32D12SW0033 2.3856 RAND

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2.3856

CARLING COPPER MINES LTD.

RAND TOWNSHIP, ONTARIO

VLF ELECTROMAGNETIC AND MAGNETOMETER SURVEYS

RECEIVED

APR 28 1981

MINING LANDS SECTION

April 16th, 1981.

Pudifin & Company

CARLING COPPER MINES LTD.

RAND TOWNSHIP, ONTARIO

VLF ELECTROMAGNETIC AND MAGNETOMETER SURVEYS

Property:

The property covered by the present surveys is comprised of the following thirty unpatented, unsurveyed, contiguous mining claims:-

Licence Number	Number of Claims
544220 to 544236 inclusive	17
544239 to 544241 inclusive	3
600703	1
600704	1
600709	1
600718 to 600724 inclusive	7

Location And Access:

The property is located in Rand Township, Larder Lake Mining Division, Ontario. It is underlain entirely by waters of South Bay, Abitibi Lake, 24 miles in a northeasterly direction from the Town of Matheson, 20 miles west of the Quebec border.

It may be reached by float or ski-equiped aircraft, the closest charter base being located at LaSarre, Quebec.

Highway 101 passes about 11 miles south of South Bay. Some timber operations and bush roads lead north to within a mile or two of South Bay. They are not kept open during winter months.

Previous Work:

There is not record of previous work on the property.

General Geology:

The claims occur within a general greenstone belt, comprised of intermediate and basic volcanic rocks which may include some meta sediments and some ultrabasic rocks.

These rocks, in the area of the property, have been intruded by the Abitibi Lake Batholith which is of granodiorite-quartz monzonite composition.

A few plugs and sills of diorite, gabbro, and lamprophyre occur. Occasional diabase dykes cross the area, striking in a predominantly north-easterly direction, occarionally northwesterly.

Several north to northwest trending faults occur in the general area.

Numerous gold, and some gold-copper occurances are found around, and within the Abitibi Lake Batholith.

Local Geology:

The property is underlain by the southwest promontory of the Abitibi Lake Batholith, comprised of quartz monzonite - quartz diorite.

North to northwesterly striking shear zones with quartz veining occurs on a small island in the west central part of South Bay, at the westerly edge of the property a second occurrance varying from 5 inches to 2 feet in width occurs on the mainland near the shoreline a further approximate half mile to the northwest. These quartz veins and shears contain disseminated and blebs of pyrtie and chalcopyrite which carry gold values.

There is no record of diamond drilling on these occurrances.

Survey Method And Instrument Data:

A north-south baselinewas cut on the easterly side of South Bay and lines established at 400 foot intervals in an east-west direction, chained and picketed at 100 foot intervals. A north-south tie line was established starting from the northeasterly small island in the south-central part of South Bay.

The magnetometer used was a Sharpe, Model MF-1, flaxgate type which measures the vertical component of the earth's magnetic field. A Base Control Station was established at 16+00W on L-0+00 and control stations along the Baseline and Tieline in order to correct for diurnal and day to day variations

in magnetic intensity during the coarse of the survey.

The Electromagnetic unit used was a Geonics, EM-16 VLF Type electromagnetic receiver. This unit measures the In-Phase and Quadrature components of the secondary electromagnetic field set up in the presence of a conductor in terms of percent change.

The primary signal employed in the present work originated from VLF Transmitter located in Anapolis, Maryland, operating at a frequency of (18.6?)KHz.

Readings were taken at 100 foot intervals along the picket lines, facing eastward.

Results: Magnetometer Survey:

Results of the survey are plotted on accompanying Plans Nos. 261 and 262 on a scale of 1 inch to 200 feet.

Values are contoured at 100 gamma intervals.

Magnetic Base Control Station is located at 16+00 W on Line 0+00 with a value of 305 gammas.

Magnetic background is in the order of 300 gammas. Generally the property is fairly magnetically uniform. Only one magnetically anomalous area (anomaly M-1) was incdicated in the survey area. It is located in the southwest part of the property.

Electromagnetic Survey:

Results of the Electromagnetic Survey are plotted on accompanying Plans No. 263 and 264 on a scale of 1 inch to 200 feet.

Data are profiled on a scale of 1 inch to 20%.

Some nine conductive zones were indicated by the survey.

Conductor No. 1 is located at the west boundary of claim 544220. It is of moderate strength.

All conductors have a reverse quadrature component which is inter-

preted as a horizontal sheet conductor (clay lakes bottom) overlaying a more vertically inclined conductor.

All lines which reach the west shore of the lake show conductivity along the shoreline which is interpreted as clay-bank-shoreline interface rather than a bedrock conducto r.

Conductor 2 is weak to moderate strength excepting on Line 36 N where it is moderately strong. It has a strike slightly west of north as do all of the conductors. There is no magnetic correlation with any of the conductors.

Conductor 3 is weak and intermittant over a length of about 3/4 mile.

Conductor 4 & 5 are moderate to strong, 6 & 7 are weak.

Conductor 8 is strong on Line 0 only.

Conductor 9 is weak.

Conductors 4 to 9 inclusive are somewhat grouped in the area of the two small islands in the central part of South Bay.

They are interpreted as structural features - probably fault or shear zones striking north-south to slightly west of north. It is expected that the stronger zones contain some sulphide mineralization.

Recommendations:

It is recommended that the stronger conductors be tested by diamond drilling as follows:-

Conductor No. 2 - On Lines 36 N and 48 N.

Conductor No. 3 - On Line 28 N.

Conductors No. 4 & 5 - On Line 4 S.

Conductor No. 7 - On Line 0.

Conductor No. 8 - On Line 0.

A minimum of 3,000 feet of diamond drilling would be required.

Respectfully submitted,

PUDIFIN AND COMPANY

A. D. Pudifin, B.Sc.
Consulting Geologist.

Val D,Or, Quebec
April 16,1981

File

32D12SW0033 2.3856 RAND 900

TEC ... ONS ETC.

Type of Survey MAGNETOMETER AND ELECTROMAGNETIC

Township or Area RAND TOWNSHIP

Claim holder(s) CARLING COPPER MINES LTD/ STE. 705, 11 ADELAIDE ST. W., TORONTO, ONT/

Author of Report A.D.PUDIFIN

Address P.O.BOX 580, VAL D'OR, QUE»

Covering Dates of Survey FEB.10 - APRIL 16,1981 (linecutting to office)

Total Miles of Line cut 31.2

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	20
--Magnetometer	40
--Radiometric	
--Other	
Geological	
Geochemical	

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

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

DATE: April 16/81 SIGNATURE: [signature] Author of Report or Agent

PROJECTS SECTION

Res. Geol. ______ Qualifications 63.1292

Previous Surveys ______

Checked by ______ date ______

GEOLOGICAL BRANCH ______

Approved by ______ date ______

GEOLOGICAL BRANCH ______

Approved by ______ date ______

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
L-544220 ✓	L-600709 ✓
L-544221 ✓	L-600718 ✓
L-544222 ✓	L-600719 ✓
L-544223 ✓	L-600720 ✓
L-544224 ✓	L-600721 ✓
L-544225 ✓	L-600722 ✓
L-544226 ✓	L-600723 ✓
L-544227 ✓	600724 ✓
L-544228 ✓	
L-544229 ✓	
L-544230 ✓	
L-544231 ✓	
L-544232	
L-544233	
L-544234 ✓	
L-544235 ✓	
L-544236 ✓	
L-544239 ✓	
L-544240 ✓	
L-544241 ✓	
L-600703 ✓	
L-600704 ✓	

TOTAL CLAIMS 30

If space insufficient, attach list

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

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS 1595 ELECTROMAGNETIC

Number of Stations 1606 MAGNETOMETER Number of Readings

Station interval 100 FT.

Line spacing 400 FT.

Profile scale or Contour intervals EM- PROFILE SCALE: 1in.=20%, MAGNETIC» 100 GAMMA CONTOUR INTERVAL
(specify for each type of survey)

MAGNETIC

Instrument SHARPE FLUXGATE TYPE, MODEL MF-1

Accuracy - Scale constant 5 GAMMAS

Diurnal correction method CONTROL STATION CHECK

Base station location LINE 0+00, 16+00 W

ELECTROMAGNETIC

Instrument GEONICS EM-16 VLF TYPE

Coil configuration

Coil separation

Accuracy 1/2 %

Method: ☒ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency NSS ANAPOLIS, MARYLAND « 21.4 kHz
(specify V.L.F. station)

Parameters measured IN-PHASE ANS QUADRATURE COMPONENTS OF SECONDARY ELECTROMAGNETIC FIELD.

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION – RESISTIVITY

Instrument

Time domain Frequency domain

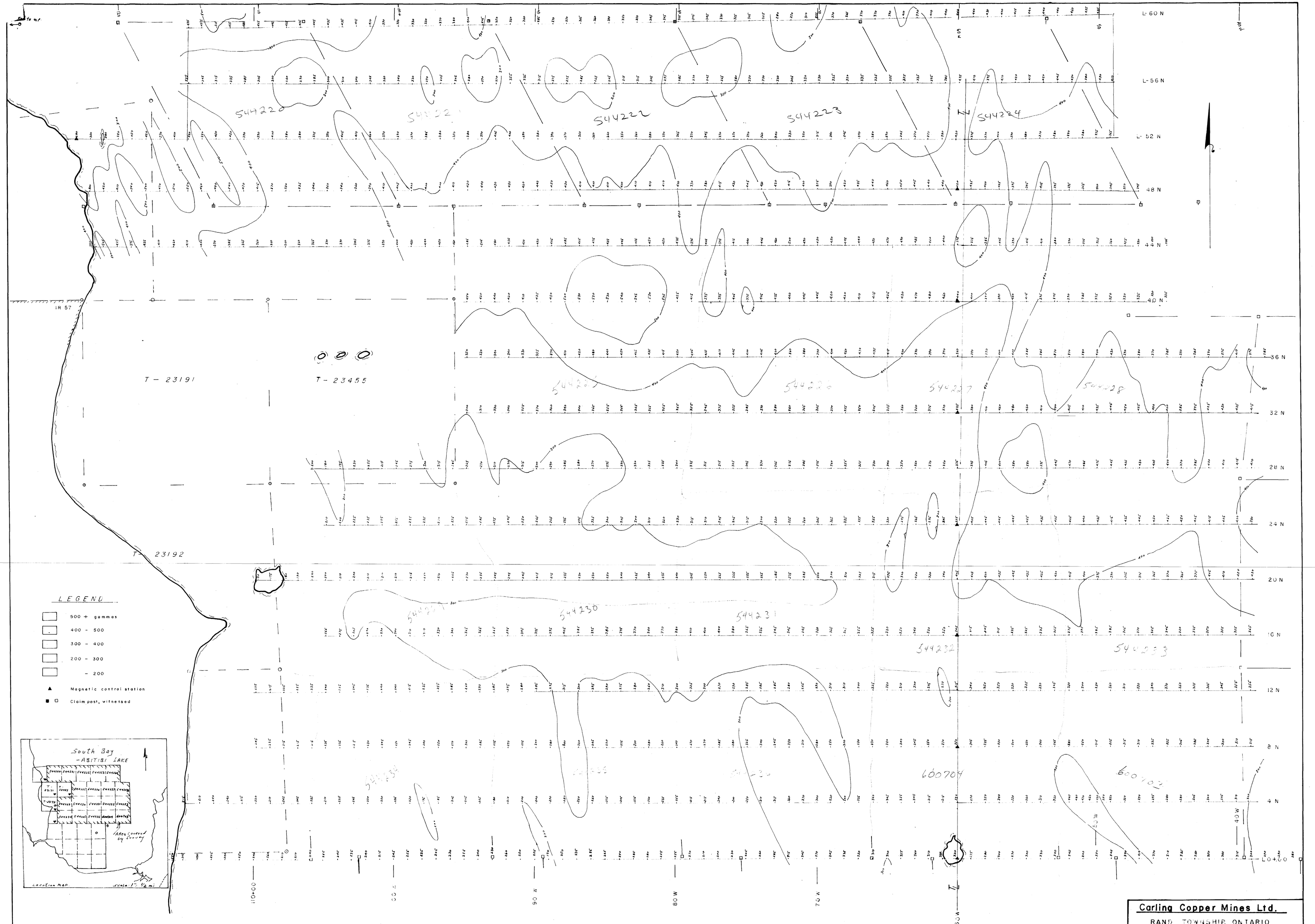
Frequency Range

Power

Electrode array

Electrode spacing

Type of electrode



Carling Copper Mines Ltd.

RAND TOWNSHIP, ONTARIO

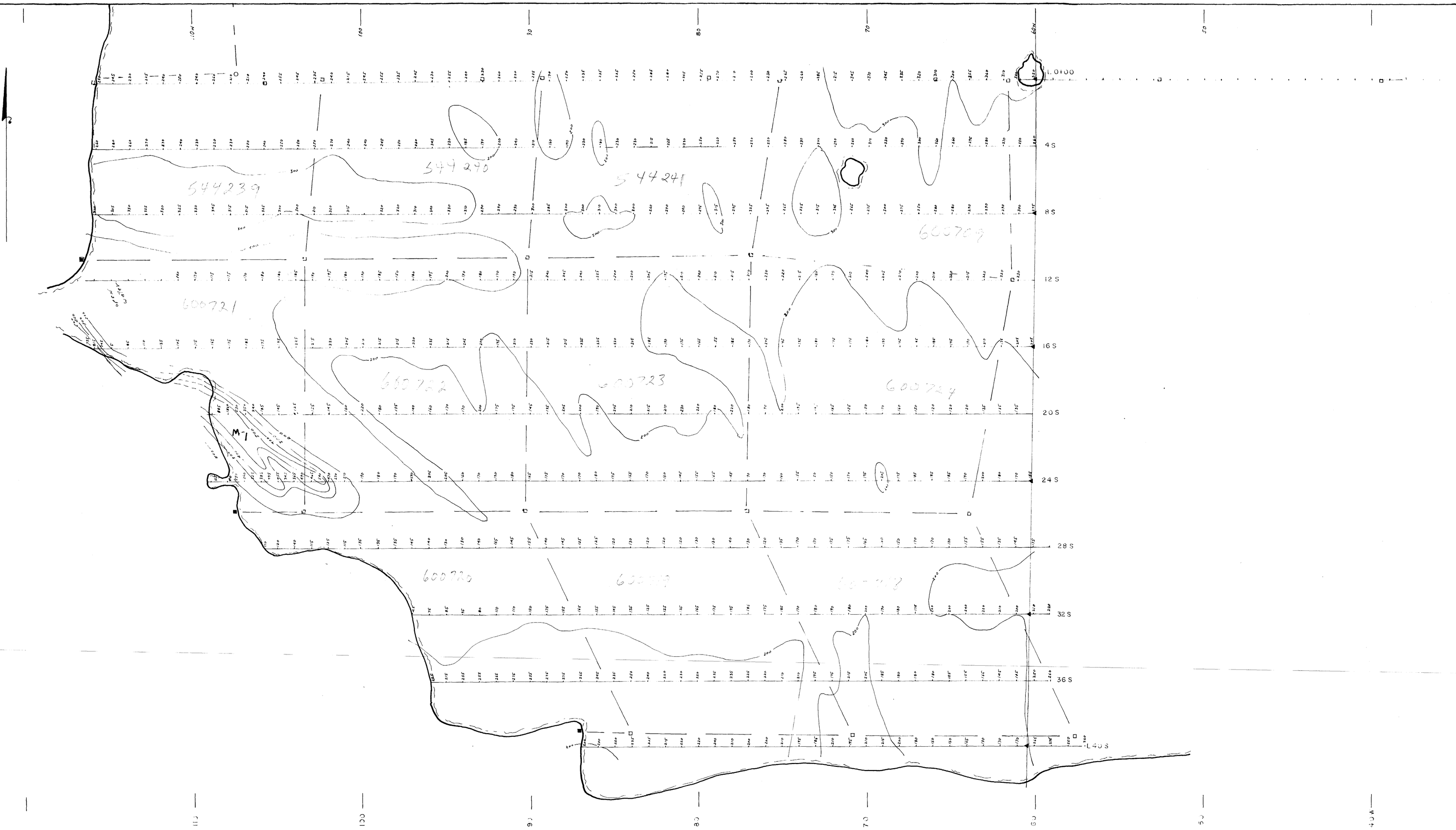
MAGNETOMETER SURVEY

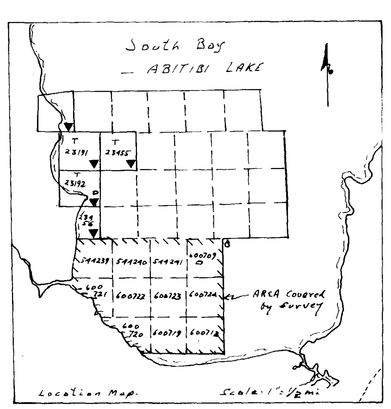
by

Pudifin & Company

Scale: 1 in. = 200 ft. Date: April 1981 261

2.3856





LEGEND

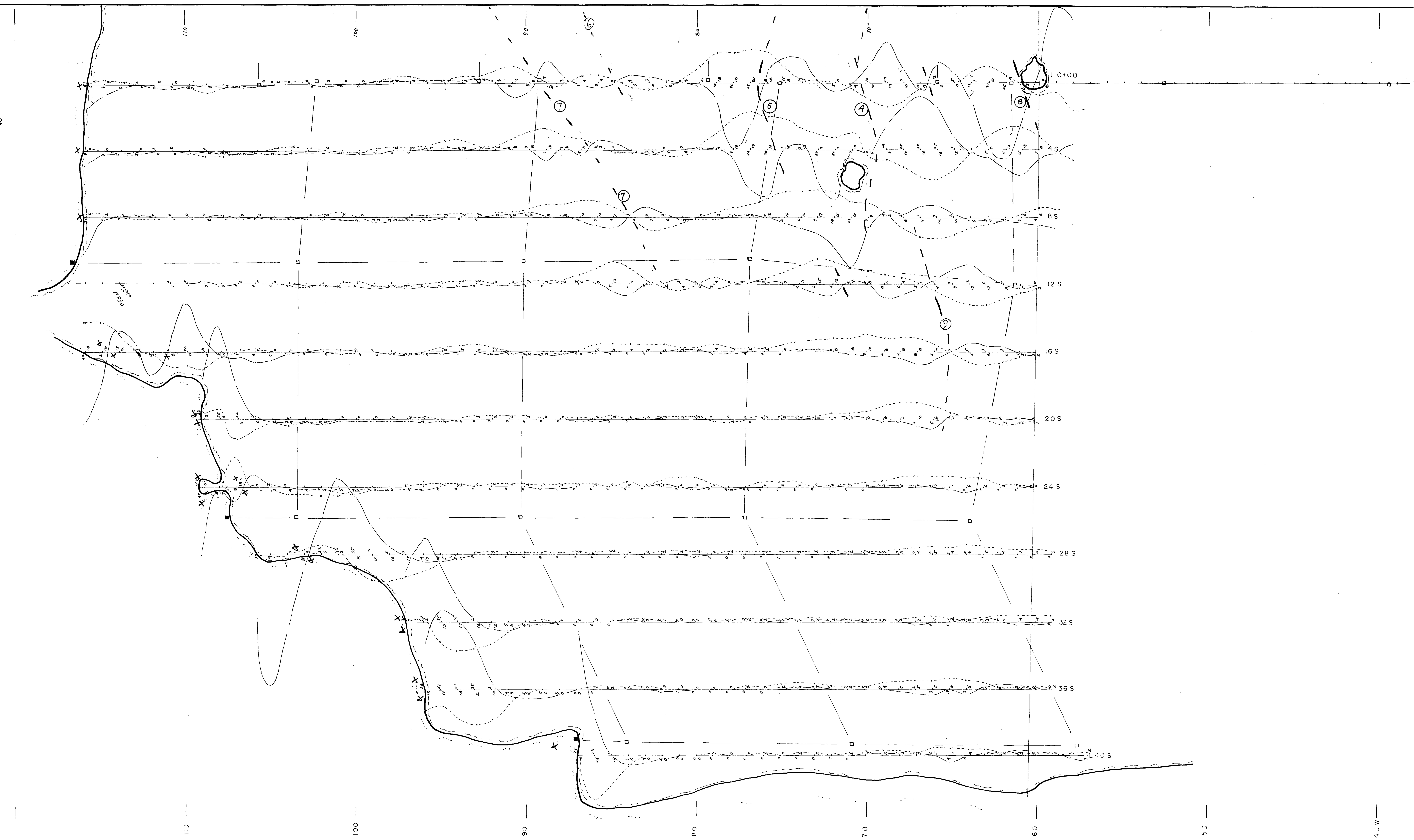
☐ 500 + gammas
☐ 400 - 500
☐ 300 - 400
☐ 200 - 300
☐ - 200
▲ Magnetic control station
■ □ Claim post, witnessed

Carling Copper Mines Ltd.
RAND TOWNSHIP, ONTARIO

MAGNETOMETER SURVEY
by
Fudifin & Company

Scale: 1 in. = 200 ft.	Date: April 16/1981	262

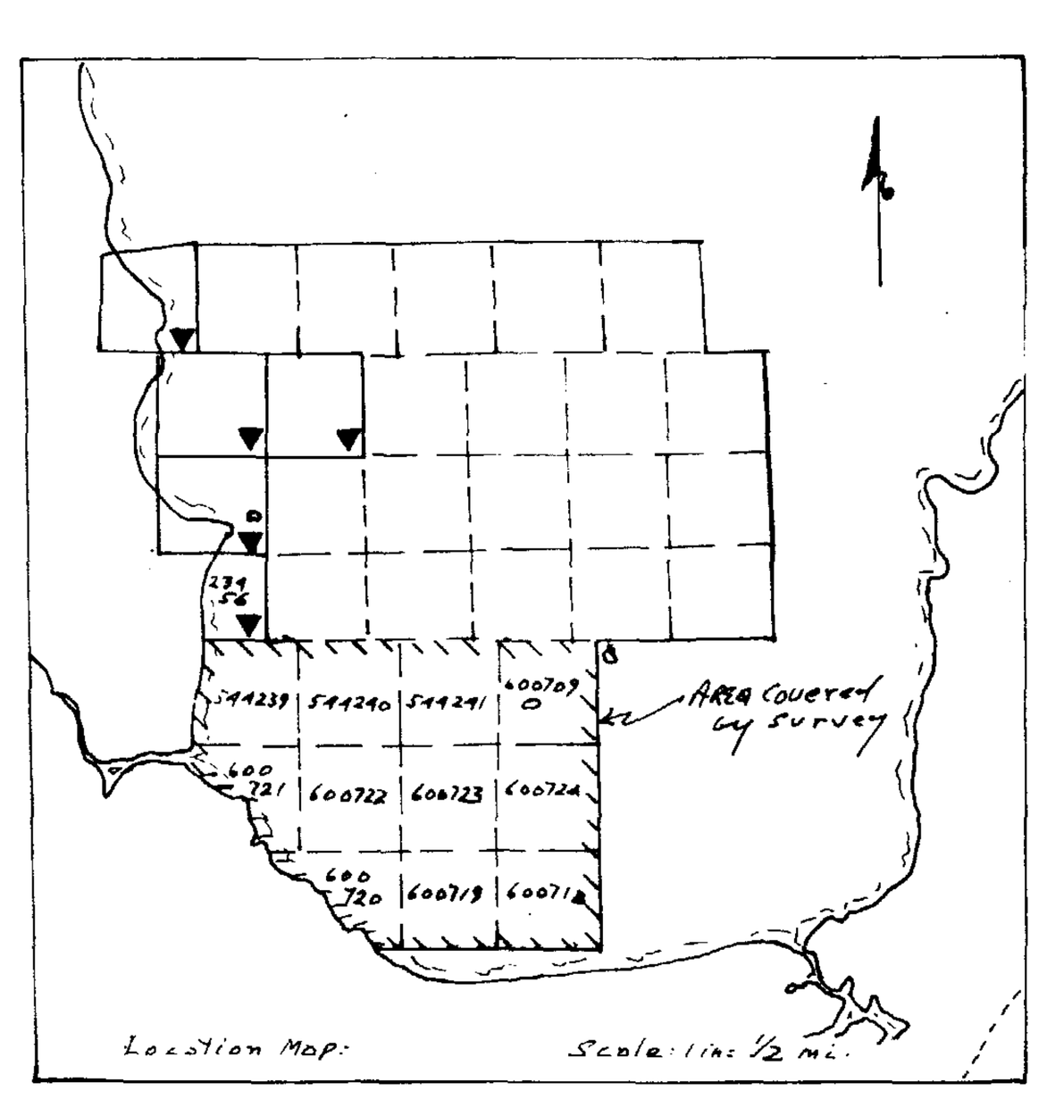

Carling Copper Mines Ltd.
RANE TOWNSHIP, ONTARIO
VLF ELECTROMAGNETIC SURVEY
by
Pudifin & Company
Scale: 1 in. = 200 ft.
Date: April 1981
263
LEGEND
Inphase plotted above station (solid profile)
Quadrature " below " (broken profile)
Profile scale: 1 in. = 20 %
conductive zone
shoreline effects
Picket line, station
Claim post, witnessed
South Bay
ABITIBI LAKE
Area covered by Survey
Location Map
L-60 N
L-56 N
L-52 N
48 N
44 N
40 N
36 N
32 N
28 N
24 N
20 N
16 N
12 N
8 N
4 N
L0+00
40 W
50 W
60 W
70 W
80 W
90 W
100 W
110+00
IR 57
220
2.385



LEGEND

In Phase plotted above station (solid profile)
Quadrature – below (broken profile)
Profile scale: 1 in. = 20 %

Conductive zone.
XXX " " – clay + shoreline effects
Picket line, station
Claim post, witnessed



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Carling Copper Mines Ltd.

RAND TOWNSHIP, ONTARIO

VLF ELECTROMAGNETIC SURVEY

by

Pudifin & Company

Scale: 1 in. = 200 ft.	Date: April 14, 1981	264

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