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GEOLOGICAL REPORT

HERRIDGE CREEK PROPERTY

NTS 31L13

STRATHCONA TOWNSHIP

SUDBURY MINING DIVISION

St. Joseph Explorations Ltd.

N. W. Rayner

INTRODUCTION

During the periods October 4 - 7 and November 2 - 4, 1977, geological mapping was carried out on a group of 8 contiguous mining claims in Strathcona Township, Ontario (NTS 31 L 13).

The work was carried out by the following personnel:

N.W.Rayner, 37 Martin Rd., Toronto, Ontario.

J.C.Harrison, 28 Wychwood Park, Toronto, Ontario.

PROPERTY and CLAIM STATUS

The Herridge Creek property consists of 8 claims with the following schedule:

Claim Nos.	Recording Date
S 478718	May 18, 1977
S 478719	May 18, 1977
S 478720	May 18, 1977
S 478721	May 18, 1977
S 478722	May 18, 1977
S 478723	May 18, 1977
S 478724	May 18, 1977
S 478686	May 18, 1977

These claims are held by St.Joseph Explorations Limited, Suite 505, 90 Eglinton Ave.West, Toronto, Ontario, M4R 2E4.

LOCATION and ACCESS

The Herridge Creek property is located four miles south of the town of Temagami on highway 11 (location map). Access is via a road along an Ontario Hydro Transmission line right of way which crosses highway 11 five miles south of Temagami. Follow this hydro-line road a distance of 1½ miles north where the north tie line of the grid intersects the hydro-line right of way (location map).

2/.....

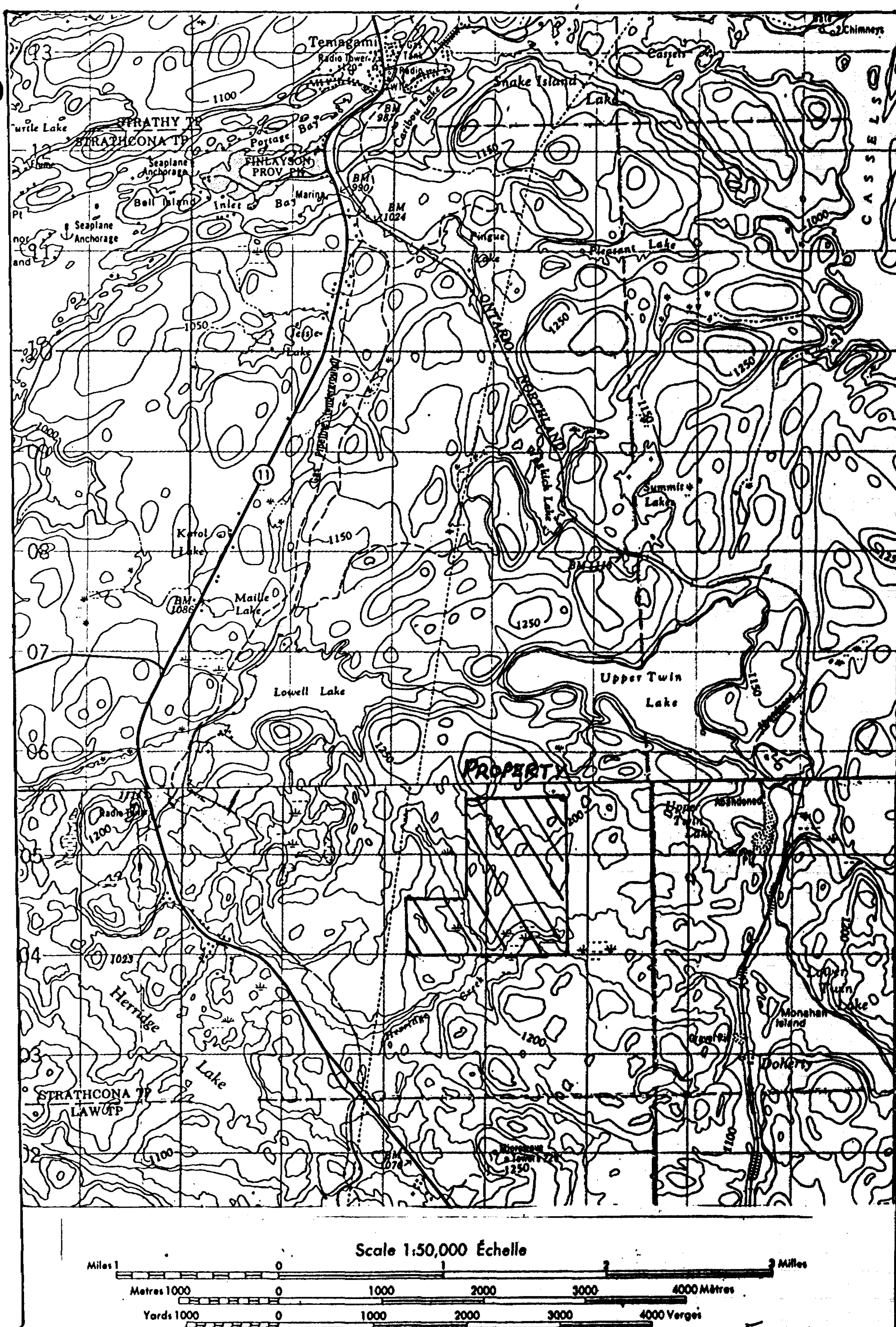
Temagami
Snake Island Lake
STRATHY TP
STRATHCONA TP
Seaplane Anchorage
FINLAYSON PROV PK
Bell Island
Inlet Bay
Marina
Portage Bay
Caribou Lake
Pingue Lake
Pleasant Lake
ONTARIO NORTHLAND
Summit Lake
Karol Lake
Maille Lake
Lowell Lake
Upper Twin Lake
PROPERTY
Lower Twin Lake
Monahan Island
Doherty
Herridge Lake
STRATHCONA TP
LAW TP
CASSELS
Scale 1:50,000 Échelle
Miles 1 0 1 2 3 Milles
Metres 1000 0 1000 2000 3000 4000 Mètres
Yards 1000 0 1000 2000 3000 4000 Verges

FIG 1

TOPOGRAPHY

The area consists of north-south trending outcrop ridges with low swampy valleys. The relief is low with maximum elevation difference of 50 feet between ridges and valleys. Drainage is to the south by a network of creeks, lakes, swamps and beaver ponds.

Pine, birch and some poplar grow on the ridges. The valleys and low areas are forested with spruce, balsam, poplar, and willow.

HISTORY of PREVIOUS WORK

In 1957, Cobalt Consolidated Mines carried out a self potential survey which covers the Herridge Creek property. Three north-south trending S.P. anomalies were located. A total of six diamond drill holes were put down to test the self potential anomalies. Logs of these diamond drill holes reported massive to disseminated sulfide zones containing pyrite, pyrrhotite, chalcopyrite and sphalerite in cherty sediments. At the time of geological mapping no tie points for the Cobalt Consolidated grid were found and no drill sites were located. It is believed that a good deal of the diamond drilling was carried out in the vicinity of old trenches located along lines 9 and 10 N west of the baseline.

GEOLOGY

Introduction

Areas of outcrop were mapped on a scale of 1 cm = 50 m. Grid lines spaced 100 metres apart and pickets placed at 25 m intervals were used for control.

Bedrock exposures make up approximately 25% of the area. The outcrops are small and in most cases moss covered.

The Herridge Creek claims are underlain by a sequence of predominantly mafic metavolcanic rocks interlayered with minor felsic flows and volcanoclastic rocks. These metavolcanics are bounded on the west and south by the Iceland Lake pluton and to the east are overlain by Huronian sediments. The metavolcanics are wrapped around a protrusion of trondjemite-granodiorite in an anticlinal fashion.

TABLE OF FORMATIONS

Recent

- swamp and stream deposits

Pleistocene

- glacial deposits

Precambrian

Proterozoic - Huronian sediments, gowganda tillite

Archean

- felsic plutonic rocks
  - trondjemite-granodiorite
  - aplite, pegmatite
- intermediate to mafic syn-volcanic dykes and sills
  - metagabbro
  - diorite
  - porphyritic leucogabbro
- felsic to intermediate syn-volcanic dykes and sills
  - feldspar porphyry
- felsic to intermediate metavolcanics
  - rhyolite to rhyodacite
  - rhyodacite to dacite
  - massive flow
  - ash tuff
- intermediate to mafic metavolcanics
  - massive to foliated andesite to basalt
  - pillowed basalt
  - massive, medium-grained amphibolite

Rock Types

The oldest rocks observed are Archean metavolcanics. The mafic metavolcanics are andesite to basaltic in composition. Massive, medium-grained amphibolites are metamorphic end products of andesite or basalt. Pillow structure were observed in one outcrop on line 8N 450E, here tops were to the southeast.

The mafic volcanics underlying claims 478718 and 478719 are generally streak banded fine-grained rocks containing thin layers and stream lined masses of dacite and rhyodacite.

The remaining portions of the mafic volcanics are massive and structureless, dark grey to black, fine-grained chloritic rocks.

Where felsic patches exceed 25% of the rock volume and the matrix becomes distinctly dacitic, the outcrops have been classified within the felsic to intermediate metavolcanic unit. Locally massive dacite to rhyodacite outcrops are found especially on line 3W at 300N, line 1+70W at 200N and L5W at 262N. These rocks weather light grey to buff-white and usually contains disseminated pyrite.

Several narrow (25 m) felsic to intermediate syn-volcanic dykes and/or sill have been mapped. In most cases, the feldspar porphyry dykes on line 12N at 275W, and between lines 6N and 7N at 100E are at right angles to schistosity. These porphyry dykes and sills may represent feeders to the volcanic pile.

Small masses of porphyritic leucogabbro and medium grained diorite are probably contact phases of the larger felsic intrusive. The high proportion of mafic minerals in these gabbros may be the result of localized partial melting of the mafic metavolcanics and magmatic mixing. The diorite sill in the central portion of the western claims retains some of the flow textures of the volcanics in much the same way as the medium-grained amphibolites to the south. Xenoliths of metavolcanics are

common within the diorite. The unit named porphyritic leucogabbro (phenocrysts of dark green hornblende) forms irregular coarse grained masses within the metavolcanics. The plugs may be aligned along an early northeast trending fault.

The intrusive body to the north appears to be engulfing the metavolcanics. This intrusive is trondjemite to granodiorite in composition. Xenoliths of rhyodacite to dacite are common within the felsic pluton. Narrow discontinuous dykes of granodiorite and aplite intrude the metavolcanics. These are probably offshoots from the large intrusive masses to the northwest.

Several outcrop of Huronian gowganda tillite were encountered on line 13N at 300E.

Structure

The Herridge Creek property is characterized by rocks having a low dip. At the east edge of the claim group (L8N 450E) relatively undeformed pillowed lavas indicate that the top of the sequence is up and to the southeast.

The most prominent structural feature is the anticlinal fold with the metavolcanic wrapped around the felsic pluton. Schistosity and dips indicate that there are several other minor folds within the metavolcanics. These changes in dips were noted in the vicinity of lines 11N, 12N and 13N east of the baseline and lines 4W, 5W and 6W at about 300N.

Faulting appears to be responsible for the erratic distribution of some rock types. One major fault zone bisects the property in a northeast-soutwest direction. This is also the predominent direction of creek and swamp drainage. North-south topographic low areas may represent fault zones. In the western most claim, the diorite sill appears to be following a fault zone in a northwesterly direction.

Mineralization

A series of mineralized pits and trenches were observed outside the western boundary of the claim ground on lines 7N 300W and 10N 275W. The mineralization in these areas were predominantly pyrite and pyrrhotite with some graphite.

Up to 5% pyrite was common in most of the felsic metavolcanic rocks. On line 13N 175E pyrite, pyrrhotite, chalcopyrite and sphalerite was observed in a thin rhyodacite to dacite ash tuff. One grab sample of this mineralization assayed 0.12% Cu, 0.37% Zn, 0.11% Pb with only trace amounts of Ag and Au. Three grab samples from the pit on L10N assayed as follows:

Sample 1719 - .10% Cu, 0.02% Zn, tr Pb, tr Au, tr Ag.
1720 - .02% Cu, 0.38% Zn, tr Pb, nil Au, tr Ag.
1721 - .34% Cu, 0.01% Zn, tr Pb, tr Ag, tr Ag.

On line 5W 262N a rhyolitic rock containing 10% pyrite and pyrrhotite with some possible sphalerite gave low assays of 0.047% Cu, 0.067% Zn, 0.019% Pb, 0.09 oz Ag. Gold was not included in the assay. Just south of this outcrop is a strong magnetic anomaly. The magnetic anomaly was found with the brunton compass, a 60° deflection of the needle was recorded in this area.

Noteworthy sulfides were also found in felsic tuff bands at L1+40W 035N and at 1+75W 275N. Assays of grab samples from these two locations were very low in Cu, Zn, Pb and Ag.

CONCLUSIONS and RECOMMENDATIONS

Detailed mapping of the Herridge Creek property has resulted in the recognition of a felsic volcanoclastic horizon of possible economic interest.

A horizontal loop survey carried out by J.Wright outlined three anomalous zones which are all one line conductors. The axis of these conductors are at the following locations: L5N BL, L7N 45W and L10N 210W.

Further geophysical work should be carried out covering potential mineralized horizons. The present horizontal loop survey may be inadequate due to the shallow dip of the rock units. Using the vertical mode or minimum coupling with the Max Min II system may enhance our present conductors and locate new conductors.

If suitable targets can be outlined in these areas of interest using geophysical or other techniques then drilling is warranted.

Respectfully submitted,

N.W. Rayner.

NWR*MS

N.W.Rayner
Geologist

Ontario

Ministry of Natural Resources

File 2.2672

GEOPHYSICAL – GE(
TECHNICAL

31M04SW0141 2.2672 STRATHCONA

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TO BE ATTACHED AS AN /
FACTS SHOWN HERE NEE
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geological Mapping

Township or Area Strathcona Township

Claim Holder(s) St. Joseph Explorations Limited
Suite 505, 90 Eglinton Ave West,
Toronto, Ont.

Survey Company St. Joseph Explor.

Author of Report N. W. Rayner

Address of Author Ste 505, 90 Eglinton A. W. Toronto

Covering Dates of Survey July 22/77 - May 3/78
(linecutting to office)

Total Miles of Line Cut 13.2 miles (21.24 km)

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other	
Geological	40
Geochemical	

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

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: May 3/78 SIGNATURE: N.W. Rayner
Author of Report or Agent

L.D

Res. Geol. _____ Qualifications 2.1785

Previous Surveys

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
S	478718
S	478719
S	478720
S	478721
S	478722
S	478723
S	478724
S	478686

If space insufficient, attach list

TOTAL CLAIMS 8

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 _____

NOTES

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

SAND and GRAVEL

(61) Gravel File 132830
(62) Gravel File 146693

Sand and gravel in this township reserved until further notice.

AREAS WITHDRAWN FROM STAKING

S.R. – SURFACE RIGHTS M.R–MINING RIGHTS

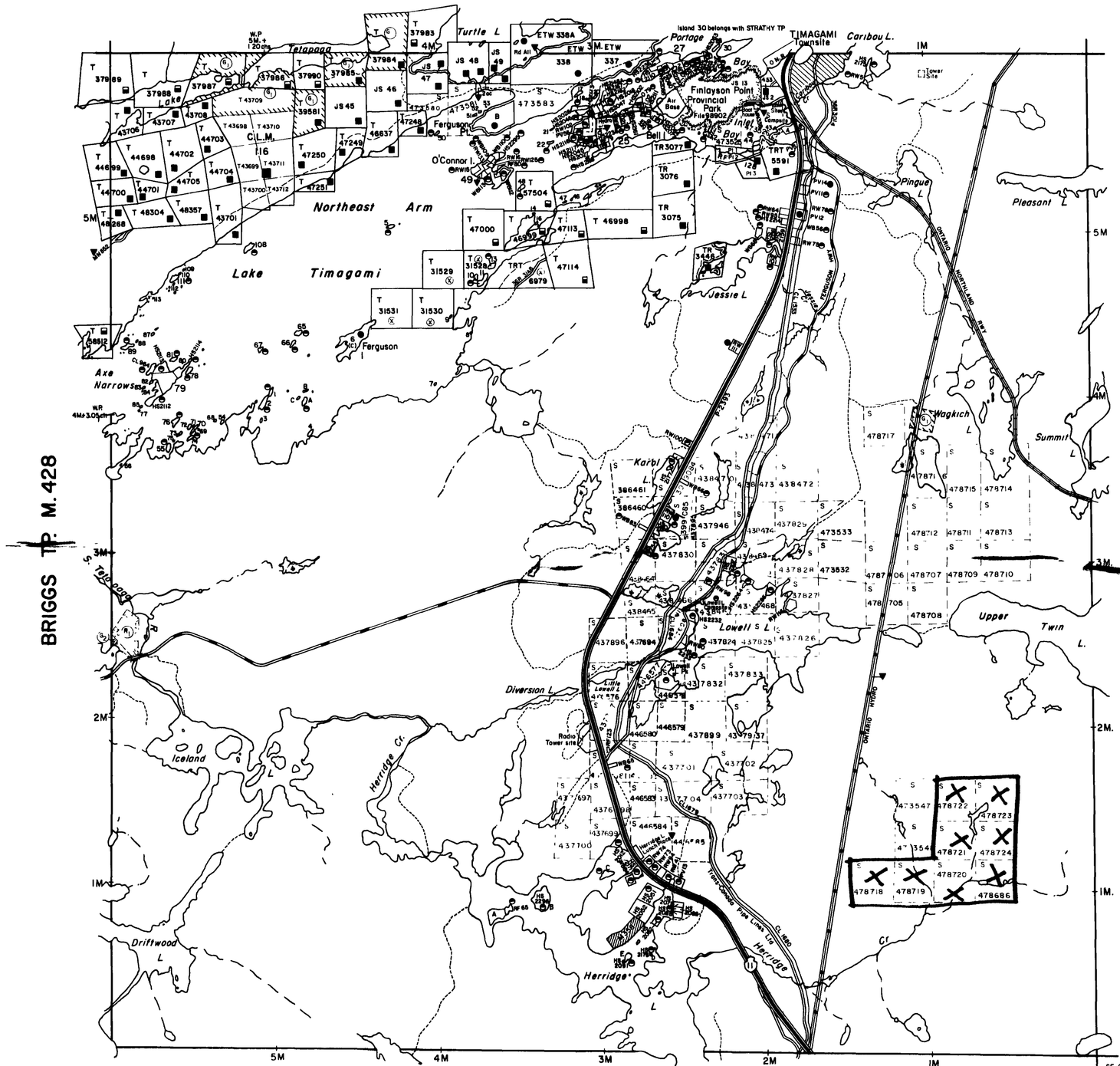
	Section	Order No	Date	Disposition	File
(61)	43 (R S O 1970)	W 70/76	13/12/76	S R	146693

Island 25 (Bell Id.) - all Crown land reserved File 68120
" 27 - " " " " " 181119
" 49 (O'Connor) - " " " " " 181200

Islands in Lake Timagami NOT OPENED FOR STAKING.

This Township lies within THE CORPORATION OF THE IMPROVEMENT DISTRICT OF TEMAGAMI. File 176049.

STRATHY TP. M.596



LEGEND

- HIGHWAY AND ROUTE No.
- 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
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES

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	▼
CROWN LAND SALE	CS
ORDER-IN-COUNCIL	OC
RESERVATION	(R)
CANCELLED	(X)
SAND & GRAVEL	(G)

SCALE : 1 INCH – 40 CHAINS

FEET 0 500 1000 2000 4000 6000 8000
METRES 0 200 400 600 800 1KM 2KM

ACRES	HECTARES
40	16

TOWNSHIP 2.2672

STRATHCONA

DISTRICT
NIPISSING

MINING DIVISION
SUDBURY

Ministry of Natural Resources
Ontario Surveys and Mapping Branch

Date MAY 1974
Whitney Block
Queen's Park, Toronto

Plan No
M.595

LEGEND – GEOLOGY

- Huronian Sediments
  - 7a Gowganda tillite
- Felsic Plutonic Rocks
  - 6a Trondjhemite–grandiorite
  - 6d Aplite, pegmatite
- Intermediate to Mafic Syn-volcanic Dykes & Sills
  - 5a Meta gabbro
  - 5b Diorite
  - 5c Porphyritic leucogabbro
- Felsic to Intermediate Syn-volcanic Dykes & Sills
  - 4a Feldspar porphyry
- 3 Metasediments
- 2 Felsic to Intermediate Metavolcanics
  - 2a Rhyolite to rhyodacite
  - 2b Rhyodacite to dacite
  - 2c Massive flow
  - 2d Ash tuff
- Intermediate to Mafic Metavolcanics
  - 1a Massive to foliated andesite to basalt
  - 1b Pillowed basalts
  - 1c Massive, medium-grained amphibolite

Fault

Schistosity

Mineral lineation

Outcrop area, small exposure

Po	Pyrrhotite
Py	Pyrite
Sph	Sphalerite
Cp	Chalopyrite
gr	Graphite

473547

473548

North Tie Line

L13N L12N L11N L10N L9N L8N L7N L6N L5N L4N L3N L2N L1N L0

L8W L7W L6W L5W L4W L3W L2W L1W

West Tie Line

BASELINE 0

East Tie Line

478718 478719 478721 478722 478723 478724 478720 478686

N.W. Rayner

ST JOSEPH EXPLORATIONS LIMITED

Herridge Creek
STRATHCONA TWP (Ont)
GEOLOGY

Lake, stream, swamp

Beaver dam

Lumber roads

Claim posts, located
" " unlocated

GEOLOGY BY: N.W. Rayner, J.C. Harrison
October 7, 1977