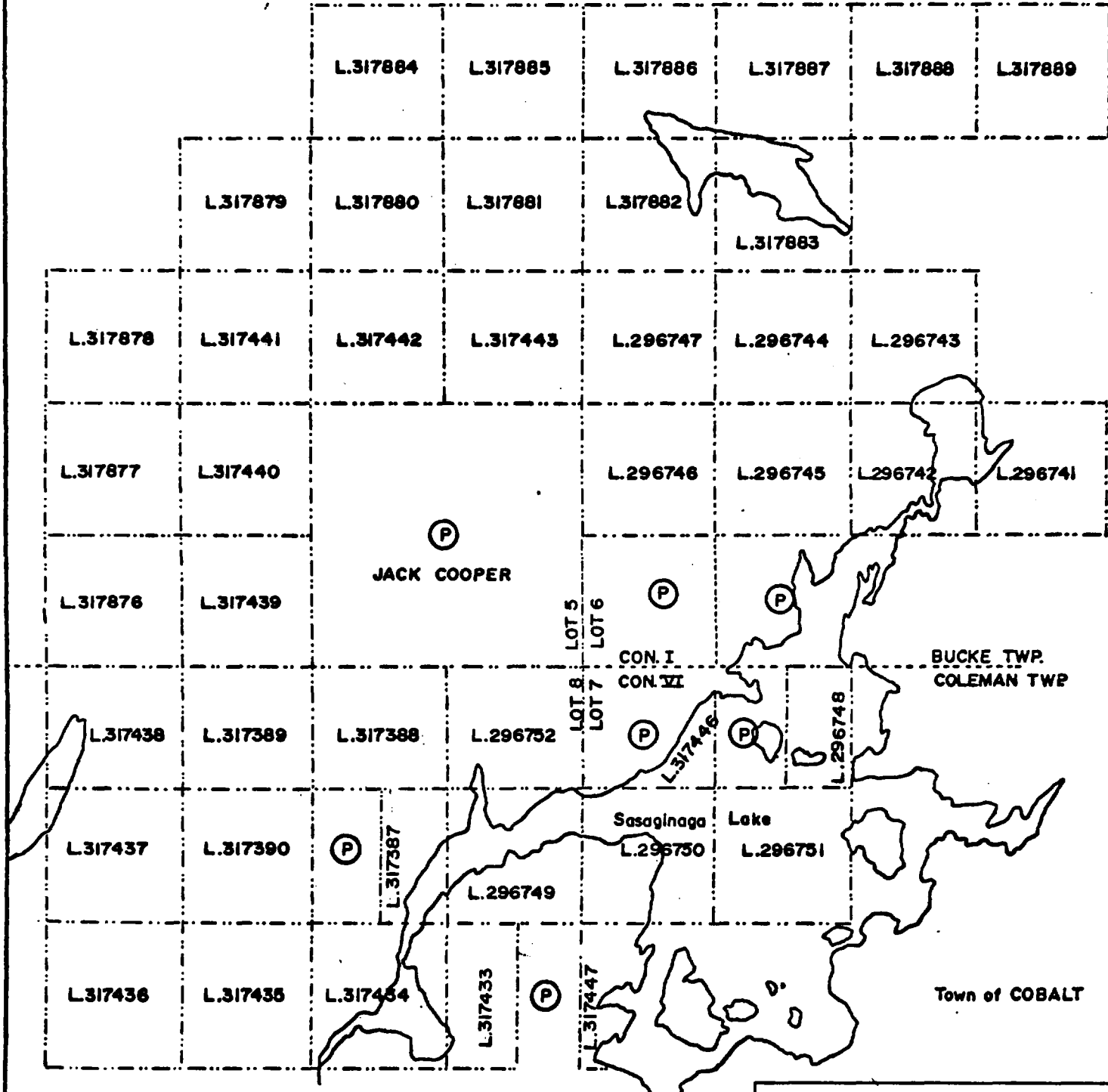
CONCLUSIONS

The magnetic survey suggests that the rhyolites are extensive beneath the Proterozoic cover. The cross-cutting feature, possibly a feeder pipe, deserves further investigation by an electromagnetic survey. The small anomaly at 68W/10S should be tested by drilling.

DFF/bb
August 4, 1972



David F. Fisher, M.Sc.



RECORDING DATES

L.296741- L.296747	June 4, 1971	L.317433 - L.317438	June 29, 1971
L.317387- L.317390	June 4, 1971	L.317446- L.317447	June 29, 1971
L.296748- L.296752	June 9, 1971	L.317876- L.317889	July 23, 1971
L.317439- L.317443	June 21, 1971		

(P) Patented claim

ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA

SAS LAKE CLAIM GROUP

SCALE 1" = 1/4 mile

APPROX LAT & LONG OF
LOWER AT COR OF SWS
47° 22' 30" LATITUDE
79° 21' 00" LONGITUDE

PROJECT NO. 1120

SHEET NO.

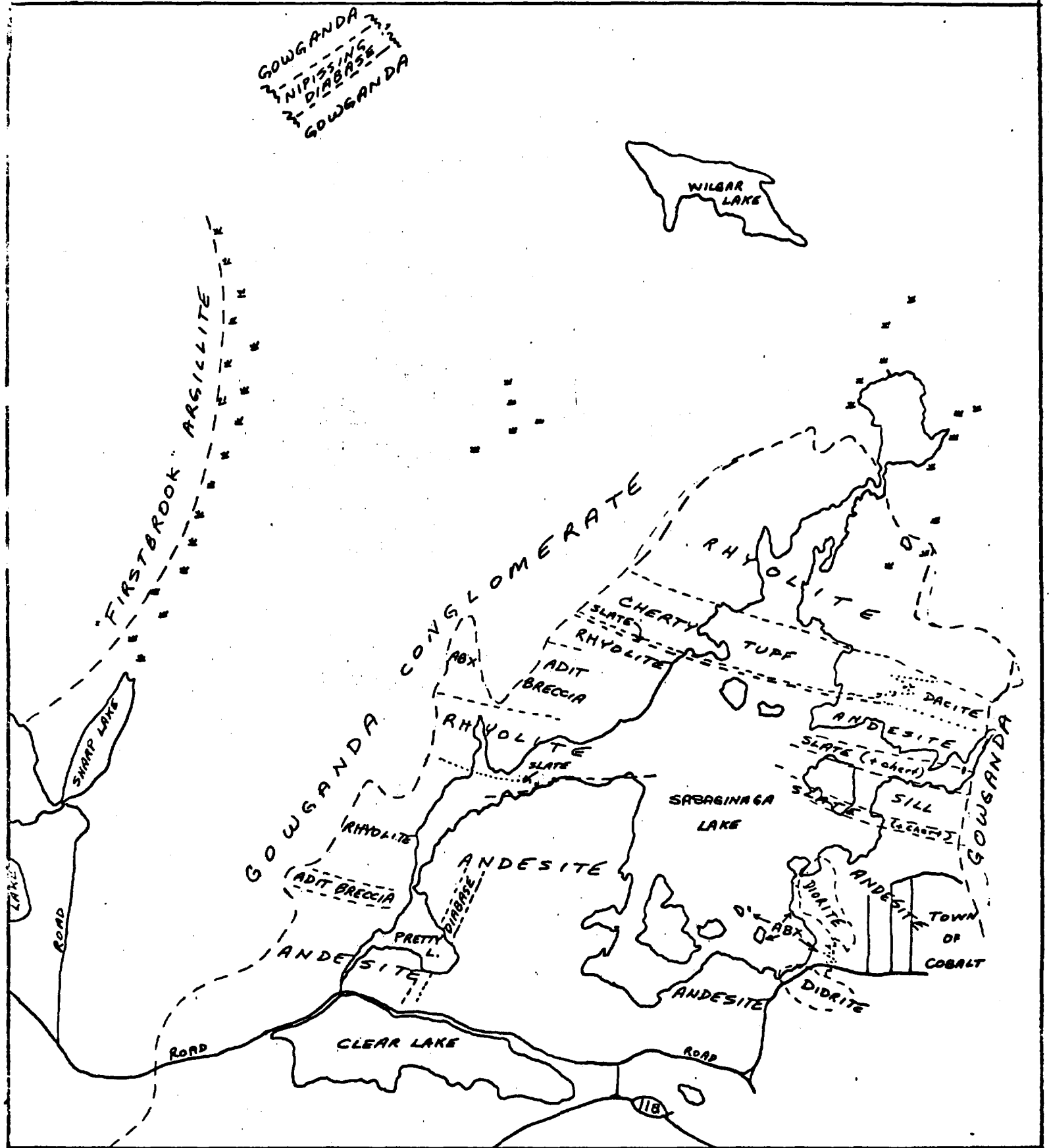
REPORT NO.

1120 31 A/S

FIGURE 2

SAS LAKE PROPERTY
(COBALT)

GEOLOGY 1" = 1/4 mile



**GEOPHYSICAL - GEOLOGICAL
TECHNICAL DATA**



31M05NE0081 2.1163 BUCKE

900

**TO BE ATTACHED AS AN APPENDIX
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.**

PROJECTS
SECTION

Type of Survey Magnetic
Township or Area Coleman and Bucke Townships
Claim holder(s) St. Joseph Explorations Limited
2323 Yonge Street Toronto M4P 2C9
Author of Report David F. Fisher
Address 24 The Links Road Willowdale
Covering Dates of Survey June 21/71 to August 4/72
(linecutting to office)
Total Miles of Line cut 30

MINING CLAIMS TRAVERSED
List numerically

.....L.....296741.....etc.....
(prefix) (number)
.....see attached schedule.....

<u>SPECIAL PROVISIONS CREDITS REQUESTED</u>	DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	Geophysical
ENTER 20 days for each additional survey using same grid.	-Electromagnetic <u>40</u>
	-Magnetometer <u>40</u>
	-Radiometric _____
	-Other _____
	Geological _____
	Geochemical _____

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: Feb 13/73 SIGNATURE: David F Fisher
Author of Report or Agent

PROJECTS SECTION
Res. Geol. _____ Qualifications in this file
Previous Surveys 63A398 Geological 63-2946 not for
assessment credits 63-306-1952, 63-1222-1963 EM + Mag
diff instrument 63-1107 - E m + Mag date diff instrument 1961
Checked by L.D.

GEOLOGICAL BRANCH _____
Approved by _____ date _____

GEOLOGICAL BRANCH _____
Approved by _____ date _____

TOTAL CLAIMS 37

If space insufficient, attach list

OFFICE USE ONLY

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations 3732 Number of Readings 3732
Station interval 50 feet
Line spacing 400 feet
Profile scale or Contour intervals 50 gammas
(specify for each type of survey)

MAGNETIC

Instrument Scintrex MF-2 (fluxgate)
Accuracy - Scale constant see attached specification sheet to Prime base station
Diurnal correction method base station at each cross line @ base line - looped back
Base station location Prime Base Station (BS-1): approx. 109+50W / 10S 15feet west of road to Gore's cottage (east side Sharpe L.), at top of Hill.

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
Time domain Frequency domain
Frequency Range
Power
Electrode array
Electrode spacing
Type of electrode

Dymond Twp.- 468

THE TOWNSHIP OF

BUCKE

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

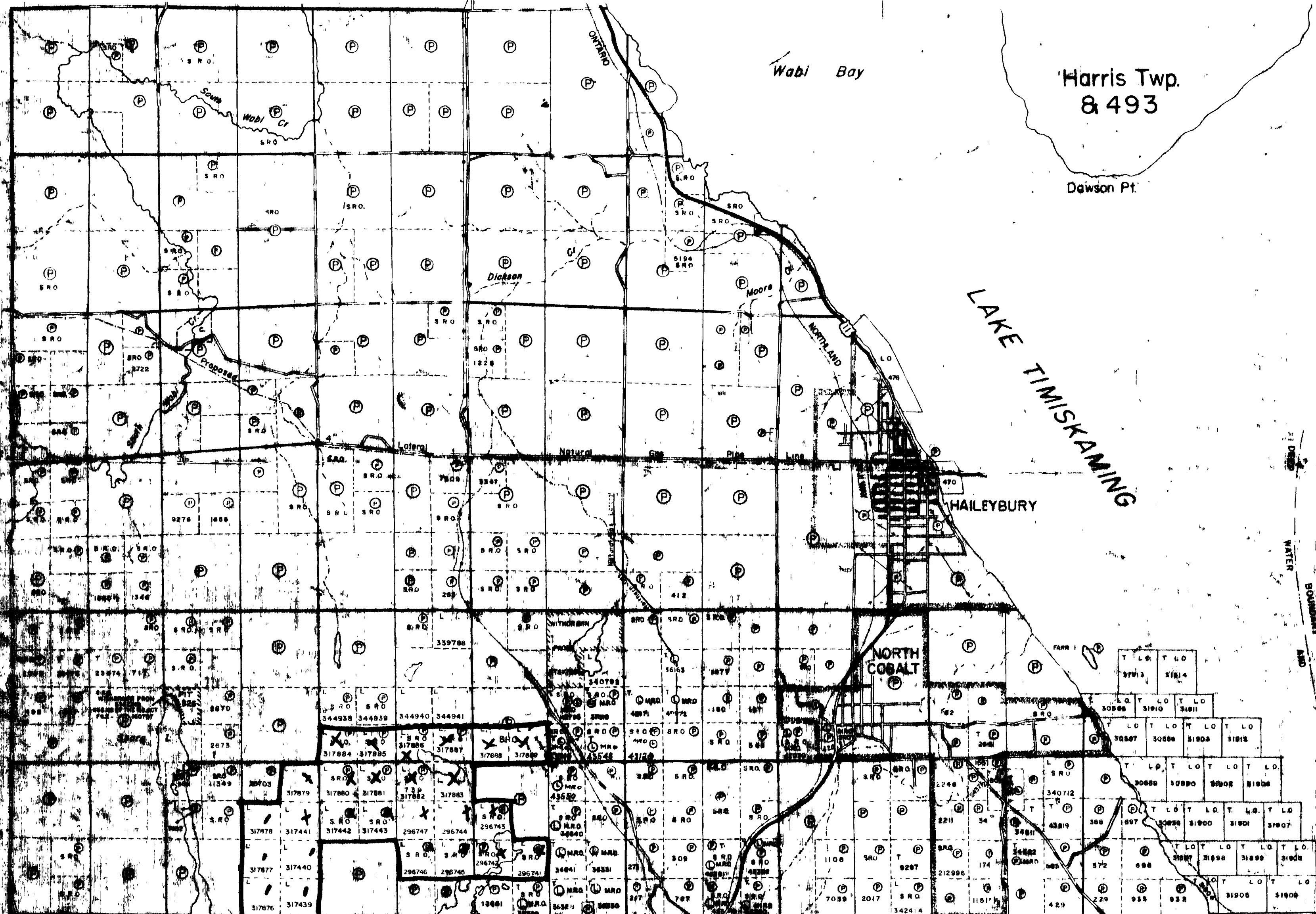
- PATENTED LAND ⊕
- CROWN LAND SALE CS
- LEASES ⊙
- LOCATED LAND Loc
- LICENSE OF OCCUPATION L.O.
- MINING RIGHTS ONLY M.R.O.
- SURFACE RIGHTS ONLY S.R.O.
- ROADS ———
- IMPROVED ROADS ———
- KINGS HIGHWAYS ———
- RAILWAYS ———
- POWER LINES ———
- MARSH OR MUSKEG ———
- MINES ———

NOTES

- 400' Surface Rights Reservation around all Lakes and Rivers
- Mining Claims within Township shown thus mean each only be staked out with consent of the Minister of Mines (Section 35)
- Flooding Rights to Elevation 595 above Sea Level in Lake Timiskaming
- Boundary by D.L.S. Order of O'Driscoll between the Province of Ontario & Quebec in accordance with the Acts 38 Victoria Chapter 5 of Ontario & 38 Victoria Chapter 6 of Quebec resp.
- Proposed Natural Gas Pipeline along Hwy. 11 through this Township.
- N/2 Lot 8 Con. 2 subject to sanitary control of Constance Lake for Town of Haileybury.

PLAN NO - M. 432

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH



Province of Quebec

WATER BOUNDARY AND LINE

MINING LANDS - DATE OF ISSUE
MAR 9 1973
MINISTRY OF NATURAL RESOURCES

Coleman Twp.- M. 454

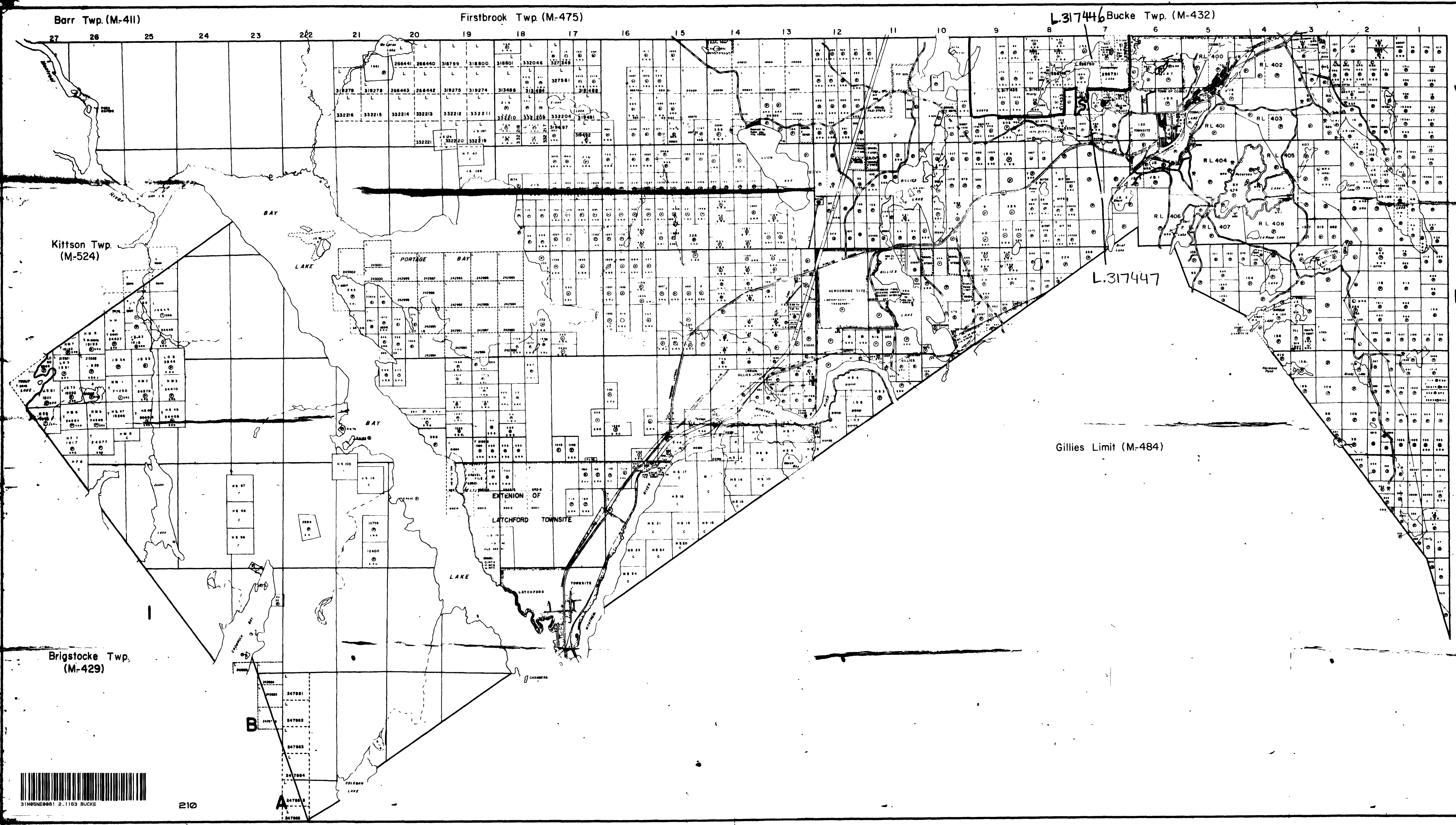
Lorrain Twp.- M. 536



3105NE0081 2 1163 BUCKE

200

2.1163



LEGEND

- PATENTED LAND
- CROWN LAND SALE
- LEASES
- LOCATED LAND
- LICENSE OF OCCUPATION
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- ROADS
- IMPROVED ROADS
- KINDS HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUCKS
- WATER

NOTES

400' Surface Rights Reservation around all Lakes & Rivers

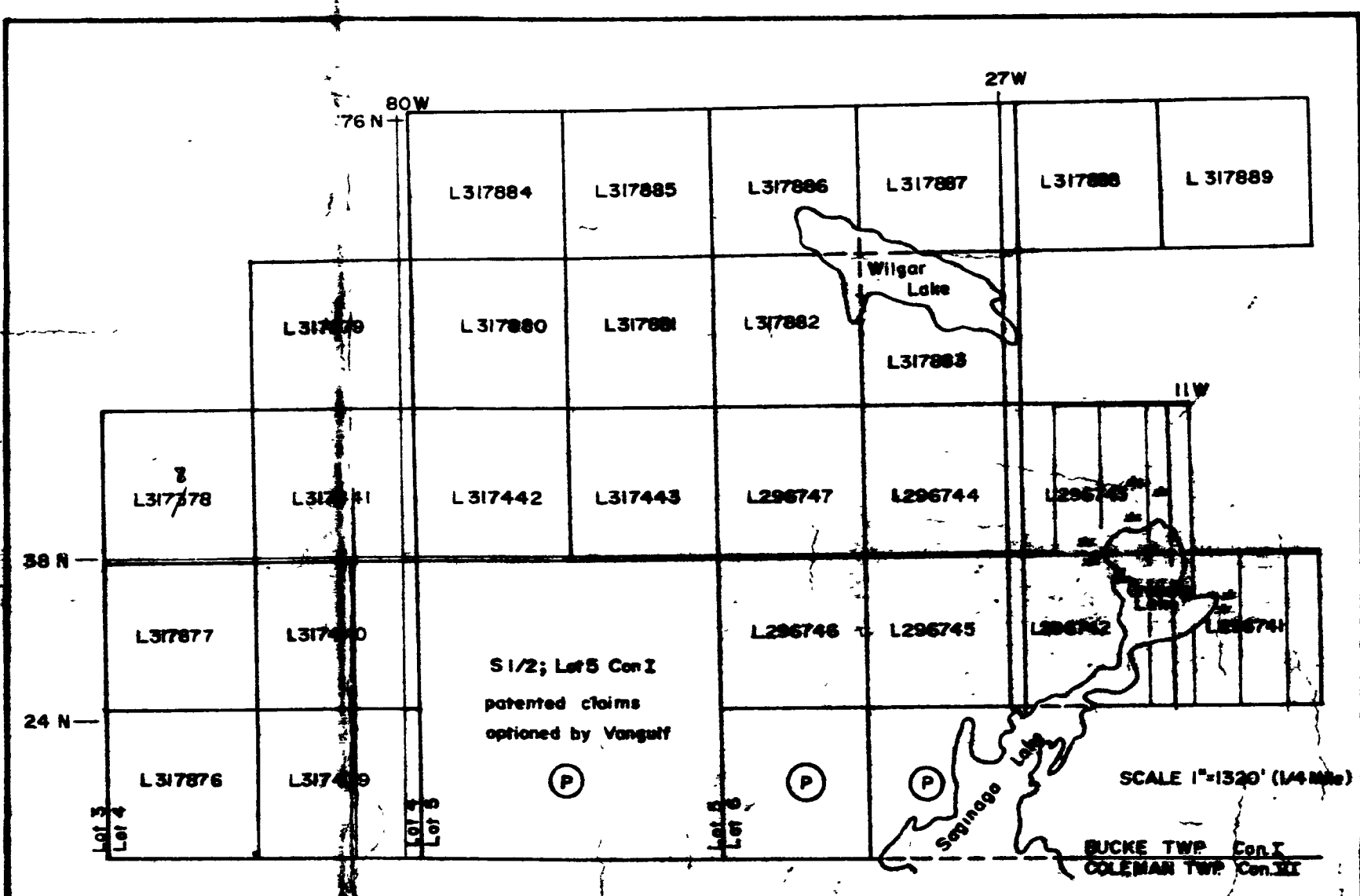
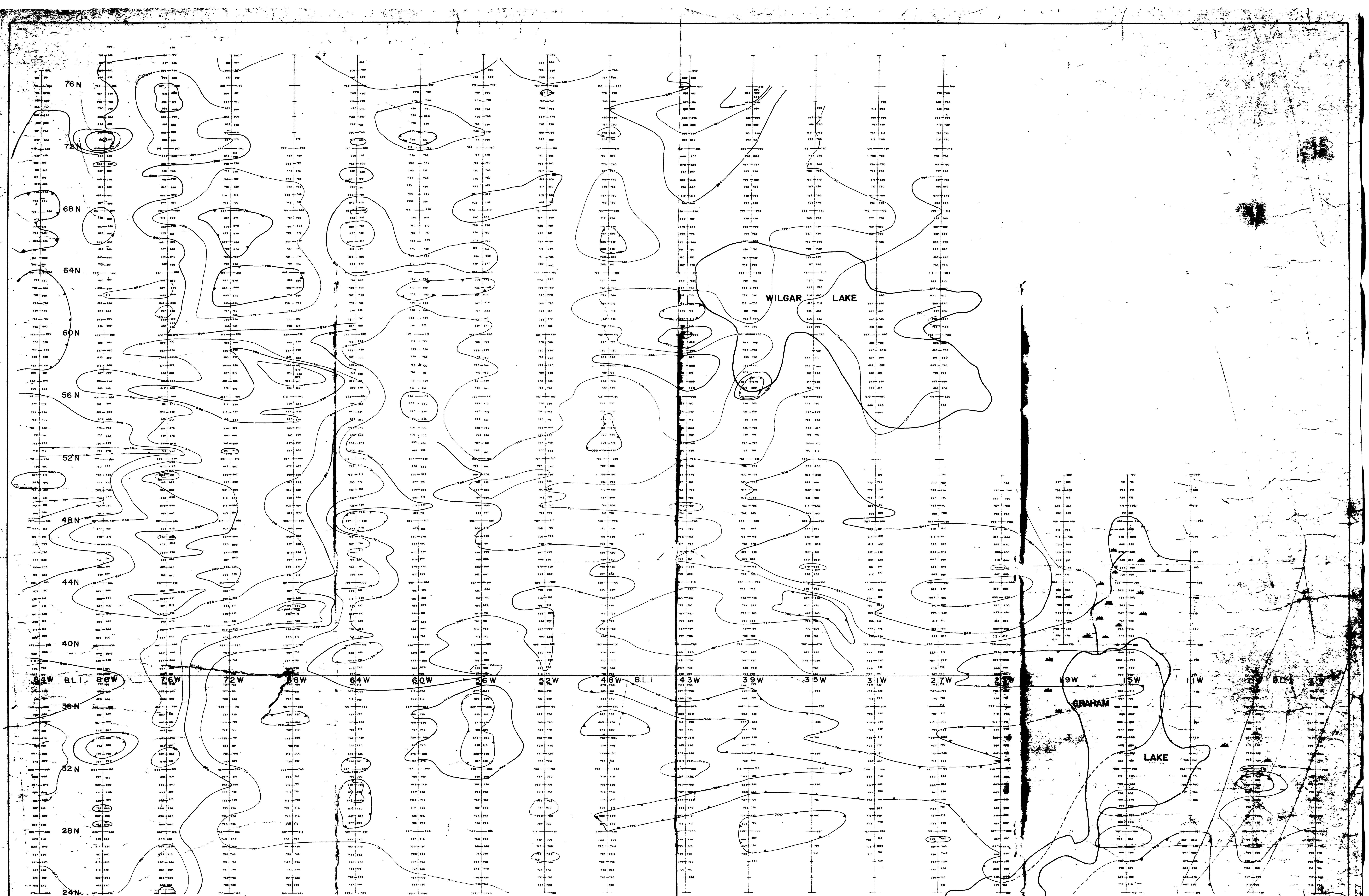
L.O. 7181 Covers Preceding Rights on Mining Rights in H.E.P.E.

Mining Claims in Clear Lake Subject to Water Right when for the Use of Cobalt, Ministry of Ontario, T. Group V, 87 Chap 87

MINING LANDS
 DATE OF ISSUE
MAR 20 1973
 MINISTRY OF NATURAL RESOURCES

PLAN NO-454
 DEPARTMENT OF MINES
 -ONTARIO-





LEGEND

- Picket line
- 695-890 3 ft average value 697 700 Magnetometer readings 707-710
- Magnetic contour
- INSTRUMENT - Scintrex MF 2

REV.	DATE	BY	DESCRIPTION
R.S.N.	08/24/71		SAS LAKE PROPERTY - N1/2, 20/25/26/27
R.S.N.	07/15/72		MAG. SURVEY
R.S.N.	07/27/72		ADDITIONAL DATA
R.S.N.	02/22/73		KEY MAP & ADDITIONAL DATA
M.L.D.	02/17/73		ADDITIONAL DATA

ST. JOSEPH EXPLORATION LTD.

SAS LAKE PROPERTY - NORTH 1/2

MAGNETOMETER SURVEY

DATE: 08/24/71

BY: R.S.N.

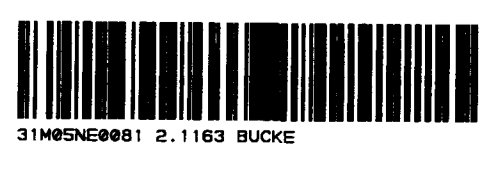
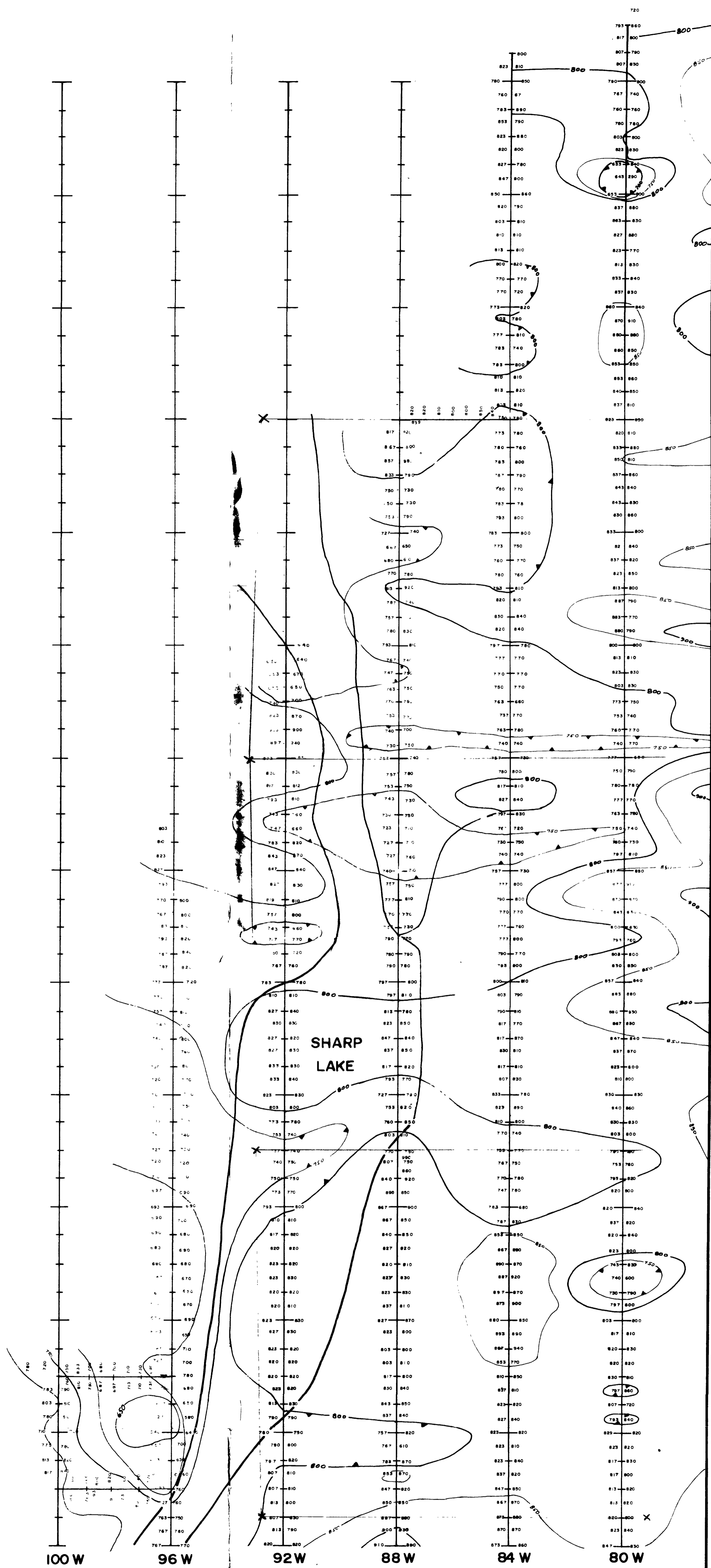
SCALE: 1" = 1320'

PROJECT NO. 1150

DWG. NO. 2-1163

76+00
72+00
68+00
64+00
60+00
56+00
52+00
48+00
44+00
40+00
36+00
32+00
28+00
24+00

108W 104W 100W 96W 92W 88W 84W 80W



31M85NE8881 2.1163 BUCKE

240

2.1163

David J. Ash

ST. JOSEPH EXPLORATIONS LIMITED		
TORONTO CANADA		
SAS LAKE PROPERTY WEST EXTENSION		
MAGNETOMETER SURVEY		
PROJECT NO. 1111		SHEET NO. 3 OF 3
REPORT NO. 1111		DATE 11/15/5