REPORT
ON
MAXMIN 11 ELECTROMAGNETIC AND MAGNETOMETER SURVEYS
GROUP 13
CRAWFORD TOWNSHIP
PORCUPINE MINING DIVISION
NORTHEASTERN ONTARIO

RECEIVED
MAR 17 1982
MINING LANDS SECTION
FOR
HOME OIL COMPANY LIMITED

Timmins, Ontario
June, 1981

John C. Grant
Exsics Exploration Ltd.
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INTRODUCTION

This report deals with the results of a MaxMin 11 electromagnetic survey on Group 13 in Lucas Township conducted by Exsics Exploration Limited for Home Oil Company Limited.

Complete survey coverage was done of the claims, as listed below, in Lucas Township.

P609767  P609771  P611251  P611255
P609768  P609774  P611252  P611256
P609769  P609775  P611253  P611257
P609770  P609776  P611254  P611258

The grid plans show 1777(high) frequency, 444 low frequency and the contoured magnetometer results. These are presented with this report, as maps, in the back pocket.
LOCATION AND ACCESS

Group 13 is located in Lot 6, Concessions 10, 11 and 12 of Lucas Township. The West Buskegou River flows through the centre of the grid as it leaves Lucas Township. Access to the property was by truck along Highway 655 to a dirt road, at the south-west corner of Wark Township, that followed an old power line which parallels Hwy. 655 1/2 to 3/4 of a mile to the east. Camps were established on the power line as it crosses the group. (see figure 1 and 2)
A total of 29.0 km of grid lines and baselines were cut. Baseline (1) was cut at azimuth 090 degrees from L 0+00 to L 1200 ME with cross lines cut at 100 m intervals in a north–south direction from 500 MS to 300 MN for lines 0+00 to 700 ME and 300 MN to 825 MS for lines 8-12E. Baseline (2) was cut from L 1300 ME to L 2300 ME at azimuth 090 degrees with cross lines cut at 100 m intervals in a north–south direction from 800 MS to 750 MN. All cross lines were chained at 25 m intervals.
Figure 1
LOCATION MAP

Home Oil
1. Electromagnetic Survey

This survey was completed using an Apex Parametrics Ltd. MaxMin 11 unit. A 150 meter reference cable was used, with operating frequencies of 1777 and 444hz throughout the survey. Technical and operating specifications of the MaxMin 11 unit are included in Appendix A of this report.

The results of the EM survey are presented as Map 1 (showing the 1777hz) Map 2 (showing the 444hz) in the back pocket of this report. The results are summarized below.

2. Magnetometer Survey

A geometrics G-816 proton precession mag was used throughout the survey. Corrections for diurnal variations was by reference to a Recording Base Station Magnetometer G-826A manufactured by Exploranium Geometrics Ltd.
3. Survey Results

The MaxMin survey noted 3 major zones called A, B and B'. The survey also showed 2 weaker zones called A' and C. These zones will be discussed separately below.

4. Conductor Characteristics

Zone A

General Characteristics: The zone strikes at azimuth $125^\circ$
for 1500 M+ across - line 800ME to Line 2300ME. It is located under highly conductive overburden which makes interpretation on the 1777hz very difficult. The dip of the zone is slightly south to near vertical. The depth to source ranges from 55 to 35 m east to west and 25 to 80 MHOS east to west.

- Depth to source of 55m
- Conductivity value of 22MHOS
<table>
<thead>
<tr>
<th>Location</th>
<th>Frequency</th>
<th>Measurement Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 1100 ME</td>
<td>444 hz</td>
<td>depth of source of 61m, conductivity value of 52 Mhos (?)</td>
</tr>
<tr>
<td>L 1300 ME</td>
<td>444 hz</td>
<td>depth to source of 57m, conductivity value of 60 Mhos</td>
</tr>
<tr>
<td>L 1500 ME</td>
<td>444 hz</td>
<td>depth to source of 46m, conductivity value of 90 Mhos (?)</td>
</tr>
<tr>
<td>L 1600 ME</td>
<td>444 hz</td>
<td>depth to source of 34m, conductivity value of 100 Mhos (?)</td>
</tr>
<tr>
<td>L 2000 ME</td>
<td>444 hz</td>
<td>depth to source of 34m, conductivity value of 48 Mhos</td>
</tr>
<tr>
<td>L 2100 ME</td>
<td>444 hz</td>
<td>depth to source of 33m, conductivity value of 58 Mhos</td>
</tr>
<tr>
<td>L 2200 ME</td>
<td>444 hz</td>
<td>depth to source of 34m, conductivity value of 61 Mhos</td>
</tr>
<tr>
<td>L 2300 ME</td>
<td>1777 hz</td>
<td>depth to source of 20m, conductivity value of 7 Mhos</td>
</tr>
<tr>
<td></td>
<td>444 hz</td>
<td>depth to source of 20m, conductivity value of 10 Mhos</td>
</tr>
<tr>
<td></td>
<td>1777 hz</td>
<td>depth to source of 20m, conductivity value of 62 Mhos</td>
</tr>
</tbody>
</table>
Zone B
General Characteristics:

This zone strikes at AZ 120° across lines 1300 ME to L 2300 ME. The survey shows some minor shifting of the conductor axis which may be due to different thicknesses of the source. The depth to source ranges from 37m on the west end to 14m at the centre and 25m on the east end. The MHO value also varies from 30 MHOS to 60 MHOS to 40 MHOS, west to east. The general dip of the zone is also slightly south.

L 1400 ME 1777hz
- depth to source of 12m
- conductivity value of 20 MHOS
444hz
- depth to source 22m
- conductivity value of 55 MHOS
L 1500 ME 444hz
- depth to source of 23m
- conductivity value of 30 MHOS
L 1600 ME 444hz
- depth to source of 37m
- conductivity value of 21 MHOS
L 1800 ME 444hz
- depth to source of 23m
- conductivity value of 60 MHOS
L 1900 ME 444hz
- depth to source of 23m
- conductivity value of
<table>
<thead>
<tr>
<th>Zone B*</th>
<th>General Characteristics:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone B*</td>
<td></td>
<td>This zone strikes at AZ 115° across lines 900 ME to 1500 ME. It may be part of zone B which has been faulted north. It ranges in depths of 50m on the west end to 20m in the middle and 40m on the east end. The conductivity value also varies from 25 MHOS to 50 MHOS to 25 MHOS west to east. The dip of the zone is near vertical to south.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L 2000 ME</th>
<th>1777hz</th>
<th>depth to source of 12m conductivity value of 21 MHOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 2000 ME</td>
<td>444hz</td>
<td>depth to source of 14m conductivity value of 40 MHOS</td>
</tr>
<tr>
<td>L 2100 ME</td>
<td>444hz</td>
<td>depth to source of 18m conductivity value of 42 MHOS</td>
</tr>
<tr>
<td>L 2200 ME</td>
<td>444hz</td>
<td>depth to source of 25m conductivity value of 42 MHOS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L 900 ME</th>
<th>444hz</th>
<th>depth to source of 50m conductivity value of 20 MHOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 1000 ME</td>
<td>1777hz</td>
<td>depth to source of 27m conductivity value of 15 MHOS</td>
</tr>
<tr>
<td>L 1100 ME</td>
<td>444hz</td>
<td>depth to source of 40m conductivity value of 25 MHOS</td>
</tr>
<tr>
<td>L 1100 ME</td>
<td>444hz</td>
<td>depth to source of 21m conductivity value of 55 MHOS</td>
</tr>
<tr>
<td>L 1500 ME</td>
<td>444hz</td>
<td>depth to source of 40m conductivity value of 22 MHOS</td>
</tr>
</tbody>
</table>
**Zone A**

**General Characteristics:**

- This zone strikes at AZ 115° across lines 1400 ME to 1600 ME with a depth range of 35 to 40m and a conductivity value range of 50-16 MHOS. The dip of the zone is south to vertical.

<table>
<thead>
<tr>
<th>Line</th>
<th>Frequency</th>
<th>Characteristics</th>
</tr>
</thead>
</table>
| 1500ME | 444hz | -depth to source of 40m  
- conductivity value of 50 MHOS |
| 1600ME | 444hz | -depth to source of 33m  
- conductivity value of 16 MHOS |

**Zone C**

**General Characteristics:**

- This zone strikes AZ 095° across lines 0+00 to 400ME showing depths of 20-25 meters and 1 to 1.5 MHOS. The zone is slightly dipping.

<table>
<thead>
<tr>
<th>Line</th>
<th>Frequency</th>
<th>Characteristics</th>
</tr>
</thead>
</table>
| 0+00  | 1777hz | -depth to source of 24m  
- conductivity value of 1 MHOS |
| 300ME | 1777hz | -depth to source of 24m  
- conductivity value of 1 MHOS |
| 400ME | 1777hz | -depth to source of 18m  
- conductivity value of 1.5 MHOS |

**Magnetics**

There is no distinct Mag trends throughout the grid. There is however several Mag highs paralleling and following zones B and B'. These highs consist of bullseye type responses with strike lengths of 220 to 250 meters. Conductive zone B has three of these Mag highs associated with it and the positions of these highs and the highs of zone B' suggest that they may be the same zone. All other zones have no definite Mag correlation.
CONCLUSIONS

Two to three lines of MaxMin or Pulse should be done to intersect the zones at a better angle for interpretation. There does not appear to be any Diamond Drill Hole on these zones. The absence of Mag may suggest a graphitic zone.
PREVIOUS WORK

INCO (1965)
One Diamond Drill Hole of 424' in length. The hole is located on their claim, which is located in the NE 1/4, N 1/2, Lot 10, Concession 6 of Lucas Township. (See attached photocopy of drill log.)

SHELL OIL (1977)
Geoex did a proton Mag survey on the area. They located a strong east west trending Mag striking for 200m. Also, a second mag high on strike, 300m to the east.
CERTIFICATE

I, John Grant, hereby certify that:

1) I am a 1975 graduate of the three year program in Geological Technology at the Cambrian College of Applied Arts and Technology and I have worked subsequently as Chief Geophysicist for Teck Exploration (5 years) and Exsics Exploration Ltd.

2) The field work described in the attached report was carried out under my supervision and the interpretation and conclusions contained therein are based on my training and professional experience.

John Grant,
Exsics Exploration Ltd.
### Type of Survey(s)

- **Geophysical**: Electromagnetic, Radiometric, Other
- **Geological**: None
- **Geochemical**: None

### Mining Claims Traversed (List in numerical sequence)

<table>
<thead>
<tr>
<th>Claim Number</th>
<th>Expended Days Cr.</th>
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</thead>
<tbody>
<tr>
<td>609 767</td>
<td></td>
</tr>
<tr>
<td>609 768</td>
<td></td>
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<tr>
<td>609 769</td>
<td></td>
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<tr>
<td>609 770</td>
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<td>611 257</td>
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<td>611 258</td>
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</tbody>
</table>

### Calculation of Expenditure Days Credits

<table>
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<tr>
<th>Total Expenditures</th>
<th>Total Days Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Expenditure (excludes power stripping)

**Type of Work Performed**

- Geophysical: Electromagnetic, Magnetometer, Radiometric
- Geological: None
- Geochemical: None

### Date Recorded

960

**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

[Signature]

Date Certified: [Date]
Type of Survey(s)       Electromagnetic, Magnetometer
Township or Area       Lucas Twp.
Claim Holder(s)        Home Oil Company Limited
                       2300 Home Oil Tower, 324 - 8th Ave. S.W. Calgary, Alberta
Survey Company         Exsies Exploration Ltd.
Author of Report       John Grant
Address of Author       P.O. Box 1880, Timmins, Ont.
Covering Dates of Survey August/September
Total Miles of Line Cut 29.0 KM.

SPECIAL PROVISIONS
CREDITS REQUESTED

Geophysical
  - Electromagnetic: 20 days per claim
  - Magnetometer: 40 days per claim
  - Radiometric: 40 days per claim
  - Other: 0 days per claim

Geological

Geochemical

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

Magnetometer
  Electromagnetic
  Radiometric

(enter days per claim)

DATE: 01/07/1985
SIGNATURE: John Grant

Res. Geol. Qualification

Previous Surveys

File No. Type Date

MINING LANDS SECTION

TOTAL CLAIMS: 18
GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 1338 Min 925 Number of Readings 1338 Min 925
Station interval 25 Meters Line spacing 100 Meters
Profile scale Max Min 1 cm = ± 10 μm
Contour interval Max 50 Gamma

MAGNETIC

Instrument Geometrics G-816 Proton Precession Magnetometer and G-336A Recording Base Station
Accuracy Scale constant 5.1 Gamma
Diurnal correction method Recording Base Station
Base Station check-in interval (hours) Continuous Monitor During Survey
Base Station location and value Lot 11, Con 2, Mountjoy Twp.

ELECTROMAGNETIC

Instrument Apex Parametric Max Min
Coil configuration Horizontal
Coil separation 150 M
Accuracy 1/10
Method □ Fixed transmitter □ Shoot back □ In line □ Parallel line
Frequency 44.4 kHz and 1772 kHz (specify VLF station)
Parameters measured Horizontal intensity and Quantitative Component of Secondary 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
**SELF POTENTIAL**

- Instrument
- Survey Method
- Corrections made

**RADIOMETRIC**

- Instrument
- Values measured
- Energy windows (levels)
- Height of instrument
- Size of detector
- Overburden

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

- Type of survey
- Instrument
- Accuracy
- Parameters measured
- Additional information (for understanding results)

**AIRBORNE SURVEYS**

- Type of survey(s)
- Instrument(s)
- Accuracy
- Aircraft used
- Sensor altitude
- Navigation and flight path recovery method
- Aircraft altitude
- Line Spacing
- Miles flown over total area
- Over claims only
GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken
____________________________________________________

Total Number of Samples

Type of Sample
(Nature of Material)

Average Sample Weight

Method of Collection

Soil Horizon Sampled

Horizon Development

Sample Depth

Terrain

Drainage Development

Estimated Range of Overburden Thickness

ANALYTICAL METHODS

Values expressed in:  per cent □  p.p.m. □  p.p.b. □

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

Others

Field Analysis (___________ tests)

Extraction Method

Analytical Method

Reagents Used

Field Laboratory Analysis

No. (___________ tests)

Extraction Method

Analytical Method

Reagents Used

Commercial Laboratory (___________ tests)

Name of Laboratory

Extraction Method

Analytical Method

Reagents Used

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

General

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________
Resident Geologist  
Ministry of Natural Resources  
60 Wilson Avenue  
Timmins, Ontario  
P4N 3W2  

Dear Sir:  

RE: Geophysical (Magnetometer and Electromagnetic) Survey on Mining Claims P 609767 et al in Lucas Township  

Additional information was requested from the claim holder on the above-mentioned survey and not submitted. This data has therefore, not been assessed.  

Enclosed is a copy of report for your information.  

Yours very truly,  

E.F. Anderson  
Director  
Land Management Branch  

Whitney Block, Room 6450  
Queen's Park  
Toronto, Ontario  
M7A 1N3  
Phone: (416) 965-1380  

S. Hurst:me  

cc: Mining Recorder  
Timmins, Ontario
Mr. William L. Good  
Mining Recorder  
Ministry of Natural Resources  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7  

Dear Sir:  

Home Oil Company Limited recorded 20 days Electromagnetic and 40 days Magnetometer assessment work credits on each of Mining Claims P 611251 to 258 inclusive; P 609767 to 771 inclusive; P 609774 to 776 inclusive on March 17, 1982.  

Additional information has been requested from the claim holder and has not been submitted.  

You are hereby authorized to delete the work credits recorded on March 17, 1982 from each of the claim record sheets. Please inform the recorded holder accordingly.  

Yours very truly,  

E.F. Anderson  
Director  
Land Management Branch  
Whitney Block, Room 6450  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416) 965-1380  

S. Hurst: mc  

cc: Home Oil Company Limited  
2300 Home Oil Tower  
324-8th Avenue South West  
Calgary, Alberta  
T2P 2Z5
TO: ARTHUR BAR

ONTARIO MINISTRY OF NATURAL RESOURCES
WHITNEY BLOCK, ROOM 6450
QUEEN'S PARK
TORONTO, ONTARIO
M7A 1W3

FURTHER TO OUR TELEPHONE DISCUSSION OF JULY 20, THIS IS OUR
FORMAL REQUEST FOR AN EXTENSION UNTIL AUGUST 22, 1983 TO FILE
HOME OIL'S ADDITIONAL INFORMATION FOR WORK CREDITS.

YOUR FILE NO'S 2.4666, 2.4662, 2.9664, 2.4627, 2.4663, 2.4670,
2.4669, 2.4629, 2.4628, 2.4667, 2.4665

S.J. STEFANOWSKI

MNR CC TOR

HOMEOIL CGY
July 11, 1983

Home Oil Company Limited
2300 Home Oil Tower
324-8th Avenue South West
Calgary, Alberta
T2P 2Z5

Dear Sir:

RE: Geophysical (Electromagnetic and Magnetometer) Survey
submitted on Mining Claims #609767 et al in the
Township of Lucas

Enclosed is a copy of our letter dated January 11, 1983,
requesting additional information for the above-mentioned
survey.

Unless you can provide the required data by July 22, 1983,
the mining recorder will be directed to cancel the work
credits recorded on March 17, 1982.

For further information, please contact Mr. F.W. Matthews
at (416)965-1380.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1M3
Phone(416)965-1380

S. Hurst:mc

Encl.

cc: Mining Recorder
Timmins, Ontario

cc: John Grant
Timmins, Ontario
Home Oil Company Limited
2300 Home Oil Tower
324 - 8th Avenue S.W.
Calgary, Alberta
T2P 1C8

Dear Sirs:


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

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

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone 416/965-1380

A. Barr:se

Encls:

cc: Mining Recorder
Timmins, Ontario
Mining Lands Comments

To: Geophysics

Mr. Barlow

Comments

☑ Approved ☐ Wish to see again with correction

Date 06/30/82 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: 5-1360)
Dear Sir:

We have received reports and maps for a Geophysical (Electromagnetic and Magnetometer) Survey submitted under Special Provisions (credit for Performance and Coverage) on mining claims P.609767 et al in the Township of Lucas.

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

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen’s Park
Toronto, Ontario
M7A 1N3
Phone: 416/965-1316

J. Skura/amc

cc: Home Oil Company Limited
    Calgary, Alberta

cc: Mr. John Grant
    Timmins, Ontario