



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 either sulphide mineralization, graphite, carbonaceous sediments, fault and shear zones, or any combination of these factors. 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.

McPHAR GEOPHYSICS LIMITED

REPORT ON THE ELECTROMAGNETIC SURVEY OF GODFREY TOWNSHIP PROPERTY, KAMISKOTIA, ONTARIO FOR

BROULAN REEF MINES LIMITED

1. INTRODUCTION

At the request of Mr. B. W. Lang, President, Broulan Reef Mines Limited, a reconnaissance electromagnetic survey was performed over the Godfrey Township property bordering Keeley and Godfrey Lakes, and over several adjacent small grids. The work was carried out during the spring of 1955.

A large portion of the property is covered by sandy overburden but a number of north-south diabase dykes are known to exist in host rocks of mixed acid and basic lavas. Three fairly strong electromagnetic anomalies have been delineated as well as several weak ones.

2. PRESENTATION OF RESULTS

The field results for the main group of claims are presented on map Nos. E4185-1, -2, -3 and -4 at a scale of 1" = 200'. The results of the small grids will be presented in a separate report to be submitted at a later date.

3. DISCUSSION OF RESULTS

ZONE A

This zone lies between stations 50800N and 51400N

between lines 608E and 624E and may continue further to the east. One test hole has been suggested already to test the cause of this anomaly. The electromagnetic results suggest a flatly dipping conductor of moderate conductivity. The same is true of the results over Zone B and the possibility of offsetting is suggested. Both zones appear to dip to the north. Further work on Zone A should be dependent upon the results of the hole which is underway at present. There does not appear to be any geological data available in this immediate area.

ZONE B

This zone lies between lines 596E and 608E and appears to be very similar to Zone A. While the programme for future work should be dependent upon the results of current drilling on Zone A, it is considered advisable that this zone should be tested in any event by at least one hole. We suggest that a vertical hole be collared at station 52600N on line 600E for this purpose.

ZONES C, D AND E

These zones lie subparallel to one another, north of 50000N between lines 568E and 604E. They are weakly to moderately conductive and apparently strike parallel with the known direction of schistosity. Steeply dipping structures are suggested by the electromagnetic results. Two drill holes should suffice to determine the cause of these anomalies. These holes might be collared at station 52550N on line 572E and at 51500N on line 576N.

ZONE F

This zone appears to lie parallel to Zones C, D and E but it is not very clearly defined. The results on line 540E are puzzling. As there are known outcrops in this vicinity, detailed geological investigation might determine the cause of this anomaly but expenditure of any other nature does not seem warranted at this time. The results of testing Zones C and D may help in making a final decision at a later date.

ZONE G

This is a very weak anomaly. It lies in the northwest corner of the claim group and should be correlated with local geological information. Any further work in this locality should be dependent upon the results of drilling Zones C and D.

ZONE H

This weak anomaly lies around station 54200N between lines 580E and 592E. Apart from geological correlation, no further work is suggested for this zone.

ZONE J

This zone is not clearly defined but its assumed strike is northwest southeast and its probable dip is to the northeast. It is a weak anomaly which shows a resemblance to Zones C, D and E both in apparent conductivity and assumed strike. It parallels the observed schistosity as shown on map of Godfrey Township. The anomaly has

not been defined well enough by the reconnaissance survey to permit the suggestion of a collar location at this time. It is such a weak electromagnetic anomaly that unless the results of drilling at other localities on this property are favourable, no further work would be warranted on this zone.

ZONE K

A weak conductor, similar to Zone J, lies between lines 628E and 632E. This zone appears to strike west southwest east northeast with a possible flat dip to the northwest. No further work appears to be warranted on Zone K at this time.

ZONE L

An interesting anomaly lies near the southern shore of Godfrey Lake between lines 592E and 668E. It also is poorly defined by the reconnaissance survey but breakup prevented any detailed surveying on this anomaly. It seems to dip to the north but its strike is uncertain. Some offsetting of the conductive material may be confusing the electromagnetic results since a diabase dyke strikes north-south in the vicinity of lines 596E and 600E.

592E
668E

If exploration of this zone can be delayed until next winter, it would be expedient to attempt to delineate the anomaly with certainty and plan a drilling programme on the results. However, a number of exploratory holes from the south shore of Godfrey Lake might be undertaken this summer to determine some general geological information.

ZONE M

A very weak anomaly exists near the western end of Godfrey Lake but it is not considered to be worthy of further attention at this time.

ZONE N

Similarly, this zone is extremely weak and on the basis of the interpretation of the electromagnetic results alone does not warrant further attention at this time.

ZONE P

This zone was delineated by the latest extension of the survey. It is a deep structure which is covered by sand and gravel. One test drill hole is suggested for this zone.

4. CONCLUSIONS

Zone A, B and L are considered to be the most promising anomalies on this group of claims. The suggestions made for testing the causes of these zones and Zones C and D should be revised in consideration of geological and topographical data in the immediate vicinity of the conductor axes and as drilling information becomes available, the programme should be modified accordingly.

McPHAR GEOPHYSICS LIMITED

A. Burlinson

A. Burlinson,
Geophysicist.

Stanley Davidson

Stanley Davidson,
Geological Consultant.

Dated: May 17th, 1955.

MCPHAR GEOPHYSICS LIMITED

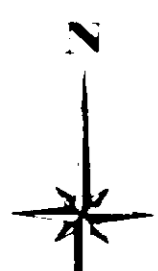
INDEX MAP



AREA OUTLINED IN BLUE COVERED BY THIS REPORT

Overlay on Godfrey Township Geology Map No. - 1954 - 4

Approx. Scale 1 inch to 1600 feet

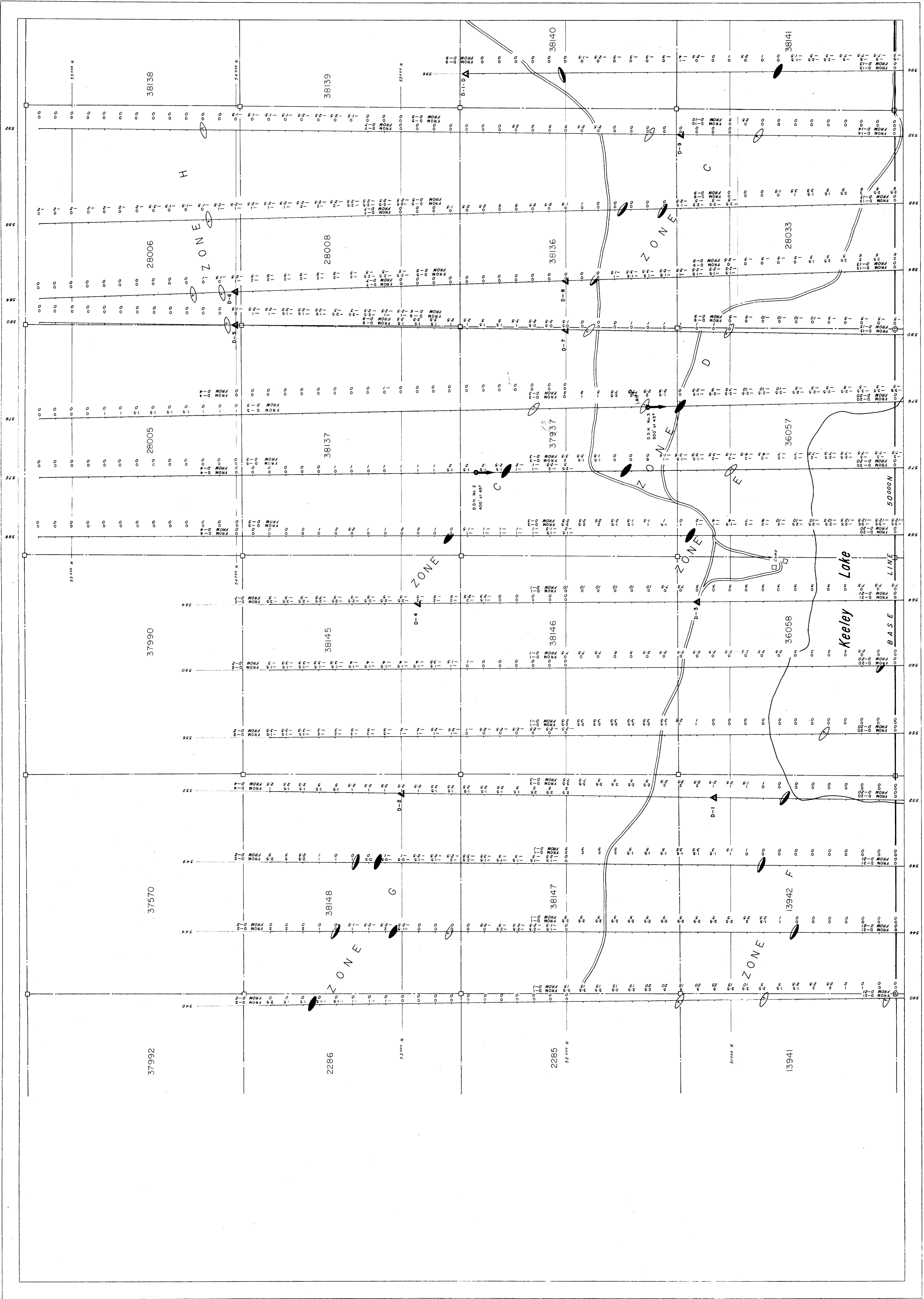


DRAWN
DATE
APPROVED

A. Paulson

63.579 DATE
May 19/55





DRAWN BY: PEER
DATE: MAY 1955
APPROVED: A. Peckham
DATE: May 1955

63.599

63.599

LEGEND
 ▲ TRANSMITTER LOCATION
 ○ READER TRAVEL AND READINGS 1000 C.P.S.
 ○ NOTE LOCATION OF CORRESPONDING END OF EACH SERIES OF READINGS
 ○ READER TRAVEL AND READINGS 2000 C.P.S.

SYMBOLS
 ○ CONDUCTOR AXIS ESTABLISHED
 ○ CONDUCTOR AXIS UNCERTAIN
 ○ SUGGESTED TEST DRILL HOLE

KEY MAP

BROULAN REEF MINES LIMITED
KAMISKOTIA AREA
ONTARIO

SCALE: ONE INCH TO TWO HUNDRED FEET

DWG. E 4185-1

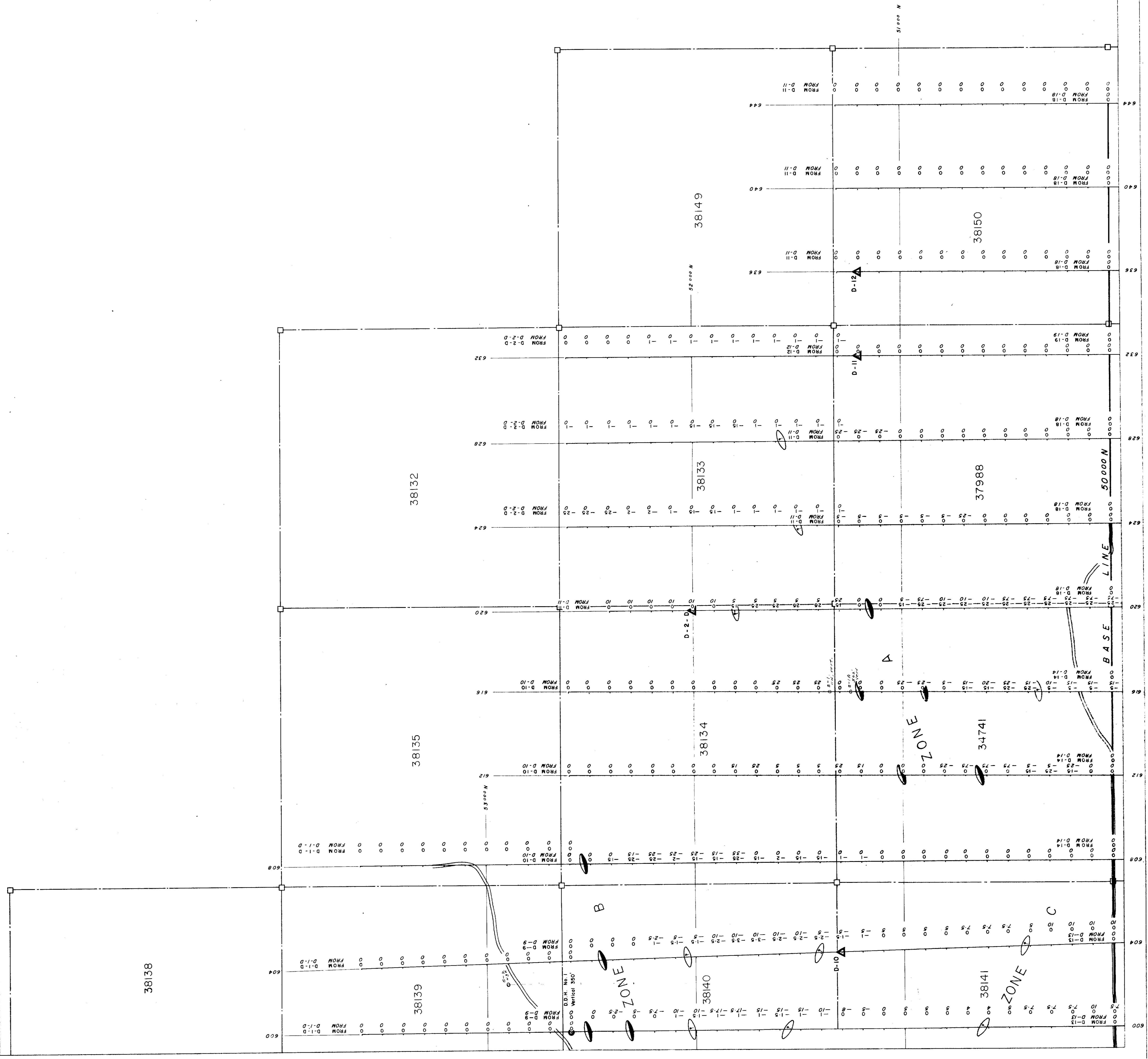
SYMBOLS
 CONDUCTOR AXIS ESTABLISHED
 POSITION OF CONDUCTOR AXIS
 EXISTENCE OF CONDUCTOR AXIS
 UNCERTAIN
 SUGGESTED TEST DRILL HOLE

BROULAN REEF MINES LIMITED
KAMISKOTIA AREA
ONTARIO

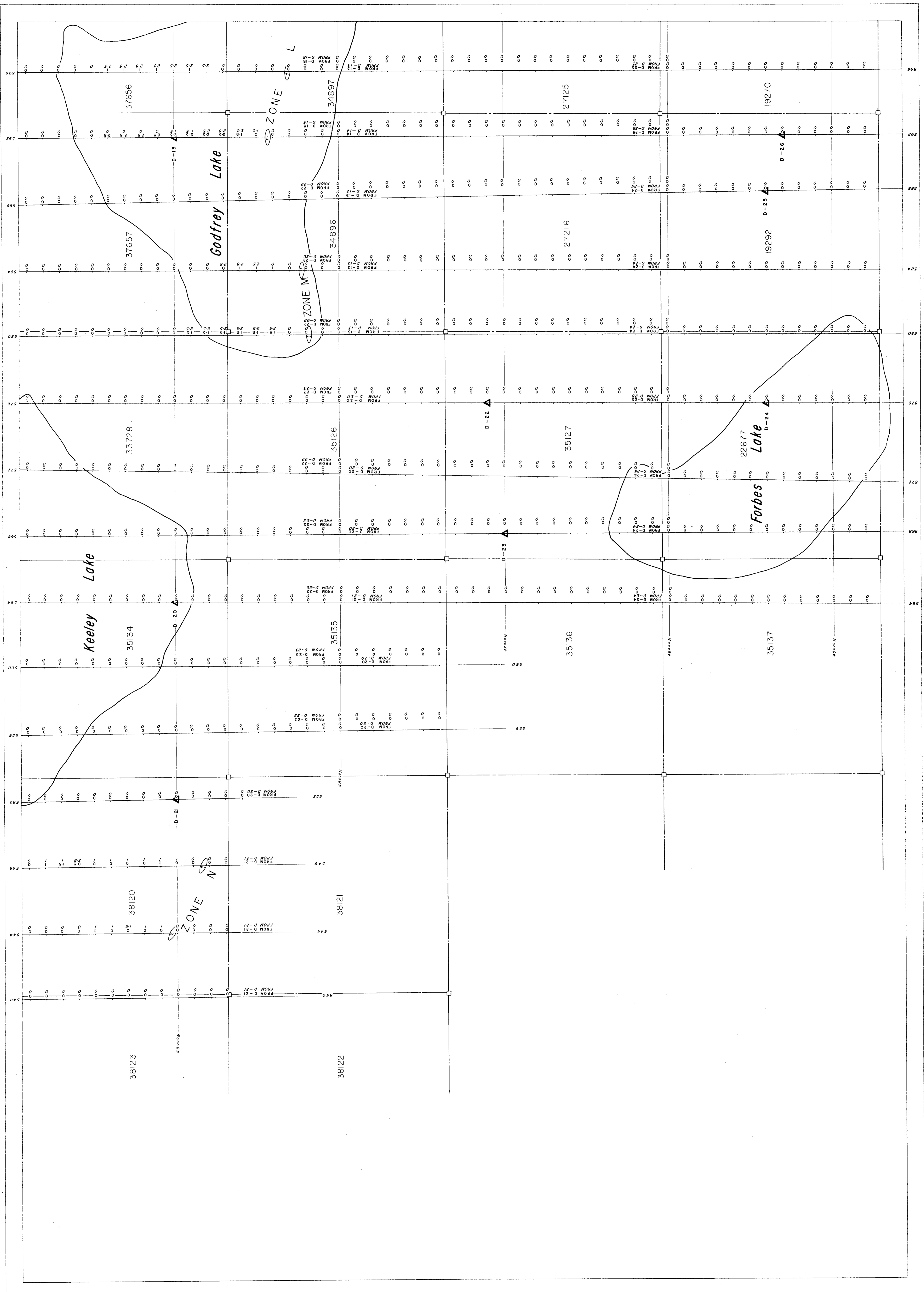
KEY MAP

LEGEND
 TRANSMITTER LOCATION
 RECEIVER TRAVEL AND
 READINGS, 1000 C.P.S.
 NOTE: LOCATION OF CORRESPONDING
 END OF EACH SERIES OF READINGS
 RECEIVER TRAVEL AND
 READINGS 5000 C.P.S.

SCALE: ONE INCH TO TWO HUNDRED FEET



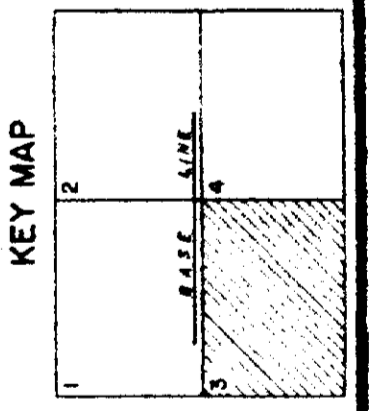
MCPHAR GEOPHYSICS LIMITED
ELECTROMAGNETIC SURVEY



DRAWN BY PEER
DATE, MAY 1955
APPROVED
A. B. ...
DATE
63.599 May 1955
DWG. E 4185-3

SYMBOLS
CONDUCTOR AXIS ESTABLISHED
UNCERTAIN
EXISTENCE OF CONDUCTOR AXIS
UNCERTAIN
SUGGESTED TEST DRILL HOLE

BROULAN REEF MINES LIMITED
KAMISKOTIA AREA
ONTARIO



LEGEND
▲ TRANSMITTER LOCATION
○ RECEIVER TRAVEL AND
--- CORRESPONDING TRANSMITTER
IS INDICATED AT THE END OF EACH
SERIES OF READINGS
D - 05 READINGS 5000 C.P.S.



