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MINING LANDS SECTION

REPORT ON
MAGNETOMETER AND VLF-EM SURVEY
HEARST TOWNSHIP, ONTARIO

Introduction

A VLF-EM and Magnetometer survey was carried out in Hearst Township over cut lines. The results are shown on the enclosed plan.

Location, Access and Ownership

The claims covered by the survey are located in the south-central part of Hearst Township, District of Temiskaming, Ontario. The claims are numbered L476794 to 476797; L522769 to 522782; L522787 to 522789; L522792 to 522793; L532256 to 532257; L565043 to 565044; L578356 to 578357; all inclusive. They are recorded in the name of Superior Northwest inc., P.O. Box 1110, Sault Ste. Marie, Ontario.

Previous Exploration

There has been a considerable amount of surface prospecting in the past. A number of deep pits were noted during the survey, but no information is available on when they were dug or what, if anything, was found.

Geology

The property is underlain by a volcanic-sedimentary sequence of rocks, cut by felsic to mafic intrusives. A large part of the claims are covered by extensive drift. A volcanic sedimentary contact approximately parallels the baseline west of the highway. but has changed strike to a north-north-east direction east of the highway. The intervening area is covered by extensive drift.

Survey Procedure

A grid line was laid out across the property with a baseline running about S 60° E across the property. Crosslines were cut perpendicular to the baselines at 400-foot intervals.

Magnetometer readings were taken with a Barringer GM-122 Proton precession Magnetometer at 50 and 100-foot intervals. The looping method was used for control of diurnal variation. In this method a base station is selected and readings taken along lines describing a loop, arriving back at the starting base station in less than two hours.

Survey Procedure (Continued)

A second loop is then started using either the same base station or another which is tied to the previous loop. Readings are the corrected for diurnal variation by assuming the time between readings is the same and distributing any variation equally among the intervening readings. No correction was applied less than the accuracy of the base station reading.

A VLF-EM survey was carried out using a Crone Radem instrument set to the signal from Cutler, Maine (17.8 KHz). Readings were taken at 50 and 100-foot intervals using the procedure outlined in Appendix I. The looping method was used for control of variation, the same as described for the magnetometer survey, excepting that the time was noted for each station.

Results and ConclusionsMagnetometer

The magnetic profile is essentially flat over the major part of the claims, which are believed underlain by sediments. The magnetics on the two most easterly lines probably outlines an area of volcanics. Scattered, local magnetic highs through the central part of the grid are probably local magnetite concentrations within the sediments.

VLF-EM

There is a strong and persistent VLF-EM anomaly through the claims, approximately following the baseline. The area is entirely covered by drift, but may be caused by graphite material within the sediments. Sulphides in small quantities are known to be associated with graphitic material at other locations in Hearst township and warrants further work. There are a few other shorter VLF-EM anomalies which may also be due to graphitic material, but which are unexplained at this time due to drift cover and could warrant further work.

Respectfully submitted



Robert A. MacGregor, P. Eng.

January 30, 1981



Ministry of N

GEOPHYSICAL - GEOL TECHNICAL DATA STATEMENT



32D04SE0260 2.3705 HEARST

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) Magnetometer & VLF-EM

Township or Area Hearst

Claim Holder(s) Superior Northwest Inc.

Survey Company Colex Explorations Inc.

Author of Report R.A. MacGregor

Address of Author 134 Palace Dr. S.S. Marie

Covering Dates of Survey October-December/80
(linecutting to office)

Total Miles of Line Cut

MINING CLAIMS TRAVERSED
List numerically

- List of mining claim numbers with checkmarks, including L476794, L522793, L476795, L532256, L476796, L532257, L476797, L565043, L522769, L565044, L522770, L578356, L522771, L578357, L522772, L522773, L522774, L522775, L522776, L522777, L522778, L522779, L522780, L522781, L522782, L522787, L522788, L522789, L522792.

If space insufficient, attach list

SPECIAL PROVISIONS
CREDITS REQUESTED

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

ENTER 20 days for each additional survey using same grid.

Table with columns: Geophysical, DAYS per claim. Rows: -Electromagnetic (20), -Magnetometer (20), -Radiometric, -Other, Geological, Geochemical.

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

Magnetometer Electromagnetic Radiometric
(enter days per claim)

DATE: Jan 30/81 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. Qualifications 2.1102

Previous Surveys

Table with columns: File No., Type, Date, Claim Holder. Row 1: L.D.

TOTAL CLAIMS 29

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations 1275 Number of Readings 1275
Station interval 100 & 50 ft. Line spacing 400ft.
Profile scale 1" = 40'
Contour interval 500 gammas

MAGNETIC

Instrument Barringer GM-122
Accuracy - Scale constant 1 gamma
Diurnal correction method looping method
Base Station check-in interval (hours) 2 hours or less
Base Station location and value various along baseline

ELECTROMAGNETIC

Instrument Crone Radem
Coil configuration N/A
Coil separation N/A
Accuracy 1 +/- 1/4
Method: [X] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency Cutler, Maine (17.8 kHz)
Parameters measured Dip Angle of the Resultant Field

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