Proton Magnetometer
and
Horizontal Loop Electromagnetic
Surveys

Eagle Lake Project
NTS 52-F-11

Phantom Exploration Services Ltd.

RECEIVED
MAY 21 1982
MINING LANDS SECTION

May 1982
R. D. Middaugh
Introduction

Tasu Resources of Toronto, Ontario contracted Phantom Exploration Services Ltd. of Thunder Bay, Ontario to conduct magnetic and electromagnetic surveys on two grids on the Eagle Lake project during the winter of 1982.

Location, Access and Grids

The survey area is located on Eagle Lake approximately 15 miles south of Eagle River, Ontario. The area is protected by a combination of 9 patented claims, K 12180 to K 12185 inclusive, K12196, K 12222 and K 12223, and 24 unpatented claims, 560770 to 560774 inclusive, 561408 to 561413 inclusive, 561416 to 561427 inclusive and 589396.

Access to the Littleneck Bay area of Eagle Lake via highway #594 and subsequent roads is excellent all year round. From Littleneck Bay the property can be reached by travelling 6 miles south by boat or snow machine, depending on the season.

Two grids were established by Mr. H. Tibbo of Tasu Resources during the winter months of 1982. Approximately 34 miles of line were cut, chained and picketed at 100 foot intervals.
Personnel

The day to day and overall supervision of the geophysical program was under R. D. Middaugh of Phantom Exploration Services Ltd.

Instrumentation

Magnetic

Two proton procession magnetometers (model MP-2) manufactured by Scintrex Limited of Concord, Ontario were used for this survey. The total field measurement was read with a resolution of one gamma and all values were corrected for diurnal variations using a MBS-2 model base station recorder also manufactured by Scintrex Limited. Readings were recorded at 100 foot intervals on the S. G. grid and at 50 foot intervals on the Bay grid. The datum was selected to be 60,000 gammas.

Electromagnetic

A Max Min II unit manufactured by Apex Parametrics Limited of Markham, Ontario was used for this survey. Both in and out of phase readings were taken at 100 foot intervals on both the S. G. and Bay grids. The frequencies read were 444 Hz and 1777 Hz while the coil separation was 300 feet.
Discussion of Results

Magnetic S. G. Grid

The S. G. grid is presented in plan form at a scale of 1 inch = 400 feet. The corrected magnetic data is plotted on this map and contoured at 0, 100, 300, 500, 700 and 900 gamma intervals.

The data shows a regional magnetic trend that is east-west on the east side of the grid and gradually changes to northeast-southwest trend on the west side of the grid. The area has a regional magnetic gradient of approximately 400 gammas from north to south. The small magnetic highs located on lines 44S, 32S and 8S are closely associated with islands.

Bay Grid

The Bay grid is presented in plan form at a scale of 1 inch = 200 feet. The corrected magnetic data is plotted on this map and contoured at 0, 200, 500 and 1000 gamma intervals.

The data indicates an east-west regional magnetic trend. Most of the magnetic highs in this area are discontinuous in lateral extent and are not magnetically homogeneous. The strongest magnetic anomaly is located just south of the baseline between lines 8W and 24W. An associated broad magnetic low is located on the north flank of this major magnetic feature.
Discussion of Results

Electromagnetic S. G. Grid

The S. G. grid is presented in plan form at a scale of 1 inch = 400 feet with the vertical scale set at 1 inch = 40% for the EM profiles.

Only one very weak conductive trend (A-A) was located in this area. It is coincident with the magnetic feature located on line 32S.

Bay Grid

The Bay grid is presented in plan form at a scale of 1 inch = 200 feet with the vertical scale set at 1 inch = 20%.

Three east-west conductive trends (B-B, C-C and D-D) were located in this grid area. The one line response A-A is probably a fault displaced western extension of the B-B anomaly. All three conductors are associated with magnetic highs. Likewise these conductive trends weaken to the east and terminate fairly abruptly to the west.
Conclusions and Recommendations

The survey area is underlain an east-west trending sequence of intermediate to felsic volcanics. This east-west trend changes to a more southwest-northeast bearing in the western portion of the S. G. grid. The magnetic and coincident conductive trends represent exhalative sulphide concentrations deposited during interflow quiescent periods.

The most favourable horizon is outlined by the magnetic high coincident with the conductor B-B on the Bay grid. Since this zone is known to be interesting relative to gold mineralization, future work consisting of drilling and trenching coupled with careful sampling and assaying procedures, should be concentrated on this horizon in order to fully evaluate its economic potential.

Based on the results of the initial phase of the recommended work, anomalous trends of similar magnetic and EM features that have not been explained or examined should be considered as future drill targets.

Submitted by
R. D. Middaugh
Appendix

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<td>HLEM Survey</td>
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<td>Map 4</td>
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<td>HLEM Survey</td>
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<td>Map 5</td>
<td>S. G. Grid</td>
<td>HLEM Survey</td>
<td>444 Hz Raw Data</td>
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<td>Map 6</td>
<td>Bay Grid</td>
<td>Magnetometer Survey</td>
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<td>Map 7</td>
<td>Bay Grid</td>
<td>HLEM Survey</td>
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<td>Map 8</td>
<td>Bay Grid</td>
<td>HLEM Survey</td>
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<td>Bay Grid</td>
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<td>Bay Grid</td>
<td>HLEM Survey</td>
<td>444 Hz Raw Data</td>
</tr>
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</table>
Ontario Ministry of Natural Resources

Report of Work
(geophysical, geological, geochemical and expenditures)

Type of Survey(s): Magnetometer and EM (max-min)

Claim Holder(s): Tasu Resources Ltd.

Address: 9th floor, 850 west hastings st., vancouver, b.c. V6C 1E1

Survey Company: Phantom Geophysics Ltd., Thunder Bay

Date of Survey: From 1982/01/17 to 1982/03/17

Total Miles of line cut: 30 (all on ice)

Name and Address of Author (of Geotechnical report)

R. J. Widdaugh, Phantom Geophysics Ltd., RR #1, Alice Ave., Thunder Bay, Ont.

Credits Requested per Each Claim in Columns at right

Name end Address of Author (of Geotechnical Report)

Phantom Geophysics Ltd., RR #1, Alice Ave., Thunder Bay, Ont.

Special Provisions

For first survey:
- Enter 40 days. (This includes line cutting)

For each additional survey:
- Using the same grid:
  - Enter 20 days (for each)

Man Days

Complete reverse side and enter total(s) here

Expenditures (Excludes power stripping)

Calculation of Expenditure Days Credits

Total Expenditure: $15 = Total Days Credits

Instructions

Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date: March 28, 1982

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying

H.G.Tibbo, Apt. 1101, 322 Eglinton Avenue East, Toronto, Ontario M4P 1L6

Date Certified: March 28, 1982

Certified by Signature

1362 (51/9)
Dear Mr. E.F. Anderson,

Enclosed please find the February 10, 1983, ten Max-Min EM survey, ten Magnetometer survey and two claim maps.

As per your direction I have added claim posts, claim lines and claim numbers to the geophysical plans.

I trust you will find all in good order.

Yours truly,

[Signature]

H. G. Tibbo
Dear Sirs:

RE: Geophysical (Electromagnetic and Magnetics) Survey submitted on Mining Claims 7360770 7360771 and 7360772 in the Area of Eagle Lake and衬衫湖.

Enclosed are the plans in duplicate for the above mentioned survey. Please show all claim lines and numbers and return them to this office.

For further information, please contact Mr. F. M. Matthews at 416/965-1380.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6460
Queen's Park
Toronto, Ontario
M7A 1H3
Phone: 416/965-1380

A. Barr:SC

Enccls:

cc: Mining Recorder
Kenora, Ontario

cc: Tasu Resources Limited
Vancouver, B.C.
To: Geophysics

Comments

- Claim lines + numbers not on maps.

[ ] Approved  [ ] Wish to see again with corrections

Date: Jan 3/83

Signature

To: Geology - Expenditures

Comments

[ ] Approved  [ ] Wish to see again with corrections

Date:

Signature

To: Geochemistry

Comments

[ ] Approved  [ ] Wish to see again with corrections

Date:

Signature

To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)
Dear Sir:

We have received reports and maps for a Geophysical (Electromagnetic and Magnetometer) Survey submitted under Special Provisions (credit for Performance & Coverage) on Mining Claims K 560770 et al, in the Areas of Eagle Lake and Buchan Bay.

This material will be examined and assessed, and a statement of assessment work credits will be issued.

Yours truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1316

J. Skura/amc

cc: Tasu Resources Ltd.
Vancouver, B.C.

cc: Phantom Exploration Services Ltd.
Thunder Bay, Ontario
Attention: Mr. R.D. Middaugh

cc: Mr. H.G. Tibbo
Toronto, Ontario
(416) 485-6819

Apartment 1101-302 Trinity Ave. East
Toronto, Ontario M5R 1G9

May 21, 1982

Mr. F.W. Matthews,
Land Management Branch,
Ministry of Natural Resources;
Whitney Block, Room 6450,
Queen's Park, Toronto, M7A 1W3

Dear Sir,

re: Mineral Claims 560770 A-774, 561408 A-774, 561412 A-774,
580306, Eagle Lake area, Kenora Mining Division.

Enclosed please find two copies of records in connection with surveys carried out on 24 claims in the Eagle Lake area under the Mining Division.

Any correspondence relating to this matter should be directed to me at the address given above.

I trust you will find all in good order.

Yours truly,

TASU RESOURCES LIMITED

Hi. C. Tibbo
President

RECEIVED
MAY 24, 1982
MINING LANDS SECTION
Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL
TECHNICAL DATA STATEMENT

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, Horizontal Loop EM
Township or Area Buchan Bay Area
Claim Holder(s) Tasu Resources Ltd.
Survey Company Phantom Exploration Services Ltd
Author of Report R.D. Middaugh
Address of Author 801 4th Ave Thunder Bay
Covering Dates of Survey Jan 1, 1982 to May 20, 1982
(linecutting to office)
Total Miles of Line Cut 34

SPECIAL PROVISIONS CREDITS REQUESTED

Geophysical

---Electromagnetic 40
---Magnetometer 20
---Radiometric

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

ENTER 20 days for each additional survey using same grid.

Other

Geological

Geochemical

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

Magnetometer

Electromagnetic

Radiometric

(enter days per claim)

DATE: May 20/82 SIGNATURE: [Signature]

Author of Report or Agent

Res. Geol. Qualifications 2.635

Previous Surveys

<table>
<thead>
<tr>
<th>File No.</th>
<th>Type</th>
<th>Date</th>
<th>Claim Holder</th>
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</table>

TOTAL CLAIMS 33
GEOPHYSICAL TECHNICAL DATA

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

Number of Stations S.G. = 733  BAY = 988  Number of Readings FM 1687  MAG 209
Station interval EM = 100 FT  S.G. = BAY  MAG 50 FT  S.G. = BAY  MAG 200 FT
Profile scale S.G. = 1 IN = 10%  BAY = 1 IN = 20%
Contour interval S.G. = 0, 100, 300, 500  BAY = 0, 200, 500, 1000

Instrument SCINTREX MP-2  PROTON PROCESSION  MAGNETOMETER
Accuracy — Scale constant 1 GAMMA
Diurnal correction method BASE STATION RECORDER
Base Station check-in interval (hours) N/A
Base Station location and value 150' BEHIND NORTH SIDE METER
VERMILION BAY ONTARIO 60,520 X

Instrument MAX MIN II (APEX PARAMETRICS)
Coil configuration HORIZONTAL LOOP
Coil separation 300 FT
Accuracy 0.25% - 0.50%
Method:
- Fixed transmitter
- Shootback
- In line
- Parallel line
Frequency 1.44 HZ (specify V.L.F. station)
Parameters measured IN PHASE & QUADRATURE COMPONENTS OF THE SECONDARY FIELD.

Instrument
Scale constant
Corrections made
Base station value and location
Elevation accuracy

Instrument
Method
- Time Domain
- Frequency Domain
Parameters — On time
- Off time
- Delay time
- Integration time
Frequency
Range

Instrument
Power
Electrode array
Electrode spacing
Type of electrode
### SELF POTENTIAL

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Range</th>
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Survey Method

<table>
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<th>Corrections made</th>
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### RADIOMETRIC

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Values measured</th>
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<tbody>
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Energy windows (levels)

Height of instrument

<table>
<thead>
<tr>
<th>Background Count</th>
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</table>

Size of detector

Overburden

(type, depth – include outcrop map)

### OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Parameters measured

Additional information (for understanding results)

### AIRBORNE SURVEYS

Type of survey(s)

<table>
<thead>
<tr>
<th>Instrument(s)</th>
<th>(specify for each type of survey)</th>
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<tbody>
<tr>
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</table>

Accuracy

<table>
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<tr>
<th>Aircraft used</th>
<th>(specify for each type of survey)</th>
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<tbody>
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</table>

Sensor altitude

Navigation and flight path recovery method

<table>
<thead>
<tr>
<th>Aircraft altitude</th>
<th>Line Spacing</th>
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<tbody>
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Miles flown over total area

Over claims only

<table>
<thead>
<tr>
<th>Miles flown over total area</th>
<th>Over claims only</th>
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</table>
**GEOCHEMICAL SURVEY – PROCEDURE RECORD**

Numbers of claims from which samples taken.

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<table>
<thead>
<tr>
<th>Total Number of Samples</th>
<th>Type of Sample</th>
<th>Average Sample Weight</th>
<th>Method of Collection</th>
<th>Soil Horizon Sampled</th>
<th>Horizon Development</th>
<th>Sample Depth</th>
<th>Terrain</th>
<th>Drainage Development</th>
<th>Estimated Range of Overburden Thickness</th>
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</table>

**ANALYTICAL METHODS**

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<tr>
<th>Values expressed in:</th>
<th>per cent</th>
<th>p. p. m.</th>
<th>p. p. b.</th>
<th>Cu, Pb, Zn, Ni, Co, Ag, Mo, As-(circle)</th>
<th>Others</th>
<th>Field Analysis (tests)</th>
<th>Extraction Method</th>
<th>Analytical Method</th>
<th>Reagents Used</th>
<th>Field Laboratory Analysis (tests)</th>
<th>Extraction Method</th>
<th>Analytical Method</th>
<th>Reagents Used</th>
<th>Commercial Laboratory (tests)</th>
<th>Name of Laboratory</th>
<th>Extraction Method</th>
<th>Analytical Method</th>
<th>Reagents Used</th>
<th>General</th>
</tr>
</thead>
</table>

**SAMPLE PREPARATION**

(Includes drying, screening, crushing, ashing)

<table>
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<tr>
<th>Mesh size of fraction used for analysis</th>
<th>General</th>
</tr>
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</table>

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LEGEND

MAGNETOMETER SURVEY

INSTRUMENT: SCINTREX MRS-2
CONTOUR INTERVAL: 0, 200, 500, 1000
MAGNETIC LOW:

DATUM: 60,000 GAMMAS
VERTICAL GRADIENT > 5000/METER

BASE STATION RECORDER

INSTRUMENT: SCINTREX MBS-2
RECORDING INTERVAL: 10 SEC
RECORDING RANGE: 1,000 GAMMAS
CHART SPEED: 2 MILES/HOUR

TOPOGRAPHY

CLAIM LINES: 3134.44, 3133.00, 3132.00
ROAD: 100, 200, 300, 400, 500, 600

PROJECT: MAGNETOMETER SURVEY

PROTO RESOURCES

LOCATION: MAP SCALE 1:12 MILE

BY: MAGNET EXPLORATION SERVICES LTD.
LEGEND

HEM SURVEY
INSTRUMENT: APEX PARAMETRICS MAX MIN
COIL SEPARATION: 300 FEET
FREQUENCY: 444 HZ
PROFILE SCALE: 1 INCH = 40%
IN PHASE: RIGHT OF LINE
OUT OF PHASE: LEFT OF LINE
CONDUCTOR AXIS:
POSITIVE READINGS:
TOPOGRAPHY
SHORELINE
ROAD

HASU RESOURCES
HORIZONTAL LOOP E.M. SURVEY
PROJECT: EAGLE LAKE
DATE: FEB 1988
SCALE: 1 IN = 400 FT
BY: PHANTOM EXPLORATION SERVICES LTD.