Electromagnetic, VLF
and Magnetic Surveys
for
DOME EXPLORATION (CANADA) LIMITED
on
Project 159L
Detour Lake Area, Ontario
(To Accompany Maps 83-280 to 83-283)

December 20, 1983
INTRODUCTION

A horizontal-loop electromagnetic survey, an EM-16 VLF survey and a magnetic survey were carried out on Project 159L for Dome Exploration (Canada) Limited in November, 1983.

The property comprises 16 claims and is located in the Tomorrow Lake area - Detour Lake, Ontario. The grid is located approximately 64 miles northeast of Cochrane, Ontario. Access to the property was by helicopter from La Sarre, Quebec.

The purpose of this survey was to locate conductive zones which might be related to economic sulphide bodies. No conductors were located. The accompanying maps show the area surveyed and the results obtained.

A technical data sheet is appended to this report.
METHOD AND INTERPRETATION OF RESULTS - ELECTROMAGNETIC SURVEY

Operating Principle: When an electrical conductor is subjected to a primary alternating field, a secondary current is induced in the conductor. This current produces a secondary alternating field which together with the primary field produces a resultant field of different amplitude and phase from the applied primary field. These differences may indicate the presence of a conductor.

Operation: The battery-powered transmitter sets up a primary field while the in-phase and out-of-phase (quadrature) components of the complex secondary vertical field are detected by a receiving coil and measured by means of a compensator-amplifier unit located a fixed distance from the transmitter unit. These parameters are expressed in percentage of the primary field.

Conductor Recognition: The typical curve over a steeply-dipping conductor shows a low (negative - greater than 5") over the centre of the conductor, flanked by positive readings on both sides of the conductor. Both the in-phase and the out-of-phase components usually produce the same general shape of curve. An asymmetrical curve may indicate one or more of the following conditions: (1) more than one conductor (2) variable conductive overburden (3) a shallow dipping conductor.

Conductivity Determination: The ratio of the amplitudes of the two measured components, in-phase to out-of-phase, is directly proportional to the conductivity of the conductor, in areas of non-conductive overburden.

Conductor Location: For a single conductor, both component readings are normally zero when either the transmitting or receiving coil is directly above the conductor. The location of the conductor is calculated by adding one-half the distance between the transmitting coil and the receiving coil (coil interval) to the co-ordinate at which the readings are zero. A unique solution is generally not possible in the case of multiple conductors spaced less than one coil interval apart. This results in the possibility that an apparently wide conductor may actually consist of two or more narrow conductors.

Depth of Penetration: The maximum depth of penetration for detection of a steeply-dipping conductor in a geo-electrically neutral background is about 0.7 times the coil interval. Over horizontal or flatly-dipping conductors, penetration of up to 1.5 times the coil interval is possible.
RESULTS

The horizontal-loop E.M. survey (Map 83-280) failed to outline an anomalous zone that could be considered a drill target. The lack of response could be due in part to the fact that the area is wet, mostly swamp covered and the depth to bedrock is unknown.

The VLF survey (Maps 83-282 and 83-283) is uninteresting with no significant response worth drill testing. At the northern end of Line 6E there is a slight E.M. response. However, with no corresponding horizontal-loop or magnetic anomaly this zone is unimportant.

The magnetic survey (Map 83-281) has outlined a zone with a maximum intensity of 60,219 gammas on Lines OE, 1E and 2E. This feature may continue to the west of the surveyed area. A minor magnetic feature is outlined on Lines 4E and 5E which appears to have a north-south strike.

On the basis of the geophysical results, no drill targets are indicated.

Geosearch Consultants Limited

[Signature]

GEOPHYSICAL TECHNICAL DATA
Project 159L

ELECTROMAGNETIC SURVEY

Instrument: Max Min II
Accuracy: 1% per scale division
Method: In line
Coil configuration: Co-planar
Parameters measured: The vertical in-phase and out-of-phase (quadrature) components of the secondary field.
Frequencies: 3555 Hz and 888 Hz
Coil separation: 100m
Number of readings at 25m stations: 1267
Total number of readings: 1267
Profile scale: 1 cm to 10%

MAGNETIC SURVEY

Instrument: Scintrex Proton Magnetometer
Magnetic field measured: Total
Accuracy - scale constant: 1 gamma
Diurnal correction method: Proton Magnetometer Recorder - at 30 second intervals
Base station locations: 4E at 8S
Number of readings at 25m stations: 1269
Total number of readings: 1269
Line spacing: 100m
Contour interval: 25 gammas
II. VLF SURVEY

Instrument: EM-16 Geonics

Frequency Measured: 17.8 KHz, NAA Cutler, Maine, U.S.A.

Reading Direction: Northeast Quadrant

Accuracy: $\pm 1\%$

Number of Readings at 25m stations: 1261

Total Number of Readings: 1261  Line Spacing: 100m

Profile Scale: 1cm to 10%

Fraser filter contour interval: 5\%
Mining Lands Section

Control Sheet

File No 26702

TYPE OF SURVEY

☐ GEOPHYSICAL
☐ GEOLOGICAL
☐ GEOCHEMICAL
☐ EXPENDITURE

MINING LANDS COMMENTS:

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________
________________________________________
________________________________________

Lrd 7.D.

Signature of Assessor

Sept 18/84

Date
**Type of Surveys:**
- Electromagnetic, Magnetic & VLF

**Claim Holders:**
- Dome Exploration (Canada) Limited

**Survey Company:**
- Geosearch Consultants Limited

**Date of Survey:**
- May 3, 1984

**Total Miles of Line Cut:**
- 33.3 km

**Mining Claims Traversed (List in numerical sequence):**

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<th>Mining Claim Number</th>
<th>Exp. Days Cr.</th>
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**Expenditure Days Credits:**

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**Expenditures (Excludes power stripping):**

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<th>Type of Work Performed</th>
<th>Expenses</th>
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**Certificate 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.

**Certified Holder or Agent (Signature):**

W. H. Thompson, Suite 700 - 88 University Ave., Toronto M5J 1T6

**Date Certified:**
- Dec. 20, 1983
Type of Survey(s)  Electromagnetic, VLF & Magnetic  
Township or Area  Tomorrow Lake - Detour Lake Area  
Claim Holder(s)  Dome Exploration (Canada) Ltd.  
Survey Company  Geosearch Consultants Ltd.  
Author of Report  W. H. Thompson  
Address of Author  Suite 700 - 88 University Ave.  
Covering Dates of Survey  Nov. 4/83 - Dec. 20/83  
Total Miles of Line Cut  33.3 km

### SPECIAL PROVISIONS CREDITS REQUESTED

<table>
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<th>Geophysical</th>
<th>DAYS per claim</th>
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<tbody>
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<td>Magnetometer</td>
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<tr>
<td>Radiometric</td>
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**AIRBORNE CREDITS** (Special provision credits do not apply to airborne surveys)

- Magnetometer  
- Electromagnetic  
- Radiometric  

**DATE:** Dec. 20, 1983  
**SIGNATURE:**  

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**Res. Geol.**  
**Qualifications:**  

**Previous Surveys**

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**TOTAL CLAIMS:** 16
**GEOPHYSICAL TECHNICAL DATA**

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

<table>
<thead>
<tr>
<th>Mag.</th>
<th>EM</th>
<th>VLF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1269</td>
<td>1267</td>
<td>1261</td>
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<tr>
<th>Number of Stations</th>
<th>1269</th>
<th>Number of Readings</th>
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</thead>
<tbody>
<tr>
<td>Station interval</td>
<td>25 metres</td>
<td>Line spacing 100 metres</td>
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<tr>
<td>Profile scale</td>
<td>1 cm to 10%</td>
<td></td>
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<tr>
<td>Contour interval</td>
<td>VLF filtered - 5%; Mag. - 25 gammas</td>
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</tr>
</tbody>
</table>

**Instrument:** Scintrex Proton Magnetometer

**Accuracy:** Scale constant 1 gamma

**Diurnal correction method:** Magnetometer recorder at 30 second intervals

**Base Station check-in interval (hours):**

**Base Station location and value:** Line 4E & 8S, 59324 gammas

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**MAGNETIC**

**Instrument:** Max-min II

**Coil configuration:** Co-Planar

**Coil separation:** 100 metres

**Accuracy:** 1%

**Method:**

- | Fixed transmitter | Shoot back | In line | Parallel line |

**Frequency:** 3555 Hz and 888 Hz

**Parameters measured:** The vertical in-phase and out-of-phase components of the secondary field

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**ELECTROMAGNETIC**

**Instrument:** Geonics EM-16

**Frequency measured:** 17.8 KHz

**Station:** NAA Cutler, Maine U.S.A.

**Direction Read:** Northeast Quadrant

**Line Spacing:** 100 metres

**Station Spacing:** 25 metres

**Profile Scale:** 1 cm to 10%

**Fraser filter contour interval:** 5%

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**VLF**

**Frequency measured:** 17.8 KHz

**Station:** NAA Cutler, Maine U.S.A.

**Direction Read:** Northeast Quadrant

**Accuracy:** ± 1%

**Line Spacing:** 100 metres

**Station Spacing:** 25 metres

**Profile Scale:** 1 cm to 10%

**Fraser filter contour interval:** 5%

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**INDUCED POLARIZATION**

**Method:**

- Time Domain
- Frequency Domain

**Parameters**

- On time
- Off time
- Delay time
- Integration time

**Frequency**

**Range**

**Power**

**Electrode array**

**Electrode spacing**

**Type of electrode**
July 9, 1984

Dome Exploration (Canada) Limited
Box 270
1 First Canadian Place
Toronto, Ontario
M5X 1H1

Dear Sirs:

RE: Geophysical (VLF) Survey on Mining Claims
   P 628586 et al in the Area of Tomorrow Lake

Enclosed is the plan, in duplicate, for the above-mentioned survey. In order to complete your submission please indicate the actual readings at each station, and return the plans to this office.

For further information, please contact Mr. Ray Pichette at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1M3
Phone:(416)965-4888

D. Kinvig:mc

cc: Geosearch Consultants Limited
   Suite 700
   88 University Avenue
   Toronto, Ontario
   M5J 1T6

cc: Mining Recorder
   Timmins, Ontario
   File: 188-84

Encl.
We have returned the U.E.F plans to Dome Exploration requesting that the actual readings be plotted, and have received the attached letter.

What they originally submitted was 1) the Fraser Fitted plans showing the E.F. values & contours, and 2) plans showing the profile of the actual readings, but not the actual readings themselves. So claims are involved, and the maps fit every other requirement. Unfortunately, we do not have the plans to be sent over for your inspection.

EPLY

What is your opinion as to our waiving our requirement for raw data this time?

Sincerely,

[Signature]

May I suggest that we can use the opinion of P. King this time regarding U.E.F new scales, however, the kind of thing is happening far too often and it seems this same company are relying on the fact that if they have a huge job they can get out of drafting new scales.
Executive Office

DE L I V E R E D

Land Management Branch
Ministry of Natural Resources
Room 6610, Whitney Block
Queen's Park
Toronto, Ontario
M7A 1W3

Attention: Mr. Ray Pichette

Re: Your File Nos. 2.6701 - 2.6703 incl.

Dear Sir:

Further to your letters of July 9, 1984 and our recent telephone conversation regarding the plotting of the actual reading at each station on the V.L.F. Survey plans which were returned with your letters, we indicated, that due to the cost factor, the considerable amount of time required and the shortage of personnel to post these readings, would delay the return of these plans to you.

We, therefore, request you waive this requirement as to the above-mentioned surveys and we will make certain that future submissions will have all readings plotted as per your requirements.

Your favourable consideration to this request will be greatly appreciated.

Yours very truly,

DOME EXPLORATION (CANADA) LIMITED

Edward A. Pigulski
Assistant Secretary

EAP:ts
Mr. Bruce Hanley  
Mining Recorder  
Ministry of Natural Resources  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

We have received reports and maps for a Geophysical (Electromagnetic & Magnetometry) Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims P 628586 et al in the Area of Tomorrow Lake.

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

Yours sincerely,

S. E. Yundt  
Director  
Land Management Branch  
Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416) 965-6918

A. Barr:sc

cc: Dome Exploration (Canada) Ltd  
Box 270  
1 First Canadian Place  
Toronto, Ontario  
M5X 1H1  
Attn: Ed Pigulski

cc: W. G. Thompson  
Suite 700  
88 University Avenue  
Toronto, Ontario  
M5J 1T6
Mr. Fred W. Matthews  
Supervisor, Projects Section  
Lands Administration Branch  
Ministry of Natural Resources  
Room 6450, Whitney Block  
Queen's Park  
Toronto, Ontario  
M7A 1X1

Re: Mining Claims P.628586 et al  
_____ - Tomorrow Lake Area (C.1678)

Dear Mr. Matthews:

We enclose herewith, in duplicate, a report and plans by Geosearch Consultants Ltd. (W. H. Thompson), covering an Electromagnetic, Magnetic and VLF Surveys performed on the above-noted 16 claims located in the Porcupine Mining Division.

This submission is made under the Special Provisions Regulations as to 80 days per claim.

Enclosed is a copy of the Report of Work which we forwarded to the Mining Recorder in Timmins, Ontario.

Please date-stamp the enclosed copy of this letter and return it to me.

Yours very truly,

DOME EXPLORATION (CANADA) LIMITED

[Signature]  
Edward A. Pigulski  
Assistant Secretary

EAP:ts  
Enclosures  

c.c. Mr. Bruce Hanley  

MINING LANDS SECTION
May 3, 1984

Dear Mr. Hanley:

Enclosed is a Report of Work covering an Electromagnetic, Magnetic and VLF Surveys (80 days for each claim) performed by Geosearch Consultants Ltd. (W. H. Thompson), on 16 mining claims as shown on the Report.

We will be delivering the survey report and plans in duplicate, to Mr. Fred W. Matthews. This assessment work is being filed under the Special Provisions Regulations.

Yours very truly,

DOME EXPLORATION (CANADA) LIMITED

Edward A. Pigulski
Assistant Secretary

EAP:ts
Enclosures

c.c. Mr. Fred W. Matthews
LEGEND

Contour interval
25 gammas
250 gammas contour
500 gammas contour
Depression
25 gammas

TOTAL

MAGNETIC SURVEY

CONSULTANTS LTD.

for OOMC EXPLORATION
(CANADA) LIMITED

PROJECT 159L
LAKE 6 DETOUR AREA