REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY

JEAN WEST CLAIM GROUP

FORT ST. JAMES AREA

OMINECA MINING DIVISION, B.C.

FOR

N.B.C. SYNDICATE

674391

BY

WILLIAM H. PELTON, B.A. Sc.

AND

PHILIP G. HALLOF, Ph.D.

NAME AND LOCATION OF PROPERTY

JEAN WEST CLAIM GROUP, FORT ST. JAMES AREA

OMINECA MINING DIVISION, B.C. 55°N, 124°W - SW

DATE STARTED JULY 25,1970

DATE FINISHED JULY 31,1970

TABLE OF CONTENTS

McPHAR GEOPHYSICS

NOTES ON THE THEORY, METHOD OF FIELD OPERATION, AND PRESENTATION OF DATA FOR THE INDUCED POLARIZATION METHOD.

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 appreciably reduce the amount of 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 per cent frequency effect or F. E. are a measurement of the polarization in the rock mass. However, since the measurement of the degree of polarization is related to the apparent resistivity of the rock mass it is found that the metal factor values or M. F. are the most useful values in determining the amount of polarization present in the rock mass. The MF values are obtained by normalizing the F. E. values for varying resistivities.

The induced polarization measurement is perhaps the most powerful geophysical method for the direct detection of metallic sulphide mineralization, even when this mineralization is of very low concentration. The lower limit of volume per cent sulphide necessary to produce a recognizable IP anomaly will vary with the geometry and geologic environment of the source, and the method of executing the survey. However, sulphide mineralization of less than one per cent by volume has been detected by the IP method under proper geological conditions.

The greatest application of the IP method has been in the search for disseminated metallic sulphides of less than 20% by volume. However, it has also been used successfully in the search for massive sulphides in situations where, due to source geometry, depth of source, or low resistivity of surface layer, the EM method can not be successfully applied. The ability to differentiate ionic conductors, such as water filled shear zones, makes the IP method a useful tool in checking EM anomalies which are suspected of being due to these causes.

In normal field applications the IP method does not differentiate between the economically important metallic minerals such as chalcopyrite, chalcocite, molybdenite, galena, etc., and the other metallic minerals such as pyrite. The induced polarization effect is due to the total of all electronic conducting minerals in the rock mass. Other electronic conducting materials which can produce an IP response are magnetite, pyrolusite, graphite, and some forms of hematite.

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 in distance (X) apart. The potentials are measured at two other points (X) feet apart, in line with the current 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, apparent per cent frequency effect, 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. (See Figure A.) The resistivity values are plotted above the line as a mirror image of the metal factor values below. On a second line, below the metal factor values, are plotted the values of the per cent frequency effect. In some cases the values of per cent frequency effect are plotted as superscripts of the metal factor value. In this second case the frequency effect values are not contoured. 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. The 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 results, model study results and theoretical investigations. The position of the electrodes when anomalous values are measured is important 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 25 feet to 2000 feet for (X). In each case, the decision as to the distance (X) and the values of (n) to be used 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 A demonstrates the method used in plotting the results. Each value of the apparent resistivity, apparent metal factor, and apparent per cent frequency effect 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. When the F. E. values are plotted as superscripts to the MF values the third section of data values is not presented and the F. E. values are not contoured.

The actual data plots included with the report are prepared utilizing an IBM 360/75 Computer and a Calcomp 770/763 Incremental Plotting System. The data values are calculated, plotted, and contoured according to a programme developed by McPhar Geophysics. Certain symbols have been incorporated into the programme to explain various situations in recording the data in the field.

The IP measurement is basically obtained by measuring the difference in potential or voltage (ΔV) obtained at two operating frequencies. The voltage is the product of the current through the ground and the apparent resistivity of the ground. Therefore in field situations where the current is very low due to poor electrode contact, or the apparent resistivity is very low, or a combination of the two effects; the value of (ΔV) the change in potential will be too small to be measurable. The symbol "TL" on the data plots indicates this situation.

In some situations spurious noise, either man made or natural, will render it impossible to obtain a reading. The symbol "N" on the data plots indicates a station at which it is too noisey to record a reading. If a reading can be obtained, but for reasons of noise there is some doubt as to its accuracy, the reading is bracketed in the data plot ( ).

In certain situations negative values of Apparent Frequency Effect are recorded. This may be due to the geologic environment or spurious electrical effects. The actual negative frequency effect value recorded is indicated on the data plot, however the symbol "NEG" is indicated for the corresponding value of Apparent Metal Factor. In contouring negative values the contour lines are indicated to the nearest positive value in the immediate vicinity of the negative value.

The symbol "NR" indicates that for some reason the operator did not attempt to record a reading although normal survey procedures would suggest that one was required. This may be due to inaccessible topography or other similar reasons. Any symbol other than those discussed above is unique to a particular situation and is described within the body of the report.

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

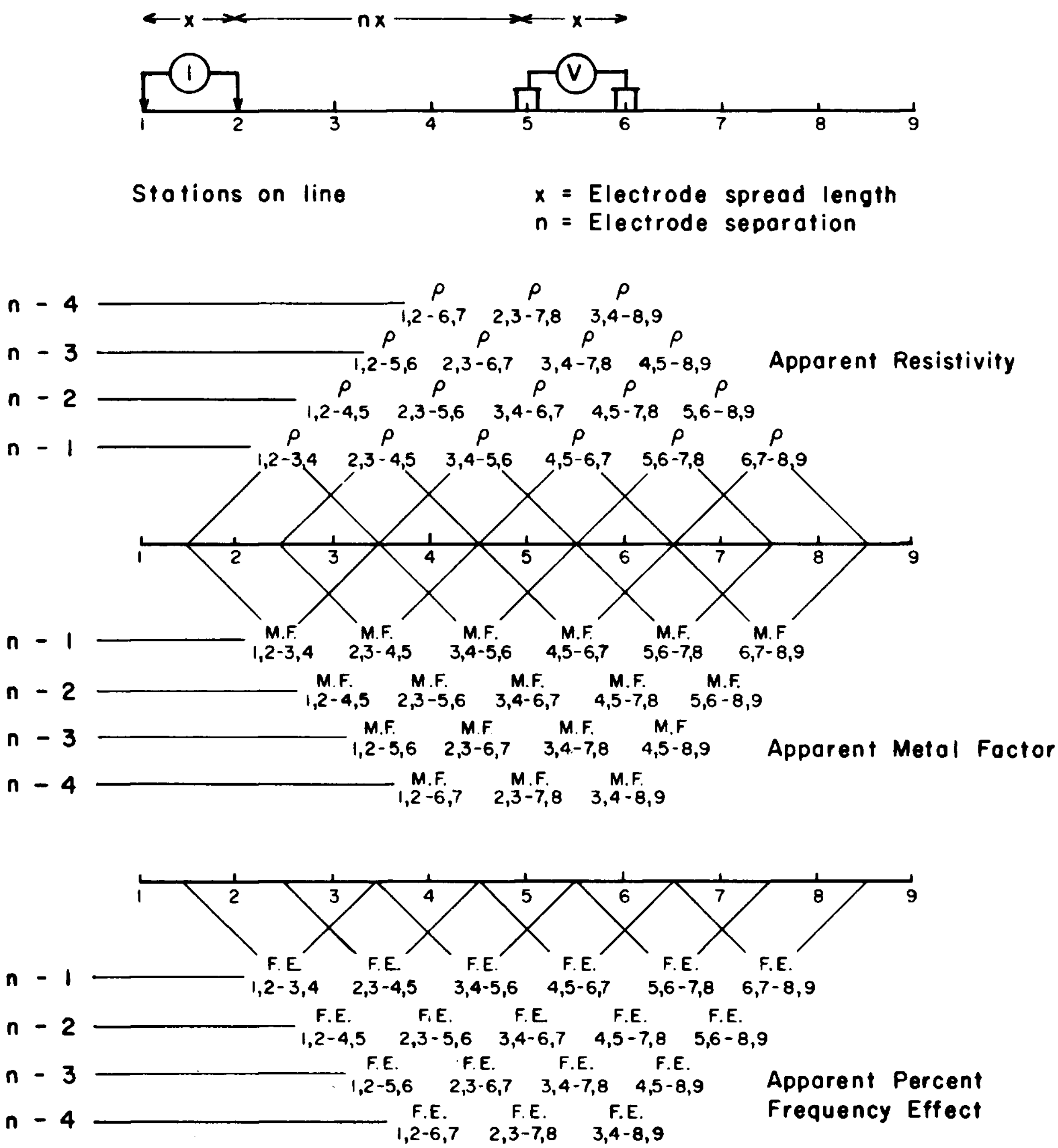

Fig. A

McPHAR GEOPHYSICS LIMITED

REPORT ON THE
INDUCED POLARIZATION
AND RESISTIVITY SURVEY
JEAN WEST CLAIM GROUP
FORT ST. JAMES AREA
OMINECA MINING DIVISION, B.C.
FOR
N.B.C. SYNDICATE

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1. INTRODUCTION

As requested by N.B.C. Syndicate, we have carried out an induced polarization and resistivity survey over the Jean West Claim Group in the Omineca Mining Division of British Columbia. The property lies 50 miles northwest of Fort St. James and six miles south of Tchentlo Lake in the southwest quadrant of the one degree quadrilateral whose southeast corner is at 55°N latitude and 124°W longitude. The area is serviced by helicopter, or by road from Fort St. James 65 miles north to the east end of Chuchi Lake.

The claim group is underlain by the western half of a granodiorite intrusive. It is generally massive and medium to coarse grained. Feldspar porphyry dikes cut the granodiorite and are sometimes fractured and mineralized. The mineralization is mainly chalcopyrite and molybdenite. Some pyrite has been observed, but it is apparently not abundant.

The induced polarization and resistivity survey was conducted in an attempt to outline any large areas of disseminated Cu-Mo mineralization on the property which could possibly be economically interesting. As shown in the Appendix, the induced polarization method has been used to detect many deposits of the "porphyry copper" type now being successfully mined in British Columbia and the southwestern United States.

The survey area included the following claims:

JW 73
JW 75
JW 103 - 106

2. PRESENTATION OF RESULTS

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

Line	Electrode Intervals	Dwg. No.
168W	200 feet	IP 5560-1
164W	200 feet	IP 5560-2
160W	200 feet	IP 5560-3
156W	200 feet	IP 5560-4
152W	200 feet	IP 5560-5
148W	200 feet	IP 5560-6

Also enclosed with this report is Dwg. I.P.P. 3451, a plan map of the Jean West Claim Group at a scale of 1" = 400'. 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 centre 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

The resistivities are considerably lower than those encountered over the eastern half of the intrusive. On the southern section of the grid, they probably reflect higher porosity due to increased fracture density. However, on the northern part of the grid, they appear due to a greater depth of low resistivity overburden.

The anomalies revealed by the survey have been tentatively correlated into two large zones. Stronger responses within the zones have been designated by "axes".

Zone A

This zone covers a large area of high frequency effects and low resistivities. The Metal Factor values are comparable to those measured over Brenda Mines (see Appendix) and suggest similar total sulphide concentrations.

Axis A-1 suggests a shallow, concentrated section of mineralization within Zone A. The highest Metal Factor values result from sources near 17+00N on Line 160W and near 13+00N on Line 152N. There is good correlation with the 300 ppm Cu geochemical contour and with observed copper in granodiorite outcrop.

Axis A-2 may possibly lie within the volcanics to the south; however, the uniform frequency effects suggest it is still within the granodiorite. The strongest response indicates a concentrated source near 11+00N on Line 160W.

Zone B

This zone is smaller and less definite than Zone A. The frequency effects are not large, and some of the highest Metal Factor values appear only to reflect low resistivities resulting from an increase in the depth of overburden.

Zone A is of higher priority and should be evaluated first.

Other Responses

High Metal Factor values have been calculated for the third separation on Line 164W near 26+00N. Ordinarily, the values would indicate a source at depth. In this case, however, the pattern appears to arise from a zone of high resistivity rock between 24+00N and 28+00N. Low apparent resistivity measurements at the n = 2 and n = 3 level are a natural consequence of the high resistivity pattern. These values, superimposed upon a uniform frequency effect background, appear to have caused high Metal Factor values which are not due to mineralization.

The weak anomalies centred at 32+00N and 42+00N on Line 152W, and at 36+00N on Line 148W are associated with only small frequency effects. They do not appear to be of particular interest.

The anomaly near 44+00N on Line 160W is associated with an increase in frequency effect and appears more definite. It may extend along strike to 44+00N on Line 156W.

4. SUMMARY AND RECOMMENDATIONS

The area of greatest interest is outlined by Zone A. The Metal Factor values are comparable to those measured over the Brenda Deposit and may indicate mineralization in similar concentrations.

Drilling is recommended to test two of the areas of strongest response in Zone A. The targets are shallow, 600' wide, and centred at 17+00N on Line 160W and at 13+00N on Line 152W.

If the results of the first two holes are encouraging, further drilling will be warranted to outline the width of the zone, test Axis A-2 (near 11+00N on Line 160W) and perhaps test Zone B (near 31+00N on Line 168N).

Vertical holes to a depth of 400' are suggested, if the mineralization does not follow steeply-dipping fracture planes.

McPHAR GEOPHYSICS LIMITED

William H Pelton

William H. Pelton,
Geophysicist.

Philip G. Hallof

Philip G. Hallof,
Geophysicist.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

Dated: October 9, 1970

Expiry Date: February 25, 1971

ASSESSMENT DETAILS

PROPERTY: Jean West Claim Group		MINING DIVISION: Omineca
SPONSOR: N.B.C. Syndicate		PROVINCE: British Columbia
LOCATION: Fort St. James Area		
TYPE OF SURVEY: Induced Polarization		
OPERATING MAN DAYS:	4	DATE STARTED: July 25, 1970
EQUIVALENT 8 HR. MAN DAYS:	6	DATE FINISHED: July 31, 1970
CONSULTING MAN DAYS:	3	NUMBER OF STATIONS: 112
DRAUGHTING MAN DAYS:	7	NUMBER OF READINGS: 783
TOTAL MAN DAYS:	16	MILES OF LINE SURVEYED: 5.0

CONSULTANTS:

William H. Pelton, Apt. 2212, 650 Parliament Street, Toronto, Ontario.
Philip G. Hallof, 5 Minorca Place, Don Mills, Ontario.

FIELD TECHNICIANS:

K. Drobot, c/o McPhar, Suite 811, 837 W. Hastings St. Vancouver, B.C.
A. Wilcox, R.R. #1, Sodom Road, Niagara Falls, Ontario.

DRAUGHTSMEN:

J. Dojc, 20 Roselawn Avenue, Toronto, Ontario.
N. Lade, 1355 Lakefield Street, Oshawa, Ontario.
B. Marr, 19 Kenewen Court, Toronto 16, Ontario.

McPHAR GEOPHYSICS LIMITED

William H Pelton

William H. Pelton,
Geophysicist.

Dated: October 9, 1970

CERTIFICATE

I, William H. Pelton, of the City of Toronto, in the Province of Ontario, hereby certify:

1. That I am a geophysicist with a business address at 139 Bond Avenue, Don Mills, Ontario.

2. That I hold a B.A. Sc. degree in Engineering Physics (Geophysics Option) from the University of British Columbia.

3. That I am a member of KEGS and an associate member of the Society of Exploration Geophysicists and the European Association of Exploration Geophysicists.

4. That I have been engaged in geophysical interpretation for more than four years.

5. I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly in the property or securities of N.B.C. Syndicate or any affiliate.

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

7. Permission is granted to use in whole or in part for assessment and qualification requirements but not for advertising purposes.

Dated at Toronto

This 9th day of October 1970

William H Pelton

William H. Pelton, B.A. Sc.

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.Sc. 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 the 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 directly or indirectly, in the property or securities of N.B.C. Syndicate or any affiliate.

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This 9th day of October 1970

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
P. G. HALLOF

Philip G. Hallof

Philip G. Hallof, Ph.D.

Expiry Date: February 25, 1971

APPENDIX

EXPECTED IP ANOMALIES FROM "PORPHYRY COPPER" TYPE ZONES OF DISSEMINATED SULPHIDE MINERALIZATION

Our experience in other areas has shown that the induced polarization method can be successfully used to locate, and outline, zones of disseminated sulphide mineralization of the "porphyry copper" type. In most cases the interpretation of the IP results is simple and straightforward. The results shown in Figure 1 and Figure 2 are typical.

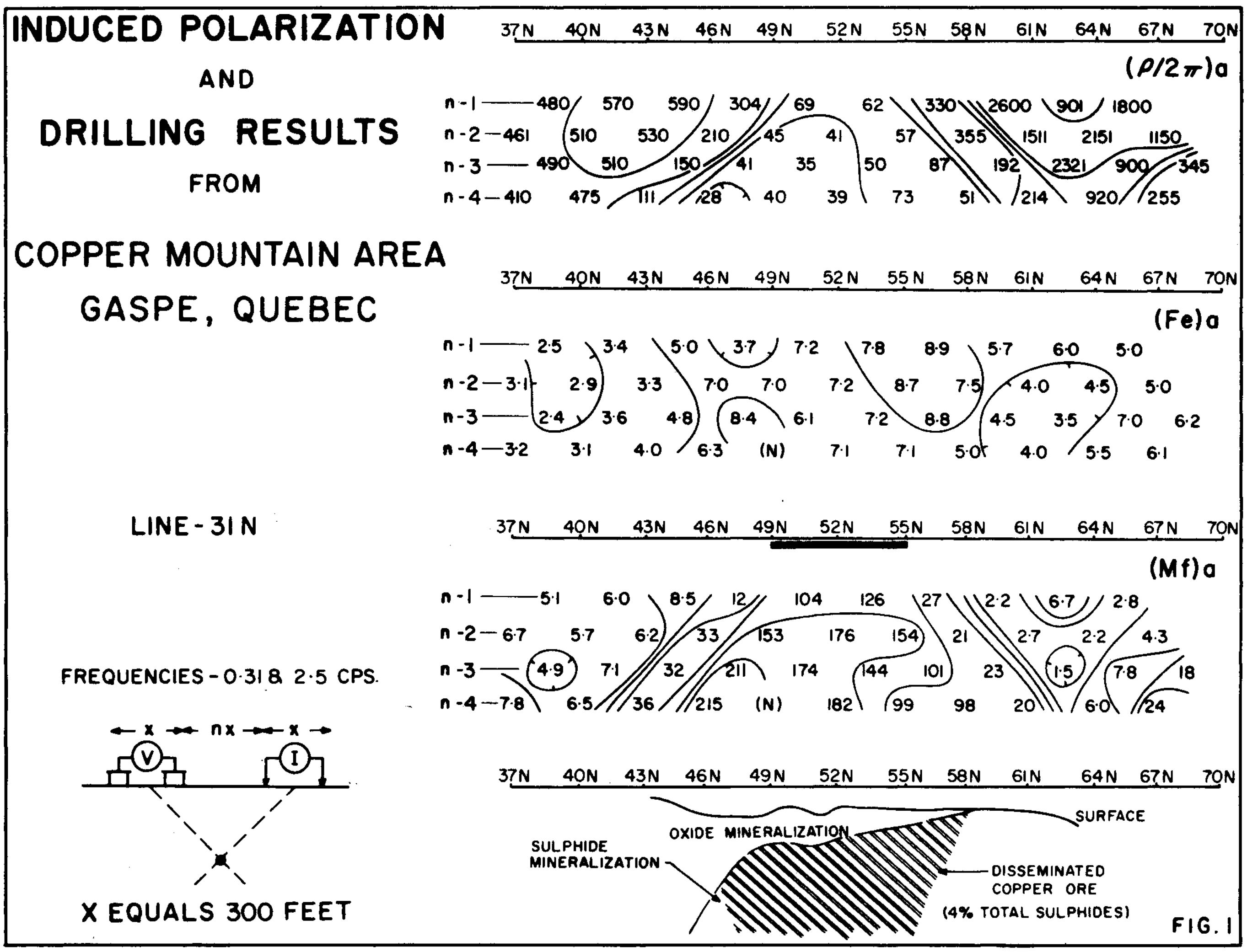

FIG. 1

The source of the moderate magnitude IP anomaly shown in Figure 1 contains approximately 4% metallic mineralization. The zone is of limited lateral extent and enough copper is present to make the mineralization "ore grade". The presence of the surface oxidation can be seen in the fact that the apparent IP effects increase for n = 2.

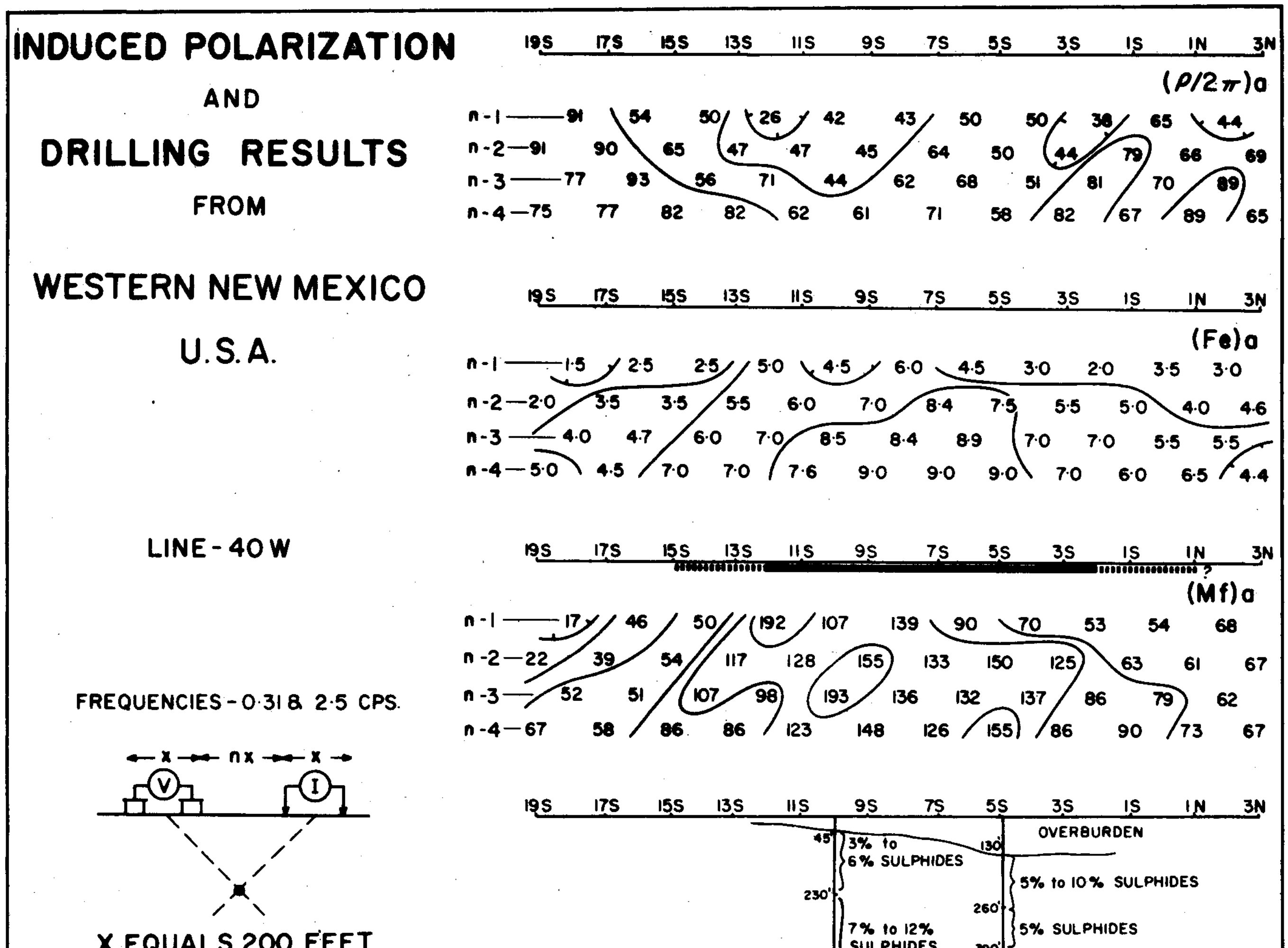

FIG. 2

The IP anomaly shown in Figure 2 has about the same magnitude as that described above. It should be noted that appreciably greater concentrations of metallic mineralization are present; further, there is little or no copper present. These results illustrate the fact that IP results can not be used to determine the exact amount of metallic mineralization present or to determine the economic importance of a mineralized zone. In some geologic situations zoning is present; the zones of mineralization of greatest economic value may contain less total metallic mineralization than other zones in the same general area.

In the proper geologic environment, the method will detect even very low concentrations of metallic mineralization. The IP results shown in Figure 3 located the ore zone at the Brenda Property near Peachland, B. C. The zone contains 1. 0 to 1. 5 per cent metallic mineralization; however, the mineralization is "ore grade" because only molybdenite and chalcopyrite are present.

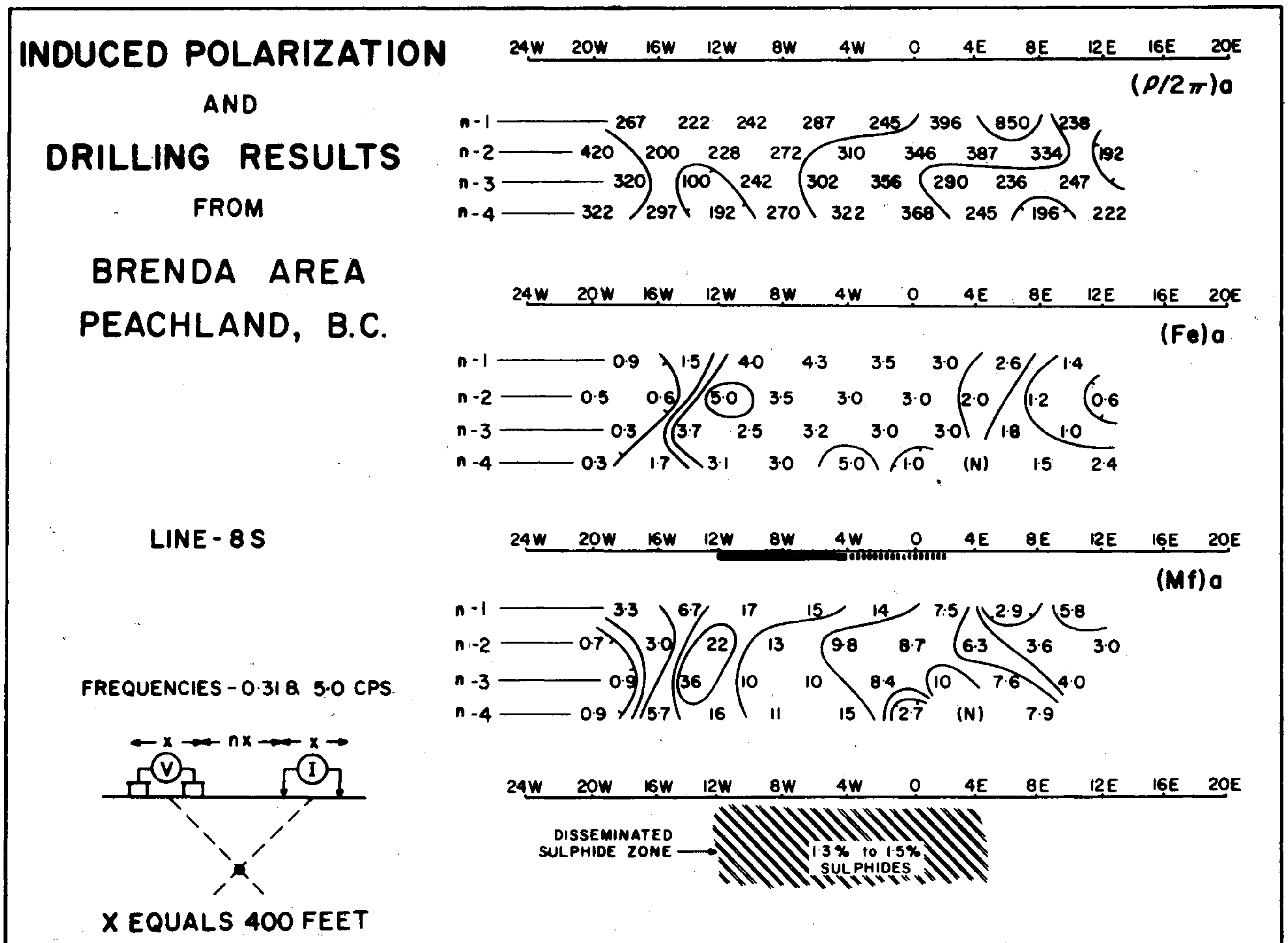

FIG.3

ASSESSMENT DETAILS

PROPERTY: Jean West Claim Group		MINING DIVISION: Omineca
SPONSOR: N.B.C. Syndicate		PROVINCE: British Columbia
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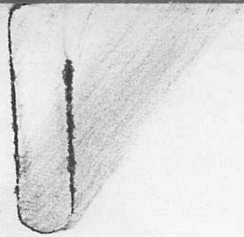
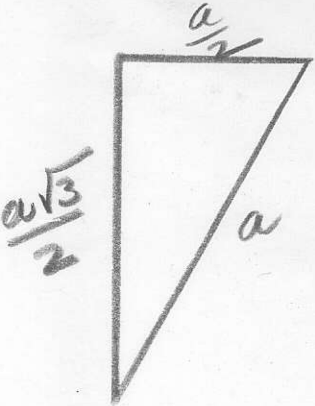




$$\text{AREA} = \frac{1}{2}\left(\frac{a}{2} \cdot \frac{a\sqrt{3}}{2}\right)$$

TOTAL AREA

$$= 12 \cdot \frac{1}{2}\left(\frac{a}{2} \cdot \frac{a\sqrt{3}}{2}\right)$$

$$= \frac{3\sqrt{3}}{2}a^2$$

eted refraction seismic
Francisco, California, to
after Pakiser (1963).

map of the Twin
trict, Arizona, after the
Survey (Plouff, 1962)
of Arizona (Davis and

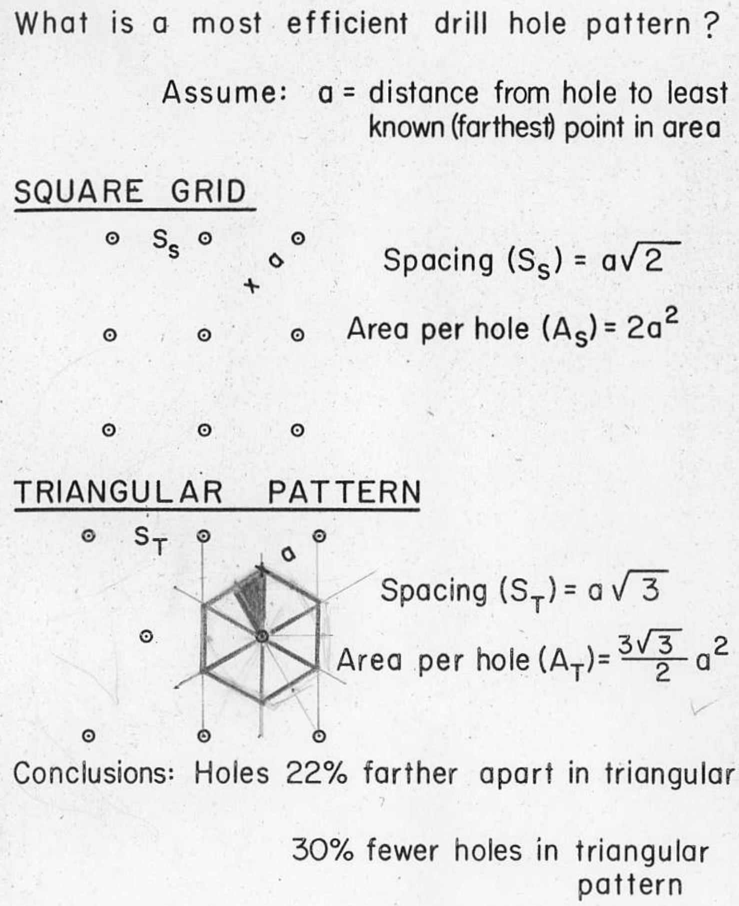


Figure 12. Optimum search and sampling pattern, using drilling sites as an example. X is the distance from near drill holes to the least known (farthest) point.

widely scattered stations will not outline shorter wavelength anomalies. Elevation influence on Bouguer gravity anomalies amounts to an areal average of about 32 milligals decrease per 1000-foot increase, giving pronounced regional gravity effects caused by regional isostatic compensation. Figure 11 is a fairly typical gravity map showing regional structure in the Tucson, Arizona area including the Twin Buttes mining district. The average density of gravity readings here is about one station per square mile. The prominent east-northeasterly trending Black Mountain fault separates the volcanic Tucson Mountains to the north from the granitic Sierrita Mountains which rise west of the open pit mines. No obviously important structures directly related to known mineralization are on this particular map, but the presence of concealed scarps certainly limits selection of likely exploration areas. Gravity surveys are useful in disclosing pediments which are not too deep for exploration.

The search problem

Principles of operations research apply to an optimum search and sampling problem, as posed by exploration for ore deposits. Operations research is a scientific method of attacking problems to provide data which can be used as the basis for decisions. Target size, relative dimensions, distribution, and physical properties and their contrasts must be related to the limits and

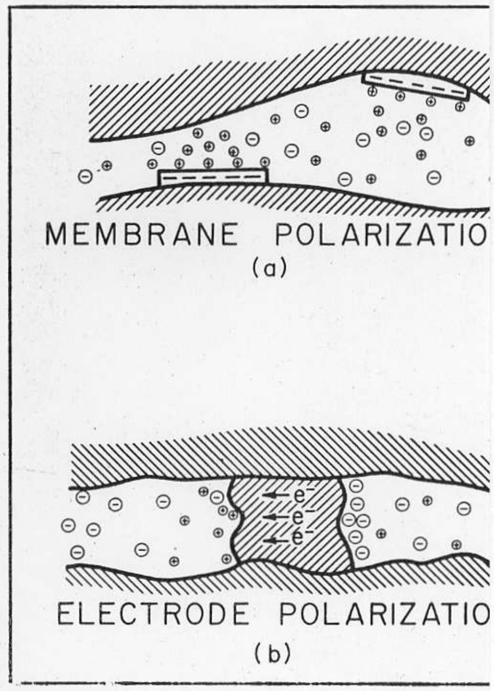


Figure 13. Induced polarization mechanisms in rocks, on a microscopic scale, showing ions in pore fluids.

capabilities of the measuring system. Slichte
out that the size-range of deposits in th
province is approximately log-normal, i.e., t
larger deposits. Slichter also shows that d
mining districts are not randomly scattered
but are strongly clustered. This informatio
professional exploration man, who stands
good place to look for new mines is near old

A simple example of an optimum search
a regular drill pattern for sampling the su
Figure 12. From the initial condition that th
to the least known (farthest) point on trian
grids is the same, one can show that an
drilling pattern is 30 percent more efficien
Assumptions are that the subsurface dist
values is unknown or is apparently homoge
which can first be verified by geophy
surveying.

Induced electrical polarization

The IP phenomenon. Most of the physica
between mineralized porphyry bodies and e
distinctive, except for the induced polarizati
there are definite exceptions, so that one
expensive geophysical technique with son
though it can be classed as a direct exploratic
mineralization, IP is not necessarily a primary

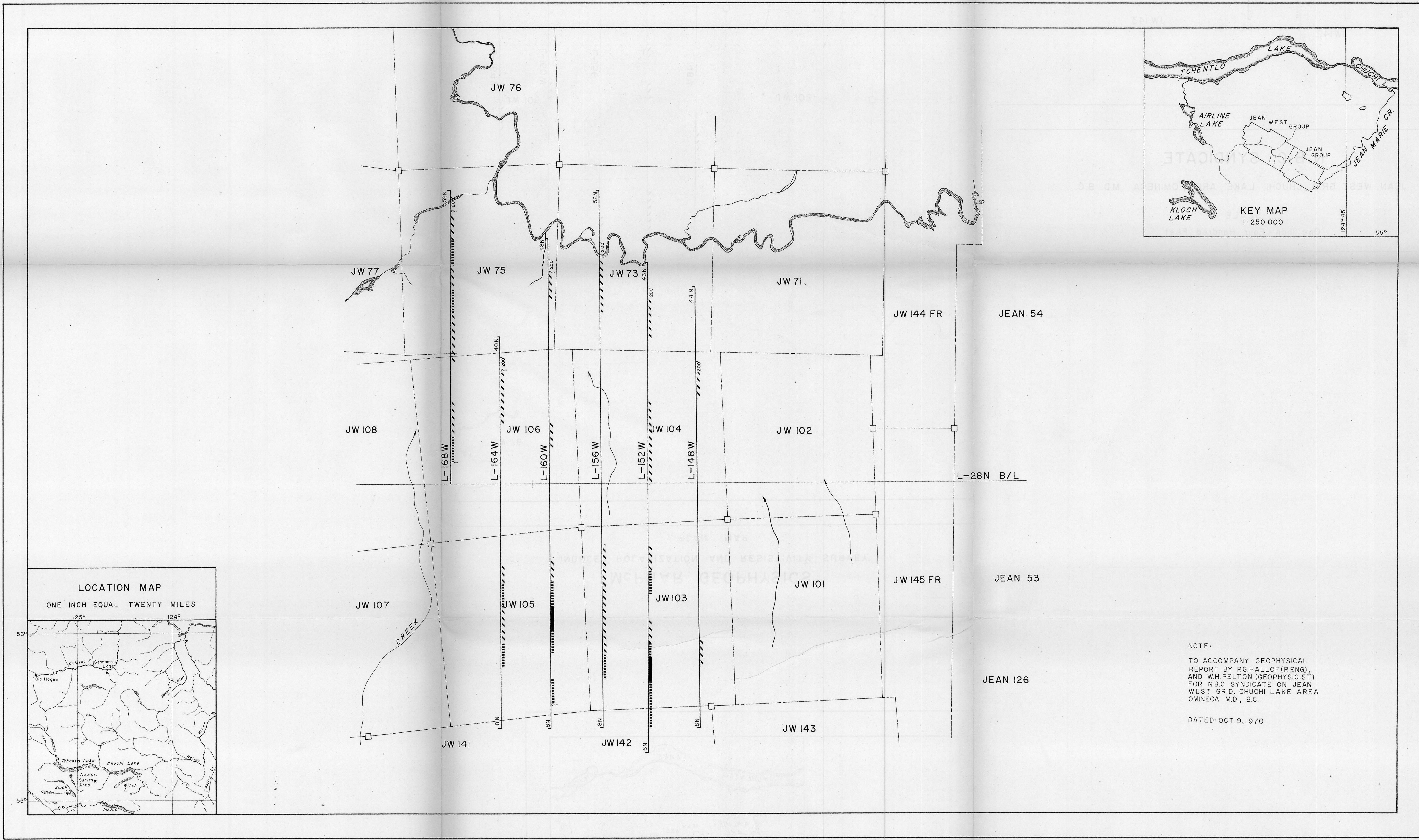
Unlike most physical properties of m
completely understand the causes of IP p
Continued research progress is being made,
several electrochemical mechanisms which

DWG. I.P.P 3451

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP



NOTE:

TO ACCOMPANY GEOPHYSICAL REPORT BY P.G.HALLOF (P.ENG), AND W.H.PELTON (GEOPHYSICIST) FOR N.B.C SYNDICATE ON JEAN WEST GRID, CHUCHI LAKE AREA OMINECA M.D., B.C.

DATED: OCT. 9, 1970

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

Number at the end of anomaly indicates spread used.

N.B.C SYNDICATE

JEAN WEST GRID, CHUCHI LAKE AREA, OMINECA M.D. B.C.

SCALE

One Inch = Four Hundred Feet

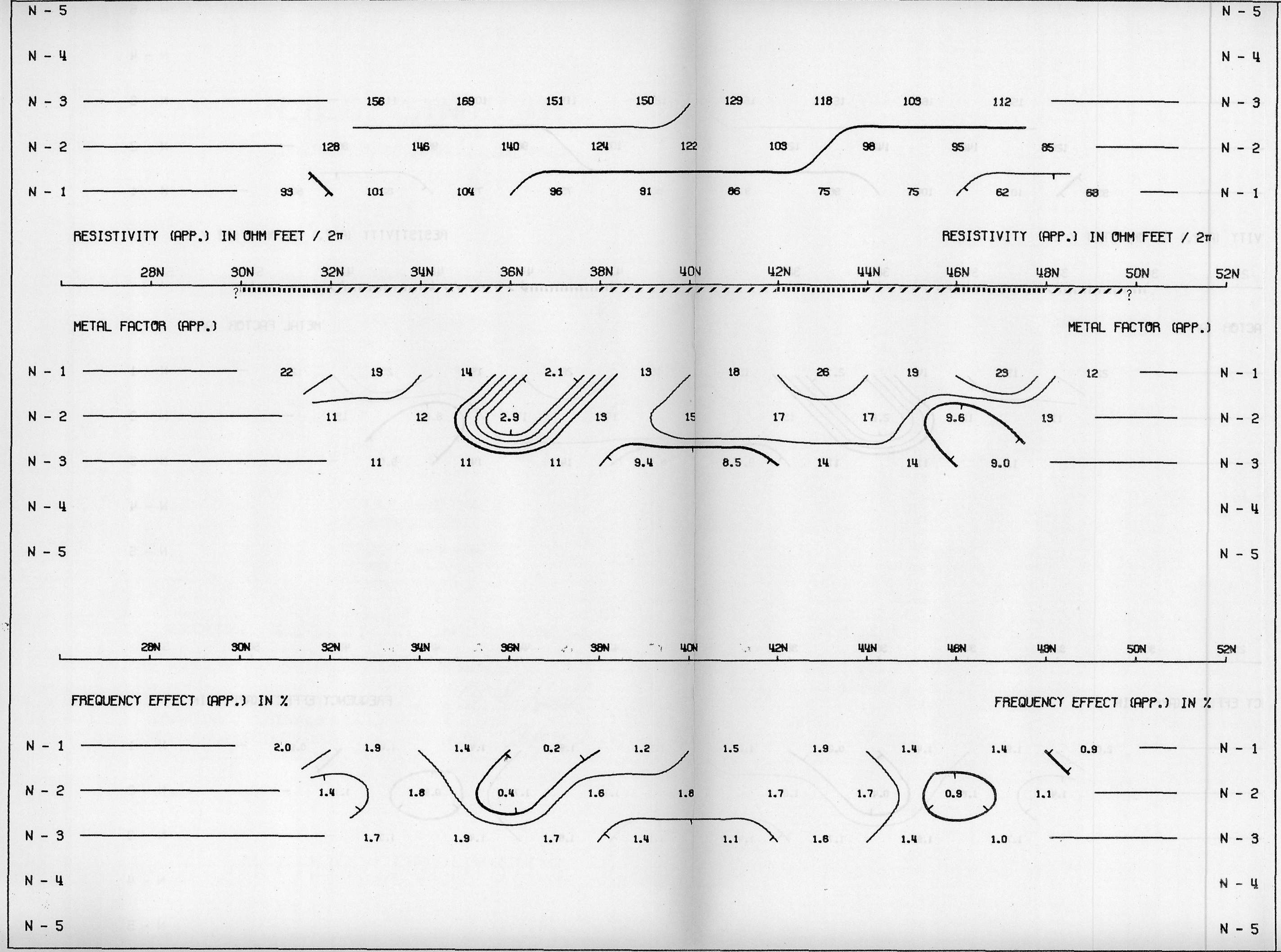
DRAWN: W.C.E. DATE: AUGUST 27, 1970

APPROVED:

PROFESSIONAL ENGINEER

Oct. 9, 1970

DWG. I.P.P. 3451



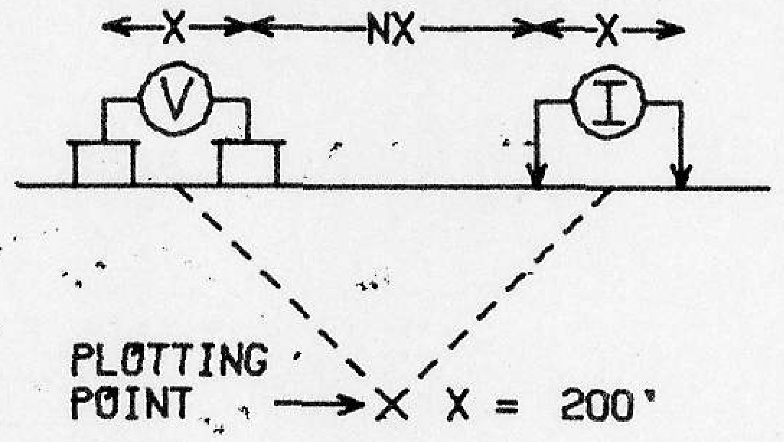
DWG. NO.- I.P.- 5560-1

N.B.C. SYNDICATE

JEAN WEST GRID, CHUCHI LAKE AREA
OMINECA M.D., B.C.

LINE NO.- 168W

ELECTRODE CONFIGURATION



SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: JUL 1970

APPROVED: P. G. Hall

DATE: Oct. 9, 1970

PHILIP G. HALL
ENGINEER

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED WITH AN IBM 360/75 COMPUTER AND A CALCOMP PLOTTER

DWG. NO.- I.P.- 5560-2

N.B.C. SYNDICATE

JEAN WEST GRID, CHUCHI LAKE AREA
OMINECA M.D., B.C.

LINE NO.- 164W

ELECTRODE CONFIGURATION

PLOTTING POINT X = 200'

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: JUL 1970

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

APPROVED: P. G. Hallof

DATE: Oct 9, 1970

PROFESSIONAL ENGINEER, PROVINCE OF BRITISH COLUMBIA, PHILIP G. HALLOF
Expiry Date February 25, 1971

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED WITH AN IBM 360/75 COMPUTER AND A CALCOMP PLOTTER

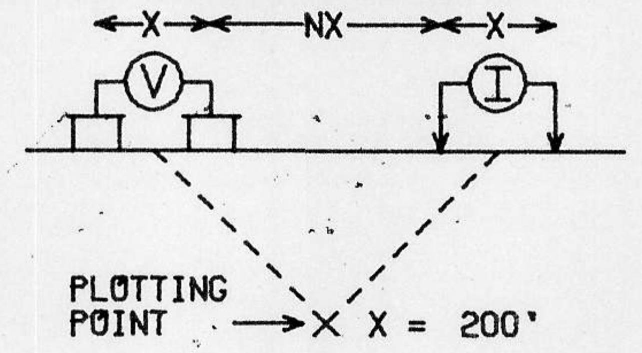
DWG. NO.- I.P.- 5560-3

N.B.C. SYNDICATE

JEAN WEST GRID, CHUCHI LAKE AREA
OMINECA M.D., B.C.

LINE NO.- 160W

ELECTRODE CONFIGURATION



SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: JUL 1970

APPROVED: R.G. Hallof

DATE: Oct. 9, 1970

Expiry Date: February 25, 1971

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED WITH AN IBM 360/75 COMPUTER AND A CALCOMP PLOTTER

DWG. NO.- I.P.- 5560-4

N.B.C. SYNDICATE

JEAN WEST GRID, CHUCHI LAKE AREA
OMINECA M.D., B.C.

LINE NO.- 156W

ELECTRODE CONFIGURATION

X — NX — X

PLOTTING POINT — X = 200'

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: AUG 1970

APPROVED:

DATE: Oct 9/1970

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA PHILIP G. HALLOF

Expiry Date: February 25, 1971

NOTE: CONTOURS AT LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED WITH AN IBM 360/75 COMPUTER AND A CALCOMP PLOTTER

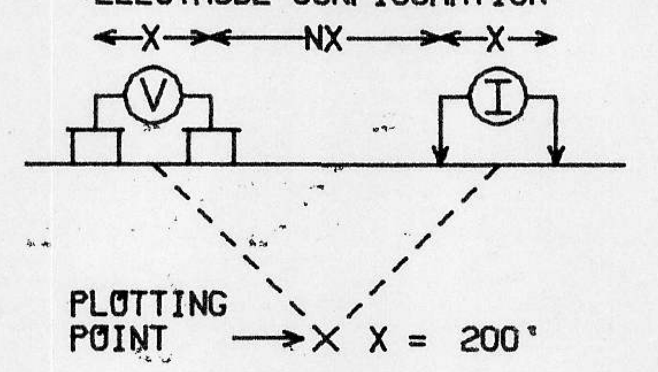
DWG. NO.- I.P.- 5560-5

N.B.C. SYNDICATE

JEAN WEST GRID, CHUCHI LAKE AREA
OMINECA M.D., B.C.

LINE NO.- 152W

ELECTRODE CONFIGURATION



SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: AUG 1970

APPROVED:

DATE: Oct 9, 1970

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

Expiry Date: February 25, 1971

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED WITH AN IBM 360/75 COMPUTER AND A CALCOMP PLOTTER

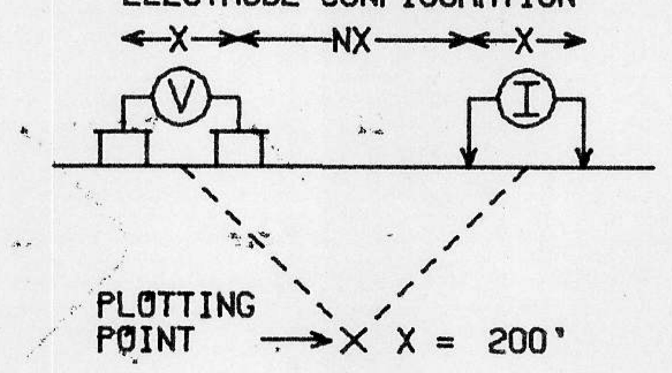
DWG. NO.- I.P.- 5560-6

N.B.C. SYNDICATE

JEAN WEST GRID, CHUCHI LAKE AREA
OMINECA M.D., B.C.

LINE NO.- 148W

ELECTRODE CONFIGURATION



SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: AUG 1970

APPROVED:

DATE: Oct. 9/1970

PROFESSIONAL ENGINEER
Expiry Date: February 25, 1971

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED WITH AN IBM 360/75 COMPUTER AND A CALCOMP PLOTTER