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ST.JOSEPH EXPLORATIONS LIMITED

REPORT ON

GEOLOGICAL and GEOCHEMICAL SURVEYS

SALERNO LAKE AREA - SILVER MOUNTAIN GRID

SNOWDON TOWNSHIP, ONTARIO

PROJECT 3188

January 30, 1981

Dennis Robertson

INTRODUCTION

This report covers work done on eight (8) mining claims in Snowdon Township, County of Haliburton, in the mining district of Eastern Ontario. The claims are held by Canadian Smelting & Refining (1974) Limited and the work is reported by St.Joseph Explorations Limited on their behalf.

The field work was performed from May 16 to May 18, 1979. The surveys were done by the following persons, all at that time employees of St.Joseph Explorations Limited, Suite 505, 90 Eglinton Ave. West, Toronto, Ontario.

Geological Survey	Geochemical Survey
D. Robertson	R. Feniak
A. Soever	B. Wilson
	S. Navatril

LOCATION and ACCESS

The Salerno Lake Area - Silver Mountain Grid property is located in the Canadian Grenville approximately 130 km northeast of Toronto. It lies 12 km east of Kinmount and 13 km south of Gooderham in Glamorgan Township. Access is via paved highway 503 east from Kinmount which diagonally cuts through the property. The property's latitude and longitude are 44° 50' 30" and 78° 33' 10". It can be found on the Minden map sheet NTS 31D/15. Further details regarding the location can be found on the accompanying location map. (Sheet 1).

PROPERTY STATUS

The property is currently held by Canadian Smelting & Refining (1974) Limited, Suite 505, 90 Eglinton Ave. West, Toronto, Ontario. The surveys covered in this report were performed by St.Joseph Explorations Limited.

This work report covers eight (8) claims numbered EO 507175, EO 507176, EO 507267, EO 507268, and EO 507273-EO 507276 inclusive.

GEOLOGICAL and GEOCHMICAL SURVEYS

The geological and geochemical surveys were carried out on a flagged and chained grid with 100 m line spacing, flagged at 30 m intervals. A flagged grid (16.2 km) was needed because the claims were on S.R.O. lots and owners did not favour bush being cut. The grid was previously reported on geophysical work (October 15, 1979). The base map was constructed using grid chainage information.

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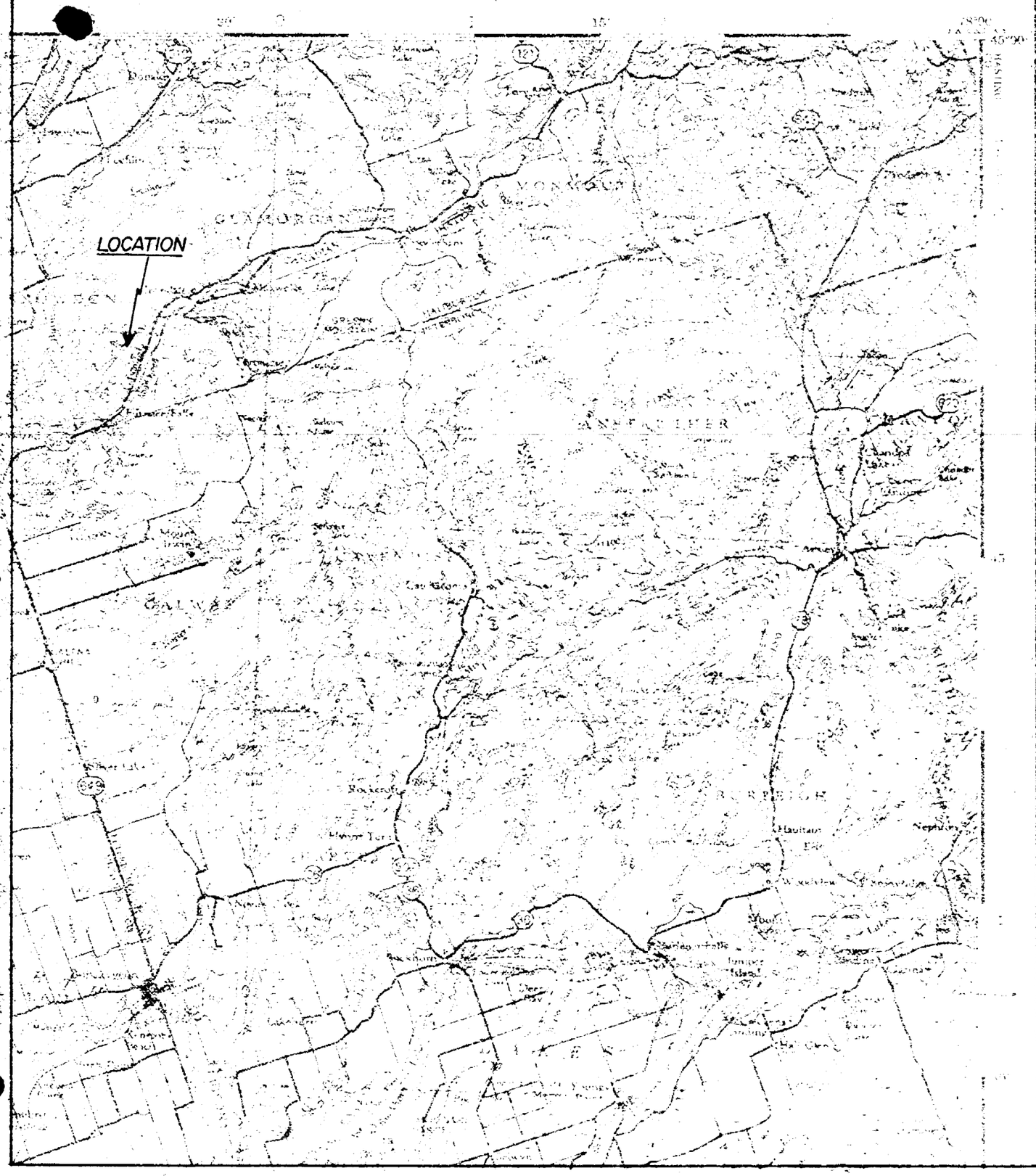
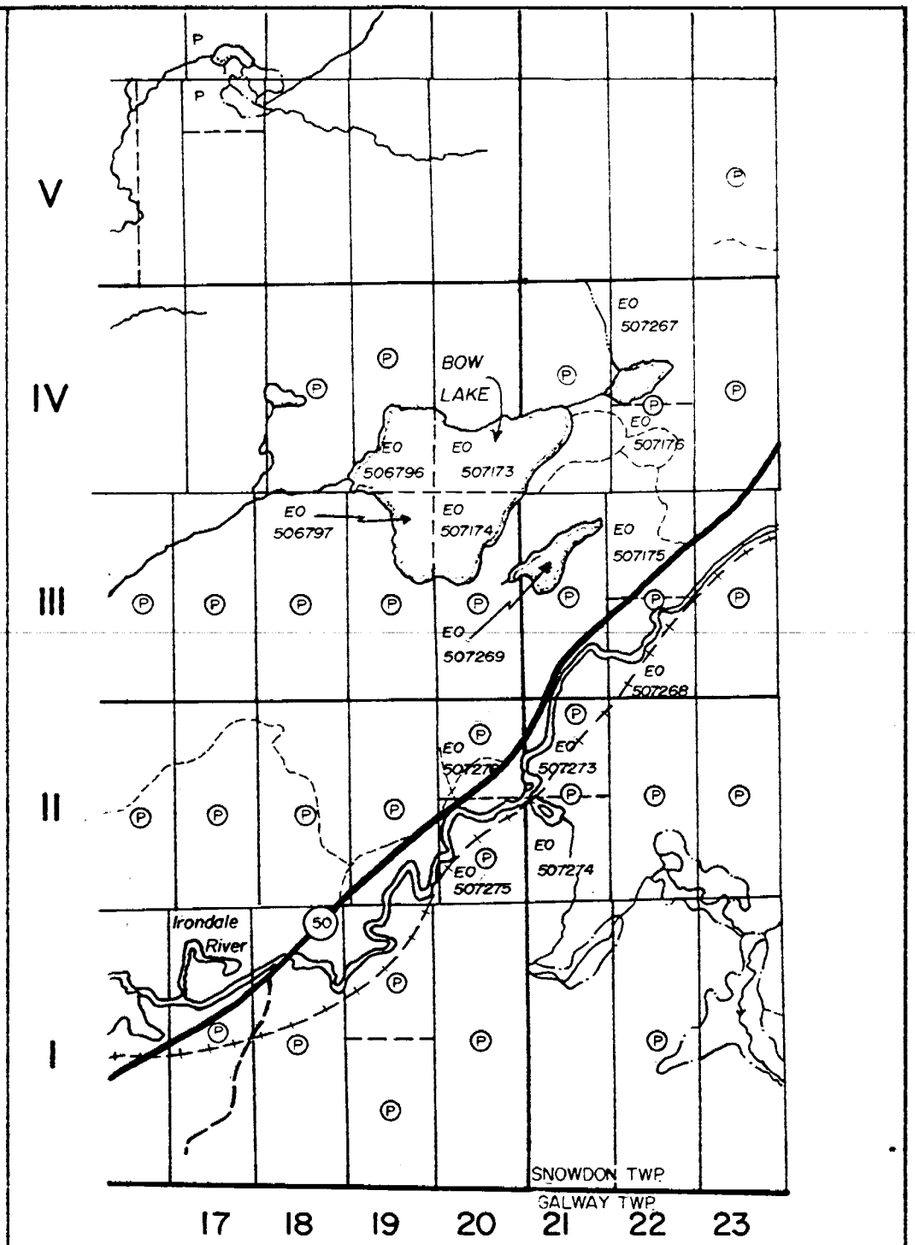




ST. JOSEPH EXPLORATIONS LIMITED
TORONTO CANADA

Salerno Lake Property - S.E. Ontario
SILVER MOUNTAIN GRID
LOCATION & CLAIM MAP
SCALE 1"=1/4 MILE

APPROX. LAT. & LONG. OF LOWER LEFT CORNER OF MAP
LATITUDE
LONGITUDE

PROJECT NO. 3188
REPORT NO.

SHEET NO. 1 OF 5
NTS 31D

The geolocial mapping was carried out using the flagged line as control for location of outcrops. Sheet 1 is a geological map of the claims at 1:5000 scale.

Approximately 250 grams of soil were collected at 30 m intervals along the flagged lines, utilizing a spade. Preference was given for B horizon material, but A horizon or peat samples were collected in the absence of a B horizon.

All samples were sent to Bondar-Clegg & Co. Ltd. of Ottawa, where they were sieved to obtain the minus 210 micron (-80#) fraction. This fraction was digested with a HCl/HNO3 acid mixture. The resulting solutions were analysed for Pb, Zn, Fe by atomic absorption spectrophotometry. Results are shown as individual element plots on sheets 3, 4, 5, contoured at appropriate intervals. A total of 550 samples were collected and analysed from the eight claims. For analytical control, duplicate samples were collected at every fiftieth site, and internal standards were inserted every 20 samples. Reproducibility was found to be good.

GEOLOGY

Regional Setting

The Silver Mountain Grid is located in the Grenville Province of southeastern Ontario. The general area is underlain by rocks of the Grenville Supergroup, which is dominated by NE-trending marble belts with smaller belts and areas of biotite paragneiss $\pm$ amphibolite, rusty paragneiss, syenitic gneiss and impure quartzite. A variety of intrusive rocks is present, including gabbro, quartz diorite, syenite and granitic types. Structure is complex, with at least three phases of deformation.

The claims fall within the following published map areas:

Map No. 19576 - Haliburton-Bancroft Area;
Ontario Department of Mines. Scale 1" = 2 miles

Property Geology (Sheet 2)

The claims are underlain by Precambrian Proterozoic rocks of the Grenville Series consisting of marbles, paragneisses and granitic gneisses. Sheet 2 illustrates the geology of the claims. The major lithologic unit is the alternating calcitic, dolomitic and silicated dolomitic marbles trending NE-SW, dipping moderately to the south. Rock types are shown on the legend of Sheet 2, the geological map (scale 1:5000).

Calcitic marble (map-unit 1) includes phlogopitic-graphitic and dolomitic varieties. Dolomitic marble (map-unit 2) and silicated dolomitic marble (map-unit 3) are white to light grey with varying amounts of graphite, calcite, serpentine, diopside, tremolite, quartz and rarely pyrite and pyrrhotite. Map-unit 5 is a foliated quartz-feldspar-biotite paragneiss unit conformable to the surrounding marble lithologies. A unit of granitic orthogneiss (map-unit 8) occurs in the northwest portion of the claims. Pegmatite is present throughout most of the granitic body.

Metamorphic layering and foliation are well defined and trend northeasterly to easterly across the claims. A few lineations plunging in a southeast direction were defined by minor fold axes and boudin orientation.

Mineralization

Minor zinc showings were located during the geological mapping. The showings can be described as minor traces of fine grained sphalerite and positive zinc tests associated with the dolomitic and silicated dolomitic marbles. The zinc occurrences are not of any economic significance.

SOIL GEOCHEMISTRY

Interpretation

Most of the soil samples collected were B horizon material. The soils of the claims can be categorized into two groups:

1) soils developed over bedrock
2) soils developed on river sands.

In the absence of B horizon material, A horizon or peat or sand samples were collected. These are mostly in swamps and lowlying areas and in some cases on outcrop areas.

Results of the soil geochemical survey are presented on sheets 3, 4 and 5 as well as Figures 1 and 2. Sheets 3, 4, 5 are individual element plots of lead, zinc, iron respectively at 1:5000 scale and contoured at appropriate intervals. Figures 1 and 2 are cumulative frequency plots for Pb and Zn.

The cumulative frequency curves were drawn for the soil sample results so as to determine the lower limits of an anomalous population(s). Thresholds for lead and zinc were chosen, and for the purpose of this report, defined as the upper limit of background fluctuation. Within the data set, the organic samples, the river sands and soils developed over bedrock have not been treated separately, but their influence can be examined visually as well as empirically.

Lead

The cumulative frequency curve for lead (Figure 1) shows two distinct populations; the bedrock population and the river sand population. This categorization of populations can be made when looking at the individual element plot (sheet 3). It can be seen that samples taken from the river sands along the flats of the river generally have concentrations of Pb, less than 20 ppm, in contrast to the elevated Pb concentrations observed from analysed soils developed over a bedrock source. The observed river sands are probably masking any Pb response. For the purpose of this report, we have taken the threshold for Pb at 50 ppm, as reflected by the bedrock population (Figure 1). This probably marks the lower limit of the anomalous population.

The lead values on sheet 3 are contoured at the 80 ppm and 28 ppm intervals. Samples containing greater than 80 ppm Pb are considered anomalous. The anomalies observed (sheet 3) reflect a possible bedrock source restricted to the dolomitic and silicated dolomitic marble units.

Zinc

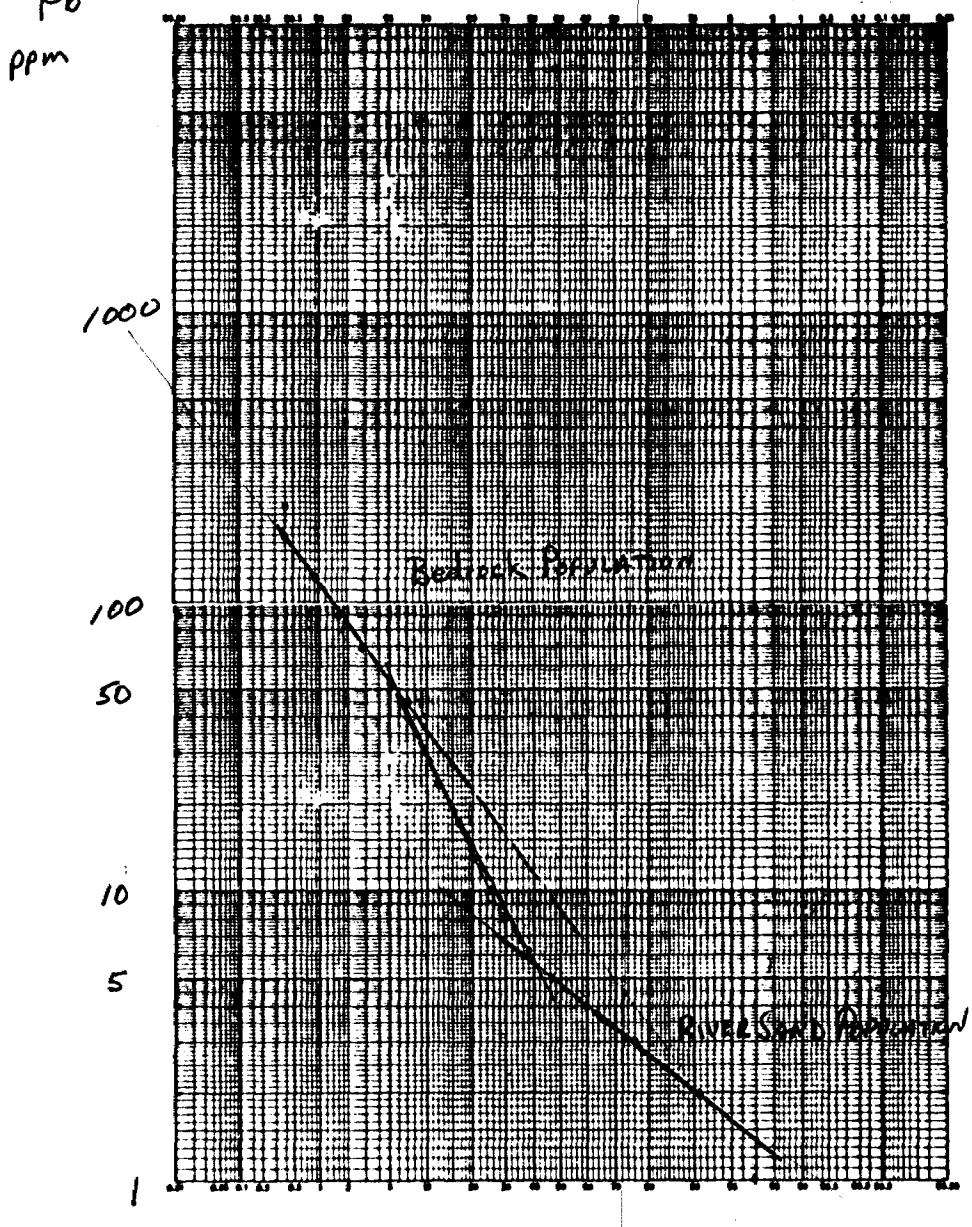
The threshold for zinc is 37 ppm (Figure 2). A 430 ppm contour interval was chosen to isolate possible anomalous samples of the bedrock population from the overlap of high background levels and samples of the river sand population. Sheet 4 is the individual element plot for Zn, contoured at intervals of 430 ppm and 110 ppm.

On the claims, two areas exhibit samples with generally greater than 110 ppm Zn concentration; the northern area (between L16+00N to L7+00N) and the southern boundary of the claim group (L7+00S & L8+00S) (see sheet 4). Both these areas represent elevated zinc levels in bedrock. Within the northern area, trace zinc mineralization was encountered.

Iron

The data for iron (sheet 5) is primarily utilized to separate hydromorphically affected lowlying areas, areas with reducing conditions. Samples with values of less than 1% Fe have a high probability of representing areas that A horizon material was collected and/or areas where A-B material from topographic lows and outcrop areas with poorly developed soil profiles. Samples with greater than 1.5% Fe reflect areas that are probably freely drained.

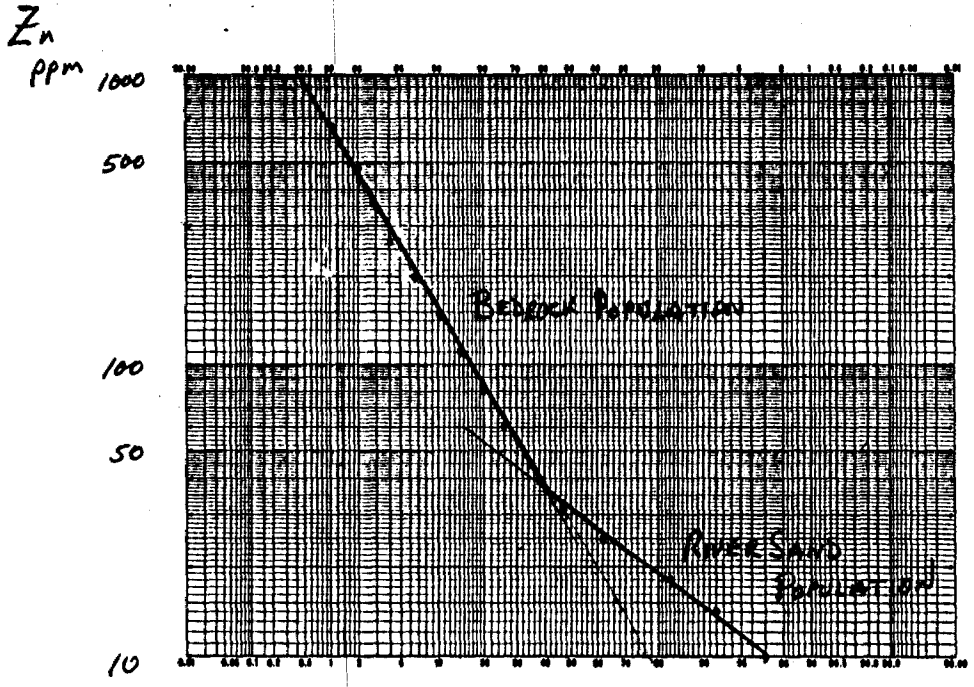
N = 548



Threshold (Bedrock)	50 ppm
MEAN	9 ppm
1st Standard Deviation	28 ppm
2nd Standard Deviation	80 ppm

Figure: 1

N=550



Threshold	37 ppm
MEAN	33 ppm
1st STANDARD DEVIATION	110 ppm
2nd " "	430 ppm

Figure: 2

CONCLUSIONS and RECOMMENDATIONS

a) Bedrock geology consists of 3 main lithologies
   i) marble (calcitic, dolomitic, silicated dolomitic)
   ii) paragneiss
   iii) granitic gneiss all of the Grenville Supergroup
b) Minor trace disseminated zinc mineralization was found to occur in the dolomitic and silicated dolomitic marble unit.
c) Soil geochemistry was effective in isolating elevated zinc levels, probably attributable to a bedrock source.
d) No further work is warranted at this time.

Respectfully submitted,

Dennis Robertson.

DR*MS

Dennis Robertson
Geologist

Ontario

Ministry o

File

GEOPHYSICAL – GE
TECHNICAL

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 & Geochemical

Township or Area Snowdon Township

Claim Holder(s) Canadian Smelting & Refining (1974) Limited
#505-90 Eglinton Ave.W., Toronto, Ont. M4R 2E4

Survey Company St.Joseph Explorations Limited, address as above

Author of Report D.Robertson

Address of Author #505-90 Eglinton Ave.W.,Toronto,Ont.M4R 2E4

Covering Dates of Survey May 16-May 18, 1979
(linecutting to office)

Total Miles of Line Cut 16.2 km (previously reported)

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	20
Geochemical	20

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

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

DATE: January 30 SIGNATURE: Dennis Robertson
Author of Report or Agent

Res. Geol. _____ Qualifications 63.11401

Previous Surveys

File No.	Type	Date	Claim Holder
			L.D.

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
EO	507175
EO	507176
EO	507267
EO	507268
EO	507273
EO	507274
EO	507275
EO	507276

If space insufficient, attach list

TOTAL CLAIMS 8

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken EO 507175, EO 507176, EO 507267, EO 507268, EO 507273-EO 507276 inclusive

Total Number of Samples 550

Type of Sample soil
(Nature of Material)

Average Sample Weight 250 gm

Method of Collection dig hole w/spade

Soil Horizon Sampled B-horizon; some A horizon

Horizon Development well developed & river sands

Sample Depth 15-30cm

Terrain rolling terraine w/numerous o/c ridges as well as flat gently rolling areas

Drainage Development moderately mature

Estimated Range of Overburden Thickness 0-8m

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis 210 micron (-80#)

General

ANALYTICAL METHODS

Values expressed in: per cent ☐ p. p. m. ☒ p. p. b. ☐

Cu, (Pb), (Zn), Ni, Co, Ag, Mo, As, (circle)

Others Fe (%)

Field Analysis (nil tests)

Extraction Method

Analytical Method

Reagents Used

Field Laboratory Analysis

No. (nil tests)

Extraction Method

Analytical Method

Reagents Used

Commercial Laboratory (550 tests)

Name of Laboratory Bondar-Clegg & Co. Ltd.

Extraction Method Hot acid extraction

Analytical Method Atomic Absorption

Reagents Used

General

L E G E N D

8 — GRANITIC ROCKS
- a - Granitic orthogneiss
- b - Massive porphyritic
- c - Massive equigranular
- P - Pegmatite

7 — ALBITE SYENITE - massive, fine grained

6 — GABBRO, DIORITE

5 — PARAGNEISS
- a - Banded quartz - feldspar biotite paragneiss
- b - Rusty micaceous paragneiss
- c - Dark grey, rusty siliceous schist ± graphite
- M - Migmatite

4 — QUARTZITE
- a - Grey banded to massive quartzite
- b - Massive rusty quartzite
- c - Interlayered quartzite and paragneiss
- d - Quartz-tremolite-muscovite schist ± graphite ± pyrite

3 — SILICATED DOLOMITIC MARBLE
- a - Serpentine marble ± talc
- b - Tremolite diopside marble and tremolite diopside rock
- bb - Massive diopside
- c - Tremolite - diopside interlayered with vitreous quartzite
- cc - Laminated quartz - diopside
- d - Interlayered quartz/diopside and grey banded dolomite

2 — DOLOMITIC MARBLE
- a - White to grey marble
- b - Grey banded marble
- c - Pyrite (up to 2%) white to grey marble
- d - Graphitic marble ± phlogopite
- e - Calcitic dolomitic marble

1 — CALCITIC MARBLE
- a - Reddish hematite marble ± talc
- b - Phlogopitic graphitic marble
- c - Grey banded marble ± pyrite ± graphite
- d - Rusty calc-silicate marble ± diopside
- e - Dolomitic calcite marble
- q - Calcitic marble with quartz

Zn; (Zn) Sphalerite; positive zinc test
Py Pyrite
Po Pyrrhotite
Hm Hematite
Mt Magnetite
F Fetid
× Outcrop; float
Geological contact; defined, approximate
Schistosity or metamorphic layering; inclined, vertical, horizontal
Crenulation cleavage
Earlier isoclinal minor fold
Later open minor folds
Mineral lineation
Boudin attitude
Jointing; inclined, vertical

TIE LINE
1+50E
3+00E
4+10E

EO 507267
EO 507173
EO 507174
EO 506796
EO 506797
EO 507269
EO 507176
EO 507175
EO 507268
EO 507276
EO 507273
EO 507275
EO 507274

L0 L1E L2E L3E L4E L5E L6E L7E L8E L9E L10E L11E

L 21+00N
L 20+00N
L 19+00N
L 18+00N
L 17+00N
L 16+00N
L 15+00N
L 14+00N
L 13+00N
L 12+00N
L 11+00N
L 10+00N
L 9+00N
L 8+00N
L 7+00N
L 6+00N
L 5+00N
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L 3+00N
L 2+00N
L 1+00N
L 0+00N
L 1+00S
L 2+00S
L 3+00S
L 4+00S
L 5+00S
L 6+00S
L 7+00S
L 8+00S

7+50W
6+00W
4+50W
3+00W
1+50W
BASE LINE 0+00W

BOW LAKE
LITTLE BOW LAKE
IRONDALE RIVER
HIGHWAY 503
ABANDONED RAILWAY
Cedar Swamp
Sand e Boulder
Low Ground
Spring
BASE STATION
Open Field

SYMBOLS
- PAVED ROAD
- TRAIL
- ABANDONED RAILWAY
- POWER LINE
- CLAIM POST

ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA

SALERNO LAKE PROPERTY, S.E. ONTARIO
SILVER MOUNTAIN GRID

GEOLOGY

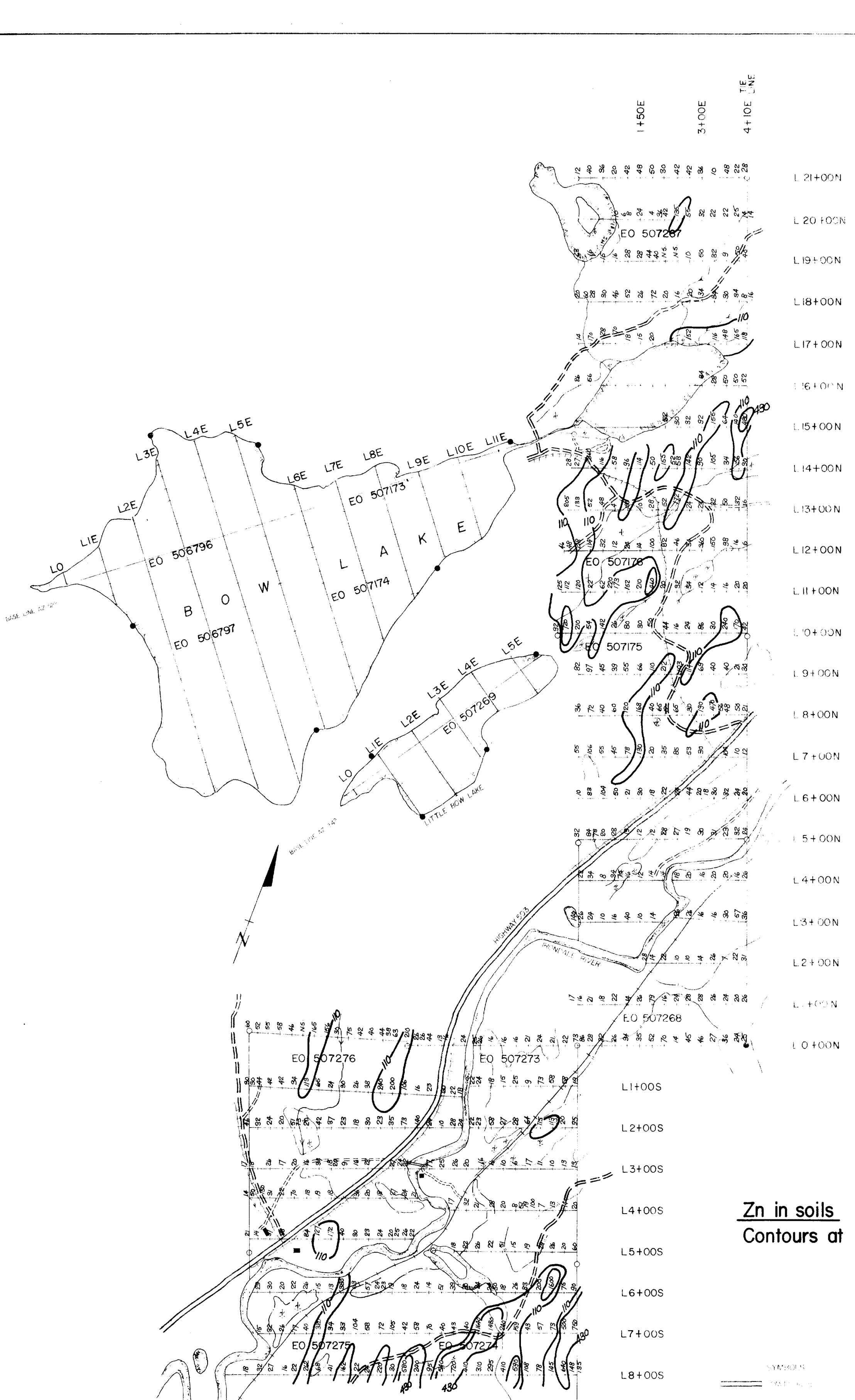
SCALE: 1 : 5,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
LATITUDE
LONGITUDE

PROJECT NO. 3188

REPORT NO.

SHEET NO. 2 OF 5



Zn in soils

Contours at 430 ppm.
110 ppm.

SYMBOLS

TRAIL

ABANDONED RAILWAY

POWER LINE

CLAIM POST LOCATED, NOT LOCATED

ST JOSEPH EXPLORATIONS LIMITED

SALERNO LAKE PROPERTY, S.E. ONTARIO
SILVER MOUNTAIN GRID

ZINC ppm

A Robertson

SHEET NO. 4 OF 5

31D15SW0001 2.3711 SNOWDON

210

2.3711 3440

Pb in soils

Contours at 80 ppm.
28 ppm.

SYMBOLS

PAVED ROAD

ROAD

ABANDONED RAILWAY

POWER LINE

CLAIM POST LOCATED, UNLOCATED

ST. JOSEPH EXPLORATIONS LIMITED

SALERNO LAKE PROPERTY,
SILVER MOUNTAIN GRID

LEAD ppm

S Robertson

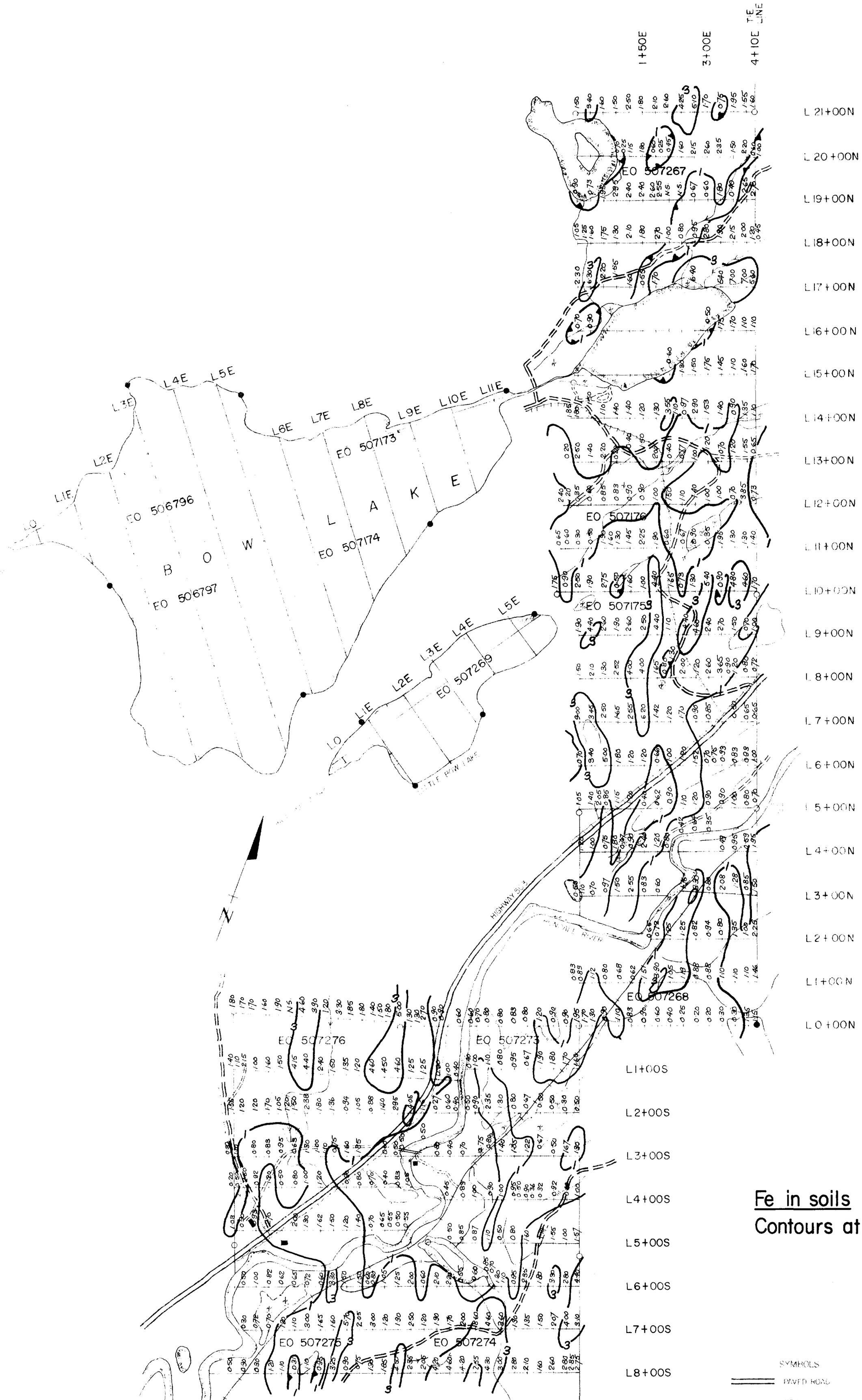
SCALE

3 5

31D15SW0001 2.3711 SNOWDON

220

2.3711 2840



Fe in soils

Contours at 3%

1%

SYMBOLS

- PAVED ROAD
- TRAIL
- ABANDONED RAILWAY
- POWER LINE
- CLAIM POST: LOCATED, UNLOCATED

ST. JOSEPH EXPLORATIONS LIMITED

TORONTO CANADA

SALERNO LAKE PROPERTY, S.E. ONTARIO
SILVER MOUNTAIN GRID

IRON %

SCALE 1 : 5,000

L. Robertson

APPROX LAT & LONG OF LOWER RT. COR. OF DWG ° ' " ° ' " LATITUDE LONGITUDE	PROJECT NO 3188	SHEET NO 5 OF 5
	REPORT NO	N.T.S. 31D

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