



42A13SE0052 63.1488 THORBURN

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## McPHAR GEOPHYSICS LIMITED

### GENERAL NOTES ON THE McPHAR ELECTROMAGNETIC METHOD

Electromagnetic measurements are made in terms of "dip angles" and are recorded in degrees. The dip angles measure the amount of distortion of the primary (applied) electromagnetic field caused by secondary fields associated with currents induced in sub-surface electrical conductors. These angles are plotted in degrees on the accompanying maps either beneath or to the right of the station from which each observation was taken. Where a minus sign precedes a number, the angle of dip is to the west or south; the absence of a sign preceding a number indicates an easterly or northerly dip angle.

Transmitting coil locations are termed "setups"; each one being marked on the maps with a triangle and bearing a code number. Several lines are traversed with the receiving coil when the transmitting coil is at any one location; the readings on these lines are related to the corresponding setup by the code at the end of each series of readings.

"Conductor-axes" are marked on the maps according to the legend. They are, in general, vertical projections to the surface of the upper extremities of electrically-conductive bodies.

Electromagnetic anomalies can result from sulphide mineralization, graphitic schists, carbonaceous sediments and, on occasion, fault zones. Apropos of this it is to be noted that disseminated sulphide mineralization consisting entirely of discrete particles is not a conductor at the normal frequencies used for practical geophysical exploration. Consequently, exploration of a property subsequent to an electromagnetic survey should be based not only on the indicated electromagnetic anomalies, but should take into account all the geologic and physiographic data that can be obtained.

Assessment Work  
7-997

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McPHAR GEOPHYSICS LIMITED  
 REPORT ON THE  
 DUAL FREQUENCY  
 ELECTROMAGNETIC SURVEY  
 THORBURN TOWNSHIP, ONTARIO  
 FOR  
 ALLIED PITCH-ORE MINES LIMITED

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1. INTRODUCTION

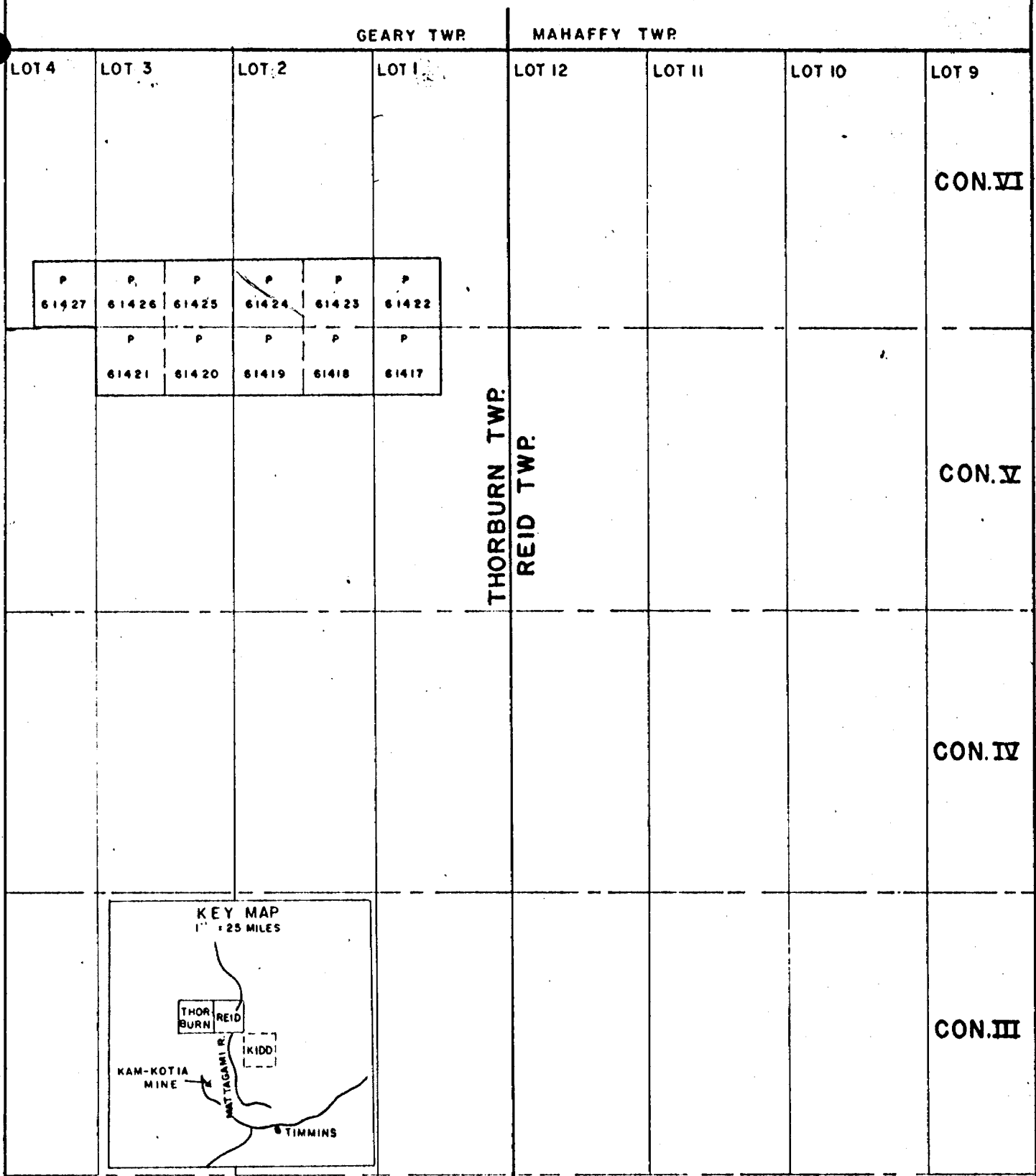
At the request of Mr. Steven Low, President of Allied Pitch-Ore Mines Limited, a dual frequency, electromagnetic survey has been carried out over the Company's holdings in Thorburn Township, Porcupine Mining Division, Ontario. The property consists of eleven claims numbered P61417 to P61427 inclusive. Their location is shown on Figure 1.

The geology of the claims is covered by the ODM Map No. 2046, Timmins-Kirkland Lake Sheet. Outcrops of gabbro and basic volcanics are shown about 2 miles northeast of the claims in Mahaffy Township, but no outcrops are reported in the immediate vicinity of the property. Overburden is believed to be quite extensive in this area and could be as much as 100 feet deep.

The aeromagnetics of the claim group are shown on the G.S.C. Map 2301G. A strong well closed magnetic high is centered in the northwest corner of Reid Township. This feature is believed to represent a plug of basic rock, probably gabbro. The claims are located on the

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LOCATION SKETCH



ALLIED PITCH-ORE MINES LIMITED  
CLAIM GROUPS

THORBURN TWP - PORCUPINE M.D. - ONTARIO

Assessment Work

Scale: 1" = 40 Chains

T-997

FIG.- I

western side of this feature, where the magnetic contours suggest a NW-SE trend.

The field surveying was carried out during January, 1965.

## 2. PRESENTATION OF RESULTS

Observations were made every 100 feet along a series of N-S traverse lines spaced at 400 foot intervals. The dip angle values are shown in profile form on Dwg. No. E4141, which is at a scale of 1"=200'.

## 3. DISCUSSION OF RESULTS

Definite conductor axes have been established at the 1000 cps frequency on the north portion of Lines 32W and 36W. These anomalies, together with the weak indication on 28W have been interpreted as a single continuous conductor, Zone A.

Zone A appears to strike NW-SE and to conform with the trend of the contours on the government aeromagnetic sheet. Although the responses are not large, the anomalies are quite definite and are believed to be due to a conductive zone within the underlying bedrock. Because of the strike of the zone, no definite indication of the depth, dip or conductivity of the conductor is possible. Detailed surveying from a more favourable transmitter location is suggested to further evaluate this interesting anomaly.

Unusual dip angle profiles occur on the south portion of Lines 28W, 32W and 36W. These results could be due to a N-S trending conductor lying between these lines or in the vicinity of

Tx-6 on Line 24W. This possibility should be checked by running a series of E-W reconnaissance lines; (i.e. base line, 5S and 10S) from a transmitter located near 15S on Line 28W.

The remainder of the dip angle profiles are quite featureless and typical of the results obtained over conductive overburden in the Timmins area.

#### 4. SUMMARY AND RECOMMENDATIONS

A NW-SE trending conductor, Zone A, has been indicated by the reconnaissance data. The responses are quite definite and appear to be caused by a conductor within the underlying bedrock. Additional detailing with electromagnetics should be carried out from transmitters located either on, or on strike with, Zone A to determine its location, dip and strike length. This detailing may be done either on existing lines, or on a series of lines cut perpendicular to the indicated strike. The latter would be expected to give more definitive results.

The profiles on the southern portion of Lines 28W, 32W and 36W could be caused by a N-S trending conductor lying between these lines or in the vicinity of Tx-6 on Line 24W. This possibility should be checked by a series of E-W reconnaissance traverses on this portion of the grid.

Because of the apparent conformability between the aeromagnetic contours and the strike of Zone A, it is suggested that magnetic surveying be carried out in conjunction with the detailed EM work outlined above.

McPHAR GEOPHYSICS LIMITED



D. B. Sutherland.

Dated: April 8, 1965

ASSESSMENT DETAILS

SPONSOR: Allied Pitch-Ore Mines Ltd.      MINING DIVISION: Porcupine  
LOCATION: Thorburn Township      PROVINCE: Ontario  
TYPE OF SURVEY: Electromagnetic  
OPERATING MAN DAYS:                    14      DATE STARTED: January 14, 1965  
EQUIVALENT 8 HR. MAN DAYS: 21      DATE FINISHED: January 23, 1965  
CONSULTING MAN DAYS:                    1      NUMBER OF STATIONS: 456  
DRAUGHTING MAN DAYS:                    3      MILES OF LINE SURVEYED: 8.27  
TOTAL MAN DAYS:                            25

CONSULTANT:

D. B. Sutherland, Apt. 604, 412 Eglinton Avenue East, Toronto 12, Ontario.

FIELD TECHNICIANS:

J. Hussey, 394 James Street, Timmins, Ontario.

D. Vincent, General Delivery, Timmins, Ontario.

DRAUGHTSMEN:

K. Bingham, 78 Hubbard Blvd., Toronto 13, Ontario.

E. Helkio, 17 Annaree Street, Scarborough, Ontario.

D. Founder, 252 Cottingham Street, Toronto 7, Ontario.

McPHAR GEOPHYSICS LIMITED



DBS:mas

D. B. Sutherland.

Dated: April 7, 1965

Assessment Work

7-037



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File 63.1488

THE MINING ACT  
Assessment Work Credits

Name: ALLIED PITCH-ORE MINES LIMITED

Township or Area: THORBURN TWP

Geophysical 21 Days Work (per claim)

Geological nil Days Work (per claim)

Mining Claims: P 61417 to 61427 inclusive



Assessment Work Breakdown

1. Type of Survey ..... **ELECTROMAGNETIC** .....

2. Township or Area ..... **THORBURN TOWNSHIP** .....

3. Mining claim numbers ..... **P 61417 to P 61427 INCLUSIVE** .....

4. Number of miles of line cut ..... **9.5** .....

\* 5. Type of instrument used ..... **McPIAR DUAL FREQUENCY, VERTICAL LOOP FM UNIT** .....

\* 6. Scale constant or sensitivity .....

\* 7. Number of stations established ..... **456** .....

8. Summary of days worked ( details on reverse side )

Total technical ( include consultants, draughting etc. .... **25 x 7** ..... **175**

Total line-cutting (~~maximum 5 man days per claim~~) ..... **60**

Total man-days ( technical plus line-cutting ) ..... **235**

Assessment days credit per claim ..... **21**

(~~Total man-days multiplied by assessment factor 4 divided by total number of claims traversed~~)

9. Dated ..... **APRIL 12, 1965** .....

Signed ..... *L.B. Halladay*  
**L.B. HALLADAY**

\* Complete only if applicable

Complete list of names, addresses and dates on reverse side

LOCATION SKETCH

GEARY TWP

MAHAFFY TWP

LOT 4    LOT 3    LOT 2    LOT 1    LOT 12    LOT 11    LOT 10    LOT 9

CON. VI

P 61427	P 61426	P 61425	P 61424	P 61423	P 61422
P 61421	P 61420	P 61419	P 61418	P 61417	

DUAL FREQUENCY  
E.M. SURVEY

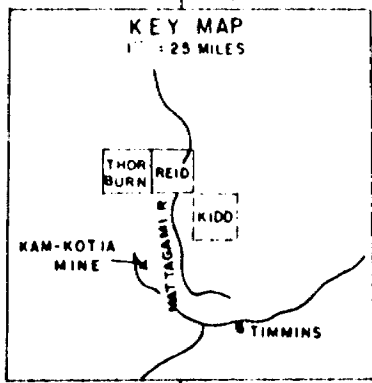
THORBURN TWP  
REID TWP.

McPhar - Apr. 65

CON. V

CON. IV

CON. III



ALLIED PITCH-ORE MINES LIMITED  
CLAIM GROUPS

THORBURN TWP - PORCUPINE M.D. - ONTARIO

63.1488

Assessment

Work

Scale: 1" = 40 Chains

T-1947

FIG. 1

1966: See Mespi T-787  
T-836 (Area # 8)

