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VOLUME 1
 REPORT ON
 INDUCED POLARIZATION
 AND RESISTIVITY SURVEY
 IN THE
 MT. TYNDALL AREA, TASMANIA
 FOR
 MOUNT LYELL MINING AND
 RAILWAY COMPANY LIMITED

REPRODUCED

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NOTES ON THE THEORY OF INDUCED POLARIZATION AND THE METHOD OF FIELD OPERATION

Induced Polarization as a geophysical measurement refers to the blocking action or polarization of metallic or electronic conductors in a medium of ionic solution conduction.

This electro-chemical phenomenon occurs wherever electrical current is passed through an area which contains metallic minerals such as base metal sulphides. Normally, when current is passed through the ground, as in resistivity measurements, all of the conduction takes place through ions present in the water content of the rock, or soil, i. e. by ionic conduction. This is because almost all minerals have a much higher specific resistivity than ground water. The group of minerals commonly described as "metallic", however, have specific resistivities much lower than ground waters. The induced polarization effect takes place at those interfaces where the mode of conduction changes from ionic in the solutions filling the interstices of the rock to electronic in the metallic minerals present in the rock.

The blocking action or induced polarization mentioned above, which depends upon the chemical energies necessary to allow the ions to give up or receive electrons from the metallic surface, increases with the time that a d. c. current is allowed to flow through

002

the rock; i. e. as ions pile up against the metallic interface the resistance to current flow increases. Eventually, there is enough polarization in the form of excess ions at the interfaces to effectively stop all current flow through the metallic particle. This polarization takes place at each of the infinite number of solution-metal interfaces in a mineralized rock.

When the d. c. voltage used to create this d. c. current flow is cut off, the Coulomb forces between the charged ions forming the polarization cause them to return to their normal position. This movement of charge creates a small current flow which can be measured on the surface of the ground as a decaying potential difference.

From an alternate viewpoint it can be seen that if the direction of the current through the system is reversed repeatedly before the polarization occurs, the effective resistivity of the system as a whole will change as the frequency of the switching is changed. This is a consequence of the fact that the amount of current flowing through each metallic interface depends upon the length of time that current has been passing through it in one direction.

The values of the "metal factor" or "M. F." are a measure of the amount of polarization present in the rock mass being surveyed. This parameter has been found to be very successful in mapping areas of sulphide mineralization, even those in which all other geophysical methods have been unsuccessful. The induced polarization measurement is more sensitive to sulphide content than other electrical measurements

because it is much more dependent upon the sulphide content. As the sulphide content of a rock is increased, the "metal factor" of the rock increases much more rapidly than the resistivity decreases.

Because of this increased sensitivity, it is possible to locate and outline zones of less than 10% sulphides that can't be located by E. M. Methods. The method has been successful in locating the disseminated "porphyry copper" type mineralization in the South-western United States.

Measurements and experiments also indicate that it should be possible to locate most massive sulphide bodies at a greater depth with induced polarization than with E. M.

Since there is no I. P. effect from any conductor unless it is metallic, the method is useful in checking E. M. anomalies that are suspected of being due to water filled shear zones or other ionic conductors. There is also no effect from conductive overburden, which frequently confuses E. M. results. It would appear from scale model experiments and calculations that the apparent metal factors measured over a mineralized zone are larger if the material overlying the zone is of low resistivity.

Apropos of this, it should be stated that the induced polarization measurements indicate the total amount of metallic constituents in the rock. Thus all of the metallic minerals in the rock, such as pyrite, as well as the ore minerals chalcopryite, chalcocite, galena, etc. are responsible for the induced polarization effect. Some

004

oxides such as magnetite, pyrolusite, chromite, and some forms of hematite also conduct by electrons and are metallic. All of the metallic minerals in the rock will contribute to the induced polarization effect measured on the surface.

In the field procedure, measurements on the surface are made in a way that allows the effects of lateral changes in the properties of the ground to be separated from the effects of vertical changes in the properties. Current is applied to the ground at two points a distance (X) apart. The potentials are measured at two other points (X) feet apart, in line with the current electrodes. The distance between the nearest current and potential electrodes is an integer number (N) times the basic distance (X).

The measurements are made along a surveyed line, with a constant distance (NX) between the nearest current and potential electrodes. In most surveys, several traverses are made with various values of (N); i. e. (N) = 1, 2, 3, 4, etc. The kind of survey required (detailed or reconnaissance) decides the number of values of (N) used.

In plotting the results, the values of the apparent resistivity and the apparent metal factor measured for each set of electrode positions are plotted at the intersection of grid lines, one from the center point of the current electrodes and the other from the center point of the potential electrodes. The resistivity values are plotted above the line and the metal factor values below. The lateral displacement of a given value is determined by the location along the survey

005

line of the center point between the current and potential electrodes. The distance of the value from the line is determined by the distance (NX) between the current and potential electrodes when the measurement was made.

The separation between sender and receiver electrodes is only one factor which determines the depth to which the ground is being sampled in any particular measurement. These plots then, when contoured, are not section maps of the electrical properties of the ground under the survey line. The interpretation of the results from any given survey must be carried out using the combined experience gained from field, model and theoretical investigations. The position of the electrodes when anomalous values are measured must be used in the interpretation.

In the field procedure, the interval over which the potential differences are measured is the same as the interval over which the electrodes are moved after a series of potential readings has been made. One of the advantages of the induced polarization method is that the same equipment can be used for both detailed and reconnaissance surveys merely by changing the distance (X) over which the electrodes are moved each time. In the past, intervals have been used ranging from 100 feet to 1000 feet for (X). In each case, the decision as to the distance (X) and the values of (N) is largely determined by the expected size of the mineral deposit being sought, the size of the expected anomaly and the speed with which it is desired to progress.

The diagram in Figure 1 below demonstrates the method used in plotting the results. Each value of the apparent resistivity and the apparent "Metal factor" is plotted and identified by the position of the four electrodes when the measurement was made. It can be seen that the values measured for the larger values of (n) are plotted farther from the line indicating that the thickness of the layer of the earth that is being tested is greater than for the smaller values of (n); i. e. the depth of the measurement is increased.

METHOD USED IN PLOTTING DIPOLE-DIPOLE INDUCED POLARIZATION AND RESISTIVITY RESULTS

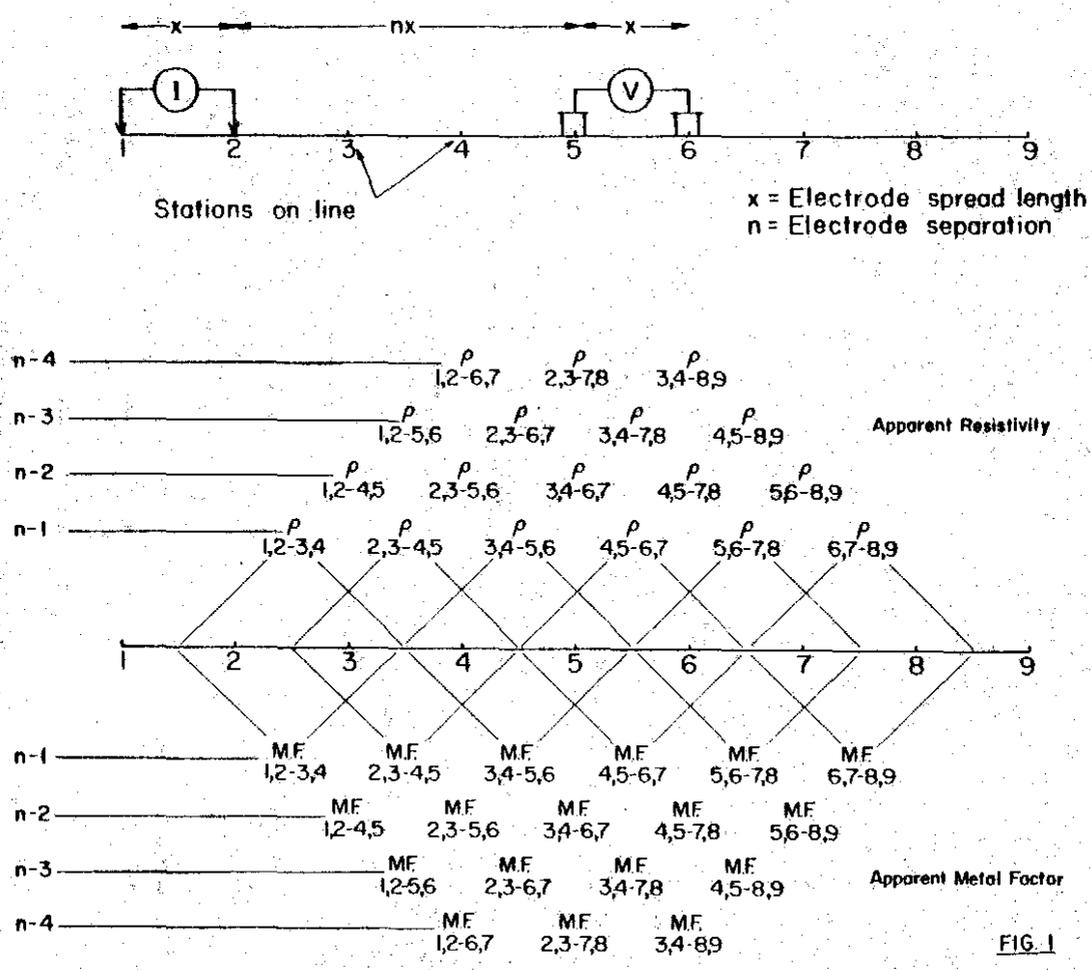


FIG. 1

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REPORT ON
INDUCED POLARIZATION
AND RESISTIVITY SURVEY
IN THE
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1. INTRODUCTION

A reconnaissance induced polarization and resistivity survey has been carried out in the favourable geologic area between Queenstown, Tasmania and Rosebery, Tasmania. The work was done on behalf of The Consolidated Syndicate; The Mt. Lyell Mining and Railway Company Limited, one of the partners in the Syndicate, supervised the work.

The area for the survey was chosen on the basis of the geologic environment. The IP lines surveyed covered the contact between the Mt. Read (Cambrian) Volcanics to the west and the Owen (Ordovician) Conglomerate to the east. This geologic setting is similar to that containing the mineralization at Queenstown and Rosebery, and the IP survey was planned in an attempt to locate any zones of metallic mineralization that might be present.

008

2. PRESENTATION OF RESULTS

The Induced Polarization results are shown on the following data plots in the accompanying booklet. The results are plotted in the manner described in the notes preceding this report.

| <u>Line</u> | <u>Spreads</u> | <u>Dwg. No.</u> |
|-------------|----------------|-----------------|
| 2 | 300 feet | IP 2679-1 |
| 4 | 300 feet | IP 2679-2 |
| 4 | 200 feet | IP 2679-3 |
| 4 | 100 feet | IP 2679-4 |
| 6 | 300 feet | IP 2679-5 |
| 6 | 200 feet | IP 2679-6 |
| 8 | 300 feet | IP 2679-7 |
| 8 | 100 feet | IP 2679-8 |
| 10 | 300 feet | IP 2679-9 |
| 10 | 200 feet | IP 2679-10 |
| 12 | 300 feet | IP 2679-11 |
| 12 | 200 feet | IP 2679-12 |
| 12 | 100 feet | IP 2679-13 |
| 14 | 300 feet | IP 2679-14 |
| 16 | 300 feet | IP 2679-15 |
| 16 | 200 feet | IP 2679-16 |
| 16 | 100 feet | IP 2679-17 |
| 18 | 300 feet | IP 2679-18 |
| 18 | 200 feet | IP 2679-19 |
| 20 | 300 feet | IP 2679-20 |

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| <u>Line</u> | <u>Spreads</u> | <u>Dwg. No.</u> |
|-------------|----------------|-----------------|
| 20 | 100 feet | IP 2679-21 |
| 22 | 400 feet | IP 2679-22 |
| 22 | 300 feet | IP 2679-23 |
| 22 | 200 feet | IP 2679-24 |
| 24 | 300 feet | IP 2679-25 |
| 24 | 200 feet | IP 2679-26 |
| 24; offset | 200 feet | IP 2679-27 |
| 26 | 300 feet | IP 2679-28 |
| 28 | 300 feet | IP 2679-29 |
| 28 | 200 feet | IP 2679-30 |
| 30 | 300 feet | IP 2679-31 |
| 30 | 200 feet | IP 2679-32 |
| 32 | 300 feet | IP 2679-33 |
| 32 | 200 feet | IP 2679-34 |
| 34 | 400 feet | IP 2679-35 |
| 34 | 300 feet | IP 2679-36 |
| 34 | 200 feet | IP 2679-37 |
| 36 | 300 feet | IP 2679-38 |
| 36 | 200 feet | IP 2679-39 |
| 38 | 300 feet | IP 2679-40 |

Enclosed with this report is Dwg. Misc. 3252-1, 2, a plan map of the grid survey at a scale of 1" = 1000'. The definite and possible induced polarization anomalies are indicated by solid and broken bars

respectively on this plan map as well as the data plots. These bars represent the surface projection of the anomalous zones as interpreted from the location of the transmitter and receiver electrodes when the anomalous values were measured.

Since the induced polarization measurement is essentially an averaging process, as are all potential methods, it is frequently difficult to exactly pinpoint the source of an anomaly. Certainly, no anomaly can be located with more accuracy than the spread length; i. e. when using 300-foot spreads the position of a narrow sulphide body can only be determined to lie between two stations 300 feet apart. In order to locate sources at some depth, larger spreads must be used, with a corresponding increase in the uncertainties of location. Therefore, while the center of the indicated anomaly probably corresponds fairly well with source, the length of the indicated anomaly along the line should not be taken to represent the exact edges of the anomalous material.

The position of the geologic contact shown on Dwg. Misc. 3252-1, 2 are supplied by the staff of Mount Lyell Mining and Railway Company Limited.

3. DISCUSSION OF RESULTS

The induced polarization results from the Mt. Tyndall Grid are of definite interest. Several anomalous zones have been outlined and further work is warranted.

Line No. 2

This is the southernmost of the lines surveyed. There is a

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weak, shallow anomaly centered at 12E, and a definite source at depth (or to the side of the line) centered at 63E to 66E.

Line No. 4

On this line the western source is less definite, but the eastern anomaly is quite strong. The source is indicated to be at less depth than on Line No. 2. The enclosed theoretical data (Case II-0.5-BU-10-a; Case II-1.5-BU-10-a) show the typical patterns for shallow and deep sources. When the source is at depth, the anomalous values are measured only for the larger values of (n).

The eastern anomaly has been checked with 200-foot electrode intervals. A definite, complex source is indicated; since the measurements for $n = 1$ are anomalous, the anomaly should be checked using 100-foot electrode intervals.

Line No. 6

On this line the measurements using 300-foot electrode intervals show two narrow, shallow sources. The anomalous patterns are typical for narrow sources, in cases where the electrode interval is appreciably greater than the width of the source.

The theoretical results shown in Figure 1, Figure 2 and Figure 3 indicate the anomalous pattern to be expected from this type of source. The results show that when the electrode interval is appreciably greater than the width of the source, a large volume of unmineralized earth is averaged into each measurement. The apparent IP effect

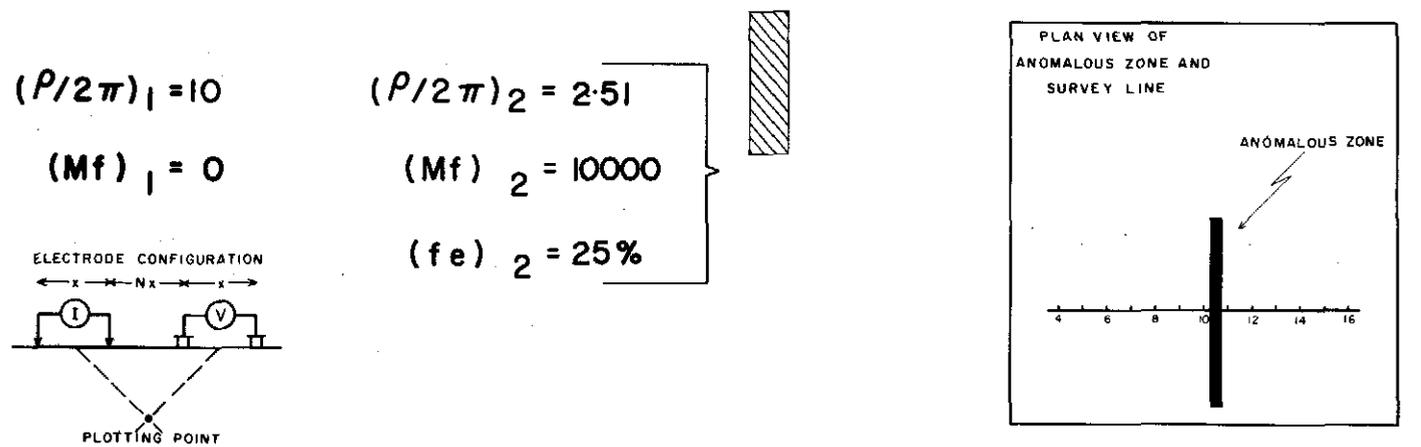
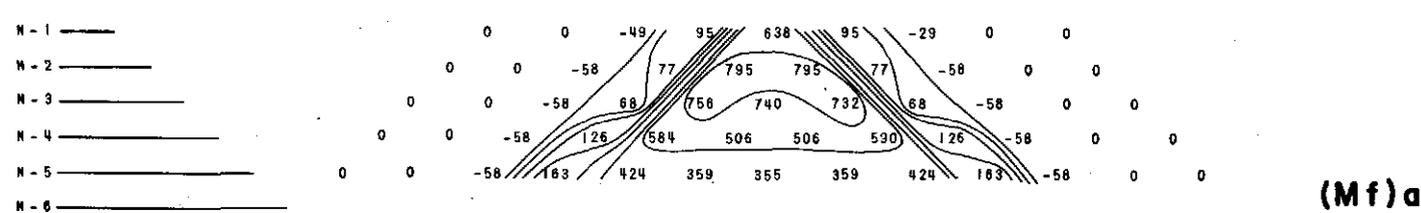
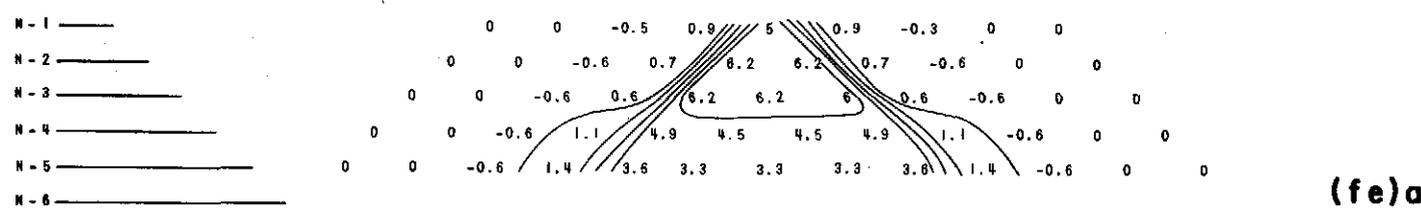
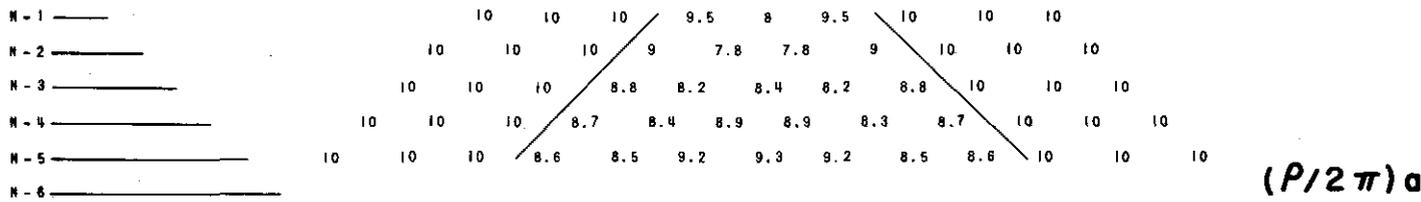
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Theoretical Induced Polarization and Resistivity Studies

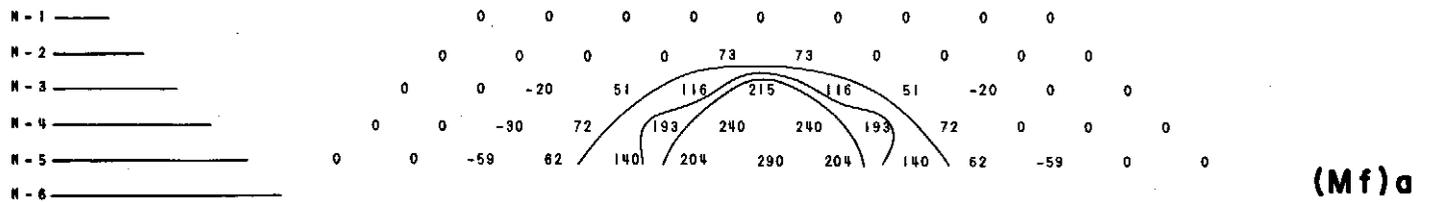
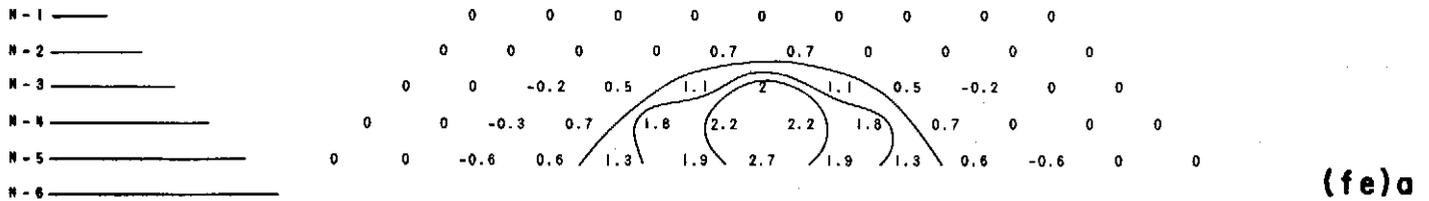
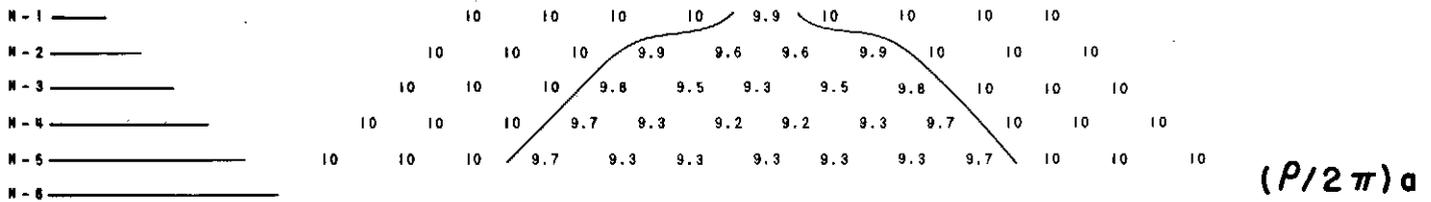
Scale Model Cases



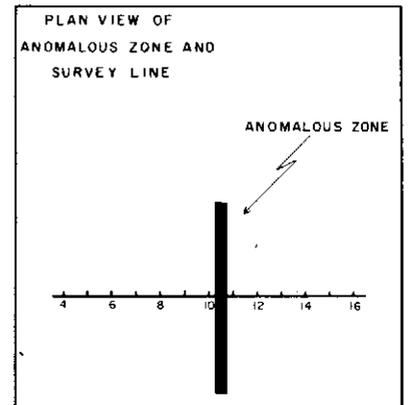
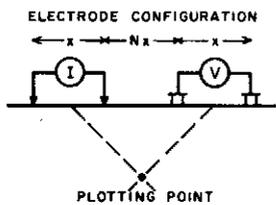
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Theoretical Induced Polarization and Resistivity Studies

Scale Model Cases



$(P/2\pi)_1 = 10$ $(P/2\pi)_2 = 2.6$
 $(Mf)_1 = 0$ $(Mf)_2 = 9250$
 $(fe)_2 = 24\%$



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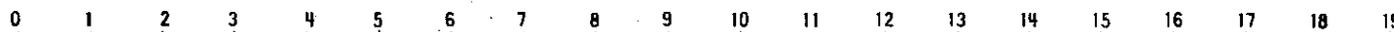
Theoretical Induced Polarization and Resistivity Studies

Calculated Cases



| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|-----|-----|
| N-1 | 100 | 100 | 100 | 100 | 101 | 103 | 112 | 72 | 24 | 72 | 112 | 103 | 101 |
| N-2 | 100 | 101 | 101 | 102 | 106 | 120 | 65 | 29 | 29 | 65 | 120 | 106 | 102 |
| N-3 | 101 | 102 | 104 | 109 | 125 | 68 | 33 | 33 | 33 | 62 | 125 | 109 | 104 |
| N-4 | 103 | 106 | 112 | 129 | 60 | 37 | 37 | 37 | 37 | 60 | 129 | 112 | 106 |
| N-5 | 107 | 114 | 131 | 59 | 40 | 40 | 40 | 40 | 40 | 59 | 131 | 114 | 107 |
| N-6 | 116 | 133 | 58 | 43 | 43 | 43 | 43 | 43 | 43 | 58 | 133 | 116 | 109 |

(P/2π)a



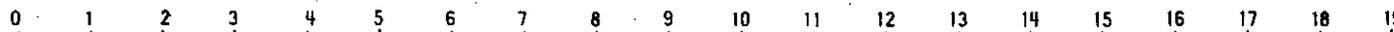
| | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|-----|----|-----|------|------|------|
| N-1 | 0 | 0 | 0 | 0 | -0.1 | -0.2 | -0.5 | 0.5 | 20 | 0.5 | -0.5 | -0.2 | -0.1 |
| N-2 | 0 | -0.1 | -0.1 | -0.2 | -0.4 | -0.9 | 0.7 | 19 | 19 | 0.7 | -0.9 | -0.4 | -0.2 |
| N-3 | -0.1 | -0.2 | -0.3 | -0.6 | -1.3 | 0.7 | 17 | 17 | 17 | 0.7 | -1.3 | -0.6 | -0.3 |
| N-4 | -0.3 | -0.5 | -0.9 | -1.6 | 0.8 | 16 | 16 | 16 | 16 | 0.8 | -1.6 | -0.9 | -0.5 |
| N-5 | -0.7 | -1.1 | -1.8 | 0.8 | 15 | 15 | 15 | 15 | 15 | 0.8 | -1.8 | -1.1 | -0.7 |
| N-6 | -1.3 | -2.0 | 0.9 | 15 | 15 | 15 | 15 | 15 | 15 | 0.9 | -2.0 | -1.3 | -0.8 |

(fe)a

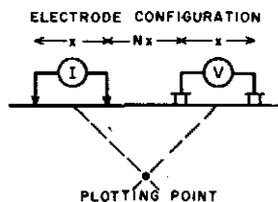


| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|----|
| N-1 | -0 | -0 | -0 | -0 | -1 | -2 | -4 | 8 | 848 | 8 | -4 | -2 | -1 |
| N-2 | -0 | -1 | -1 | -2 | -4 | -8 | 11 | 646 | 646 | 11 | -8 | -4 | -2 |
| N-3 | -1 | -2 | -3 | -6 | -10 | 12 | 523 | 523 | 523 | 12 | -10 | -6 | -3 |
| N-4 | -3 | -5 | -8 | -12 | 13 | 445 | 445 | 445 | 445 | 13 | -12 | -8 | -5 |
| N-5 | -6 | -8 | -14 | 14 | 385 | 385 | 385 | 385 | 385 | 14 | -14 | -9 | -6 |
| N-6 | -11 | -15 | 15 | 341 | 341 | 341 | 341 | 341 | 341 | 15 | -15 | -11 | -7 |

(Mf)a



| | | |
|--------------------|--------------------|--------------------|
| $(P/2\pi)_1 = 100$ | $(P/2\pi)_2 = 5.0$ | $(P/2\pi)_3 = 100$ |
| $(Mf)_1 = 0$ | $(Mf)_2 = 5000$ | $(Mf)_3 = 0$ |
| | $(fe)_2 = 25\%$ | |



CASE
III-AX-dd-I

Fig. 1

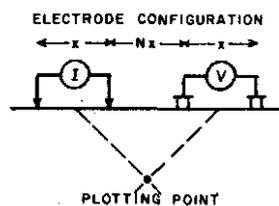
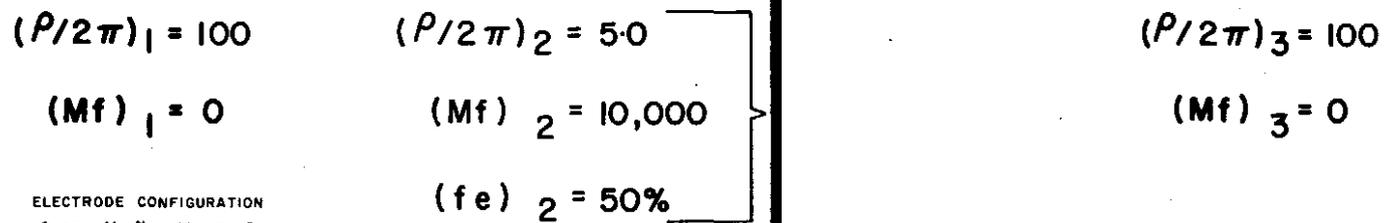
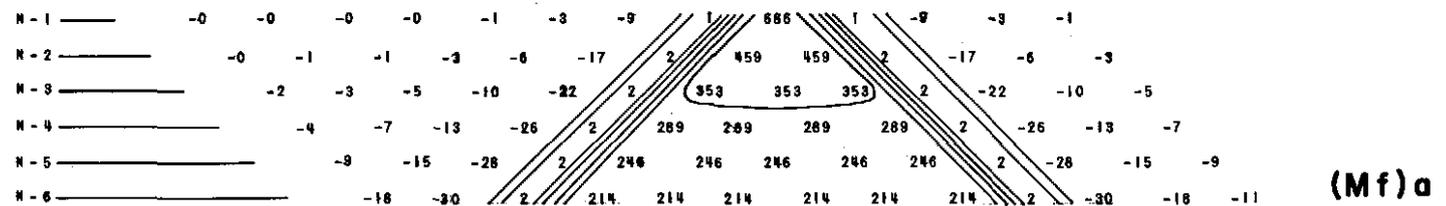
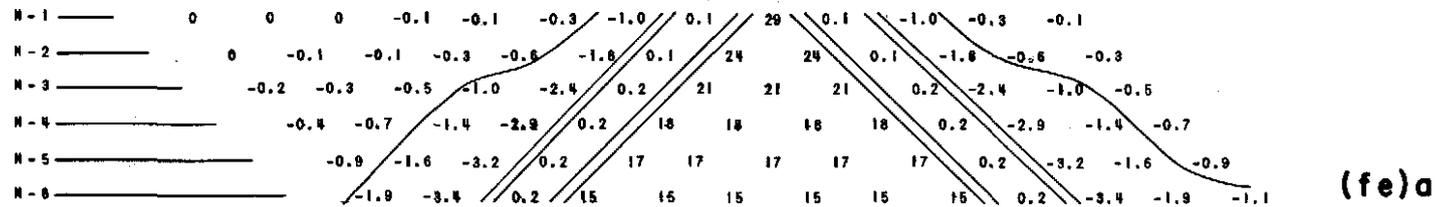
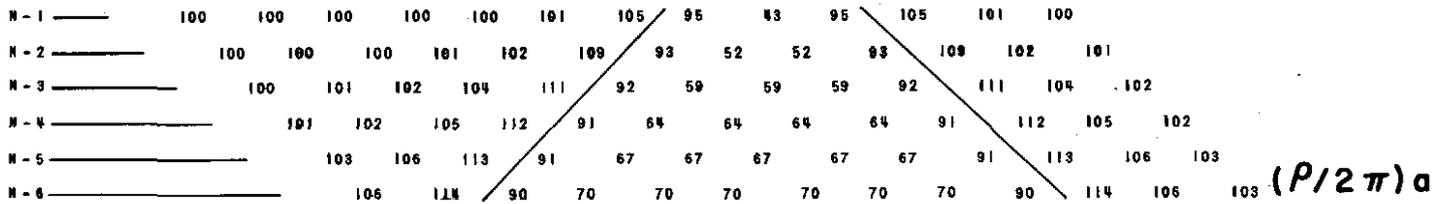
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Theoretical Induced Polarization and Resistivity Studies

Calculated Cases



CASE
I-BX-dd-1

Fig 2

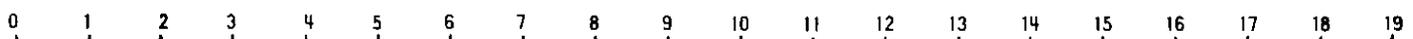
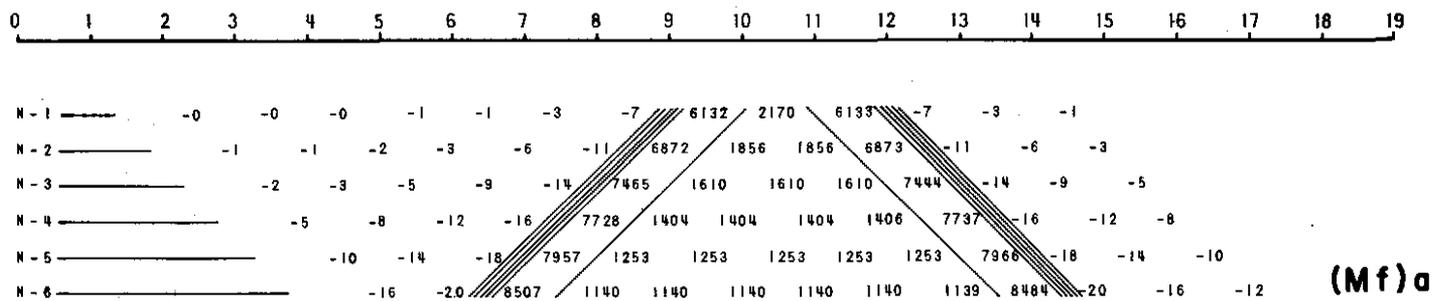
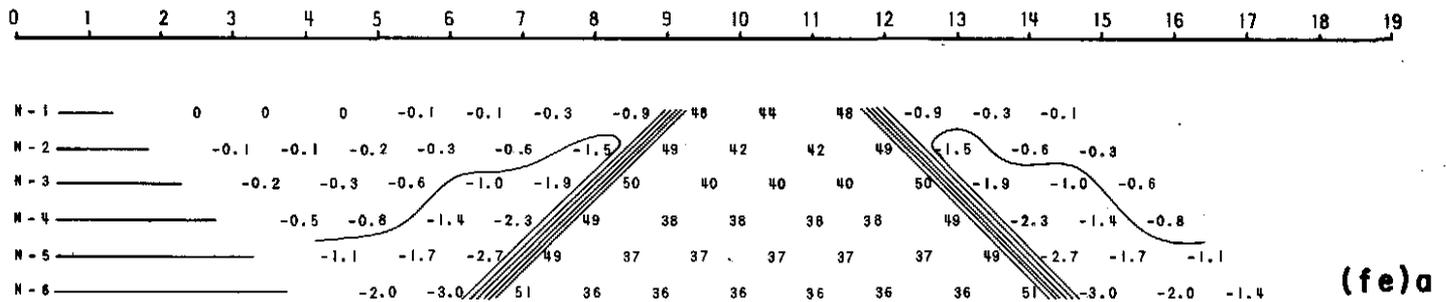
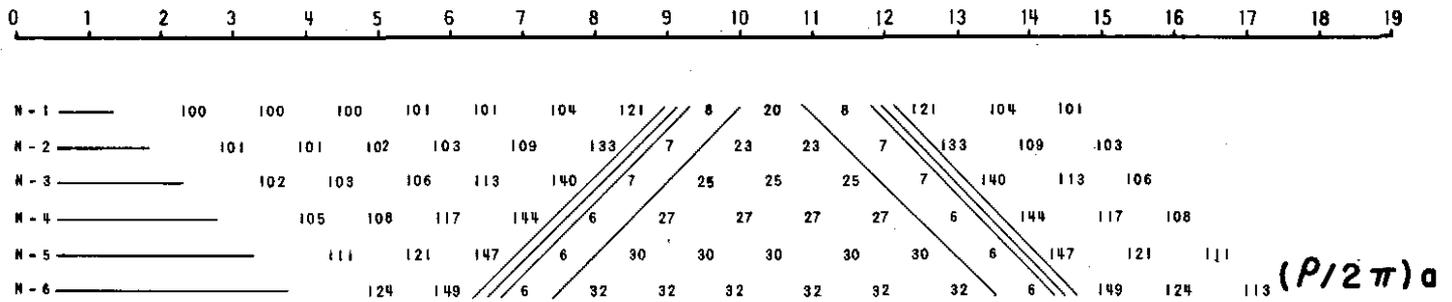
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Theoretical Induced Polarization and Resistivity Studies

Calculated Cases



$(P/2\pi)_1 = 100$

$(P/2\pi)_2 = 5.0$

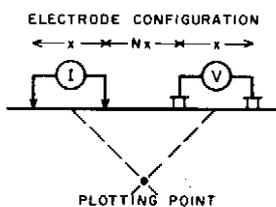
$(P/2\pi)_3 = 100$

$(Mf)_1 = 0$

$(Mf)_2 = 10,000$

$(Mf)_3 = 0$

$(fe)_2 = 50\%$



CASE
IV-BX-dd-1

Fig. 3

017

measured at the surface is much lower in magnitude than the true IP effect in the source. Under these conditions, the apparent anomaly from a broad zone of mineralization is much the same as that from a narrower source of more concentrated mineralization. When the size of the electrode interval used is reduced until it is approximately equal to the width of the source, the apparent effects measured will increase in magnitude.

The detailed measurements with 200-foot spreads on the eastern anomaly show a shallow, narrow anomaly centered at 46E. This source can be better located and evaluated by using 100-foot electrode intervals. Closely spaced parallel lines should also be surveyed.

The anomaly centered at 2W to 0+00 has a source at some depth, when checked using 200-foot electrode intervals. The anomaly should be checked using 200-foot electrode intervals and the odd-numbered stations. Parallel lines should also be checked.

Line No. 8

On this line, the anomalous IP effects are very weak. No further work seems to be warranted at this time.

Line No. 10

These results are very similar to those on the lines to the south. There is a moderate magnitude, shallow source centered at 36E to 39E, and a weak, shallow source at 15E. The 200-foot spread detail confirms a narrow, shallow anomaly at 36E to 37E. The anomaly should be checked with 100-foot spreads, and parallel lines should be surveyed.

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Line No. 12

The narrow anomaly to the east is somewhat stronger on this line. It should be checked with 100-foot spreads, and parallel lines should be surveyed.

Line No. 14

The results on this line show the background values for the area. There is one weak IP source at depth at 12E to 13E that may warrant further work. Lines should be surveyed 300 feet to the north and south.

Line No., 16

One of the most definite anomalies located during the reconnaissance survey is centered at about 6E on this line. The details with 200-foot electrode intervals confirm the presence of the anomaly. The source is indicated to be relatively wide, and detail with 100-foot electrode intervals should be carried out to better locate and evaluate the source. Parallel lines should also be surveyed.

The 100-foot spread measurements at 22E to 23E are east of the data from the reconnaissance survey. The results show a narrow source at depth, that is of definite interest. Lines 100 and 200 feet to the north and south should be surveyed with 100-foot spreads.

Line No. 18

The reconnaissance results show a shallow anomaly at approximately 0+00 on this line. The 200-foot spread results confirm the shallow source. Detail with 100-foot spreads is warranted and parallel lines should be surveyed.

Line No. 20

Only background IP effects were measured on this line.

Line No. 22

The results on this line confirm a complex source in the interval 24W to 15W. Lines 200 and 400 feet to the north and south should be surveyed using 200-foot electrode intervals. The shallow source centered at 23W should be checked with 100-foot spreads.

Line No. 24

There is a definite anomaly centered at 23W on this line. It should be checked with 100-foot spreads and parallel lines should be surveyed.

Line No. 26

There are no anomalous IP effects measured on this line.

Line No. 28

There is a single anomaly centered at 30W on this line. The anomaly is moderate in magnitude, and the pattern is typical for a shallow, narrow, near-vertical tabular source. The anomaly should be checked using 100-foot electrode intervals. Parallel lines should also be surveyed.

Line No. 30

The 200-foot spread detail on this line shows two weak, shallow sources. They should be checked with 100-foot spreads.

Line No. 32

The IP anomaly centered at 8E on this line is quite low in magnitude. It should be checked with 100-foot spreads.

Line No. 34

The detailed results here show an anomalous pattern centered at 20W. There may be two narrow sources, or a single broad source. The anomaly should be checked with 100-foot spreads, and parallel lines should be surveyed.

Line No. 36

There are several weak anomalies located on this line. The shallow source located at 23W should be checked with 100-foot spreads.

Line No. 38

This is the northernmost of the lines surveyed. There are shallow anomalies centered at 37+50W and at 12W. The sources should be checked using shorter electrode intervals.

4. CONCLUSIONS AND RECOMMENDATIONS

The reconnaissance induced polarization and resistivity survey in the Mt. Tyndall Area has shown the presence of several definite IP anomalies. The anomalies are quite definite, and in some cases they can be correlated into zones; this has been done on Dwg. Misc. 3252-1, -2.

The resistivity results from the Mt. Tyndall Area are also of interest. There are definite contacts between high resistivity rock (greater than 1000) and low resistivity rocks (less than 100). Typical

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contacts are shown at Line No. 2, 54E and Line 36E, 30W and 18W.

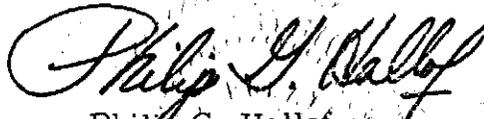
An attempt has been made to correlate these resistivity units into zones (Dwg. No. R3253-1, -2). In some places the correlation is quite straightforward, but in others there is some ambiguity. This may be due to flat-dipping contacts, intermediate rock-types, etc. There is no obvious correlation between these resistivity zones, and the Cambrian-Ordovician contact. However, the zones should be correlated with the available geologic information.

There are several of the IP anomalies that are definite enough to warrant drilling; however, additional measurements would be needed before holes can be spotted. The existing reconnaissance lines are at one-half mile intervals, and the intermediate lines should be surveyed to confirm the somewhat uncertain correlations that have been made.

The detailed IP work that has been recommended in this report should be completed before any holes are drilled. Many of the anomalies must be better located using shorter electrode intervals; closely spaced, parallel lines must also be surveyed in order to determine the strike direction of the source.

When the detailed data is available, several holes will be warranted to determine the nature of the mineralization causing the IP anomalies.

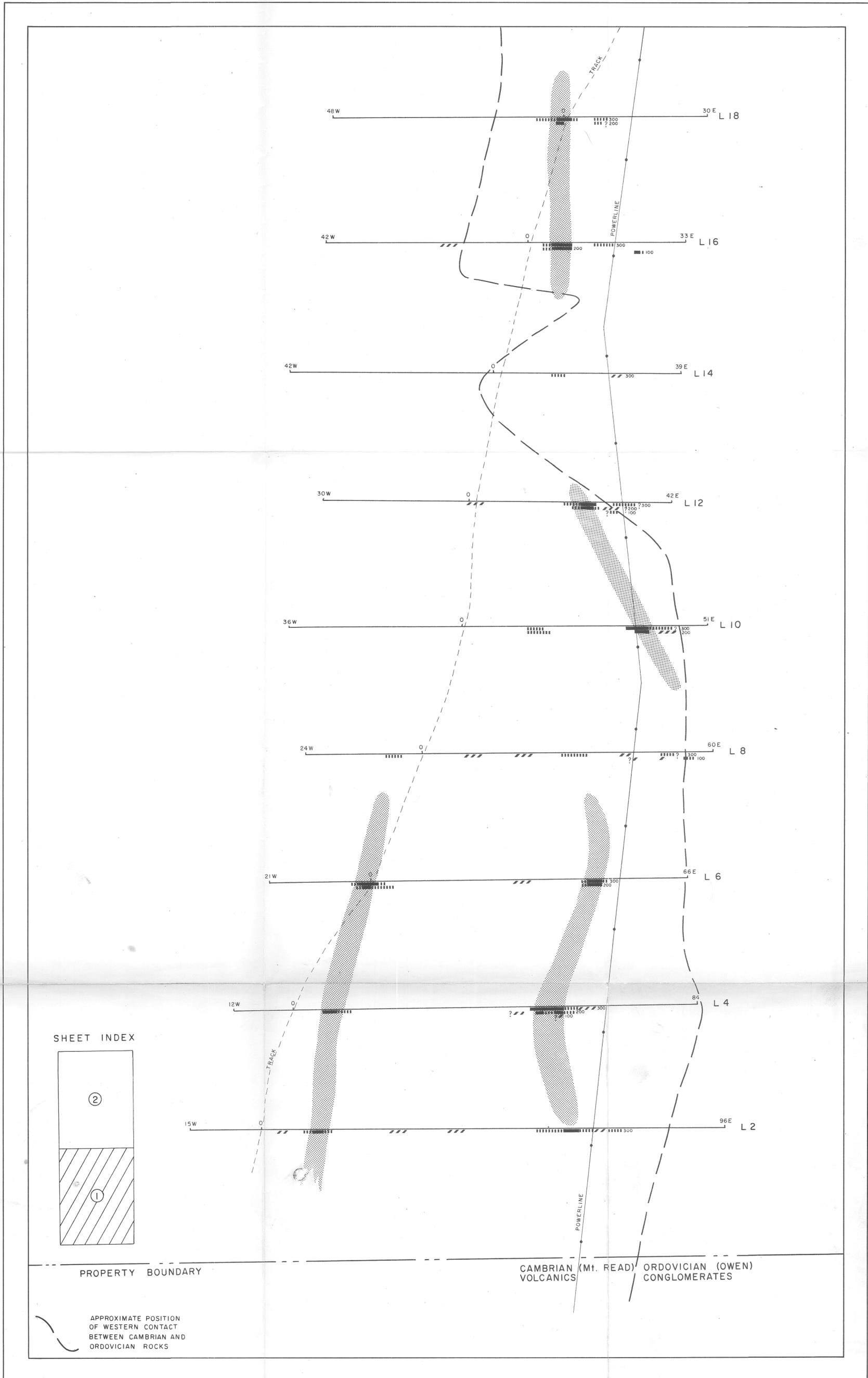
McPHAR GEOPHYSICS LIMITED



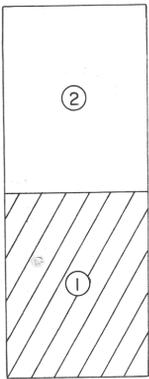
Philip G. Hallof,
Geophysicist,

Dated: June 9, 1967

McPHAR GEOPHYSICS LIMITED
 INDUCED POLARIZATION AND RESISTIVITY SURVEY
 PLAN MAP



SHEET INDEX



PROPERTY BOUNDARY

APPROXIMATE POSITION OF WESTERN CONTACT BETWEEN CAMBRIAN AND ORDOVICIAN ROCKS

CAMBRIAN (Mt. READ) VOLCANICS
 ORDOVICIAN (OWEN) CONGLOMERATES



SURFACE PROJECTION OF ANOMALOUS ZONES
 DEFINITE —————
 PROBABLE - - - - -
 POSSIBLE / / / / /
 Numbers of the end of the anomalies indicate spread used.

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

340023

MOUNT TYNDALL AREA, TASMANIA.

SCALE 5 cm

ONE INCH EQUALS ONE THOUSAND FEET

ANOMALOUS I.P. ZONES

022



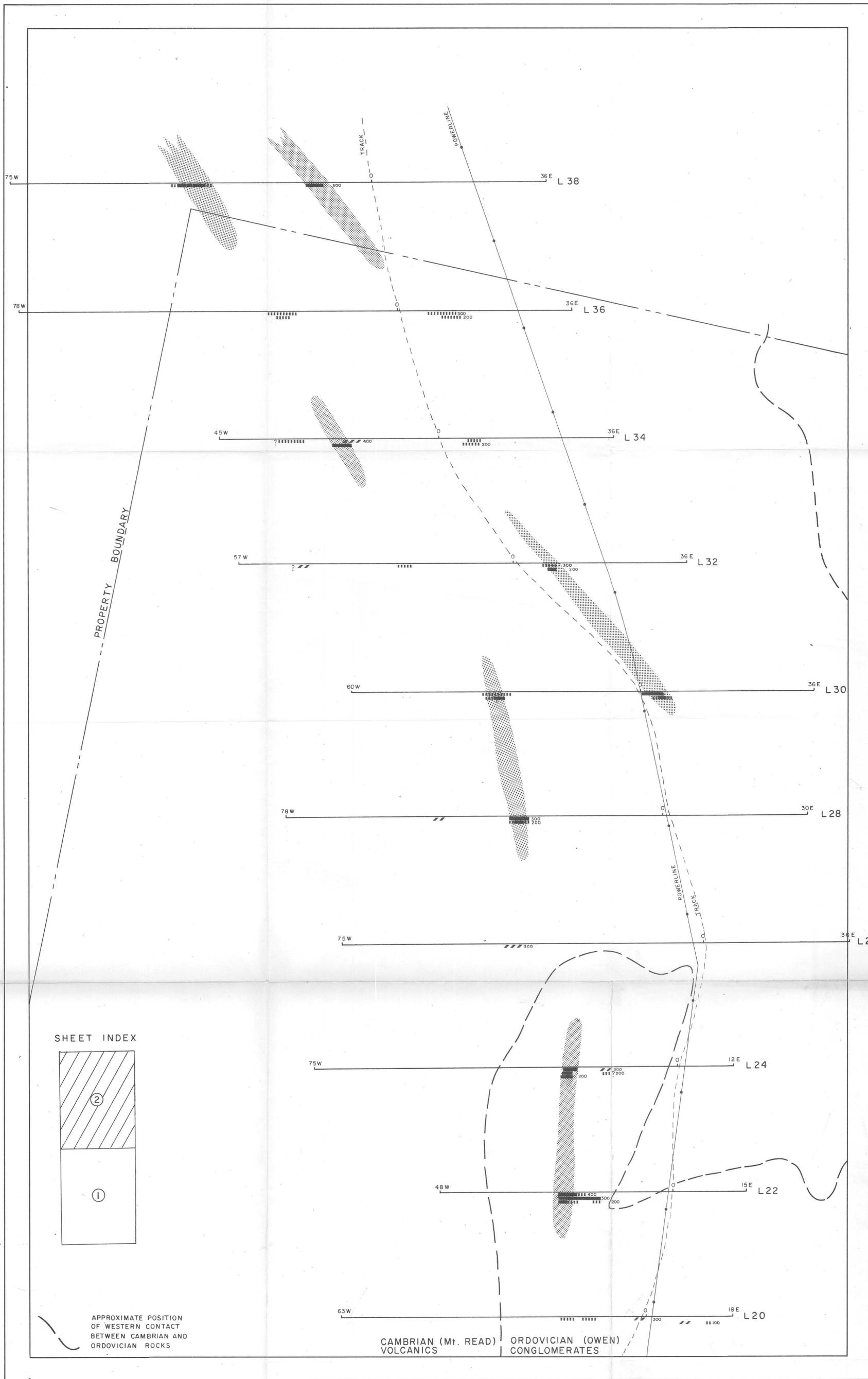
84-2220 vol 1/2

DWG. MISC. 3252-1

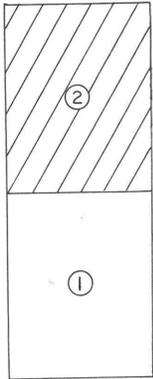
DWG. MISC. 3252-1

DWG. MISC. 3252-2

McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY
PLAN MAP



SHEET INDEX



APPROXIMATE POSITION
OF WESTERN CONTACT
BETWEEN CAMBRIAN AND
ORDOVICIAN ROCKS

CAMBRIAN (Mt. READ)
VOLCANICS ORDOVICIAN (OWEN)
CONGLOMERATES

SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE —————
PROBABLE - - - - -
POSSIBLE / / / / /

Numbers at the end of the
anomalies indicate spread used.

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

340024

MOUNT TYNDALL AREA, TASMANIA.

5 cm

SCALE

023

ONE INCH EQUALS ONE THOUSAND FEET

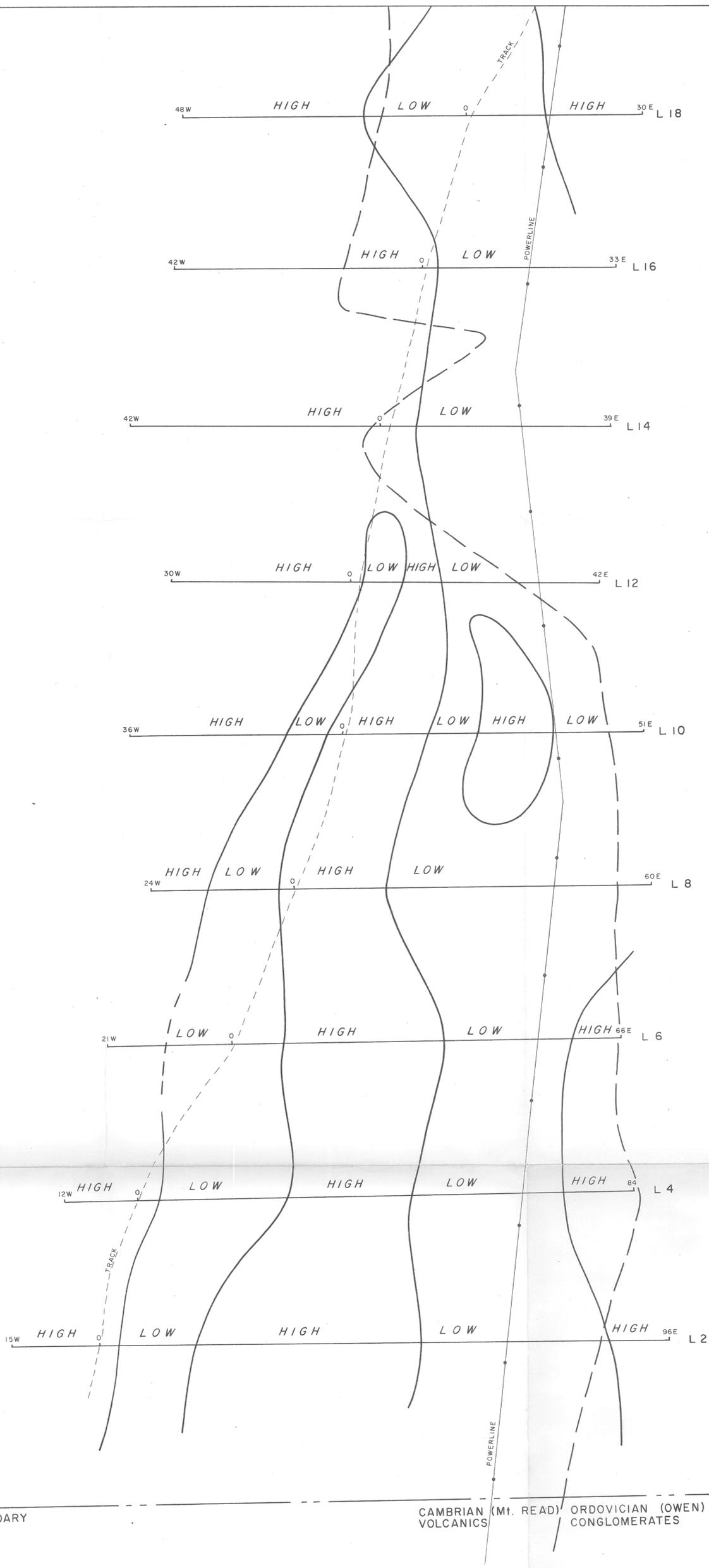
ANOMALOUS I.P. ZONES



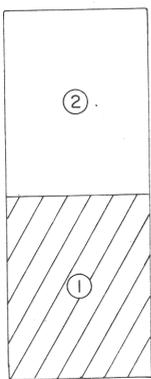
6/8/67
84-2220 vol 1/2

DWG. MISC. 3252-2

McPHAR GEOPHYSICS LIMITED
 INDUCED POLARIZATION AND RESISTIVITY SURVEY
 PLAN MAP OF RESISTIVITY ZONES



SHEET INDEX



PROPERTY BOUNDARY

CAMBRIAN (Mt. READ) VOLCANICS / ORDOVICIAN (OWEN) CONGLOMERATES

APPROXIMATE POSITION OF WESTERN CONTACT BETWEEN CAMBRIAN AND ORDOVICIAN ROCKS



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

340025

LOW Resistivity less than 1000
 HIGH Resistivity greater than 1000

MOUNT TYNDALL AREA, TASMANIA.



SCALE

ONE INCH EQUALS ONE THOUSAND FEET

024



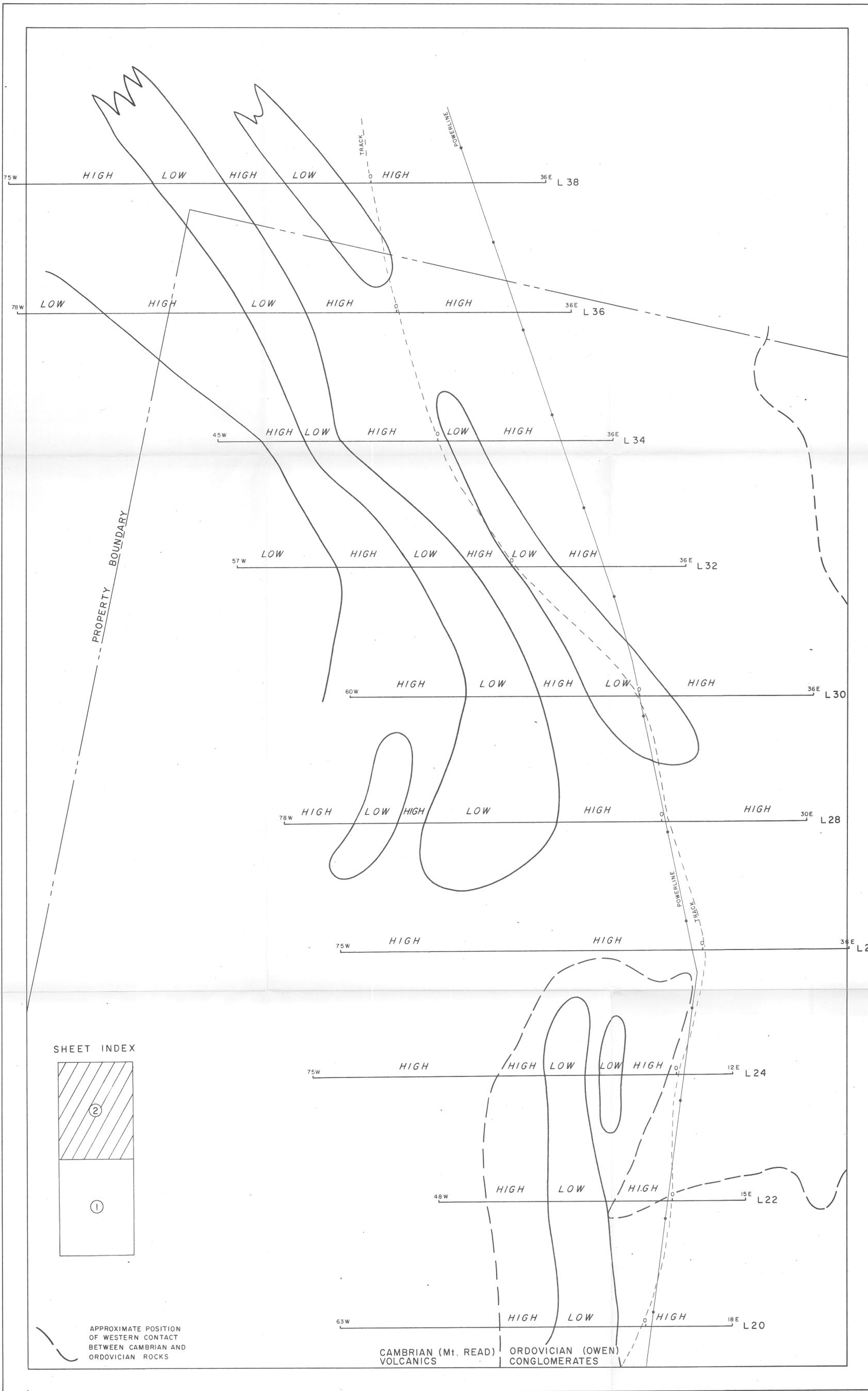
84-2220 VOL 17
 DWG. R. 3253-1

DWG. R. 3253-1

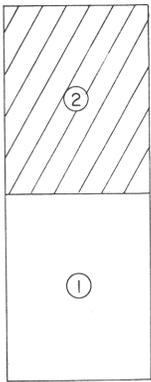
McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP OF RESISTIVITY ZONES



SHEET INDEX



APPROXIMATE POSITION OF WESTERN CONTACT BETWEEN CAMBRIAN AND ORDOVICIAN ROCKS

CAMBRIAN (Mt. READ) VOLCANICS | ORDOVICIAN (OWEN) CONGLOMERATES

340026

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA.

LOW Resistivity less than 1000
HIGH Resistivity greater than 1000

5cm SCALE
ONE INCH EQUALS ONE THOUSAND FEET

025



84-2220 v01/2
DWG. R. 3253-2

DWG. R. 3253-2

340027

OPEN FILE

MICROFILMED

VOLUME 11
INDUCED POLARIZATION
AND RESISTIVITY DATA PLOTS
IN THE
MT. TYNDALL AREA, TASMANIA
FOR
MOUNT LYELL MINING AND
RAILWAY COMPANY LIMITED

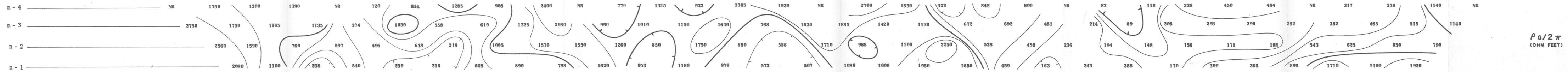
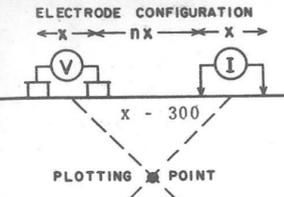
| | | | | |
|---------|--------------------|------|------|-----------|
| D of M | A.O. | C.G. | E.O. | D.S.M.E |
| | | | | Registrar |
| D. DIR. | 2 OCT 1984 | | | E & IL |
| | DEPT. OF MINES | | | |
| | REF. No. 10,076/84 | | | |

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340028

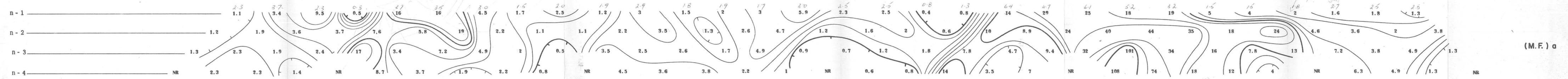
McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



$\rho_a / 2\pi$
(OHM FEET)

TELEPHONE WIRES POWER LINES



(M.F.) a

*depth shallower than surf.
NW 5-7% sepius
with 200 ft @ 20.*

*depth 300 ft.
NW 10% normal clay sp. (soft)
10x elongated background.*

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA



Scale - One inch = 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB - APR 67

APPROVED

DATE 10/1/67

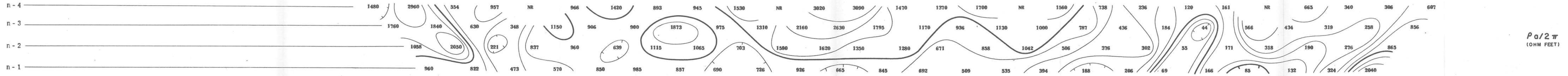
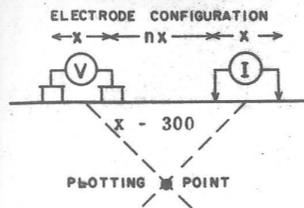
LINE NO. 1.2

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

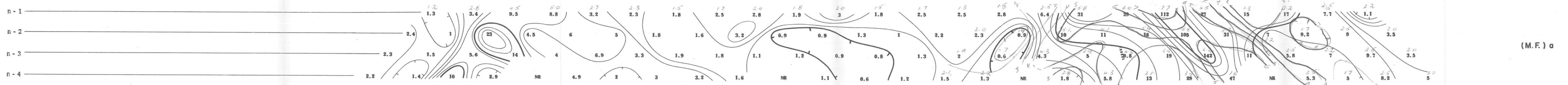
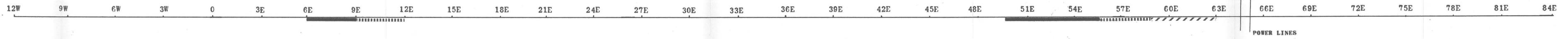
340029

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



$P_a/2\pi$
(OHM FEET)



(M.F.) a

*depth 250ft
position 66 92
Sulphates 50% (66 92)
(over roof)*

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL



SURFACE PROJECTION OF ANOMALOUS ZONES



FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB - APR 67

APPROVED

DATE 10/1/67

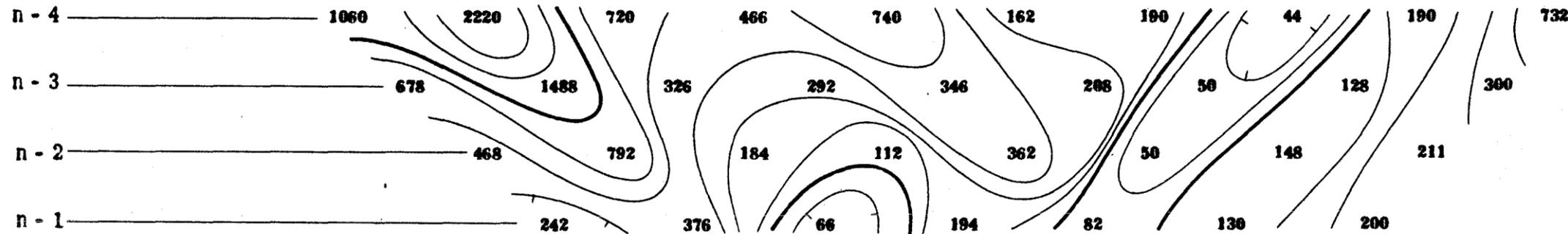
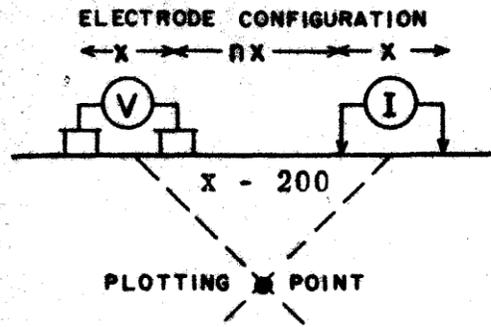
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McPHAR GEOPHYSICS LIMITED

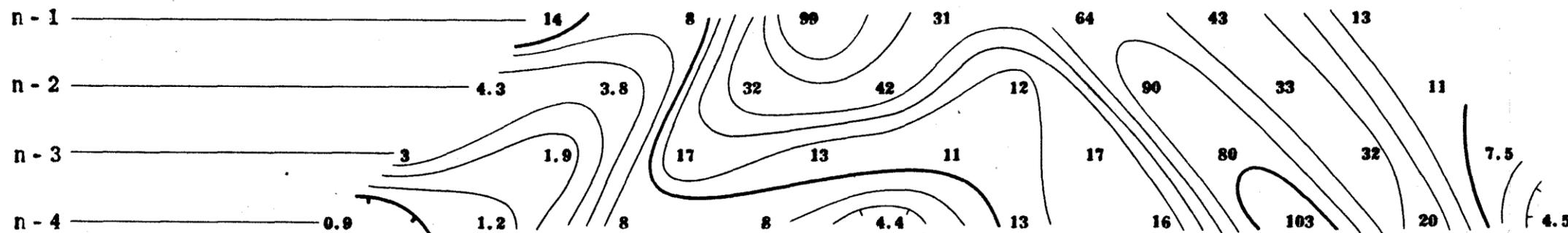
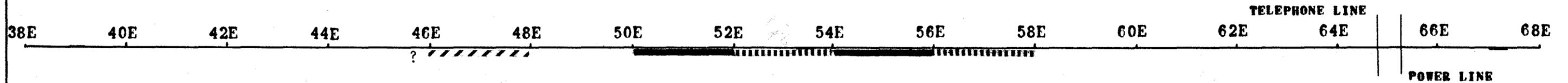
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340030



$P_a/2\pi$
(OHM FEET)



(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

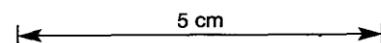
MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE

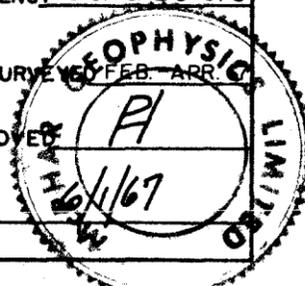


FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR

APPROVED

DATE 16/1/67



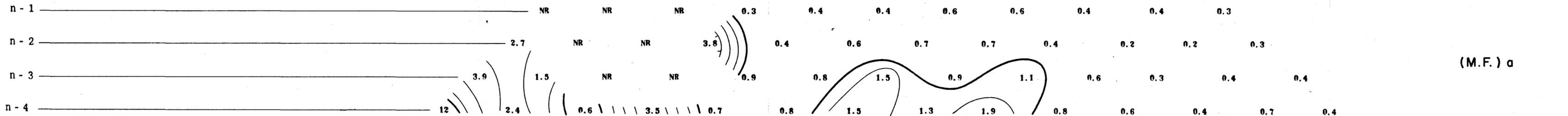
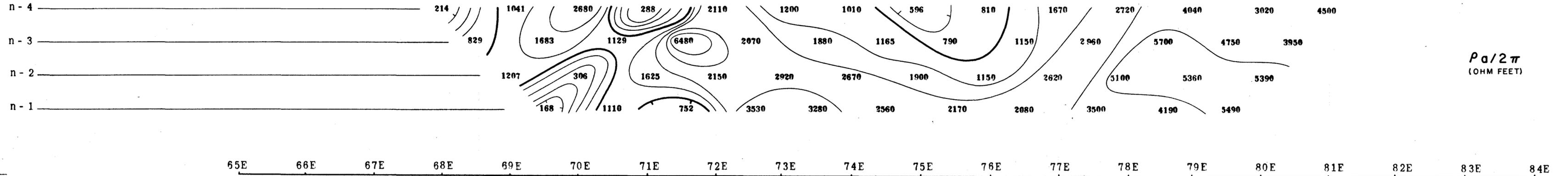
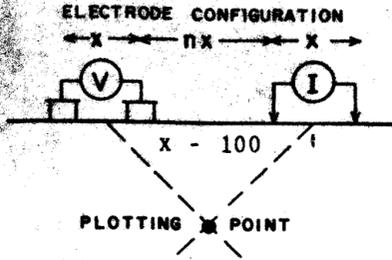
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McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340031



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 100 Feet

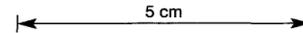
NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE



LINE NO. - 4

FREQUENCY 0.318 2.5 CPS

DATE SURVEYED FEB.-APR. 67

APPROVED

DATE 11/67

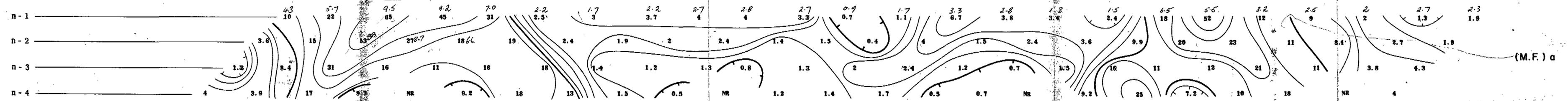
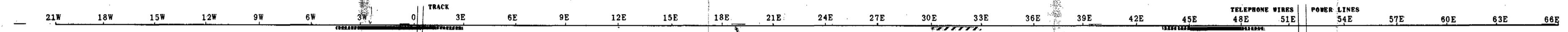
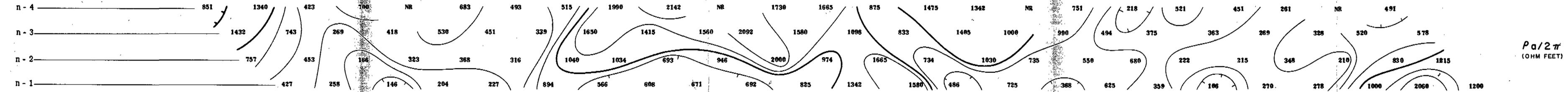
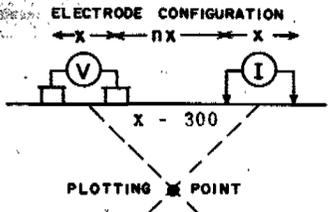
NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340032

McPHAR GEOPHYSICS LIMITED

POLARIZATION AND RESISTIVITY SURVEY

*only half page
32, 33, 34, 35
Missing
Pg 65 in twice
over after 67*



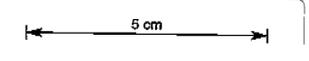
*Picture
1000ft and air slightly
both on each with each surface
arranged @ (W) <1
stagnant 87 171*

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL



SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE

FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED

APPROVED

DATE

031



LINE NO. 6

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340033

$\rho_a / 2\pi$
(OHM FEET)

(M.F.) a

FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED

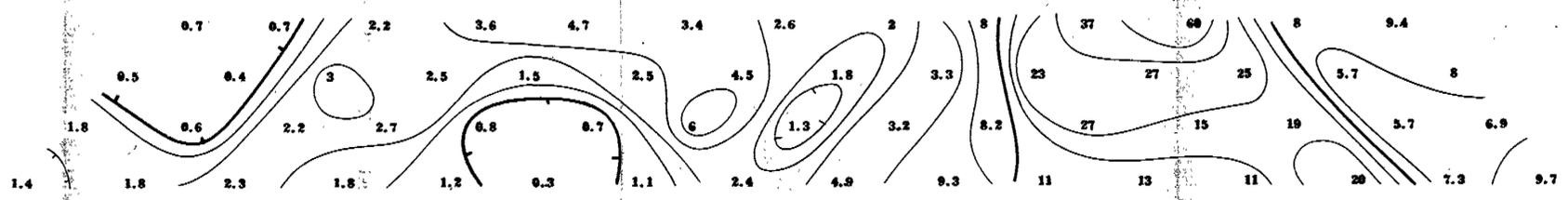
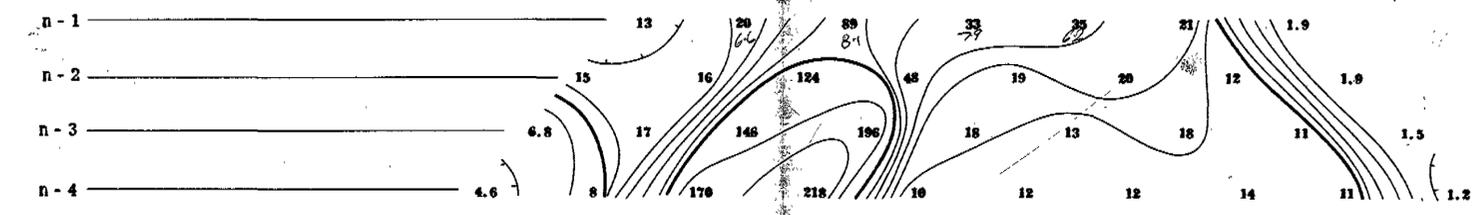
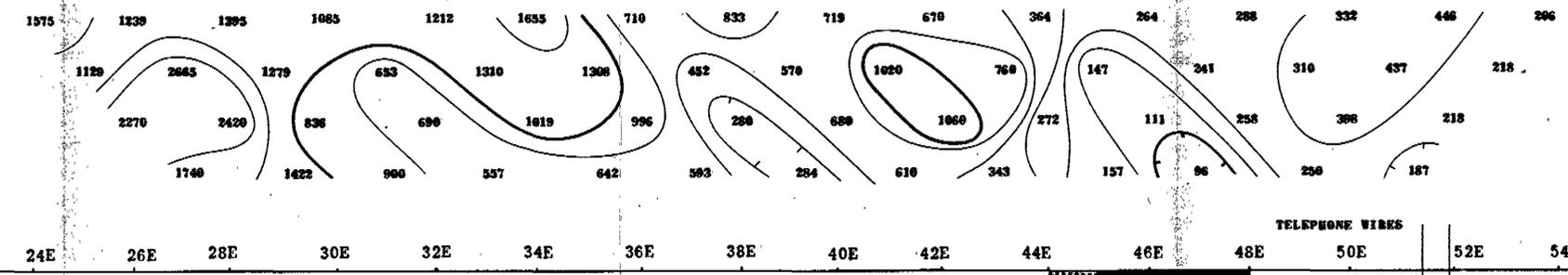
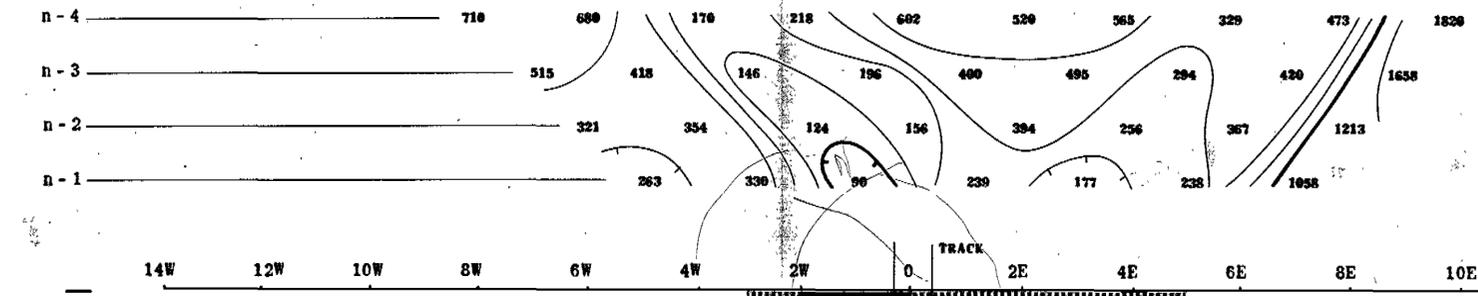
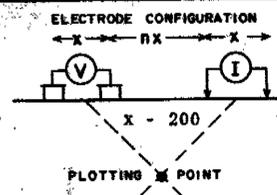
APPROVED

DATE

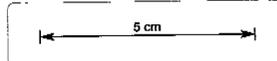
032

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.
MOUNT TYNDALL AREA, TASMANIA



Scale - One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

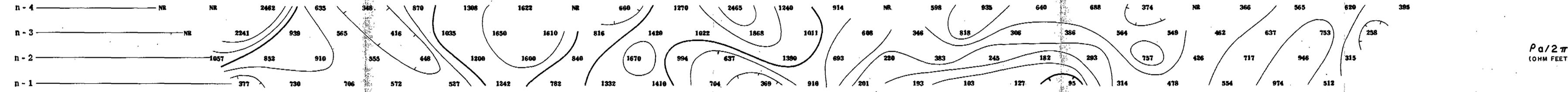
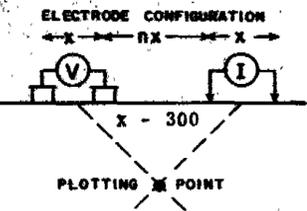
LINE NO. 6

McPHAR GEOPHYSICS LIMITED

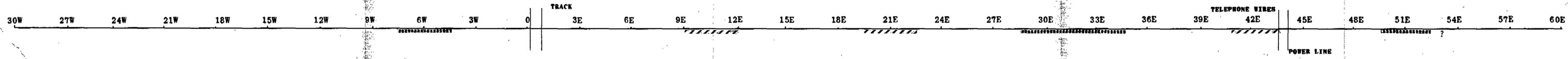
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340034



$\rho_a / 2\pi$
(OHM FEET)



(M.F.) a

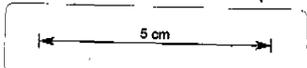
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED

APPROVED

DATE



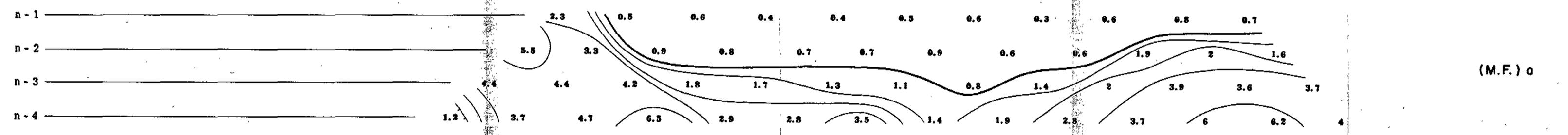
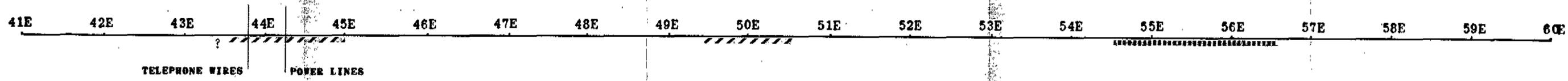
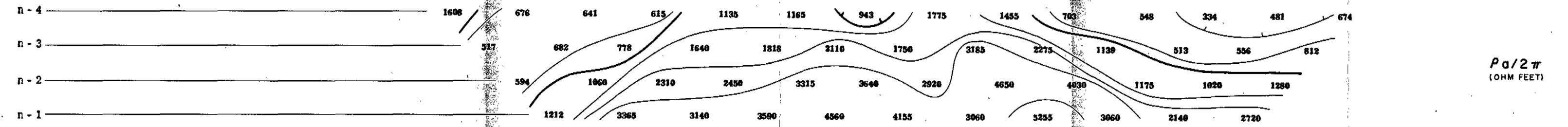
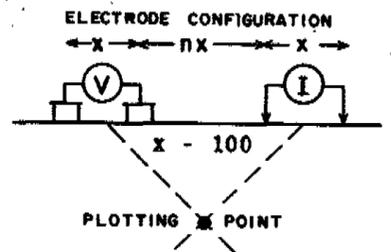
LINE NO. - 8

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340035

McPHAR GEOPHYSICS LIMITED

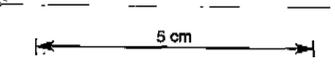
INDUCED POLARIZATION AND RESISTIVITY SURVEY.



SURFACE PROJECTION OF ANOMALOUS ZONES
 DEFINITE
 PROBABLE
 POSSIBLE

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA



Scale - One inch = 100 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

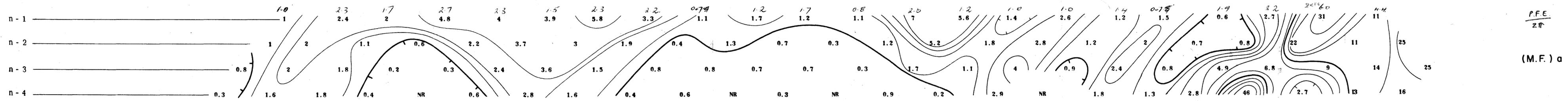
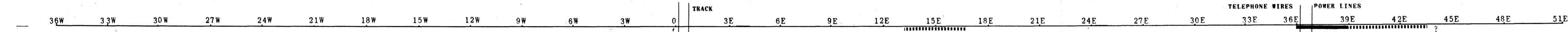
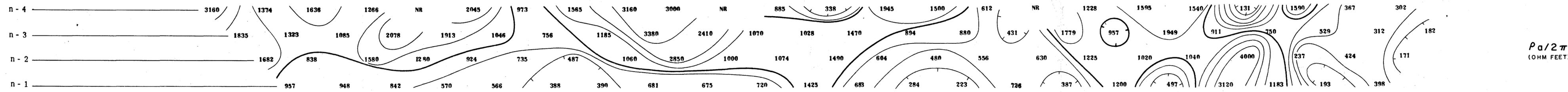
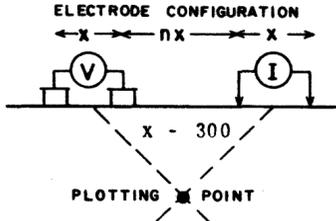
FREQUENCY 0.3 HZ
 DATE SURVEYED FEB.-APR. 67
 APPROVED
 DATE 1/1/67

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340036

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



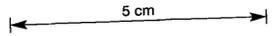
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE



FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB - APR 67

APPROVED

DATE 16/4/67

035

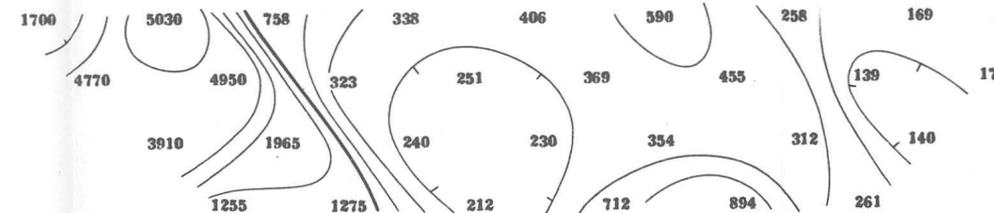
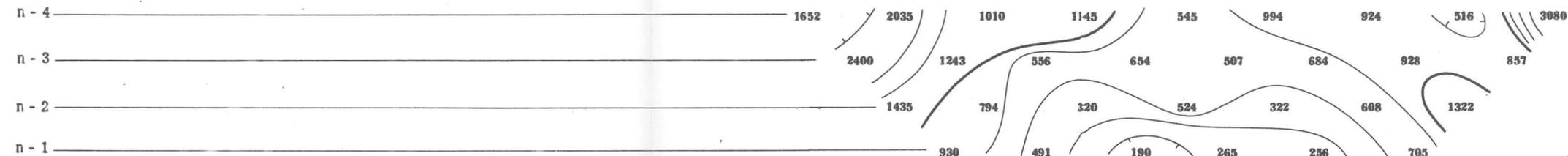
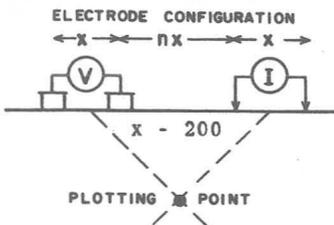
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NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

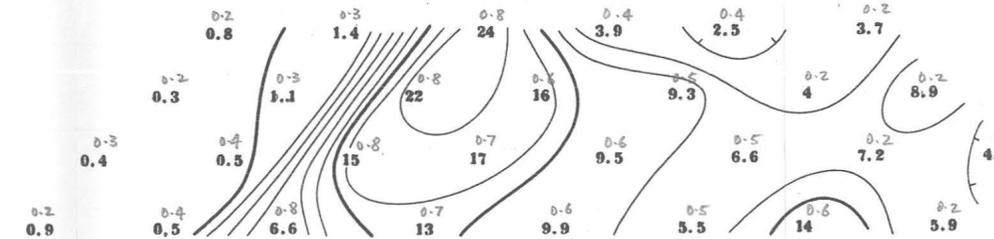
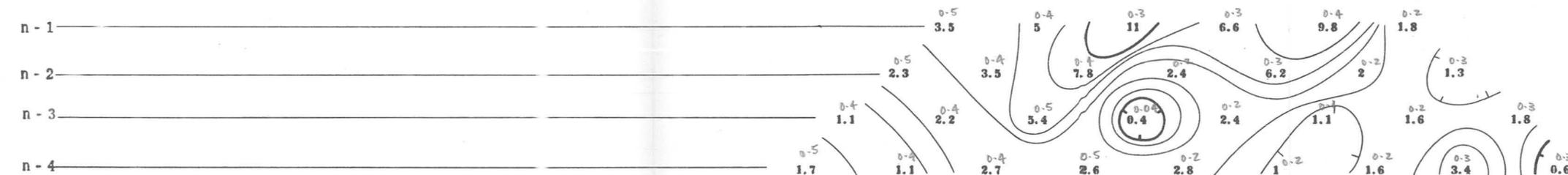
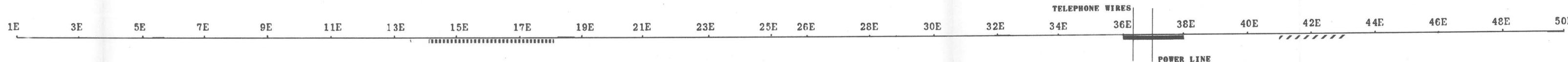
340037

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



$\rho_a / 2\pi$
(OHM FEET)



P.F.E.
21'

(M.F.) a

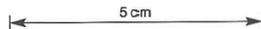
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB. APR. 67

APPROVED

DATE 10/1/67



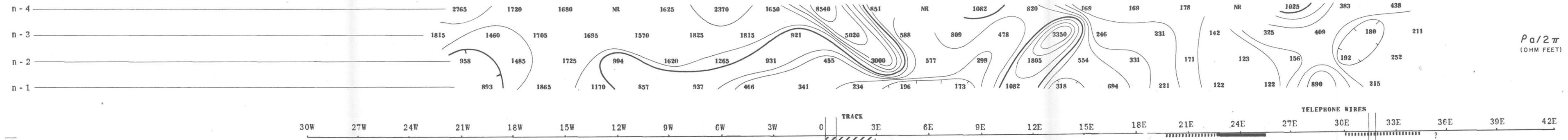
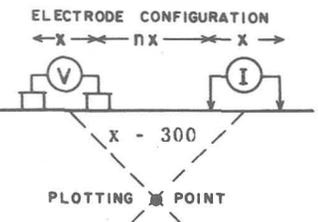
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NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

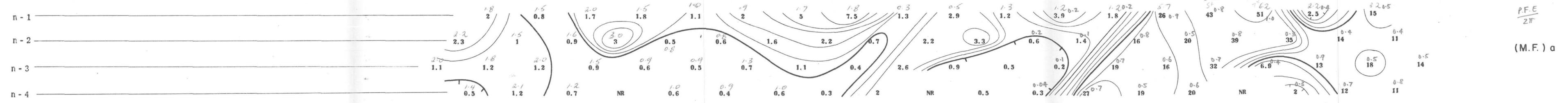
340038

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



$\rho_a / 2\pi$
(OHM FEET)



$\frac{P.F.E}{2\pi}$

(M.F.) a

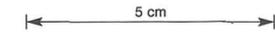
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR 67

APPROVED

DATE 1/16/67

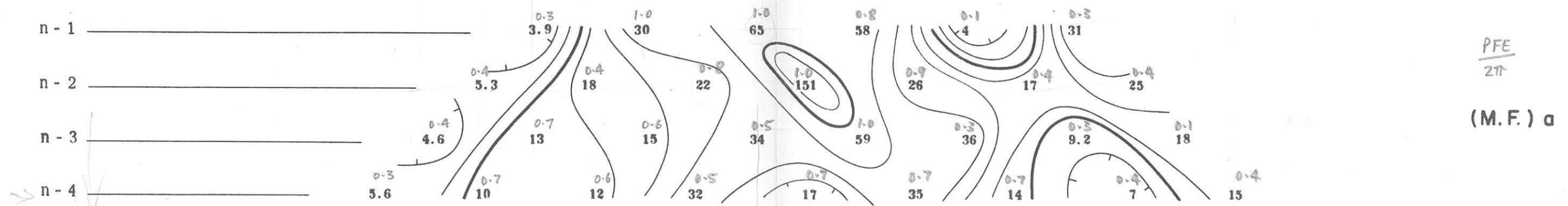
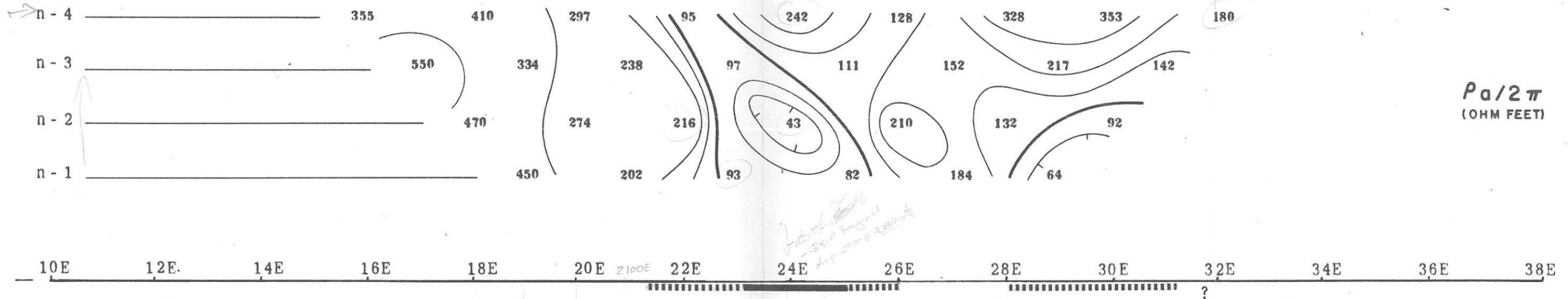
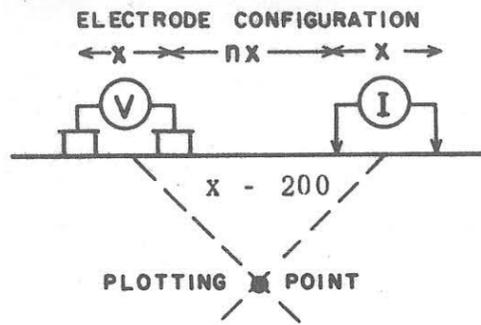
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McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340039



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 200 Feet

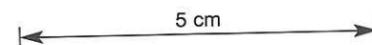
NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

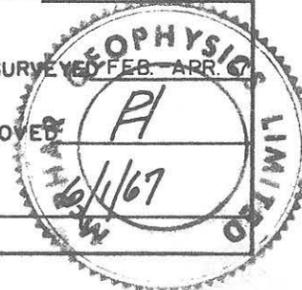


FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB. - ARR.

APPROVED

DATE 16/1/67

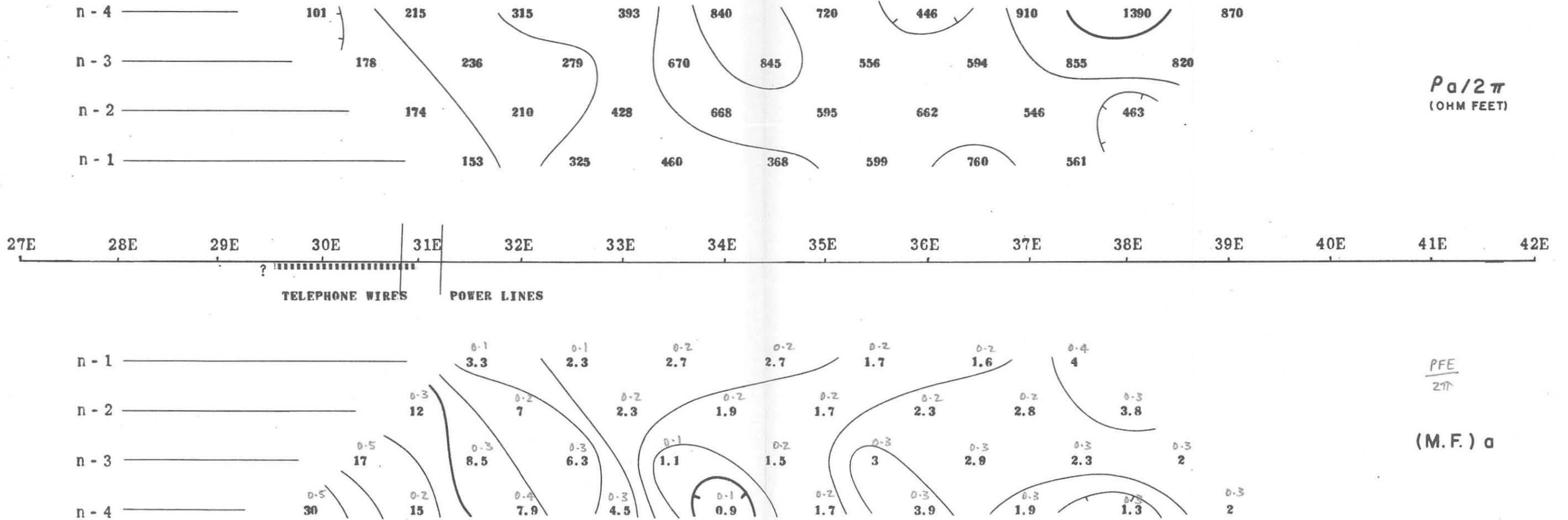
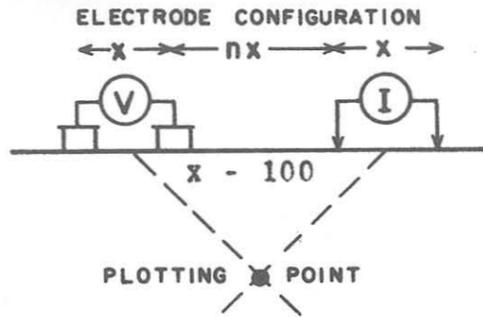


McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340040



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 100 Feet

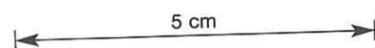
NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR

APPROVED

DATE 16/1/67



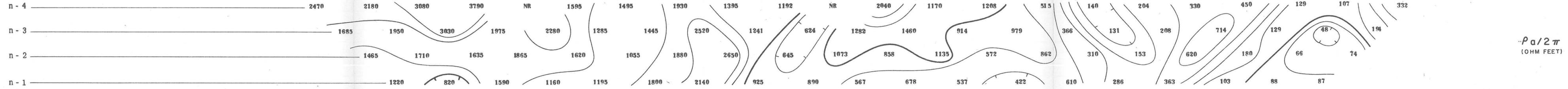
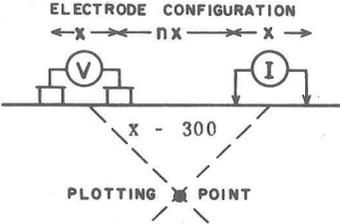
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NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

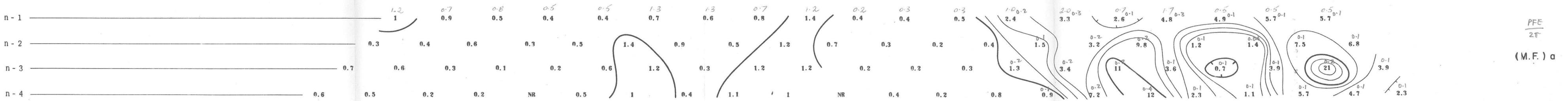
340041

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



$\rho_a / 2\pi$
(OHM FEET)

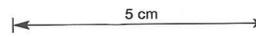


$\frac{PFE}{2T}$

(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA



Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB - APR 67

APPROVED

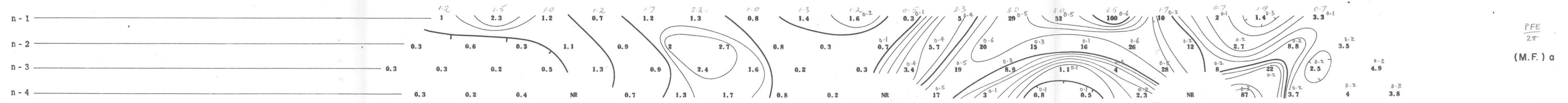
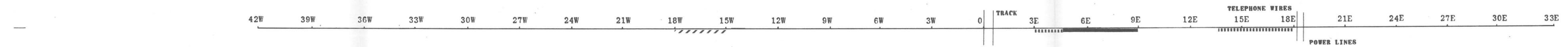
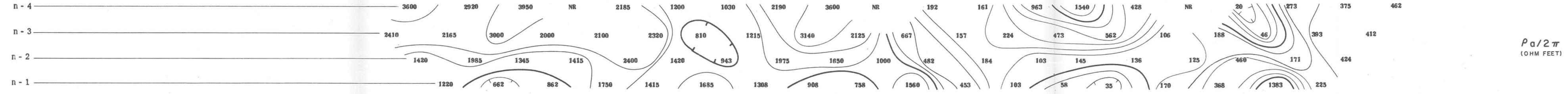
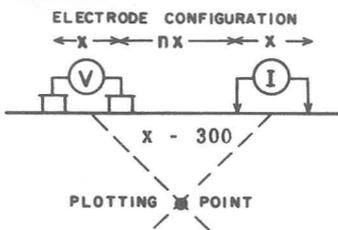
DATE 26/1/67

LINE NO.-14

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340042

McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY



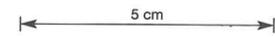
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE



FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB - APR 67

APPROVED

DATE 16/67

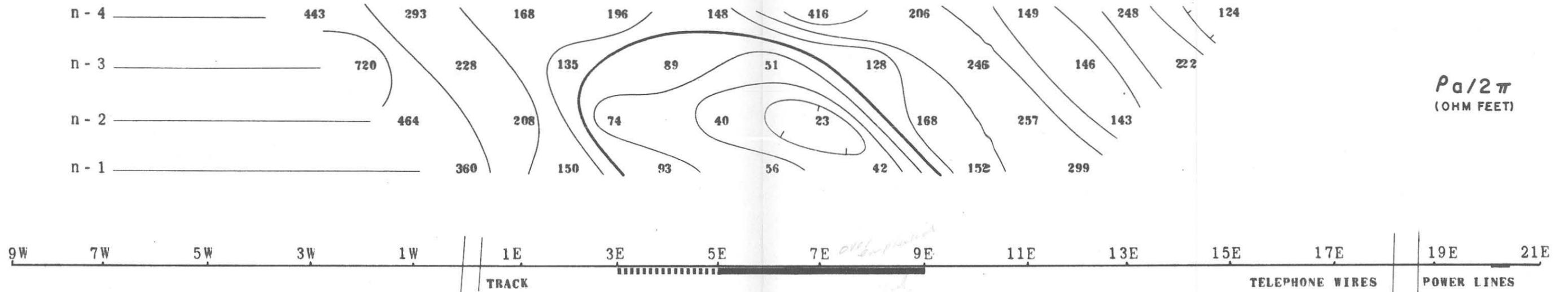
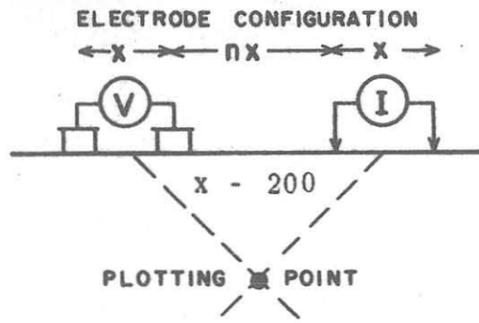
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McPHAR GEOPHYSICS LIMITED

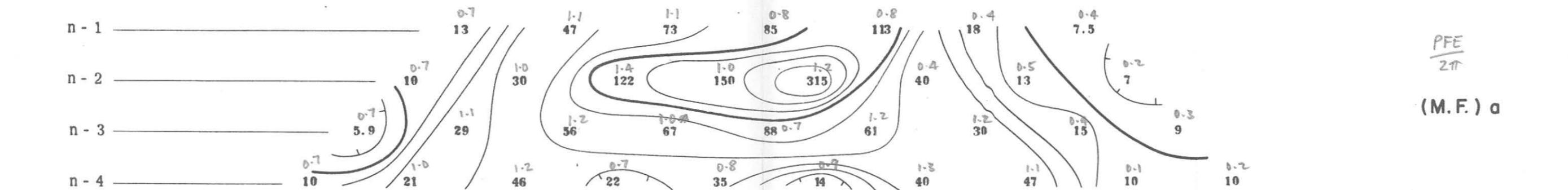
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340043



$\rho_a/2\pi$
(OHM FEET)



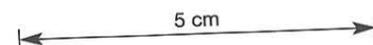
$\frac{PFE}{2\pi}$
(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
 PROBABLE
 POSSIBLE



Scale - One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR

APPROVED

DATE 16/1/67



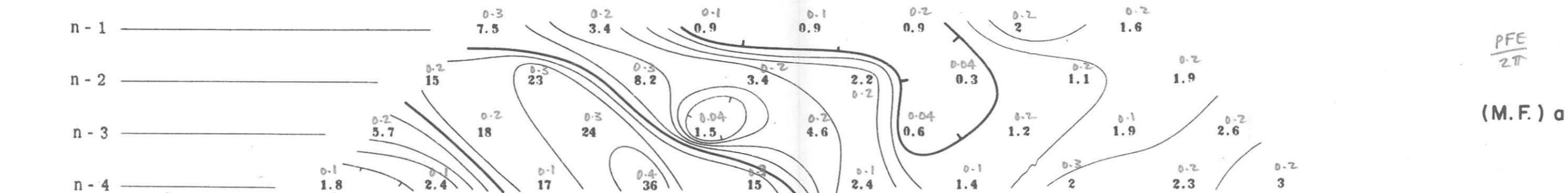
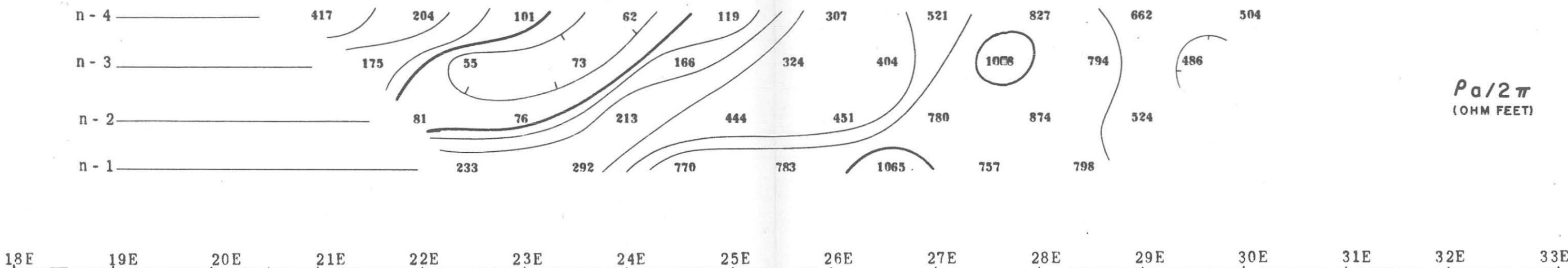
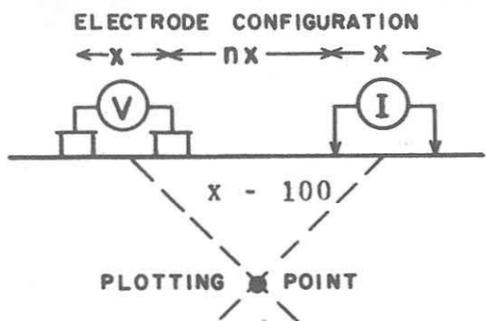
LINE NO. - 16

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340044



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

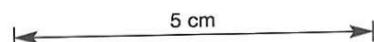
MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 100 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE

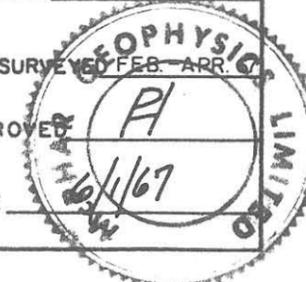


FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - ARR

APPROVED

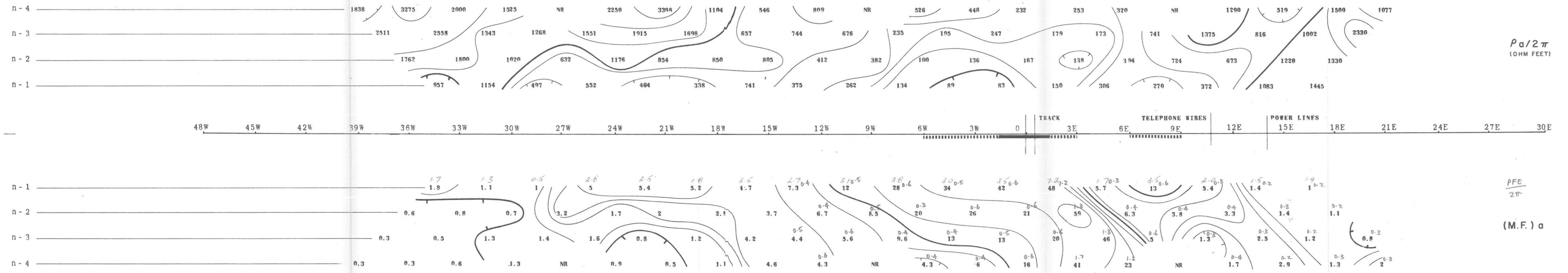
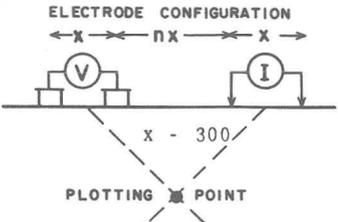
DATE



NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340045

McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY



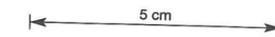
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
 DEFINITE
 PROBABLE
 POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR 67

APPROVED

DATE 26/6/67

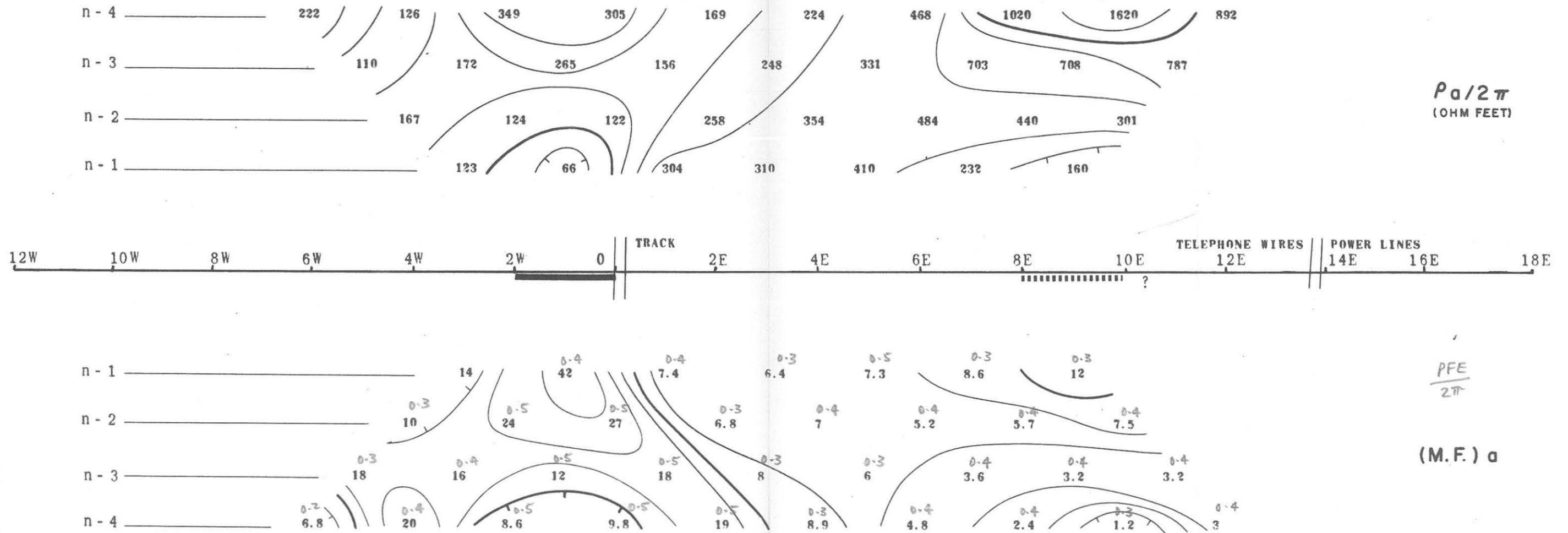
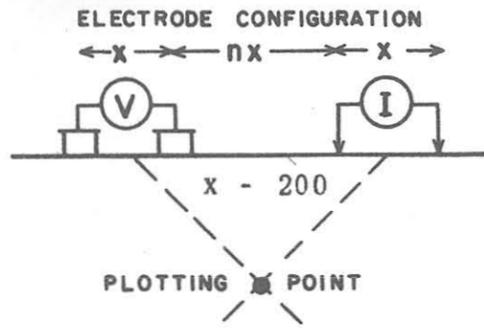
LINE NO.-18

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340046



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

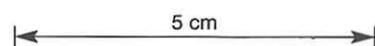
MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB. - APR.

APPROVED

DATE 16/1/67

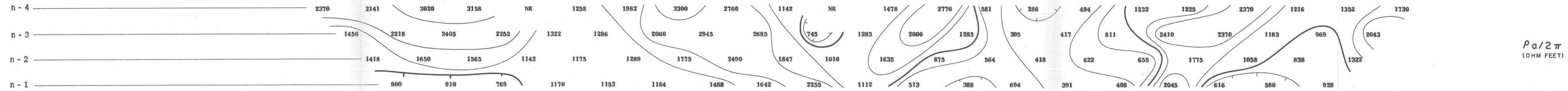
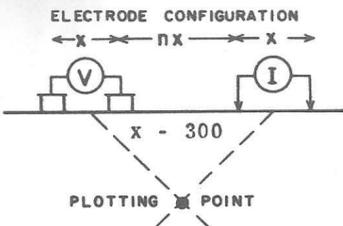


NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

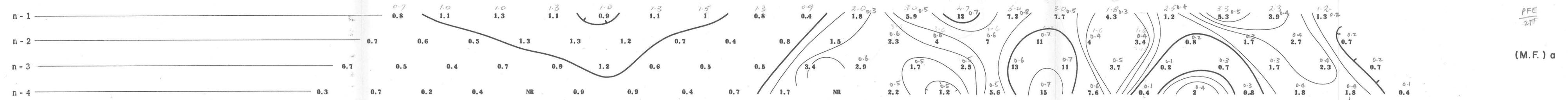
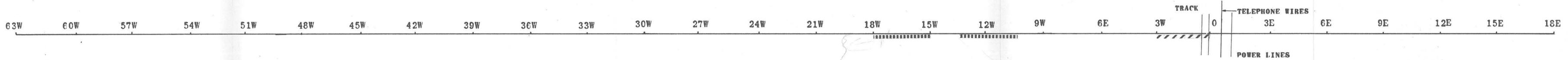
340047

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



$\rho_a / 2\pi$
(OHM FEET)



$\frac{PFE}{2\pi}$

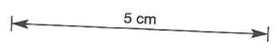
(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch = 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL



SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

mF
 $\frac{PFE}{\rho_e} \times 1000$
 $PFE = \frac{\rho_a \times mF}{1000}$

FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB - APR 67

APPROVED

DATE 5/1/67

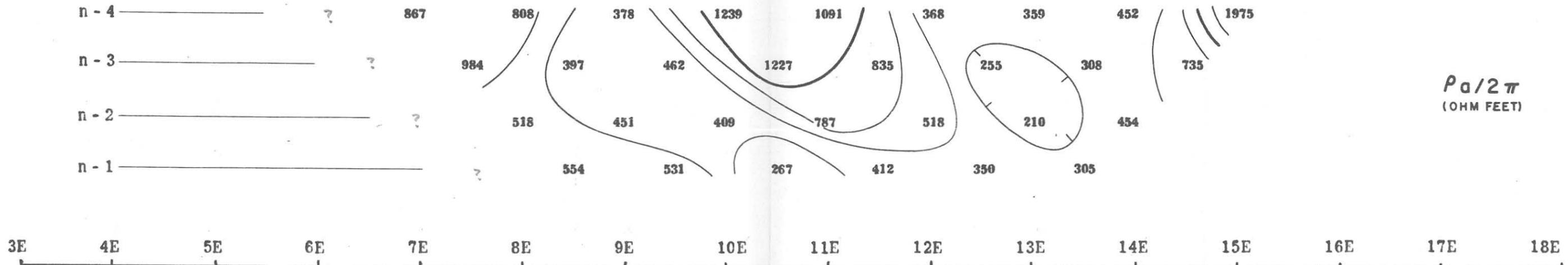
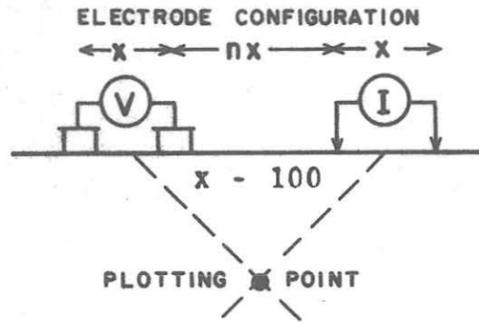
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McPHAR GEOPHYSICS LIMITED

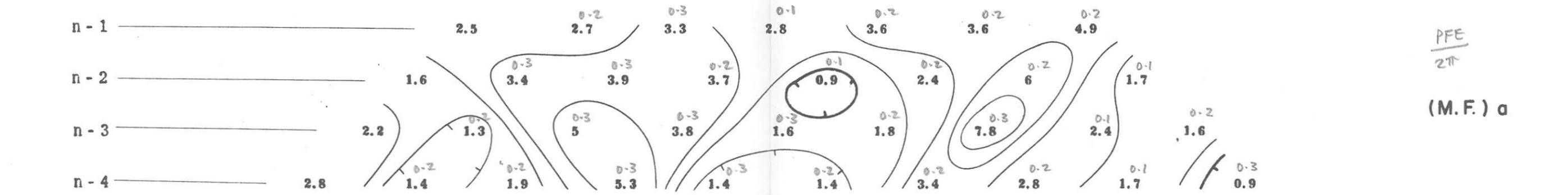
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340048



$P_a / 2\pi$
(OHM FEET)



PFE
 2π
 (M.F.) a

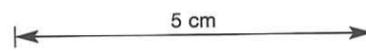
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 100 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
 DEFINITE
 PROBABLE
 POSSIBLE



FREQUENCY 0.31 & 2.5 CPS
 DATE SURVEYED FEB - APR
 APPROVED
 DATE 16/1/67



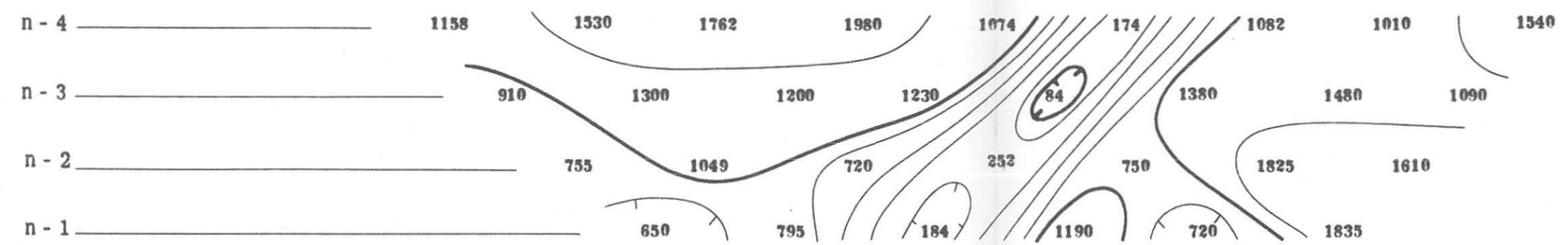
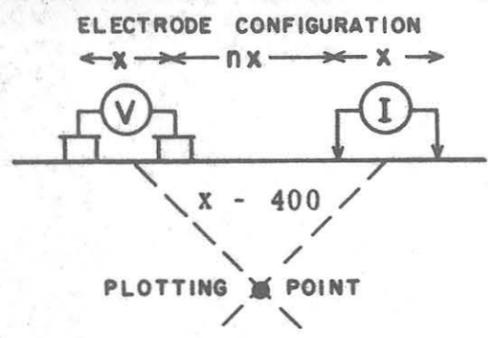
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McPHAR GEOPHYSICS LIMITED

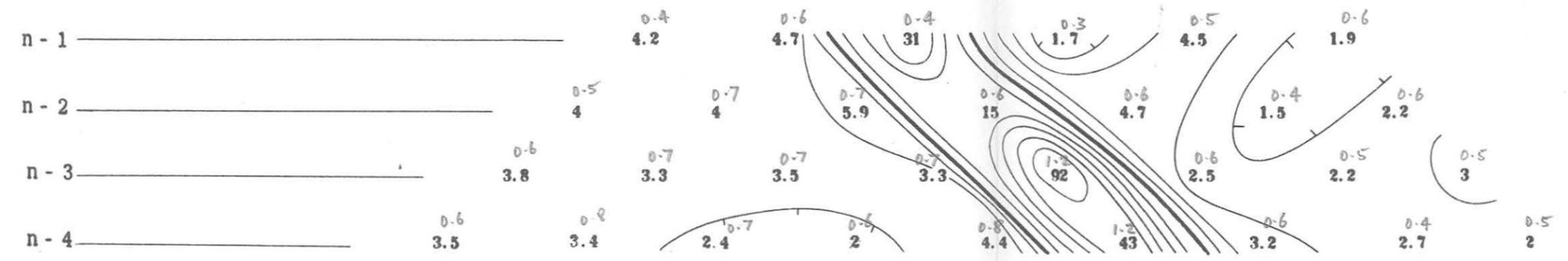
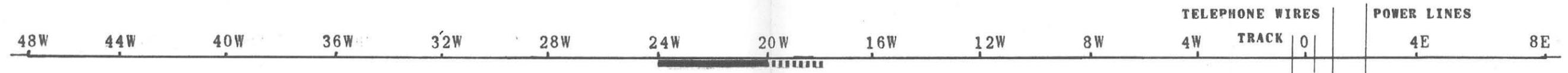
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340049



$\rho_a / 2\pi$
(OHM FEET)



$\frac{PFE}{2\pi}$
(M.F.) α

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 400 Feet

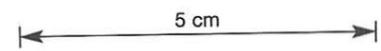
NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

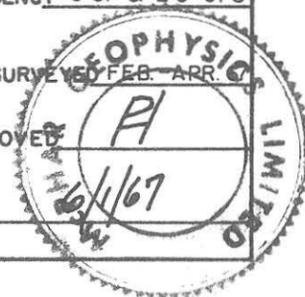


FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB. ARR.

APPROVED

DATE 16/1/67



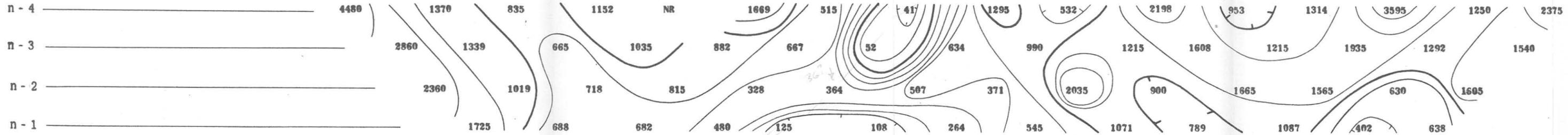
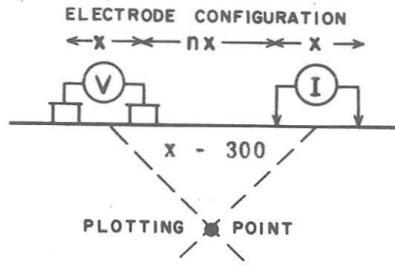
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McPHAR GEOPHYSICS LIMITED

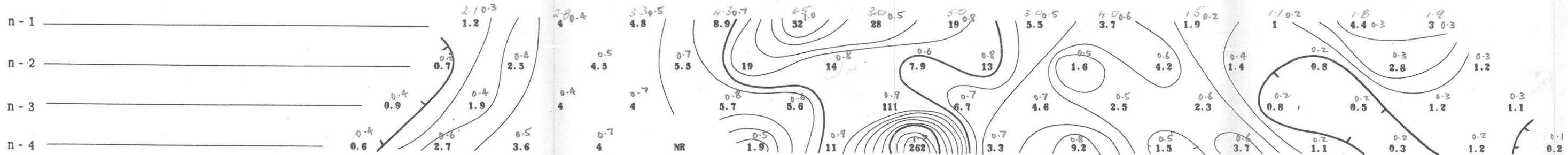
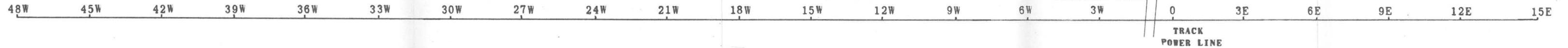
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340050



$\rho_a / 2\pi$
(OHM FEET)



$\frac{PFE}{2\pi}$
(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

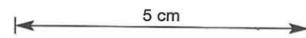
MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 300 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB.-APR. 67

APPROVED

DATE 6/1/67

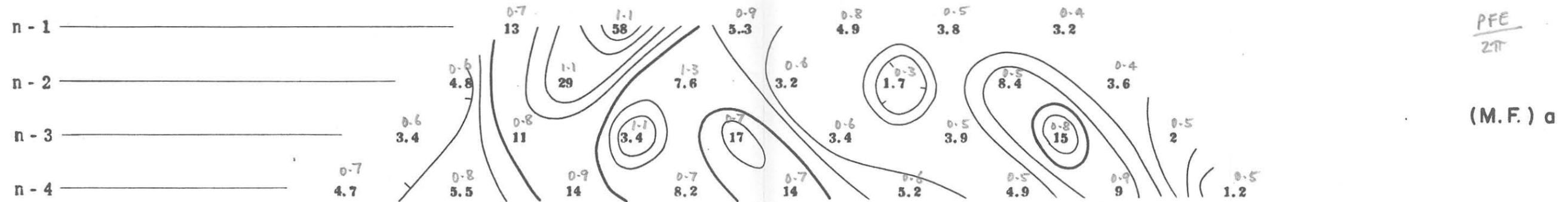
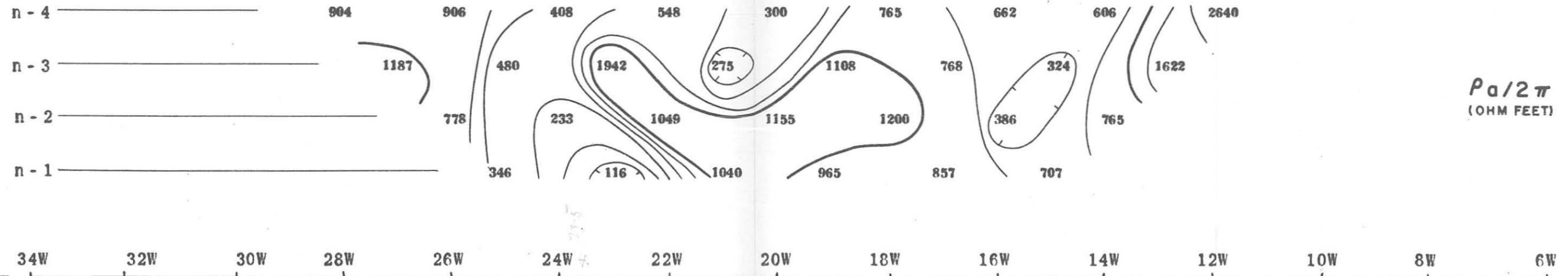
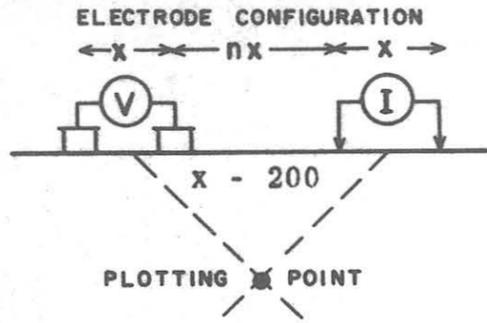
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McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340051



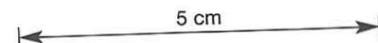
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
 DEFINITE
 PROBABLE
 POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR 67

APPROVED

DATE 1/1/67



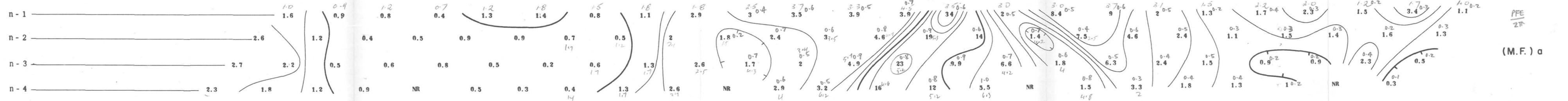
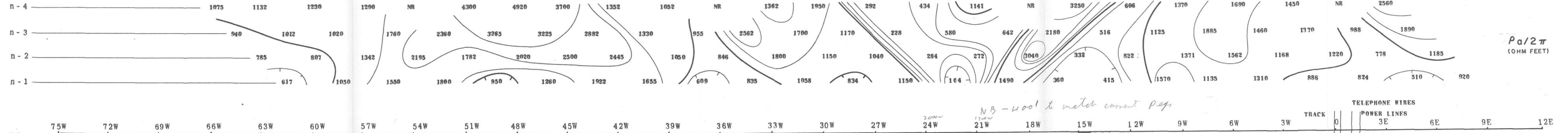
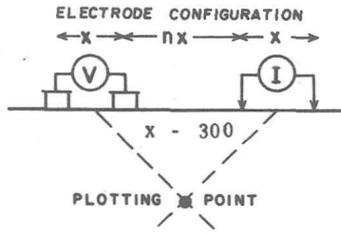
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NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340052

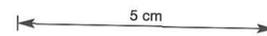
McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA



Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE

FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB. APR. 57

APPROVED

DATE 6/4/67

051



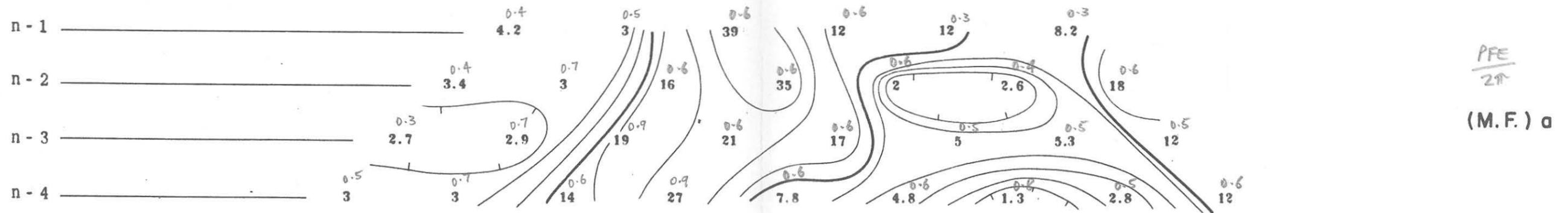
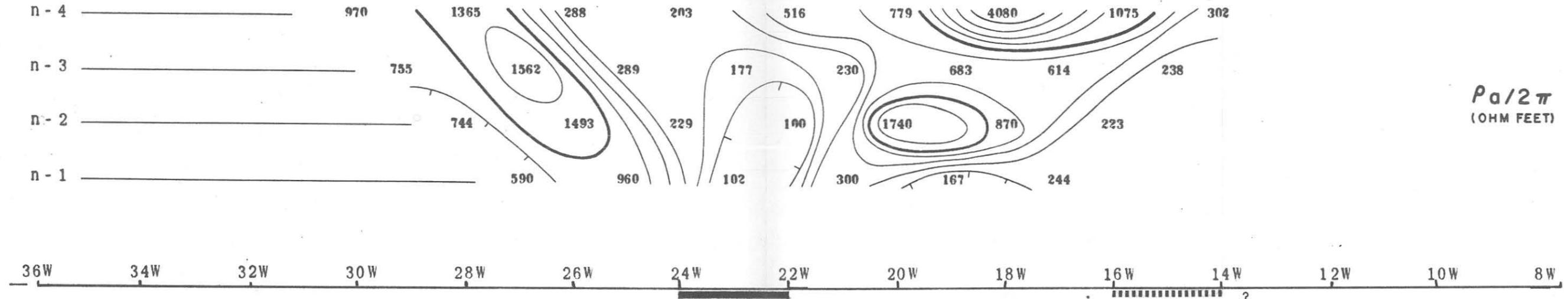
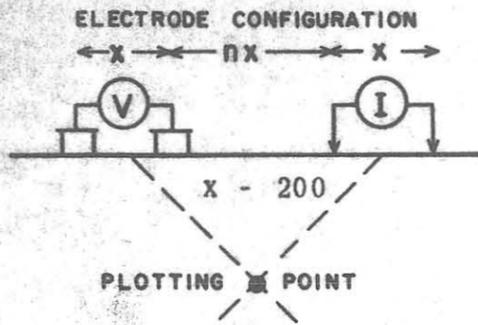
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McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340053



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 200 Feet

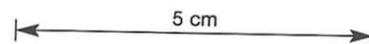
NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB. ARR.

APPROVED

DATE

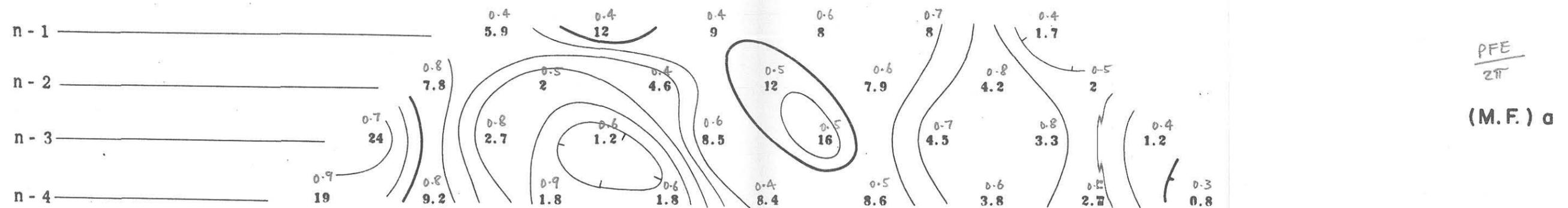
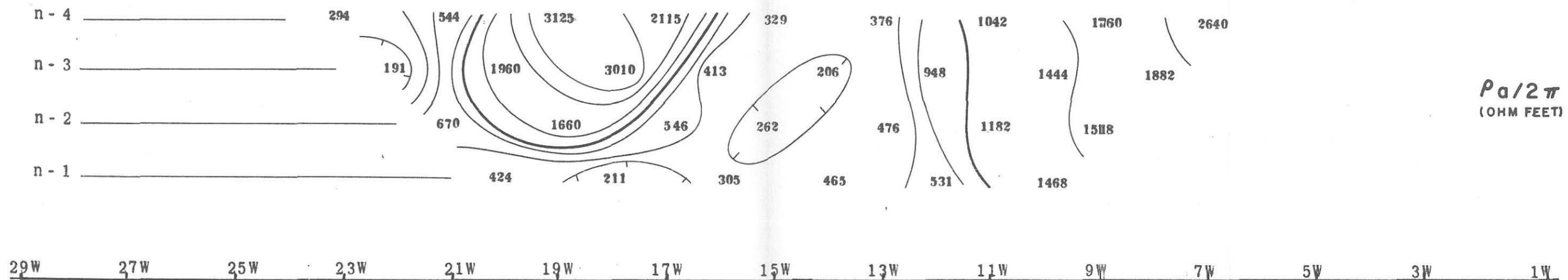
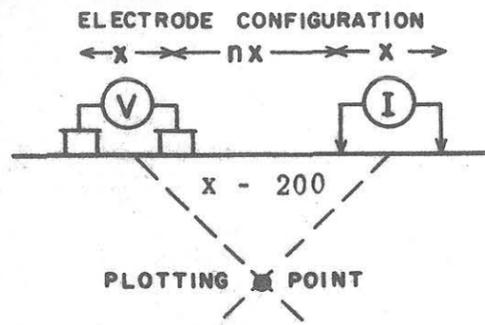


McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340054



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 200 Feet

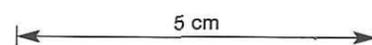
NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE **—————**

PROBABLE **|||||**

POSSIBLE **//////**



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR. 67

APPROVED *[Signature]*

DATE 16/4/67



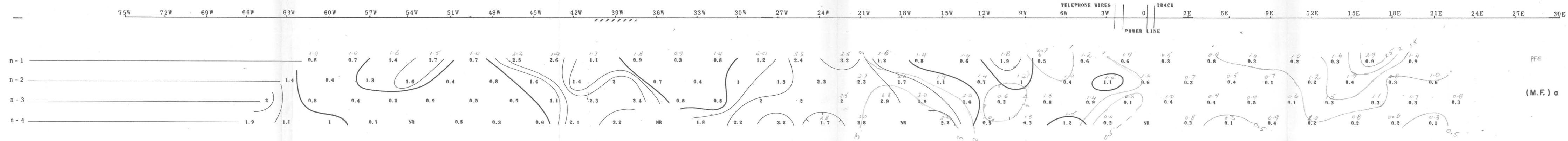
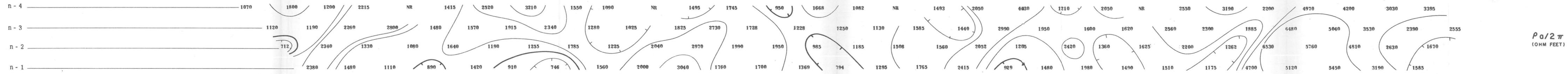
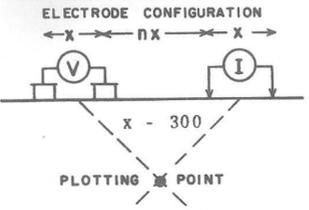
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McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

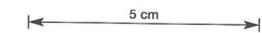
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THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 300 Feet



NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB. APR. 1967

APPROVED

DATE 10/1/67

054

PFE

(M.F.) a

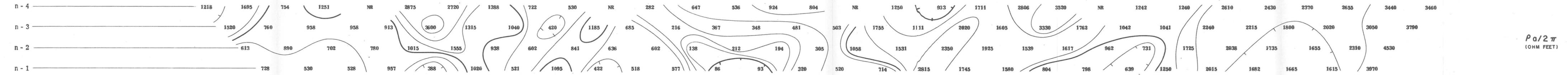
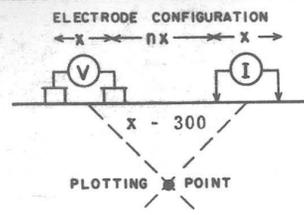
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McPHAR GEOPHYSICS LIMITED

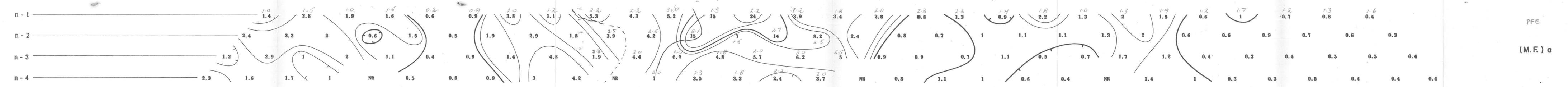
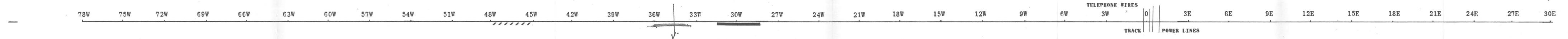
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340056



$\rho_a / 2\pi$
(OHM FEET)

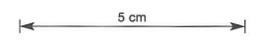


PFE

(M.F.) α

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA



Scale - One inch = 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB. APR. 67

APPROVED

DATE 16/1/67

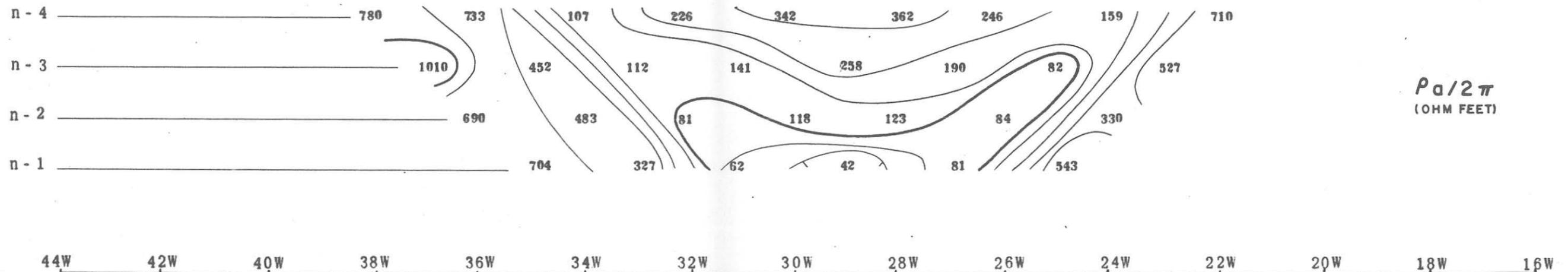
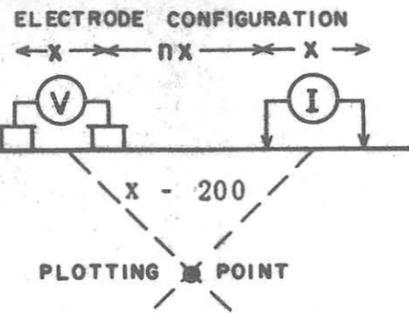
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McPHAR GEOPHYSICS LIMITED

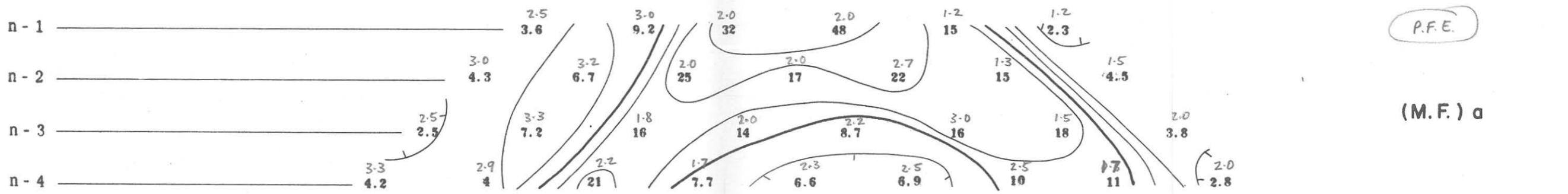
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340057



$P_a/2\pi$
(OHM FEET)



P.F.E.

(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 200 Feet

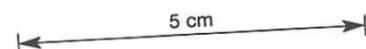
NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR

APPROVED

DATE



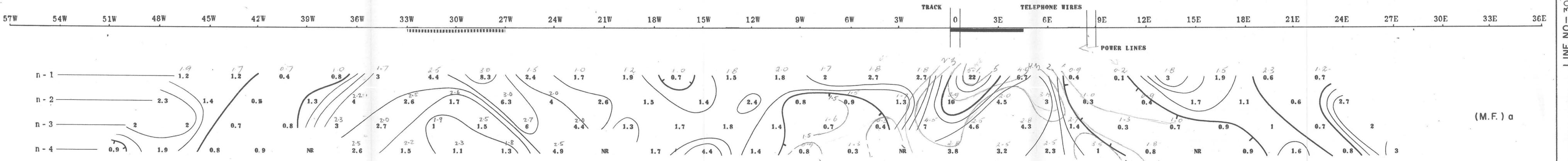
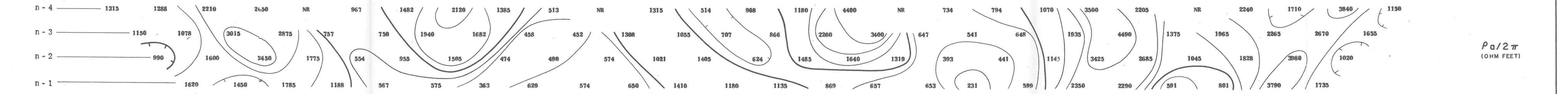
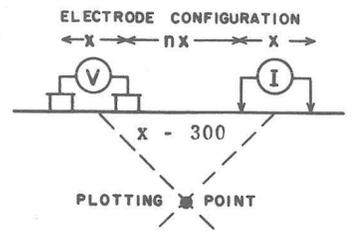
056

LINE NO. - 28

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340058

McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY



THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE



FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB. APR. 67

APPROVED

DATE 6/4/67

057

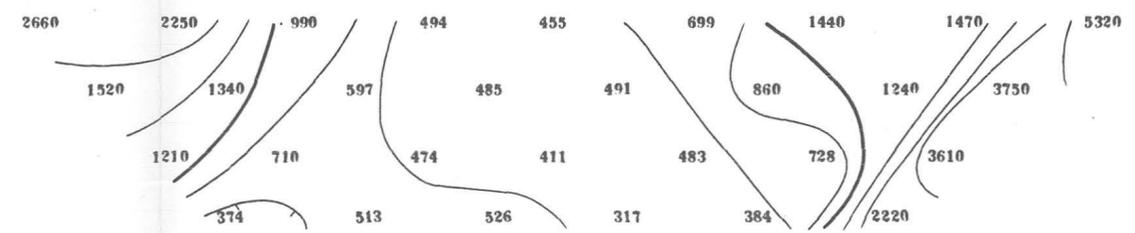
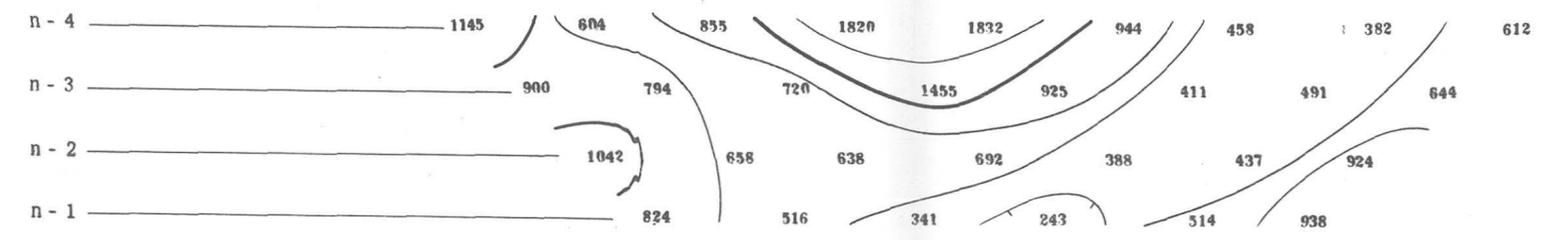
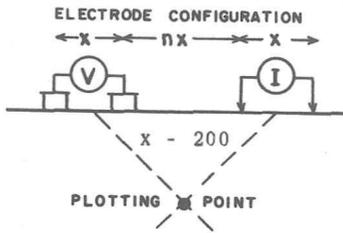
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NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

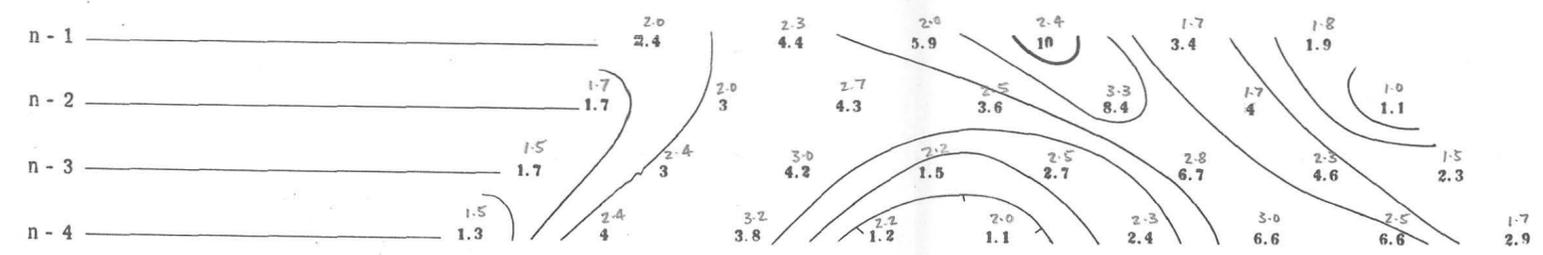
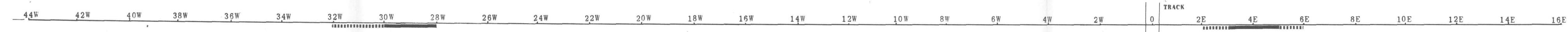
340059

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



$\rho_a / 2\pi$
(OHM FEET)



(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL



SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR 67

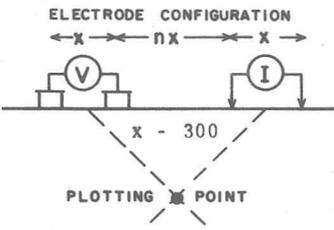
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DATE 26/4/67

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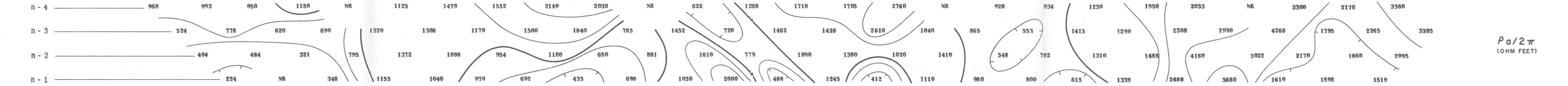
NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340060

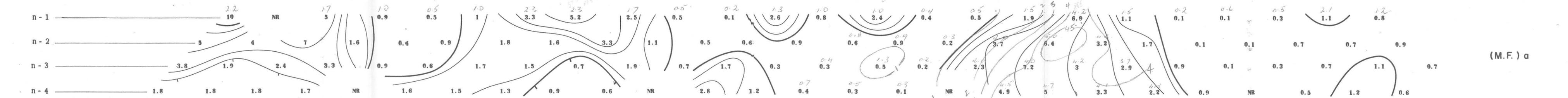


McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



$\rho_a / 2\pi$
(OHM FEET)



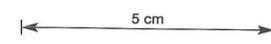
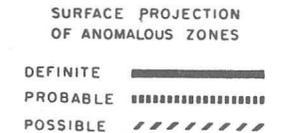
(M.F.) α

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL



FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB APR 67

APPROVED [Signature]

DATE 6/4/67

959

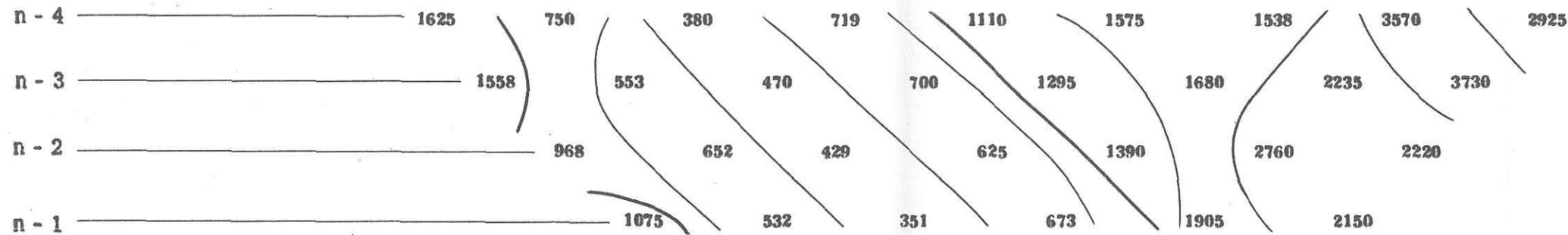
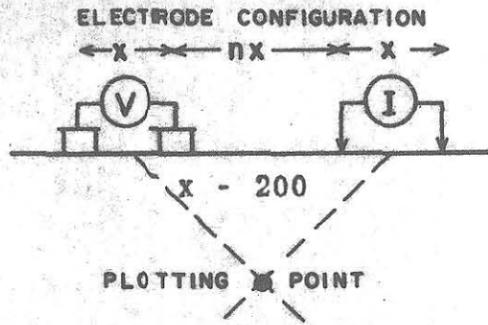
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McPHAR GEOPHYSICS LIMITED

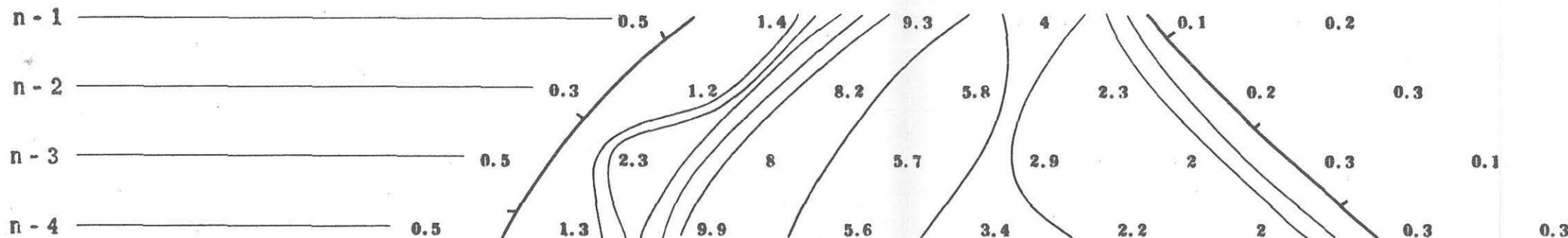
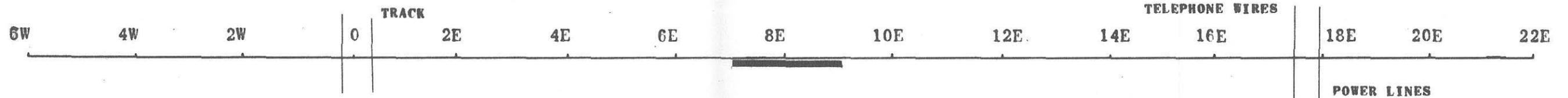
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340061



$P_a/2\pi$
(OHM FEET)



(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

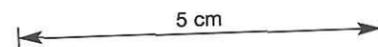
MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE



FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR 67

APPROVED

DATE 16/1/67



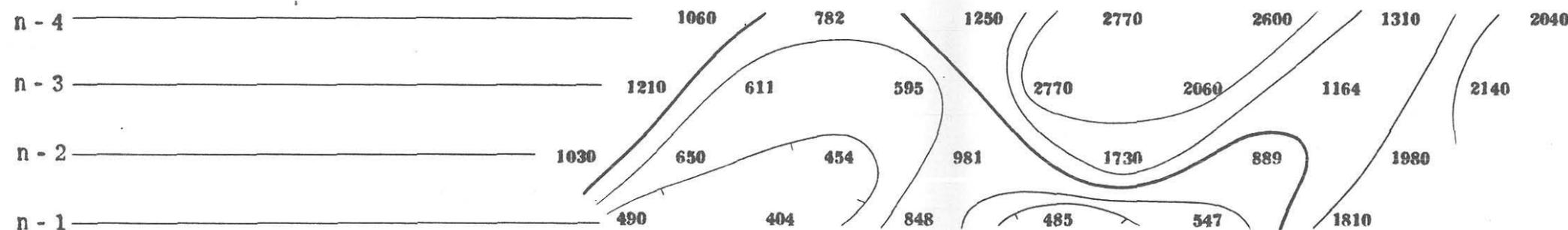
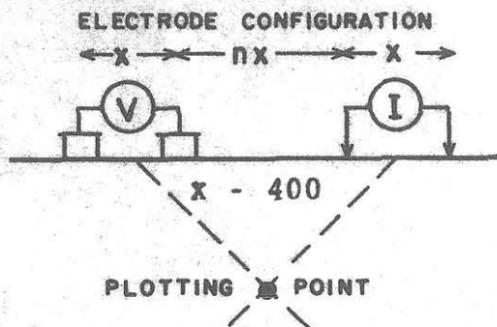
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McPHAR GEOPHYSICS LIMITED

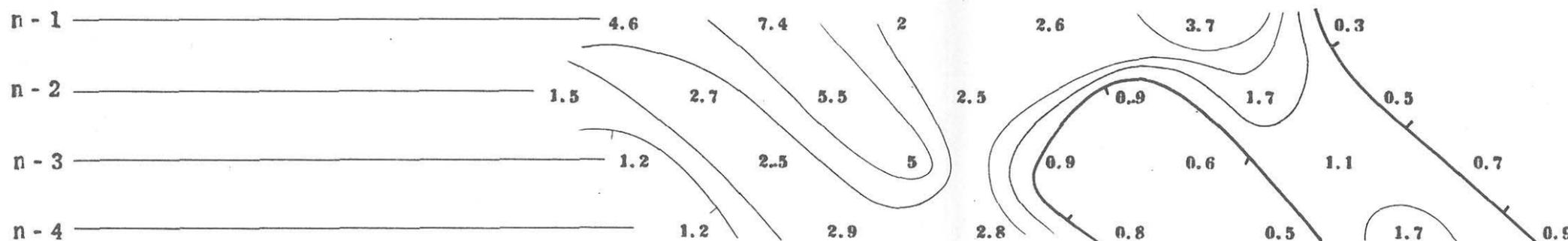
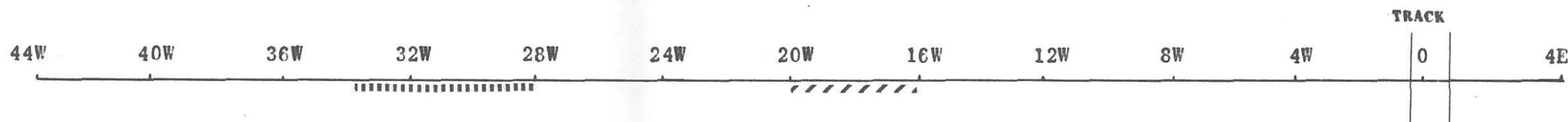
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340062



$P_a/2\pi$
(OHM FEET)



(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

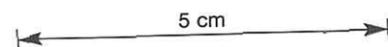
MOUNT TYNDALL AREA, TASMANIA

Scale - One inch = 400 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE

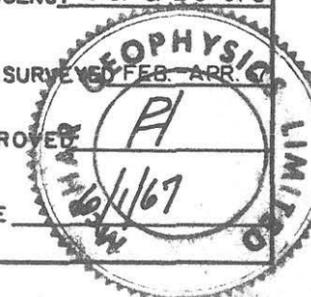


FREQUENCY 0.31 & 2.5 CPS

DATE SURVEYED FEB - APR

APPROVED

DATE 16/1/67

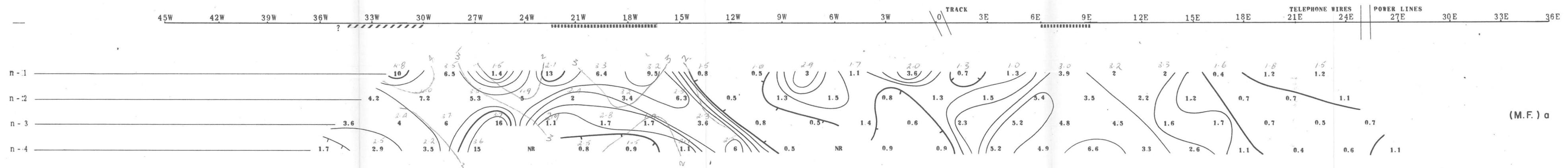
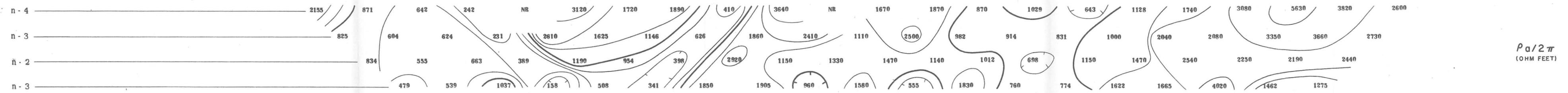
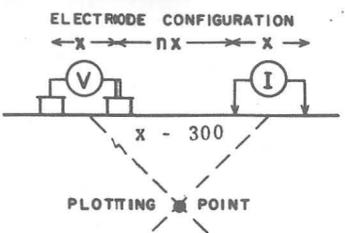


NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340063

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



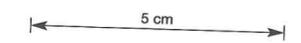
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE



FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB - APR 67

APPROVED

DATE 16/1/67

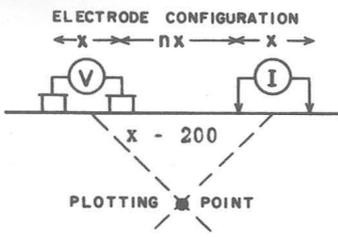
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NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340064

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



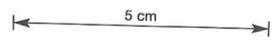
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THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

Scale—One inch= 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL



SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB - APR 67

APPROVED

DATE 3/6/67

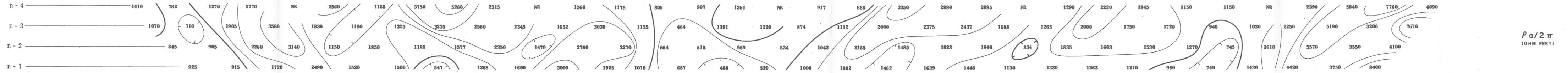
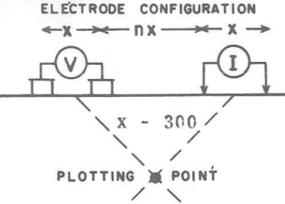
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McPHAR GEOPHYSICS LIMITED

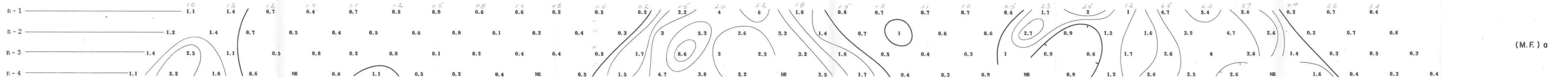
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340065



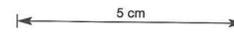
$\rho_a / 2\pi$
(OHM FEET)



(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA



Scale - One inch = 300 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

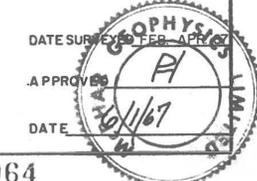
SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCY 0.31 & 2.5 CPS.

DATE SURVEYED FEB - APR 1967

APPROVED

DATE 5/1/67



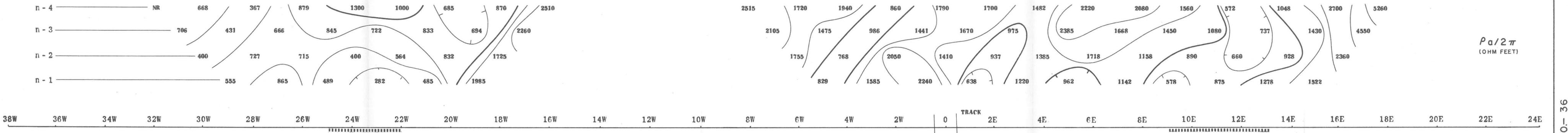
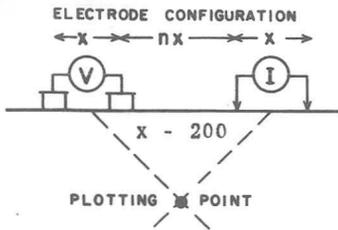
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McPHAR GEOPHYSICS LIMITED

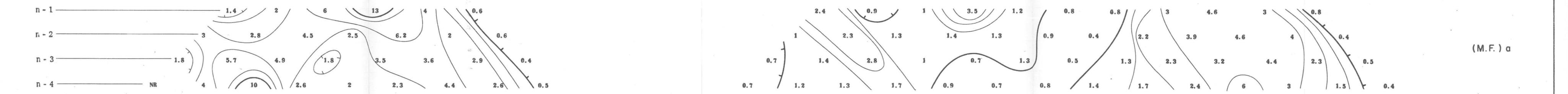
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340066



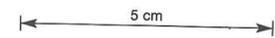
$\rho_a / 2\pi$
(OHM FEET)



(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA



Scale—One inch= 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCY 0.31 & 2.5 CPS
DATE SURVEYED FEB. APR. 67
APPROVED
DATE 6/1/67

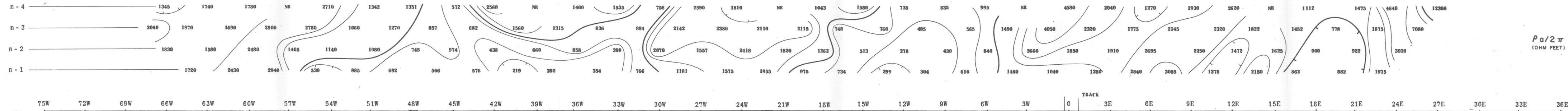
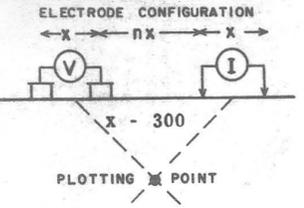
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McPHAR GEOPHYSICS LIMITED

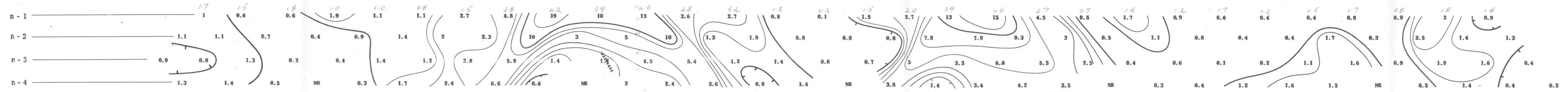
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

340067



$\rho_a / 2\pi$
(OHM FEET)



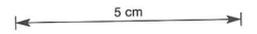
(M.F.) a

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

MOUNT TYNDALL AREA, TASMANIA

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DATE SURVEYED FEB. 1967

APPROVED

DATE 16/1/67

LINE NO. - 38