2.929

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ELECTROMAGNETIC SURVEY

on the

MACDIARMID No. 3 GROUP

HOLLINGER MINES LIMITED

Macdiarmid Township, Ontario

July 5, 1972.

H. Z. Tittley, P.Eng.

SUMMARY

Horizontal loop electromagnetic surveys have been completed on 13 claims in Macdiarmid Township, Ontario. Several conductive zones that vary from uninteresting to excellent have been outlined.

INTRODUCTION

This report, covering the results of the surveys, is prepared on compliance with the assessment requirements as set by the Ministry of Natural Resources of Ontario. The author planned the surveys, supervised the field crews, interpreted and presented the data.

The geophysical activity on the property was in two stages. During June 1971 a Ronka MK III horizontal loop unit with coils 300 feet apart was used to test airborne electromagnetic responses detected by a survey flown in early 1970. The ground survey was conducted over a grid of lines 400 feet apart established the previous month. The grid lines bearing 10 degrees were cut from and normal to a base line originating from a point near a bay along the west shore of the Mattagami River. During the winter of 1972, additional grid lines 400 feet apart were extended across the Mattagami River along a bearing parallel to the main base line (100 degrees). All the new lines were then read using an EM-17 horizontal loop electromagnetic unit with a coil separation of 400 feet. Because of poor resolution with the MK III results, north-south grid lines between 00 and 20W were repeated with the EM-17.

PROPERTY, DESCRIPTION and LOCATION

The portion of Macdiarmid No. 3 Group, covered by this report, consists of 13 contiguous claims acquired by staking during May 1970 and registered in the name of Hollinger Mines Limited. The claims are numbered: P-255214 to P-255222 inclusive

P-255369

P-255519

P-255955 and P-255956

The property is situated mainly along the west side of the Mattagami River in the central part of Macdiarmid Township, Porcupine Mining Division. The Town of Timmins lies 16 miles to the southeast.

ACCESSIBILITY

The group is accessible via the Mattagami River for 13 miles, from Sandy Falls in Mountjoy Township where a good rural road arrives from Timmins 5 miles away. Land transportation is possible only by tractor roads through Loveland Township from the end of Highway 576 in Robb Township.

HISTORY

Since airborne magnetic surveys flown after World War 2 discovered a pronounced magnetic feature lying along and immediately south of the south boundary of the group, mineral potential interest has been generated in the area. Some drilling was carried out within the high magnetic feature and more recently, considerable exploration work including drilling was conducted further south. However, in the author's knowledge, the area of the Hollinger claims has received minimum attention in recent years.

A previous assessment report by D. R. Alexander on a geomagnetic survey of the property contains additional information on the history of the area.(1)

GEOLOGY

Outcrops of basic intrusive rocks and basic intrusive rocks in contact with basic lavas have been mapped one half mile west of the property.(2) From drilling results the high magnetic trend along the south boundary is known to contain ultrabasic rocks.

From compilation work in the area and adjacent townships, a major structural break indicated as the Mattagami River Fault is shown to parallel the east boundary.(3)

SURVEY METHODS

The electromagnetic surveys were performed over the existing grid at a station interval of 100 feet or less. All readings were recorded at the station midway between the coils.

RESULTS

From the survey results, 14 conductive zones have been interpreted. These are labelled A to N, according to their approximate order of interest, on the accompanying map of the profiles. The readings obtained with the Ronka MK III unit along lines 24W to 40W north of the base line and 20W to 36W south of the base are erratic and appear to give poor definition of the underlying conductors.

Anomaly "A" displays characteristics of the largest concentration of conductive material. Anomaly "N" is believed due to phreatic waters along the east bank of the river. Similarly, anomaly "J" follows the west bank of the river but where it underlies the river between lines 20N and 28N its causes are suspect because of its close association with the center of a large magnetic feature. A fair response detected near the west end of line 28N, labelled "K", is viewed with interest because of the possibility of a north-south striking conductor.

RECOMMENDATIONS and CONCLUSIONS

The EM-17 survey with a coil separation of 400 feet should be completed over the western portion of the grid.

The area of anomalies L, M and C should be detailed along lines 200 feet apart.

Anomaly "A" is a possible target for drilling but this should be delayed until the entire 24 claims in the Macdiarmid No. 3 Group have been examined by ground geophysics.

References:

(1) Geomagnetic Survey Macdiarmid #3, D.R. Alexander;
Ontario Ministry of Natural Resources assessment file T-560.

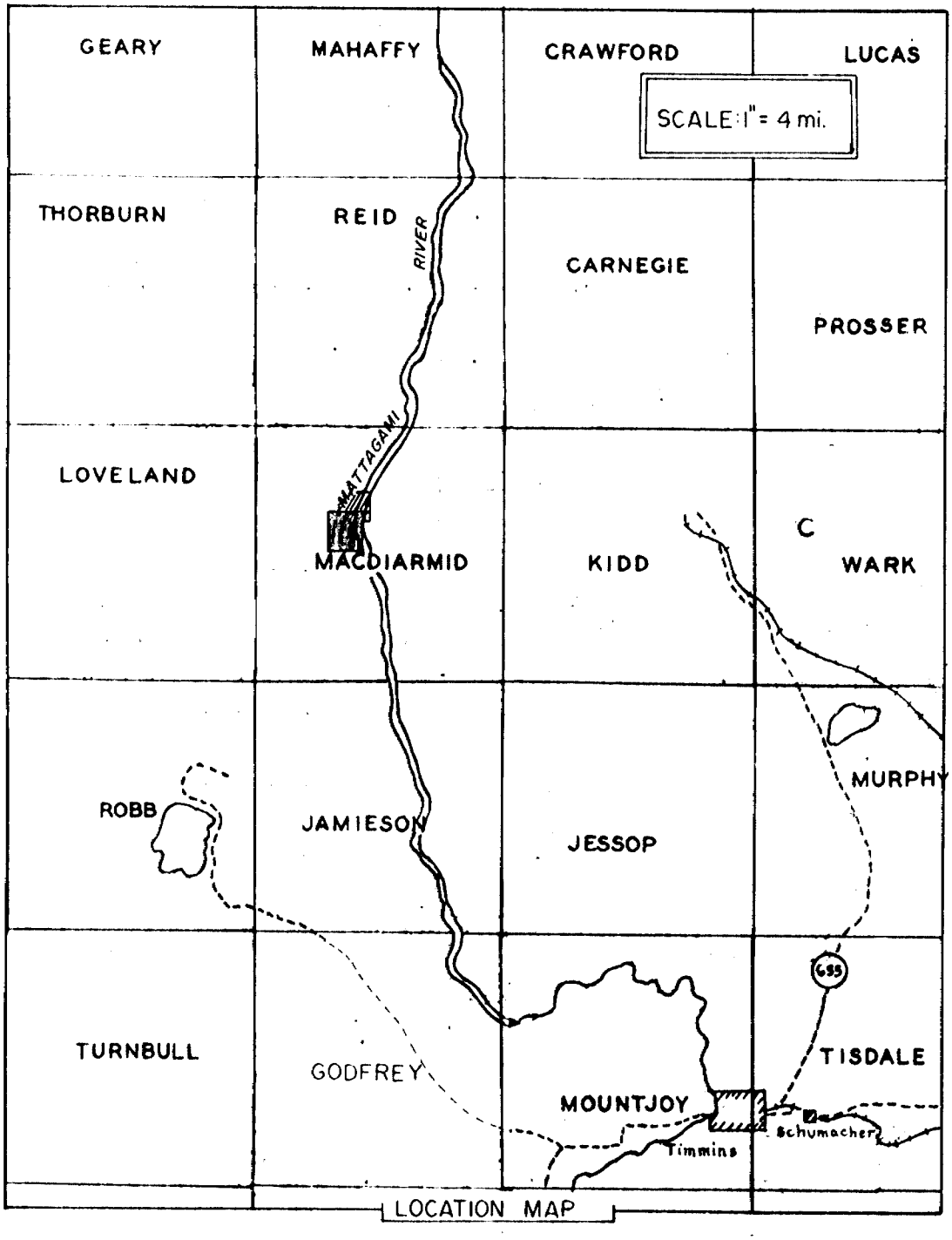
(2) Robb-Jamieson Area;
Ontario Department of Mines, Vol. LIII part 4, Pub. 1944.

(3) Pamour Sheet;
Ministry of Natural Resources, Ontario;
Preliminary Map No. 698, Pub. 1971.

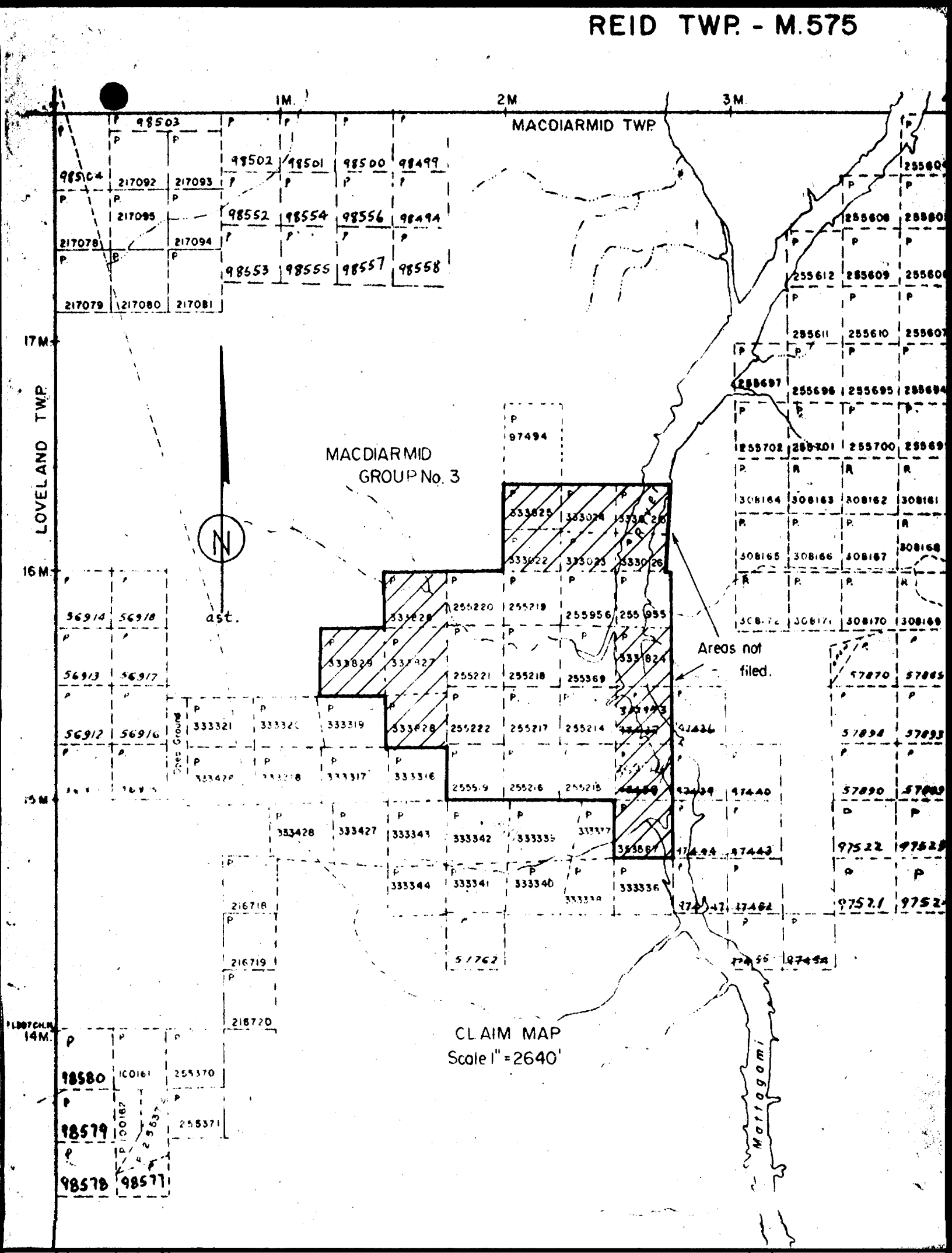
HOLLINGER MINES LIMITED

H. Z. Tittley P.Eng.

H. Z. Tittley.


GEARY
MAHAFFY
CRAWFORD
LUCAS
SCALE: 1" = 4 mi.
THORBURN
REID
MATTAGAMI
RIVER
CARNEGIE
PROSSER
LOVELAND
MACDIARMID
KIDD
C
WARK
MURPHY
ROBB
JAMIESON
JESSOP
TURNBULL
GODFREY
MOUNTJOY
TISDALE
655
Timmins
Schumacher
LOCATION MAP

REID TWP. - M.575



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RECEIVED
JUL 10 1972

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDI
FACTS SHOWN HERE NEED NOT I
TECHNICAL REPORT MUST CONTAIN INTE

42A11NW0630 2.929 MACDIARMID

900

Type of Survey Geophysical Electromagnetic

Township or Area Macdiarmid #3 Group, Macdiarmid Twp.

Claim holder(s) Hollinger Mines Limited
Box 320, Timmins, Ontario

Author of Report H. Z. Tittley

Address c/o Hollinger Mines Limited

Covering Dates of Survey June 2, 1971 - April 7, 1972
(linecutting to office)

Total Miles of Line cut 15.71

SPECIAL PROVISIONS CREDITS REQUESTED

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

ENTER 20 days for each additional survey using same grid.

DAYS per claim

Geophysical
--Electromagnetic 20
--Magnetometer
--Radiometric
--Other
Geological
Geochemical

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

Magnetometer ____ Electromagnetic ____ Radiometric ____
(enter days per claim)

DATE: ____ SIGNATURE: ____
Author of Report or Agent

PROJECTS SECTION

Res. Geol. ____ Qualifications 63.2513

Previous Surveys 2.846 mag received line cutting

Checked by ____ date ____

GEOLOGICAL BRANCH ____

Approved by ____ date ____

GEOLOGICAL BRANCH ____

Approved by ____ date ____

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)

P - 255214
P - 255215
P - 255216
P - 255217
P - 255218
P - 255219
P - 255220
P - 255221
P - 255222
P - 255369
P - 255519
P - 255955
P - 255956

TOTAL CLAIMS 13

If space insufficient, attach list

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations 824 Number of Readings 614

Station interval 100 feet

Line spacing 400 feet

Profile scale or Contour intervals 1 inch = 40%
(specify for each type of survey)

MAGNETIC

Instrument

Accuracy - Scale constant

Diurnal correction method

Base station location

ELECTROMAGNETIC

Instrument Ronka MK III and Geonics EM-17

Coil configuration Horizontal Coplanar

Coil separation MK III 300' EM-17 400'

Accuracy Inphase ± 1% Out-of-phase ± 3%

Method: ☐ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line

Frequency MK III 2400 Hz EM-17 1600 Hz
(specify V.L.F. station)

Parameters measured

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION -- RESISTIVITY

Instrument

Time domain Frequency domain

Frequency Range

Power

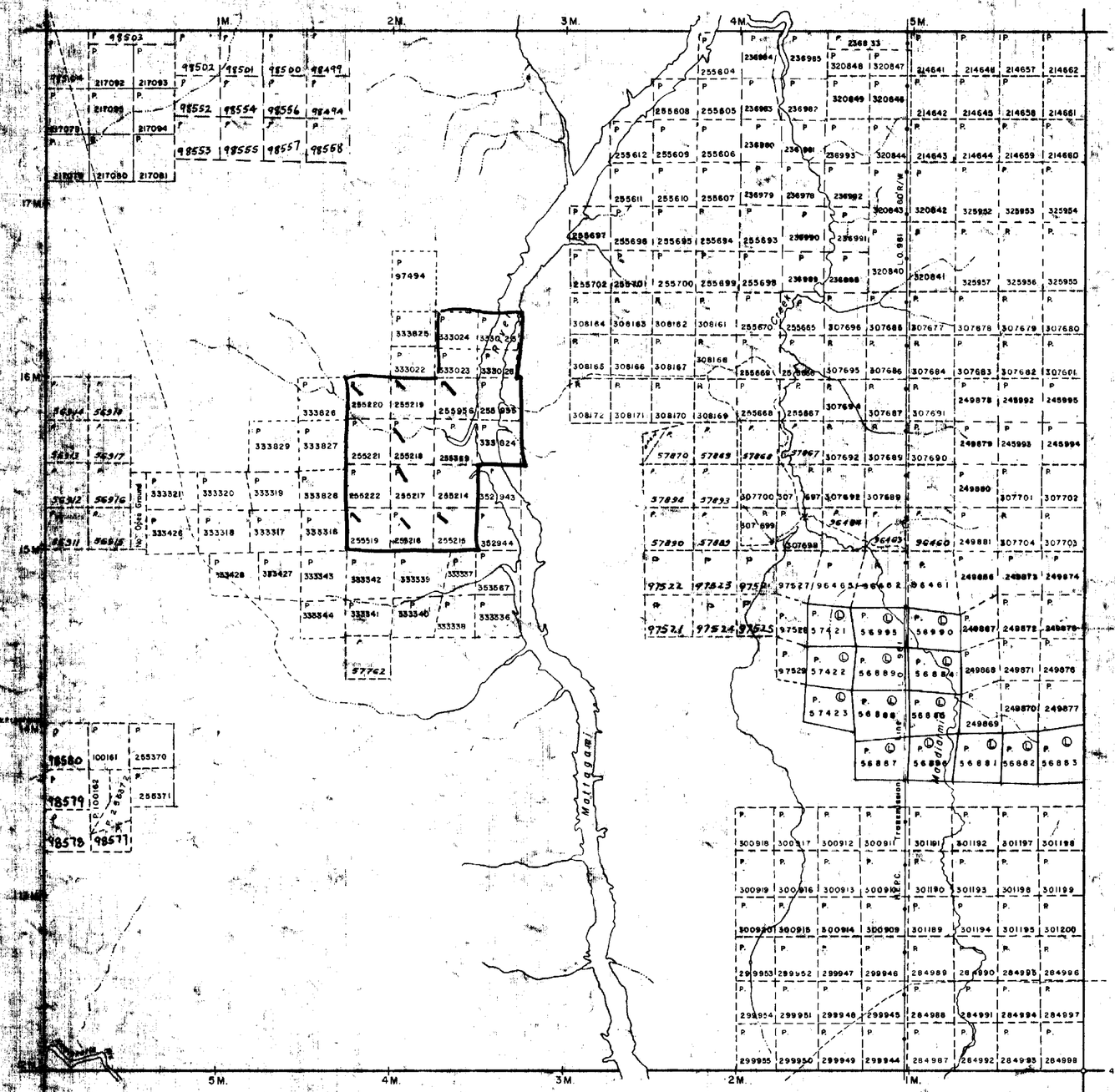
Electrode array

Electrode spacing

Type of electrode

TRIM LINE

REID TWP. - M.575



THE TOWNSHIP
OF

MACDIARMID

DISTRICT OF
COCHRANE

PORCUPINE
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

LEGEND

PATENTED LAND	P.
CROWN LAND SALE	C.S.
LEASES	L.
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C.

NOTES

400' surface rights reservation around all lakes and rivers.

Flooding rights to areas along Mattagami River reserved to H.E.P.C. – L.O. 7985

2.929

DATE OF ISSUE
AUG 1 1972
ONT. DEPT. OF MINES
AND NORTHERN AFFAIRS

PLAN NO. M.294

ONTARIO
DEPARTMENT OF MINES
AND NORTHERN AFFAIRS

TRIM LINE

N

AST.

MK III H.E.M.

Frequency 2400 Hertz

Coil Separation 300'

40 W 36 W 32 W 28 W 24 W 20 W 16 W 12 W B L

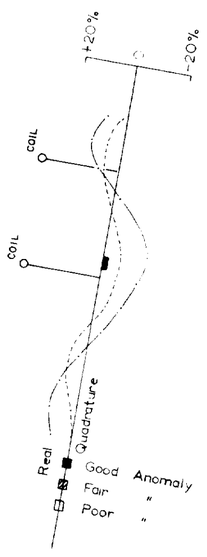
56 N 52 N 48 N 44 N 40 N 36 N 32 N 28 N 24 N 20 N 16 N 12 N 8 N 4 N 00

K H G J I L C N M D E A B F

255220 255219 255956 255955 255221 255218 255369 333824 255222 255217 255214 255219 255216 255215

MATTAGAMI RIVER

LEGEND



HOLLINGER MINES LTD.

H.E.M. SURVEY

FREQUENCY: 1600 Hertz

MACDIARMID TWP.

SCALE: 1 INCH TO 400 FEET

9/2 Tittley P. Eng.

REGISTERED PROFESSIONAL ENGINEER
H. Z. TITTLEY
PROVINCE OF ONTARIO

N.W. Sheet