513

REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY

[illegible] ON THE

DOROTHY CLAIM GROUP, HOGEM AREA

OMINECA MINING DIVISION, B. C.

FOR 93N/14W

KENNCO EXPLORATIONS (WESTERN) LTD.

BY

PHILIP G. HALLOF, PH. D.

NAME AND LOCATION OF PROPERTY:

DOROTHY CLAIM GROUP, HOGEM AREA
OMINECA MINING DIVISION, B. C. 55°N-125°W.

DATE STARTED - JUNE 16, 1963

DATE COMPLETED - AUGUST 3, 1963

TABLE OF CONTENTS

McPHAR GEOPHYSICS LIMITED

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 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 chalcopyrite, chalcocite, galena, etc. are responsible for the induced polarization effect. Some 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 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

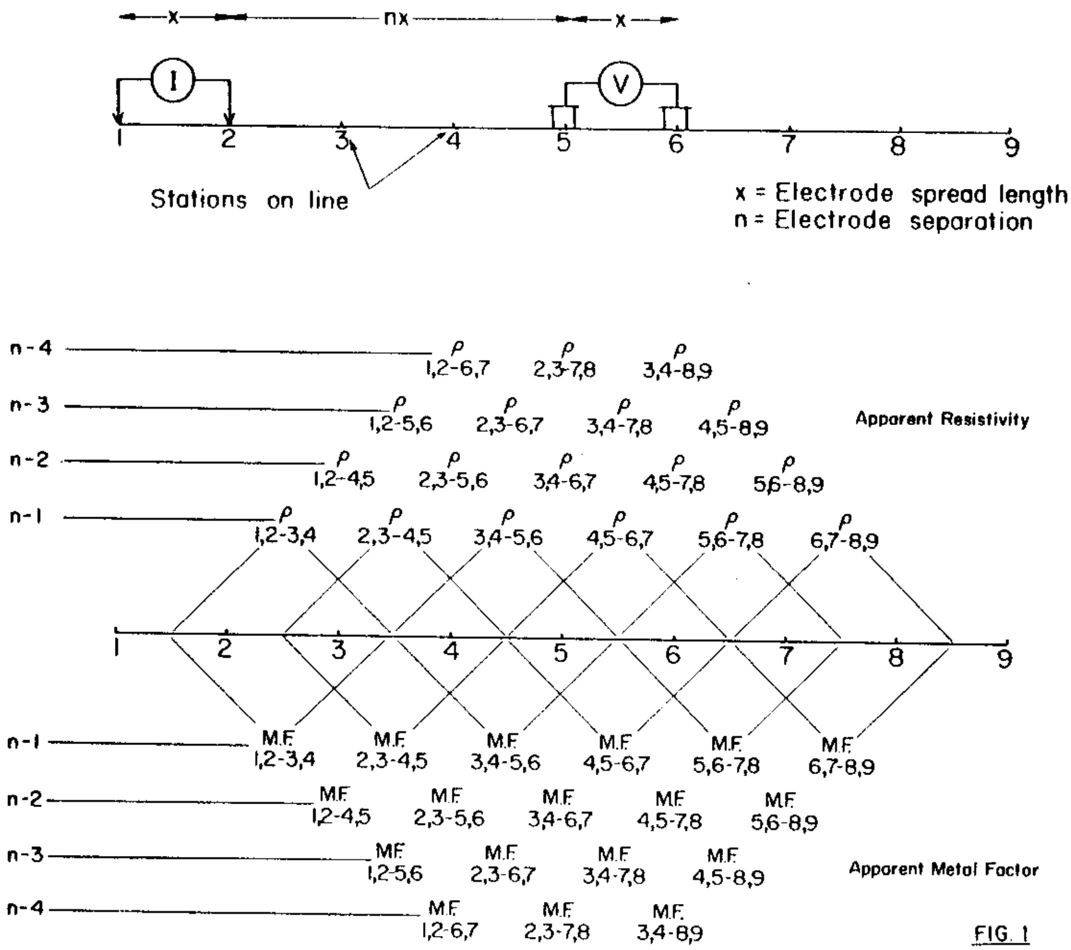

FIG. 1

McPHAR GEOPHYSICS LIMITED

REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY ON THE DOROTHY CLAIM GROUP, HOGEM AREA OMINECA MINING DIVISION, B. C. FOR KENNCO EXPLORATIONS (WESTERN) LTD.

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1. INTRODUCTION

A previous report dated July 17, 1962 and entitled, "Report on the Induced Polarization and Resistivity Survey on the Dorothy Claim Group, Hogem Area, Omineca Mining Division, B. C. for Kennco Explorations (Western) Ltd." described the reconnaissance geophysical survey carried out on the Dorothy Claim Group during the 1962 field season. The Dorothy Claim Group is located in the northeast quadrant of the one degree quadrilateral whose southeast corner is at 55°N-125°W.

The reconnaissance I. P. survey was planned to locate any metallic mineralization in the area that might be the source of the geochemical anomaly previously located in the area. A light-weight I. P. unit was used for the survey, and several anomalous indications were located. However, the high electrical noise level in the area caused many of the measurements for the larger values of (n) to be doubtful, and the anomalies could not be fully evaluated.

During the 1963 field season, detailed I. P. measurements were made using a standard I. P. unit. The higher power available in the transmitter made it possible to make reliable measurements in the presence of the electrical noise present. The anomalies have been shown to be definite, and several are strong enough to warrant drilling.

2. PRESENTATION OF RESULTS

The induced polarization and resistivity results are shown on the following enclosed data plots. The results are plotted in the manner described in the notes preceding this report.

Line 32S	200' Electrode Separations	Dwg. I. P. 2098-1
Line 24S	200' Electrode Separations	Dwg. I. P. 2098-2
Line 16S	200' Electrode Separations	Dwg. I. P. 2098-3
	100' Electrode Separations	Dwg. I. P. 2098-4
Line 8S	200' Electrode Separations	Dwg. I. P. 2098-5
	100' Electrode Separations	Dwg. I. P. 2098-6
Line 4S	200' Electrode Separations	Dwg. I. P. 2098-7
	100' Electrode Separations	Dwg. I. P. 2098-8
Line 0	200' Electrode Separations	Dwg. I. P. 2098-9
Line 8N	200' Electrode Separations	Dwg. I. P. 2098-10
Line 16N	200' Electrode Separations	Dwg. I. P. 2098-11
	100' Electrode Separations	Dwg. I. P. 2098-12
Line 24N	200' Electrode Separations	Dwg. I. P. 2098-13
Line 32N	200' Electrode Separations	Dwg. I. P. 2098-14

	100' Electrode Separations	Dwg. I.P. 2098-15
Line 44N	200' Electrode Separations	Dwg. I.P. 2098-16

Also enclosed with this report is Dwg. Misc. 4045, a plan map of the Dorothy Claim Group. 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 200' spreads the position of a narrow sulphide body can only be determined to lie between two stations 200' 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.

3. DISCUSSION OF RESULTS

There are several anomalous zones indicated by the I.P. results from 1963 on the Dorothy Claim Group. Many of the anomalies caused relatively high frequency effects in areas of high resistivity, and therefore, are only of low to moderate magnitude.

Line 32S

There are two weak anomalies on this line. The western anomaly indicates a shallow, narrow source, and the data does not extend far enough to the east to complete the eastern anomaly.

Line 24S

There are several weak anomalies on this line also. The most definite is the deeper anomaly at 19W to 23W.

Line 16S

There are several shallow anomalies in the region 4W to 14E on Line 16S. They are of larger magnitude than the anomalies on the lines to the south. The detailed results using 100' electrode intervals show a strong shallow anomaly at 2E to 3E. The anomalous pattern suggests a source of concentrated metallic mineralisation, with a width of 100' or less.

Line 8S

There are two broad, weak anomalies indicated by these results. The detail using 100' spreads on the eastern anomaly confirms the width of the source, and with the shorter spreads there is some depth indicated to the top of the source.

The anomalous effects measured in the broad anomalies are more or less uniform, indicating that the apparent effects measured are approximately equal to the true I. P. effects within the source. The anomalies are associated with relatively high apparent resistivities and therefore, although the frequency effects measured are quite high, the apparent Metal factors are only of moderate value.

We do not have a great deal of experience with this type of anomaly, but it is usually caused by a relatively small amount of disseminated mineralization in a non-porous rock that is of high resistivity.

Line 4S

The anomalies indicated on this line are similar to those on Line 8S, and correlate with them.

Line 0

Several of the anomalies on this line correlate with the broad anomalies located to the south. However, the broad anomaly at depth at 15W to 19W is of larger magnitude, and probably represents more concentrated mineralization. The shallow anomaly at 14E is of different character, and should be checked with shorter electrode intervals.

Line 8N

The two broad anomalies on this line indicate a source at depth, and are similar to those on the lines to the south.

Line 16N

The anomalous effects are much the same on this line. The 100' spread detail on the eastern anomaly indicates an anomaly caused by very large frequency effects, in an area of resistivities greater than 500.

Line 24N

There are three weak anomalies on the western end of this Line.

Line 32N

The moderate magnitude anomalies on the western end of the line have been detailed with 100' electrode intervals. With the detailed data, there is some depth indicated to the top of the source.

Line 44N

There is only one anomalous zone on this line.

4. CONCLUSIONS AND RECOMMENDATIONS

As shown on Dwg. Misc. 4045, the anomalies on the Dorothy Claim Group do not correlate well. The distribution of the anomalies suggests widely scattered mineralisation that forms continuous zones for only a few hundred feet.

The shallow, narrow anomaly shown by the 100' spread data at 2E to 3E on Line 16S is of larger magnitude than the others on the Property. A hole drilled to test the source intersected several narrow zones of near massive mineralisation.

Most of the other anomalies on the Dorothy Claim are of low to moderate magnitude, and similar in character. The anomalies on Line 8N are typical, with the source indicated as being at some depth. The resistivities measured are relatively high, and the moderately large frequency effects give small magnitude Metal factors. The largest frequency effects were measured with 100' spreads on Line 16N, and the largest metal factors were measured on Line C, at depth with 200' electrode intervals. A hole drilled to test the source of the anomaly on Line 32N, intersected disseminated mineralization that probably explains the weak I. P. effects measured.

Several of the other broad, moderate magnitude anomalies on the Dorothy Claim Group are larger in magnitude than the anomaly on Line 32N. They may represent more concentrated mineralization; however, despite the high frequency effects they are probably not due to massive mineralization. The decision concerning any further drilling to test these anomalies should be based on the available geologic information, and the distribution of the geochemical anomalies.

McPHAR GEOPHYSICS LIMITED,

Philip G. Hallof

Philip G. Hallof,
Geophysicist.

Dated: September 12, 1963

ASSESSMENT DETAILS

PROPERTY: Dorothy Claim Group

MINING DIVISION: Omineca

SPONSOR: Kennco Explorations(Western) Ltd.

PROVINCE: British Columbia

LOCATION: Hogem Area.

TYPE OF SURVEY: Induced Polarisation

OPERATING MAN DAYS:	177.0	DATE STARTED:	June 16, 1963
EQUIVALENT 8 HR. MAN DAYS:	265.5	DATE FINISHED:	August 3, 1963
CONSULTING MAN DAYS:	3.0	NUMBER OF STATIONS:	433
DRAUGHTING MAN DAYS:	10.0	NUMBER OF READINGS:	2582
TOTAL MAN DAYS:	278.5	MILES OF LINE SURVEYED:	13.95

CONSULTANTS:
Philip G. Hallof, 5 Minorca Place, Don Mills, Ontario.

FIELD TECHNICIANS:
P. Beuden, c/o Forest Ranger's School, Dorset, Ontario.
M. Leduc, Box 346, Azilda, Ontario.
J. Lee, 264 Oriole Parkway, Toronto 7, Ontario.
B. McNulty, 3 Ecclestone Drive, Toronto, Ontario.
4 Helpers - supplied by client for each crew.

DRAUGHTSMEN:
D. Grant, 1987A Lawrence Avenue East, Scarborough, Ontario.
J. Cowdy, 21 Tordale Crescent, Scarborough, Ontario.
R. MacKenzie, 55 Shandon Drive, Scarborough, Ontario.

McPHAR GEOPHYSICS LIMITED,

Philip G. Hallof

Philip G. Hallof,
Geophysicist.

Dated: September 12, 1963

SUMMARY OF COST

Dorothy Claim Group

Crew

29 1/2 days Operating	@ $164.75/day	$4,860.13

Expenses

Airfare	$473.15	
Excess Baggage	18.69	
Meals & Accommodation	125.31	
Telephone & Telegraph	23.75	
Supplies	29.58	
Taxi, etc.	13.77	
Vehicle Rental	57.27	
Airfreight	117.26	
Misc.	1.92	
Credit - Extra Labour	(41.76)	323.94
		$5,684.07

McPHAR GEOPHYSICS LIMITED,

Philip G. Hallof,
Geophysicist.

Dated: September 12, 1963

CERTIFICATE

I, Philip George Hallof, of the City of Toronto, Province of Ontario, do hereby certify that:

1. I am a geophysicist residing at 5 Minorca Place, Don Mills, (Toronto), Ontario.

2. I am a graduate of the Massachusetts Institute of Technology with a B. S. Degree (1952) in Geology and Geophysics, and a Ph. D. Degree (1957) in Geophysics.

3. I am a member of the Society of Exploration Geophysicists and the European Association of Exploration Geophysicists.

4. I have been practising my profession for ten years.

5. I have no direct or indirect interest, nor do I expect to receive any interest, direct or indirect, in the property or securities of Kennco Explorations (Western) Limited.

6. The statements made in this report are based on a study of published literature and unpublished private reports and geophysical data.

Dated at Toronto

This 12th day of September 1963

Philip G. Hallof

Philip G. Hallof, Ph.D.

DWG. NO.-I.P.-2098-1

513

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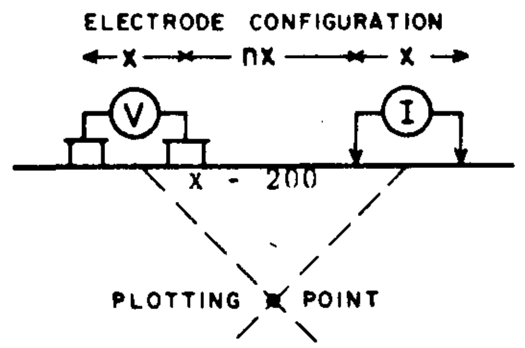
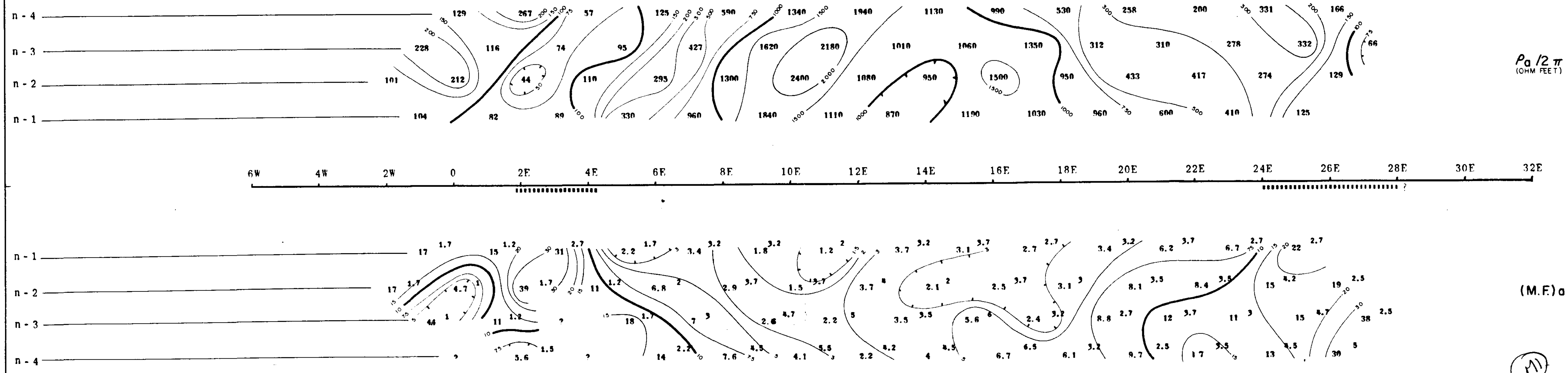
INDUCED POLARIZATION AND RESISTIVITY SURVEY





LINE NO.– 32S

FREQUENCY 0.31 - 5 C.P.S.

DATE SURVEYED AUG. 1963

APPROVED P.H.

DATE 9/10/63

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

KENNCO EXPLORATIONS (WESTERN) LIMITED

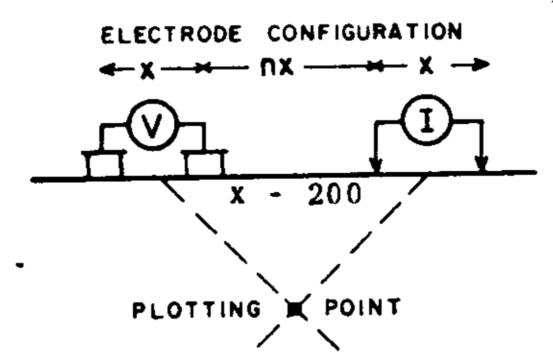
DOROTHY CLAIM GROUP , HOGEM AREA — OMINECA MINING DIVISION , B.C.

Scale-One inch = 200 Feet

DWG. NO.– I.P.– 2098-2

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP , HOGEM AREA — OMINECA MINING DIVISION , B.C.

Scale – One inch = 200 Feet

FREQUENCY-0.31-5C.P.S.

DATE SURVEYED AUG. 1963

APPROVED PH

DATE 9/10/63

DWG. NO.– I.P.– 2098-3

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

ELECTRODE CONFIGURATION

LINE NO.–16 S

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP , HOGEM AREA – OMINECA MINING DIVISION , B.C.

Scale – One inch = 200 Feet

ANOMALOUS ZONE
POSSIBLE ANOMALOUS ZONE
NOTE
LOGARITHMIC CONTOUR INTERVAL

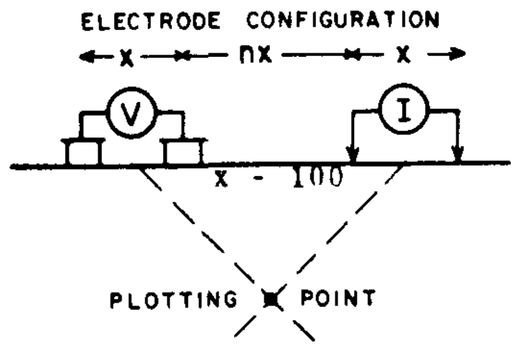
FREQUENCY 0.31–5 C.P.S.
DATE SURVEYED AUG. 1963
APPROVED P.H.
DATE 9/10/63

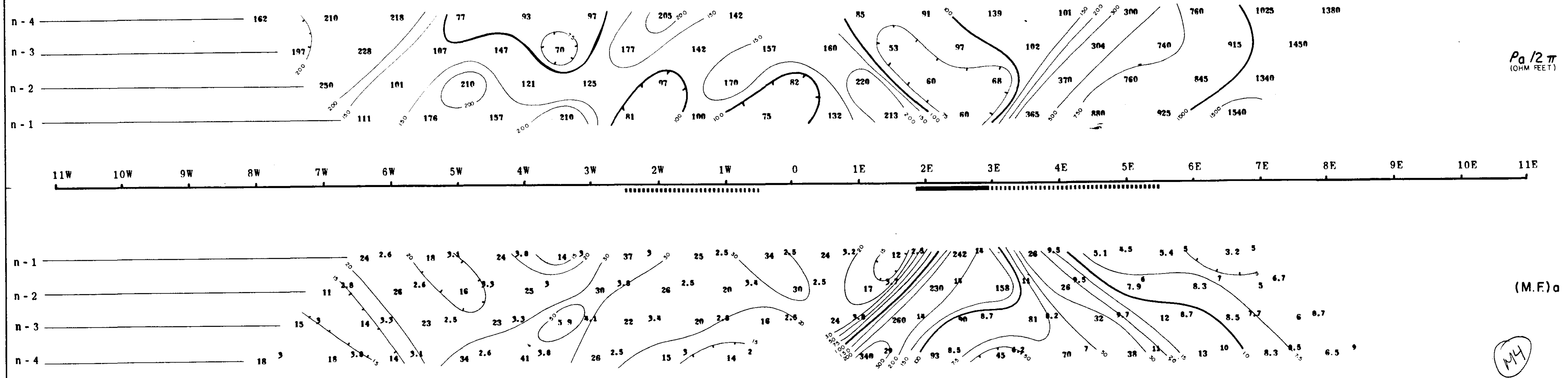
M3

DWG. NO.-I.P.-2098-4

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY





LINE NO.-16 S

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP , HOGEM AREA — OMINECA MINING DIVISION , B.C.

Scale-One inch = 100 Feet

ANOMALOUS ZONE ————

POSSIBLE ANOMALOUS ZONE — — —

NOTE
LOGARITHMIC CONTOUR INTERVAL

FREQUENCY 0.31-5 C.P.S.

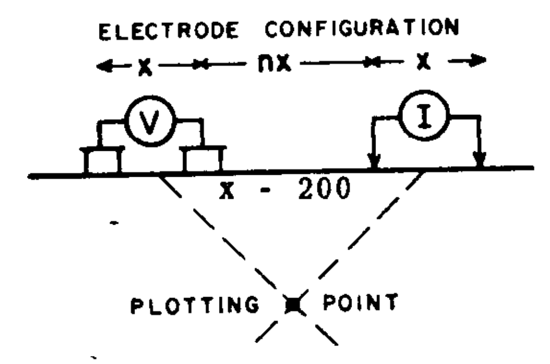
DATE SURVEYED AUG. 1963

APPROVED PH

DATE 9/10/63

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



LINE NO.-8S

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP, HOGEM AREA— OMINECA MINING DIVISION, B.C.

Scale-One inch = 200 Feet

ANOMALOUS ZONE
POSSIBLE ANOMALOUS ZONE
NOTE
LOGARITHMIC CONTOUR INTERVAL

FREQUENCY-0.31-5C.P.S.
DATE SURVEYED AUG. 1963
APPROVED
DATE 9/10/63

DWG. NO.-I.P.-2098-6

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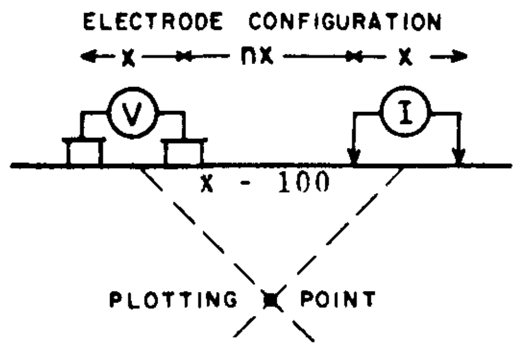
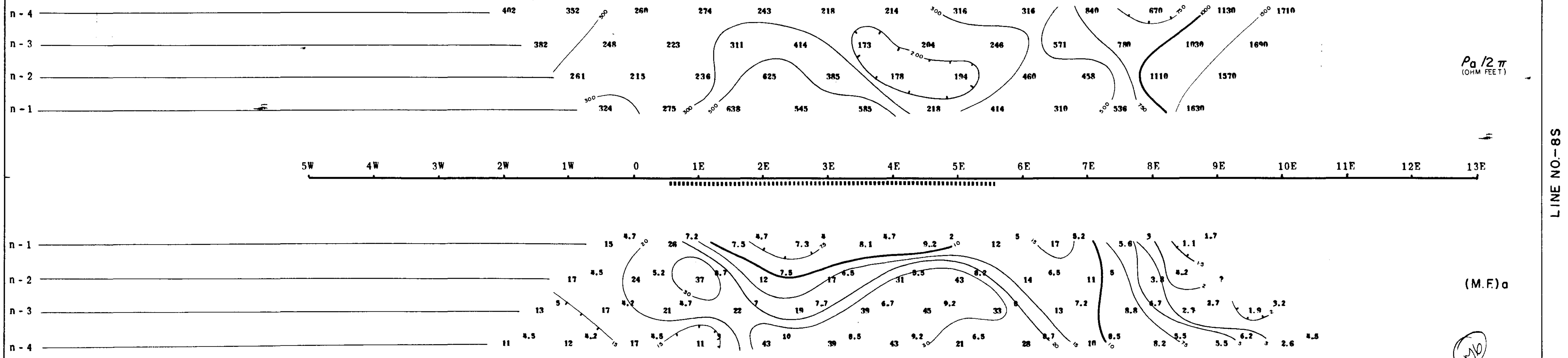
INDUCED POLARIZATION AND RESISTIVITY SURVEY





KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP, HOGEM AREA—OMINECA MINING DIVISION, B.C.

Scale-One inch = 100 Feet

ANOMALOUS ZONE
POSSIBLE ANOMALOUS ZONE
NOTE
LOGARITHMIC CONTOUR INTERVAL

FREQUENCY 0.31-5 C.P.S.
DATE SURVEYED AUG. 1963
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DATE 9/10/63

DWG. NO.-I.P.-2098-7

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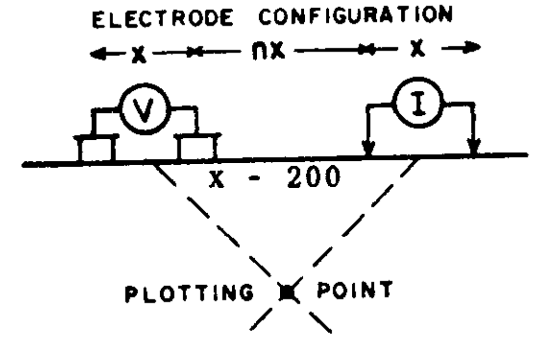
INDUCED POLARIZATION AND RESISTIVITY SURVEY

ELECTRODE CONFIGURATION



LINE NO.-4S

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP , HOGEM AREA – OMINECA MINING DIVISION , B.C.

Scale – One inch = 200 Feet

ANOMALOUS ZONE
POSSIBLE ANOMALOUS ZONE
NOTE
LOGARITHMIC CONTOUR INTERVAL

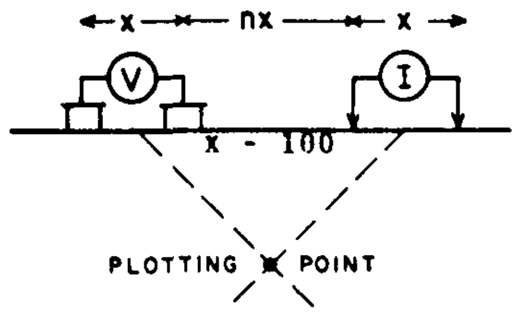
FREQUENCY 0.31 - 5C.P.S.
DATE SURVEYED AUG. 1963
APPROVED PH
DATE 9/10/63

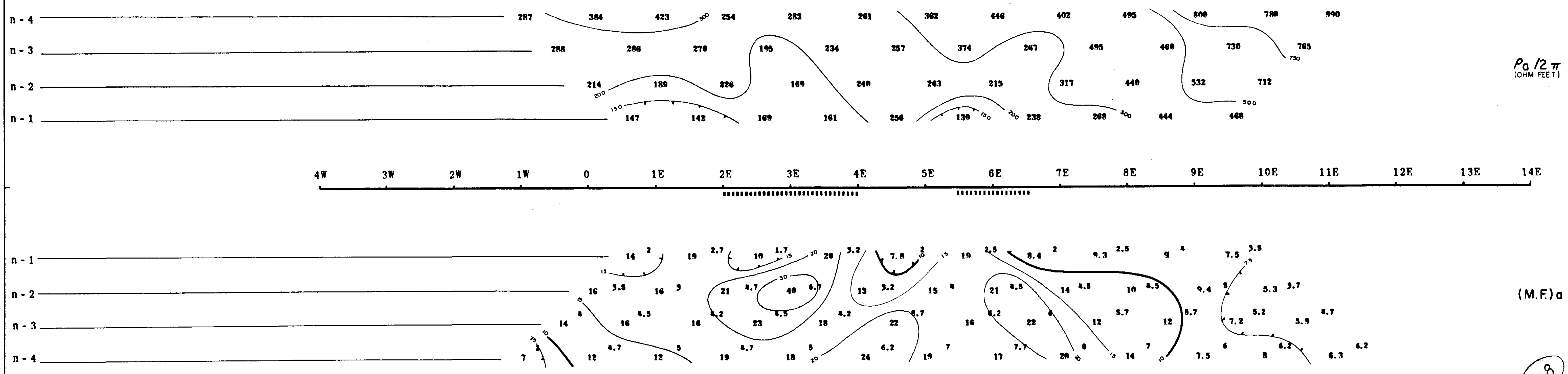
DWG. NO.-I.P.-2098-8

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

ELECTRODE CONFIGURATION





LINE NO.-4S

M8

FREQUENCY 0.31-5 C.P.S.

DATE SURVEYED AUG. 1963

APPROVED PH

DATE 9/10/63

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DOROTHY CLAIM GROUP, HOGEM AREA—OMINECA MINING DIVISION, B.C.

Scale-One inch = 100 Feet

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE

LOGARITHMIC CONTOUR INTERVAL

DWG. NO.-I.P.-2098-9

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

ELECTRODE CONFIGURATION

x - 200

PLOTTING POINT

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP, HOGEM AREA — OMINECA MINING DIVISION, B.C.

Scale — One inch = 200 Feet

FREQUENCY 0.31-5C.P.S.

DATE SURVEYED AUG. 1963

APPROVED P/

DATE 9/10/63

H9

DWG. NO.–I.P.–2098–10

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

ANOMALOUS ZONE
POSSIBLE ANOMALOUS ZONE
NOTE
LOGARITHMIC CONTOUR INTERVAL

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DOROTHY CLAIM GROUP, HOGEM AREA – OMINECA MINING DIVISION, B.C.

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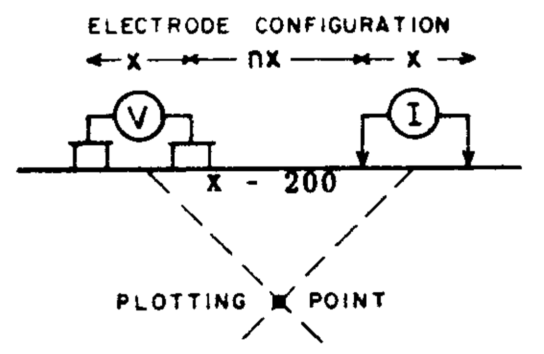
INDUCED POLARIZATION AND RESISTIVITY SURVEY



M11

FREQUENCY-0.31-5C.P.S.

DATE SURVEYED AUG.1963

APPROVED PH

DATE 9/10/63

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE

LOGARITHMIC CONTOUR INTERVAL

KENNCO EXPLORATIONS (WESTERN) LIMITED

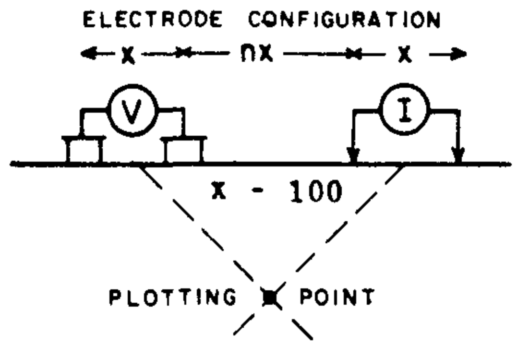
DOROTHY CLAIM GROUP, HOGEM AREA — OMINECA MINING DIVISION, B.C.

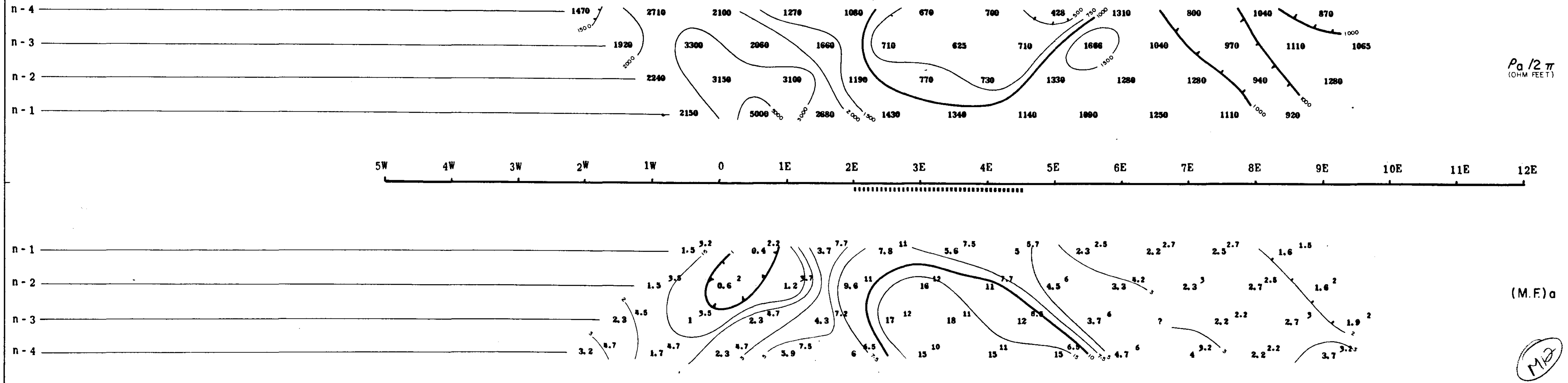
Scale - One inch = 200 Feet

DWG. NO.-I.P.- 2098-12

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY





LINE NO.- 16 N

M12

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP , HOGEM AREA — OMINECA MINING DIVISION , B.C.

Scale-One inch = 100 Feet

ANOMALOUS ZONE ————

POSSIBLE ANOMALOUS ZONE — — —

NOTE

LOGARITHMIC CONTOUR INTERVAL

FREQUENCY 0.31-5 C.P.S.

DATE SURVEYED AUG. 1963

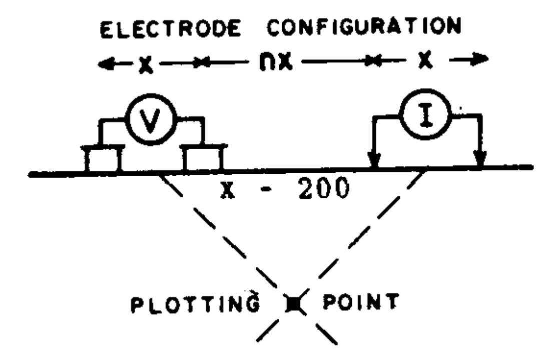
APPROVED PH

DATE 9/10/63

DWG. NO.-I.P.-2098-13

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



M-3

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP, HOGEM AREA—OMINECA MINING DIVISION, B.C.

Scale—One inch = 200 Feet

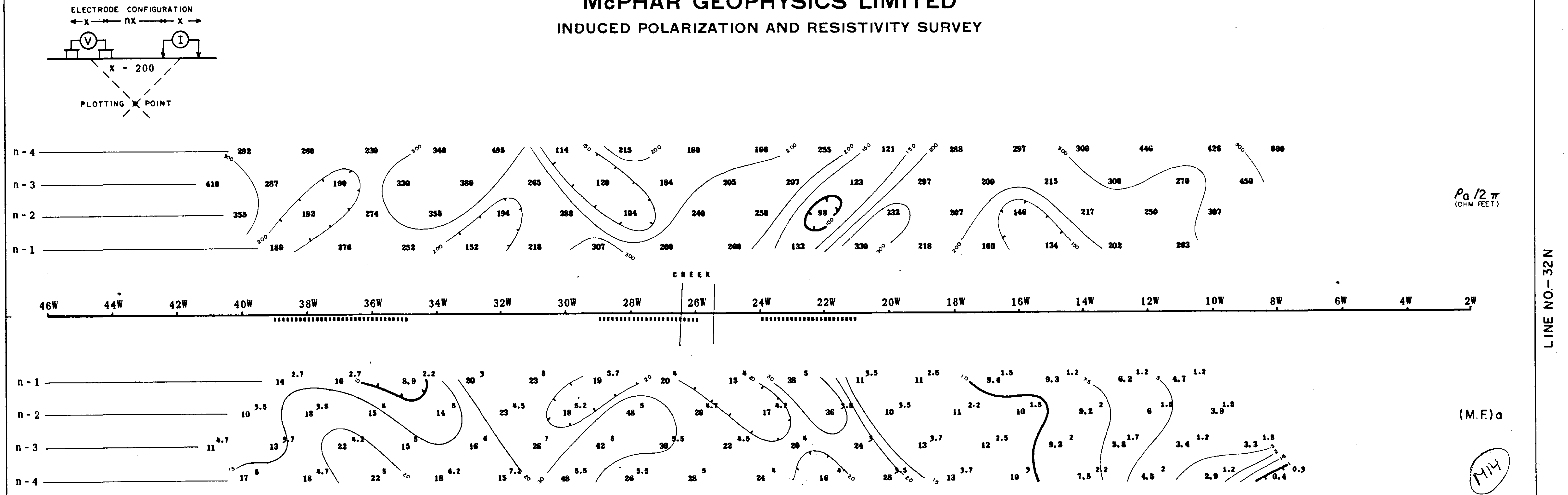
ANOMALOUS ZONE
POSSIBLE ANOMALOUS ZONE
NOTE
LOGARITHMIC CONTOUR INTERVAL

FREQUENCY 0.31-5.0 C.P.S.
DATE SURVEYED AUG. 1963
APPROVED [signature]
DATE 9/10/63

DWG. NO.-I.P.-2098-14

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP, HOGEM AREA—OMINECA MINING DIVISION, B.C.

Scale-One inch = 200 Feet

FREQUENCY 0.31-5 C.P.S.

DATE SURVEYED AUG. 1963

APPROVED

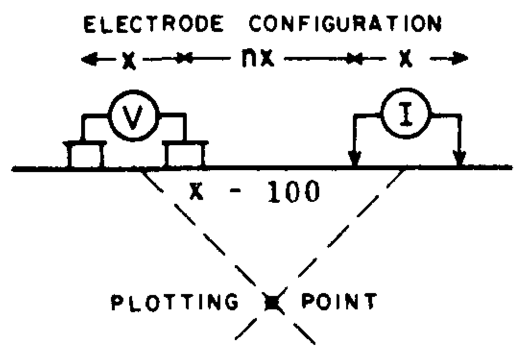
DATE 9/10/63

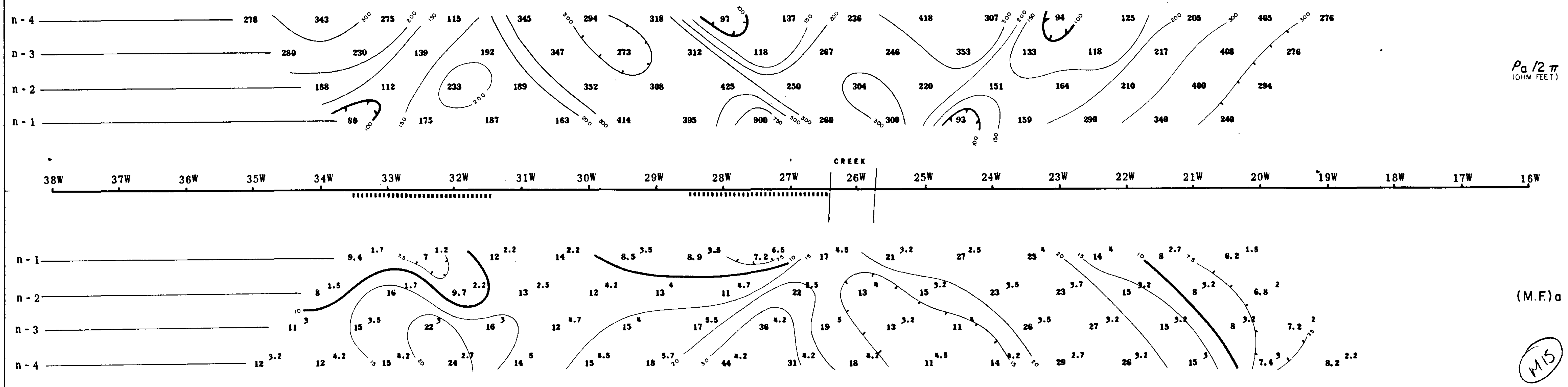
M14

DWG. NO.-I.P.-2098-15

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY





FREQUENCY 0.31-5 C.P.S.

DATE SURVEYED AUG, 1963

APPROVED [signature]

DATE 9/10/63

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP , HOGEM AREA — OMINECA MINING DIVISION , B.C.

Scale-One inch = 100 Feet

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

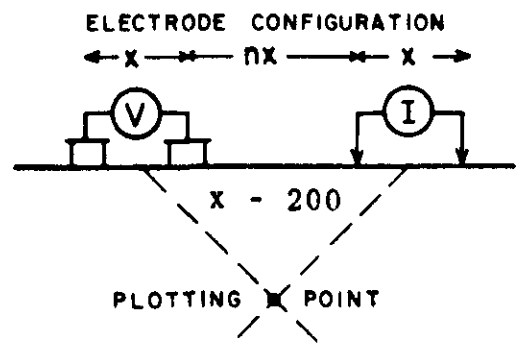
NOTE
LOGARITHMIC CONTOUR INTERVAL

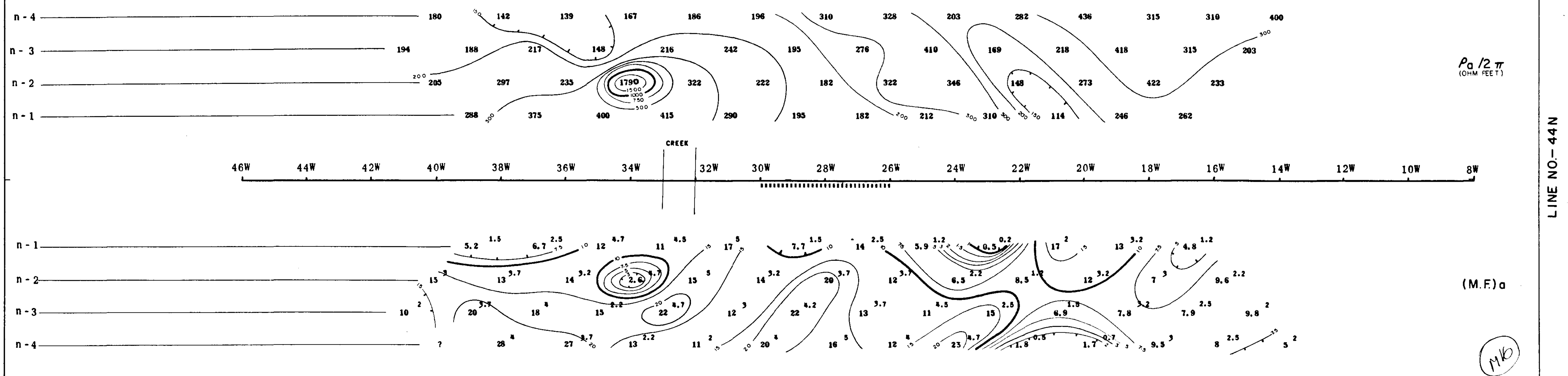
DWG. NO.-I.P.- 2098-16

513

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY





MB

FREQUENCY 0.31-5 C.P.S.

DATE SURVEYED AUG. 1963

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP , HOGEM AREA — OMINECA MINING DIVISION , B.C.

Scale-One inch = 200 Feet

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

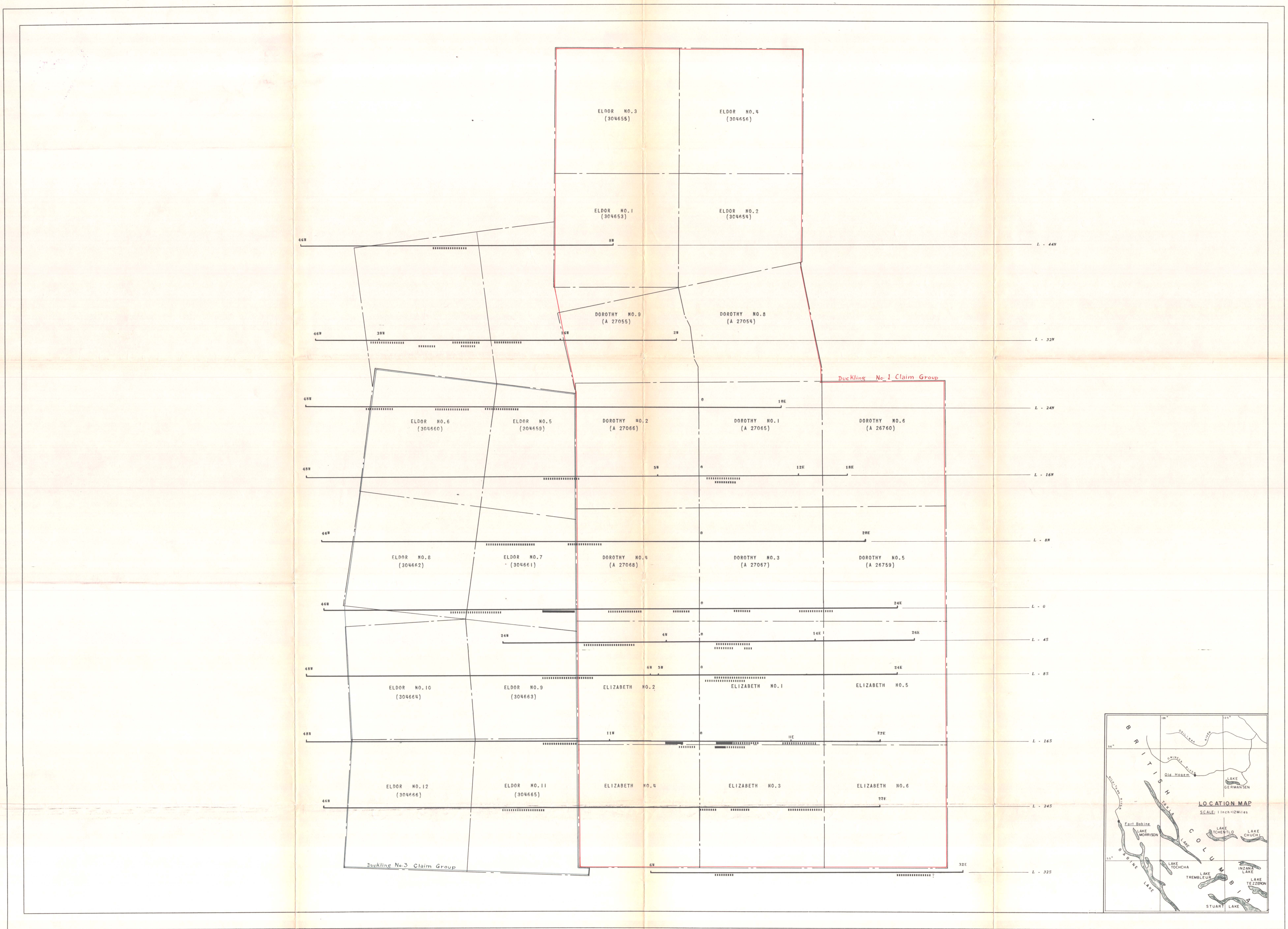
APPROVED [signature]

DATE 9/10/63

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

LOCATION MAP



N

ANOMALOUS ZONE
POSSIBLE ANOMALOUS ZONE
CLAIM BOUNDARY

KENNCO EXPLORATIONS (WESTERN) LIMITED

DOROTHY CLAIM GROUP

HOGEM AREA – OMINECA MINING DIVISION, B.C.

SCALE

400 200 0 400 800 1200 1600 2000
FEET

One Inch = Four Hundred Feet

TO ACCOMPANY GEOPHYSICAL REPORT BY PHILIP G. HALLOF, Ph. D.,
ON THE DOROTHY CLAIM GROUP, HOGEM AREA, OMINECA MINING DIVISION,
BRITISH COLUMBIA,

DATED: SEPTEMBER 12th, 1963

M17

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 513 MAP 1

DRAWN: D.A.G.
DATE: AUG. 1963
APPROVED: PH
DATE: 9/10/63

Report 513

DWG. MISC.-4045