932

REPORT ON INDUCED POLARIZATION AND RESISTIVITY SURVEY ON THE BRENDA LAKE PROPERTY PEACHLAND AREA, OSOYOOS M. D., B. C. FOR BUTTLE LAKE MINING COMPANY LTD. AND TROJAN CONSOLIDATED MINES LTD.

82E/13W

BY

ROBERT A. BELL, Ph. D.

NAME AND LOCATION OF PROPERTY

BRENDA LAKE PROPERTY, PEACHLAND AREA

OSOYOOS MINING DIVISION, B. C. 49°N, 119°W SE

DATE STARTED: December 4, 1966

DATE FINISHED: December 18, 1966

TABLE OF CONTENTS

McPHAR GEOPHYSICS LIMITED

REPORT ON
INDUCED POLARIZATION
AND RESISTIVITY SURVEY
ON THE
BRENDA LAKE PROPERTY
PEACHLAND AREA, OSOYOOS M.D., B.C.
FOR
BUTTLE LAKE MINING COMPANY LTD.
AND
TROJAN CONSOLIDATED MINES LTD.

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1. INTRODUCTION

At the request of Mr. P.A. Crammond, President of Buttle Lake Mining Company Limited and Trojan Consolidated Mines Limited, we have carried out a combined induced polarization and resistivity survey on the Brenda Lake Property in the Peachland Area of British Columbia. The property is situated in the Osoyoos Mining Division, in the northwest quadrant of the one degree quadrilateral whose southeast corner is at 49°N and 119°W.

The claim group is of interest as it adjoins on the south the property of Brenda Mines Limited where a very large copper-molybdenum deposit is currently being evaluated with a view to establishing a large open-pit mine. The present survey consists of six east-west traverses 400 feet apart. Field work was performed during December, 1967 using

a McPhar frequency-type IP system with 400 foot electrode intervals; four readings were taken from each transmitter location (i. e. n=1, 2, 3 and 4.) Several interesting anomalies were found and further investigation is warranted.

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 20N	400 foot spreads	Dwg. IP 2638-1
Line 16N	400 foot spreads	Dwg. IP 2638-2
Line 12N	400 foot spreads	Dwg. IP 2638-3
Line 8N	400 foot spreads	Dwg. IP 2638-4
Line 4N	400 foot spreads	Dwg. IP 2638-5
Line 0	400 foot spreads	Dwg. IP 2638-6

Enclosed with this report is Dwg. Misc. 3241, a plan map of the grid 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

400' spreads the position of a narrow sulphide body can only be determined to lie between two stations 400' 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

The mineralization on the Brenda Mines property consists of disseminated chalcopyrite, bornite and molybdenite (with virtually no accessary pyrite) amounting to 1.3% - 1.5% metallic minerals. Under these conditions relatively weak IP anomalies may be of considerable importance as shown on the accompanying Fig. 1. This situation has been used as a guide in interpreting the present data as described below.

Line 20N

A definite anomaly of moderate magnitude for this area is centred at station 10+00W. There appears to be some depth to the top of the source since the maximum Metal Factor value occurs on the 2nd separation. The data further suggests a weaker extension of the anomaly to the west and a possible weak anomaly centred at 2E.

Line 16N

Some difficulty was encountered on this line due to ground contact problems hence some of the measurements could not be made

accurately. Nevertheless, there is a definite shallow anomaly at 6W, with a probable extension to 2E, and a possible weak anomaly at 18W. The definite anomaly should be detailed with shorter electrode intervals.

Line 12N

Here there is a broad, shallow weak zone from about 2E to 22W. The M.F. values increase again at the east end of the traverse suggesting a second anomaly but the line would have to be extended to evaluate these effects.

Line 8N

These results are similar to those on the preceding line.

Line 4N

The broad zone appears to split into several narrower bands here, with a shallow definite source at 2E to 2W and a probable deeper source at 10W. Again the traverse should be extended east to evaluate the effects at the end of the line.

Line 0

Only weak effects were measured here.

4. SUMMARY AND RECOMMENDATIONS

Anomalous values were measured on all six traverses. For the most part the IP effects are only of weak to moderate magnitude but they are still of interest since they are comparable in magnitude to those obtained over the Brenda Mines copper-molybdenum deposit. Further

INDUCED POLARIZATION

AND

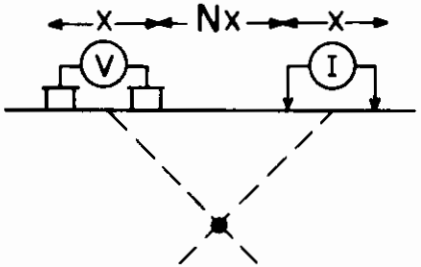
DRILLING RESULTS

FROM

BRENDA AREA

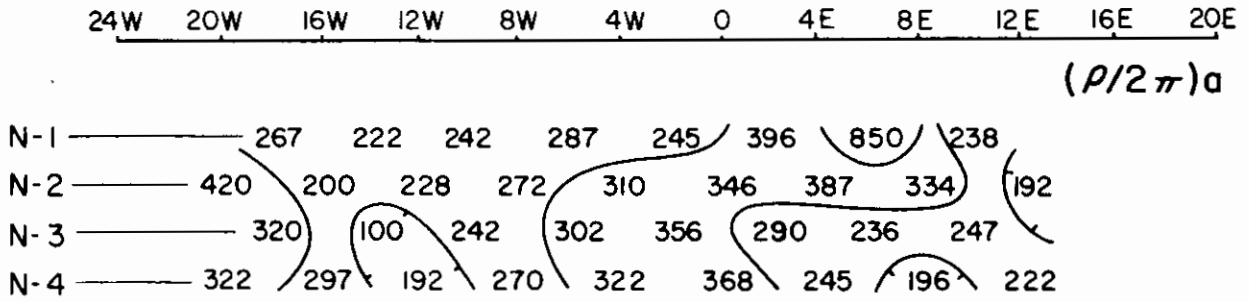
PEACHLAND, B.C.

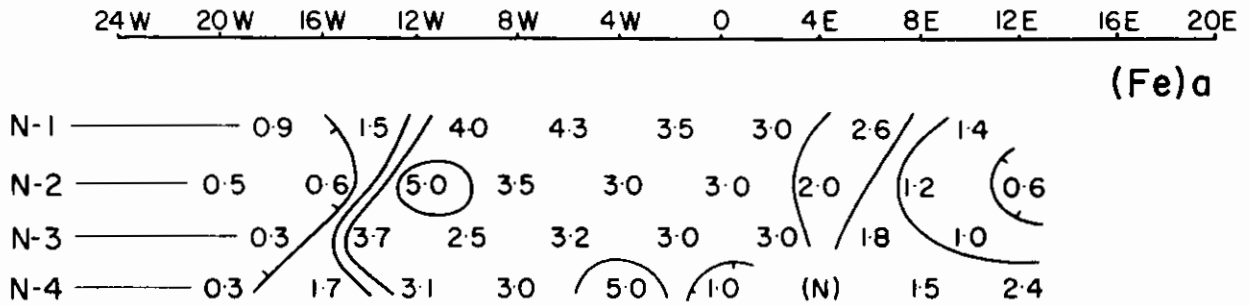
LINE - 8 S

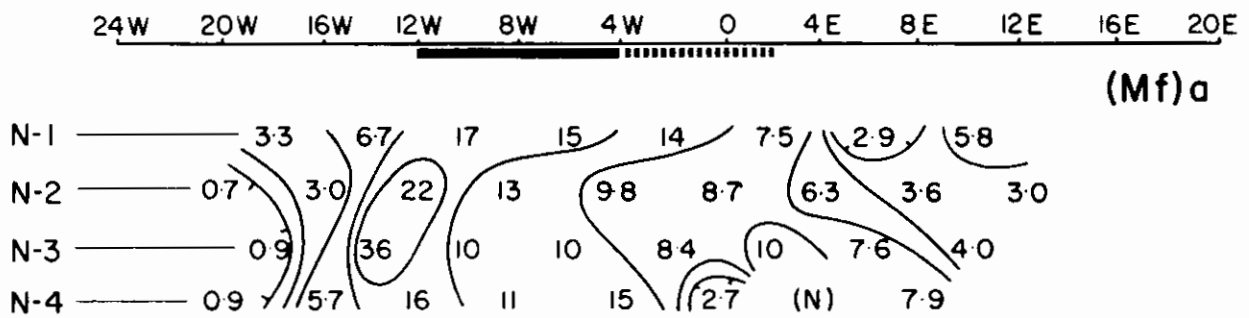


FREQUENCIES - 0·318 & 5·0 CPS.

X EQUALS 400 FEET







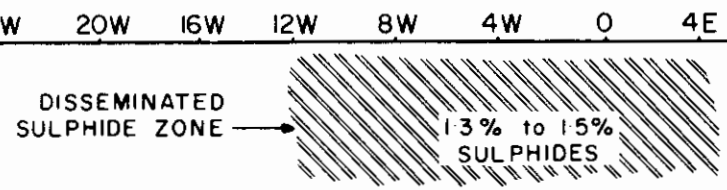


FIG. 1

investigation is warranted and it is suggested that the IP grid be extended to the east, west and south. Some of the shallow anomalies should be checked with shorter electrode intervals, followed by detailed geochemical profiles before drilling targets are selected.

McPHAR GEOPHYSICS LIMITED

Robert A. Bell,
Geologist.

Philip G. Hallof,
Geophysicist.

Dated: January 31, 1967

ASSESSMENT DETAILS

PROPERTY: Brenda Lake

MINING DIVISION: Osoyoos

SPONSOR: Buttle Lake Mining Co. Ltd. and Trojan Consolidated Mines Ltd.

PROVINCE: British Columbia

LOCATION: Peachland Area

TYPE OF SURVEY: Induced Polarization

OPERATING MAN DAYS:	24	DATE STARTED:	Dec. 4, 1966
EQUIVALENT 8 HR. MAN DAYS:	36	DATE FINISHED:	Dec. 18, 1966
CONSULTING MAN DAYS:	1	NUMBER OF STATIONS:	68
DRAUGHTING MAN DAYS:	3	NUMBER OF READINGS:	342
TOTAL MAN DAYS:	40	MILES OF LINE SURVEYED:	4.70

CONSULTANTS:
R. A. Bell, 50 Hemford Crescent, Don Mills, Ontario.
P. C. Hallof, 5 Minorca Place, Don Mills, Ontario.

FIELD TECHNICIANS:
J. Parker, Box 340, Choiceland, Saskatchewan.
R. Quesnel, 36 Penhurst Ave., Apt. 2, Etobicoke, Ontario.

Extra Labour supplied by Client.

DRAUGHTSMEN:
E. Helkio, 102 Goodwood Park Court, Apt. 706, Toronto 13, Ontario.
S. Woods, Apt. 401, 1222 York Mills Road, Don Mills, Ontario.

McPHAR GEOPHYSICS LIMITED

Robert A. Bell.

R. A. Bell,
Geologist.

Dated: January 31, 1967

SUMMARY OF COST

Brenda Lake

Crew

4 3/4 days Operating		@ $215.00/day	$1,021.25
2 1/2 days Travel	)		
1/2 day Bad Weather)	7 3/4	@ $ 75.00/day	581.25
4 3/4 days Standby	)		
			1,602.50

Expenses

Transportation-Air-Kamloops-Vanc.-Sask.	$ 74.00	
Taxis and Excess Baggage	50.25	
Rented Vehicles	263.44	
Freight and Brokerage	150.00	
Meals and Accommodation	172.70	
Supplies	13.62	724.01
		$2,326.51

McPHAR GEOPHYSICS LIMITED

Robert A. Bell.

R. A. Bell,
Geologist.

Dated: January 31, 1967

CERTIFICATE

I, Robert Alan Bell, of the City of Toronto, Province of Ontario, do hereby certify that:

1. I am a geologist residing at 50 Hemford Crescent, Don Mills, (Toronto) Ontario.

2. I am a graduate of the University of Toronto in Physics and Geology with the degree of Bachelor of Arts (1949); and a graduate of the University of Wisconsin in Economic Geology with the degree of Ph. D. (1953).

3. I am a member of the Society of Economic Geologists and a fellow of the Geological Association of Canada.

4. I have been practising my profession for over fifteen 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 Buttle Lake Mining Company Ltd., or Trojan Consolidated Mines Ltd.

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

Dated at Toronto

This 31st day of January, 1967

Robert A. Bell

Robert A. Bell, Ph. D.

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 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, direct or indirect, in the property or securities of Buttle Lake Mining Company Ltd., or Trojan Consolidated Mines Ltd.

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 31st day of January 1967

Philip G. Hallof, Ph. D.

Claims Map 82 E/13 W
March 8/67

Buttle Lake Mining Company Ltd.
and
Trojan Consolidated Mines Ltd. (NPL)

SUBMITTING THE COST OF LINE CUTTING AND IP SURVEY BEING APPLIED TO THE WP GROUP AND THE CATI GROUP -- BRENDA AREA, PEACHLAND, B. C.
As Assessment work for 1966.

Cutting grid lines -- September 27 - 29, 1966:		
- Cat Swamper -- $2.50/Hr. for 24 Hrs.	$ 60.00	
- Dobbins & Sons (D-8 Cat) -- $32.00/Hr. for 24 Hrs.	768.00	$ 828.00
Cutting grid lines and chaining lines -- October 6 - 10, 1966: (4,000 Ft. of baseline cut and 7.22 miles of grid lines)		
-R. Derikson		
-Noel Derikson		
-Bill Jackson		
-Nick Lingor -- $26.00 per man per day - 17 man days		442.00
Helping IP crew with equipment and electrodes:		
- L. Ferguson - $15.00 per day - 11 days.....		165.00
-W. Champion -- $15.00 per day - 6 days		90.00
McPhar Geophysics Ltd. account		2,326.51
Shoveling snow, digging holes and carrying water for electrodes for IP Survey:		
-Nick Lingor - $20.00 per day - 6 days		120.00
-D. Laurie --- $15.00 per day - 7 days		105.00
Expeditor (Pete Bland) - $550.00 per month -- 2 weeks		275.00
Supervision (Geo. Burdett) - $600.00 per month - from September 27 - December 11/66 - total of 2 weeks		300.00
Room and board (Geo. Burdett) - 2 weeks		168.00
Rooms for: (Totem Inn, Peachland, B. C.)		
-John Parker - 2 men - December 7 - 17, 1966		80.00
-Pete Bland -- December 6 - 17, 1966		61.00
-L. Ferguson - December 7 - 17, 1966		55.00
Meals - (Totem Inn, Peachland, B.C.)		
- Pete Bland		
- John Parker		
- L. Ferguson		
- D. Laurie		
- R. Quesnel		
- W. Champion --		263.76
Equipment Rental:		
- Power Saw	$ 35.00	
- Ski-Doo - 2 weeks	200.00	
- 10-passenger Landrover - 2 weeks - plus gas and oil - $15.00 per day for 14 days	210.00	445.00
TOTAL EXPENSES		$5,724.27

Geo L Burdett
Exploration Manager.

Claims Map 82 E/13 W

Buttle Lake Mining Company Ltd.

and

Trojan Consolidated Mines Ltd. (NPL)

Percentage of the cost of the IP Survey to be applied to the Cati group for Assessment work.

Line cutting with cat -- 25% of $828.00	$ 207.00	
Line cutters and chainmen -- 25% of $442.00 .	110.50	
McPhar Geophysics Ltd.:		
-Extra labour for IP Survey		
-Room and board		
-Transportation		
-Supervision -- 33 1/3% of $4,454.27	1,484.75	$1,802.25

Percentage of the cost of the IP Survey to be applied to the WP group for Assessment work.

Line cutting with cat -- 75% of $828.00	$ 621.00	
Line cutters and chainmen -- 75% of $442.00 .	331.50	
McPhar Geophysics Ltd.:		
-Extra labour for IP Survey		
-Room and board		
-Transportation		
-Supervision -- 66 2/3% of $4,454.27	2,969.72	3,922.22

TOTAL $5,724.47

One Hundred Dollars ($100.00) to be applied to each of the following claims as assessment work:
- -Cati #1-16, record #9857-9872 (O)
- -Cati #17-18, record #9903-4 (O)
- - WP #1-34, record #9823-9856 (O)

An additional One Hundred Dollars ($100.00) to be applied to each of the following claims.
- -WP #13-17, record #9835-9839 (O)

March 8, 1967

Geo A Burdett
Exploration Manager

RECEIVED
MAR 15 1967
MINING RECORDER
PRINCETON, B. C.

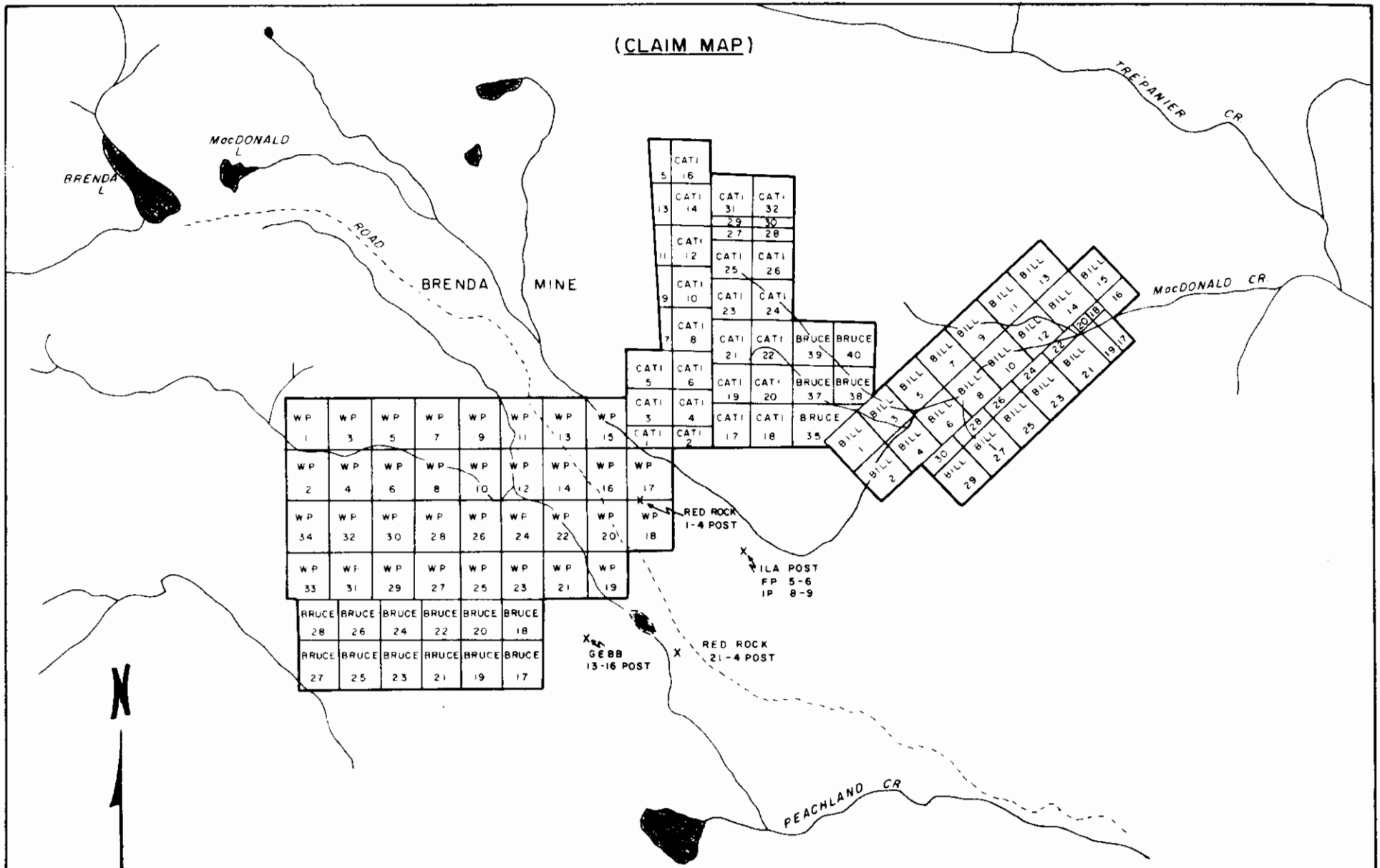

(CLAIM MAP)
MacDONALD L
BRENDA L
ROAD
BRENDA MINE
TREPANIER CR
MacDONALD CR
PEACHLAND CR
RED ROCK 1-4 POST
ILA POST FP 5-6 IP 8-9
GEBB 13-16 POST
RED ROCK 21-4 POST
N
BUTTLE LAKE MINING CO. LTD. & TROJAN CONSOLIDATED MINES LTD.
BRENDA LAKE PROPERTY, PEACHLAND AREA, OSOYOOS M.D., B.C.
SCALE: 1" = 1 MILE

FIG. 2

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 Southwestern 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

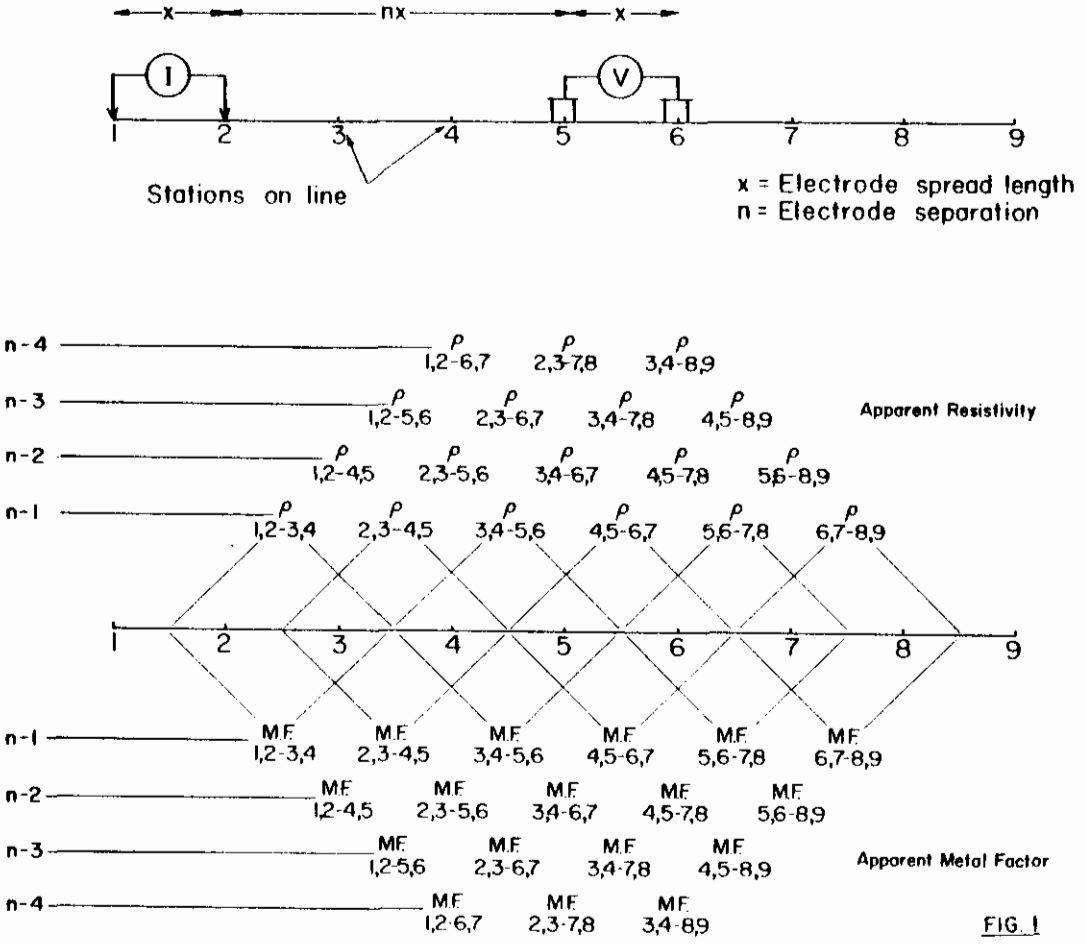


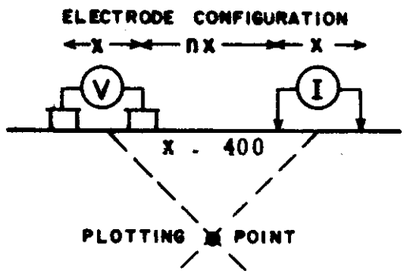
FIG. 1

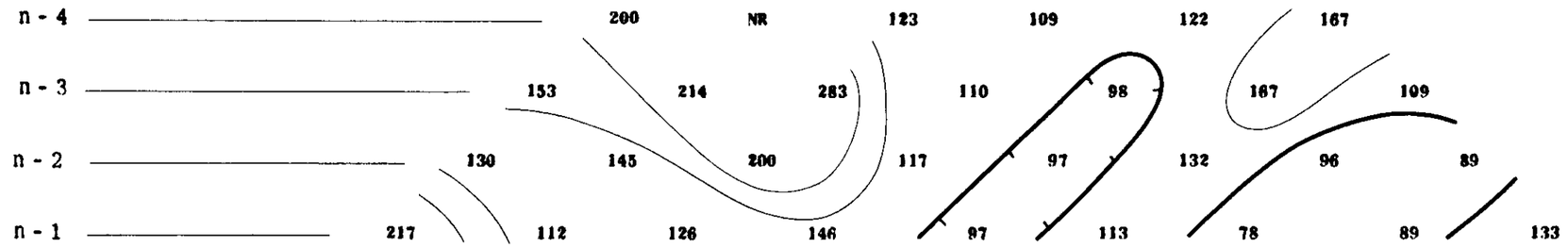
DWG. NO.- I.P.- 2638-1

McPHAR GEOPHYSICS LIMITED

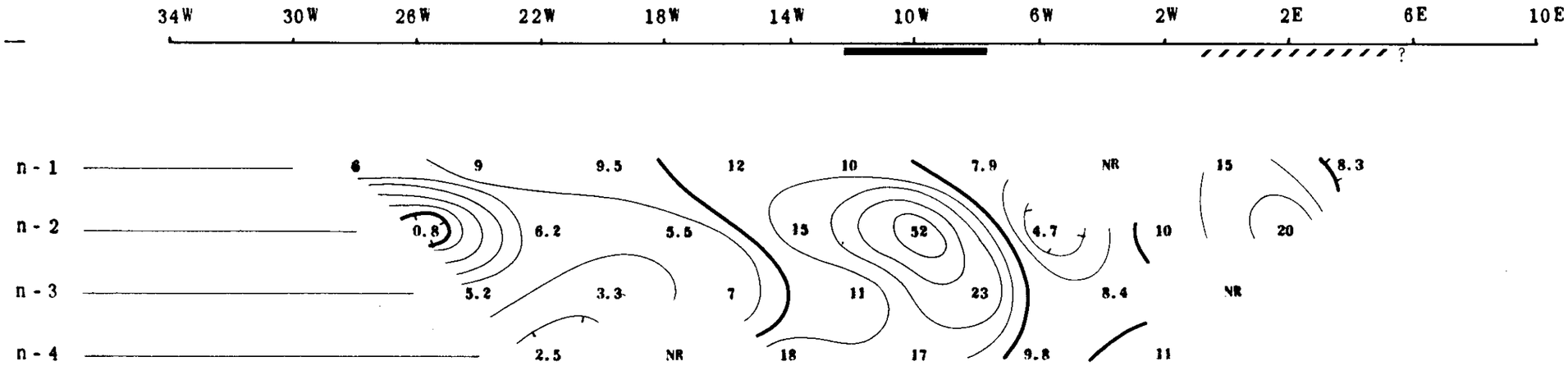
INDUCED POLARIZATION AND RESISTIVITY SURVEY

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





$P_a/2\pi$
(OHM FEET)



(M.F.) a

LINE NO.- 20N

BUTTLE LAKE MINING COMPANY LTD.
TROJAN CONSOLIDATED MINES LTD.

BRENDA LAKE PROPERTY, PEACHLAND AREA, OSOYOOS M.D., B.C.

Scale- One inch = 400 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

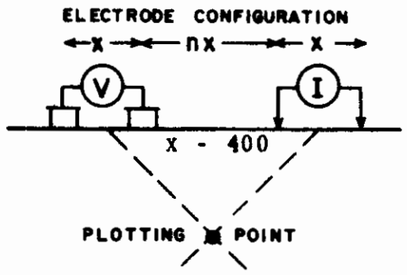
DEFINITE
PROBABLE
POSSIBLE

932

FREQUENCY 0.3 - 4.5 C.P.S.
DATE SURVEYED DEC. 1966
APPROVED
DATE

McPHAR GEOPHYSICS LIMITED

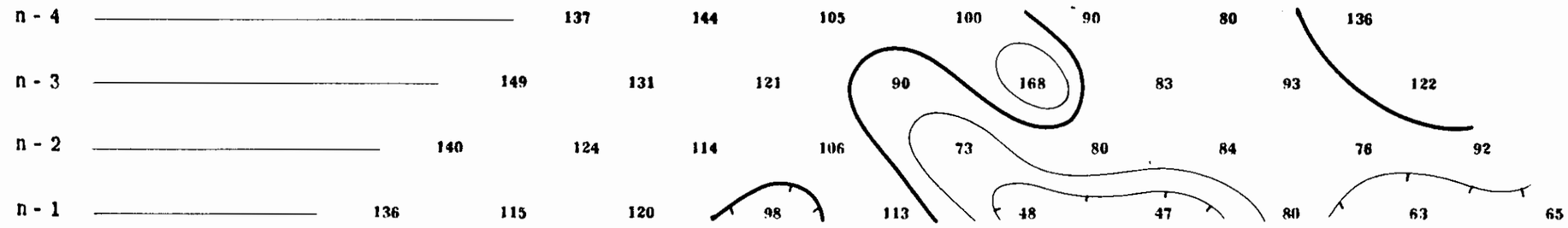
DWG. NO.-I.P.-2638-2



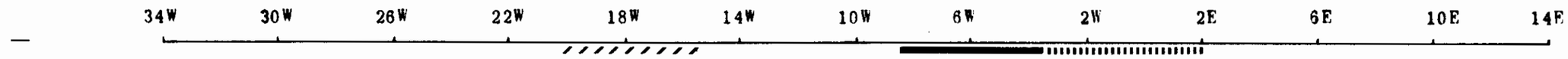
McPHAR GEOPHYSICS LIMITED

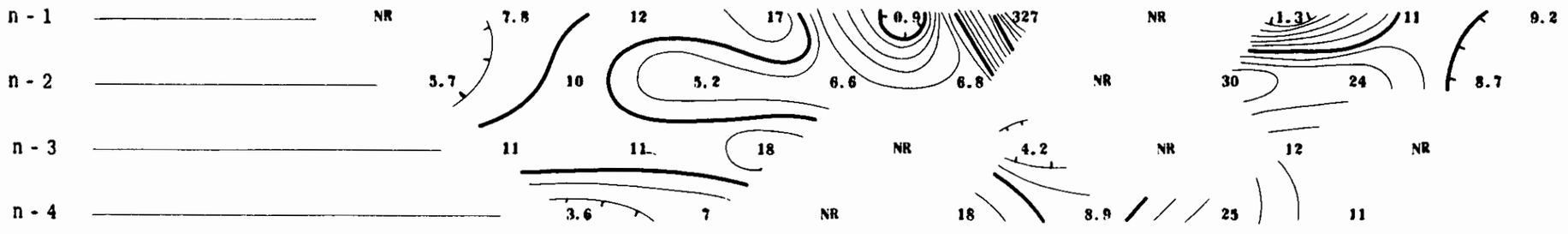
INDUCED POLARIZATION AND RESISTIVITY SURVEY

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



Pa/2π
(OHM FEET)





(M.F.) a

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE ——————

PROBABLE ■■■■■■■■■■■■■■■■■■

POSSIBLE / / / / / / / / /

BUTTLE LAKE MINING COMPANY LTD.
TROJAN CONSOLIDATED MINES LTD.

BRENDA LAKE PROPERTY, PEACHLAND AREA, OSOYOOS M.D., B.C.

Scale - One inch = 400 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

932

FREQUENCY 0.5/5.0 C.P.S.

DATE SURVEYED DEC. 1966

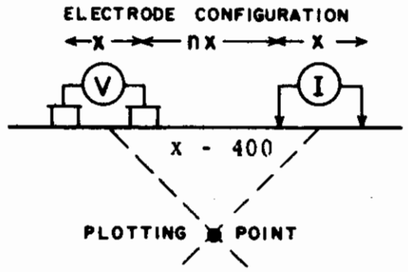
APPROVED A

DATE 1/20/67

McPHAR GEOPHYSICS LIMITED

LINE NO.- N 91-10

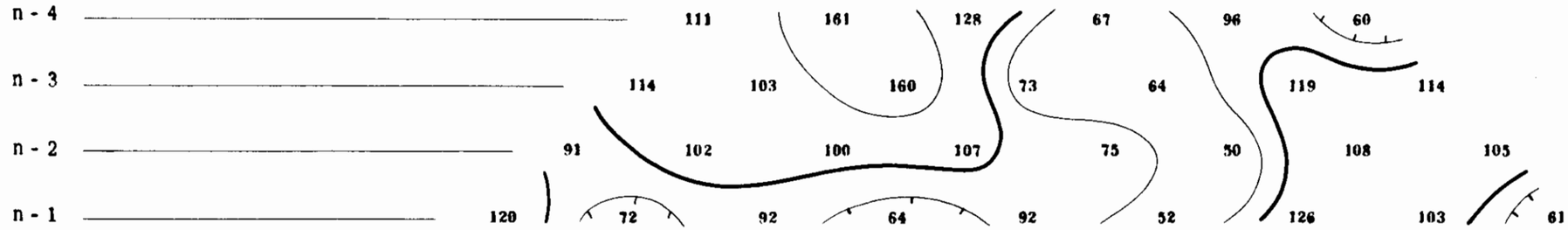
DWG. NO.-I.P.-2638-3



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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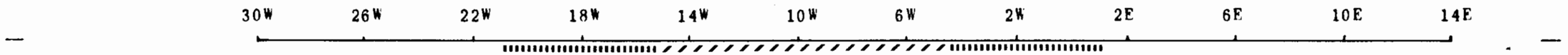
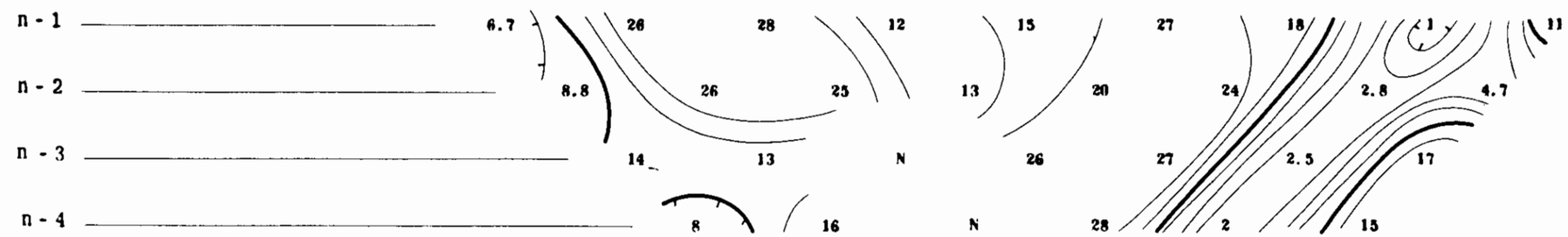
(OHM FEET)





(M.F.) a

LINE NO.- 12 N

BUTTLE LAKE MINING COMPANY LTD.
TROJAN CONSOLIDATED MINES LTD.

BRENDA LAKE PROPERTY, PEACHLAND AREA, OSOYOOS M.D., B.C.

Scale-One inch= 400 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE ——————

PROBABLE ··········

POSSIBLE / / / / / / / /

932

FREQUENCY 0.25/0.5 CPS

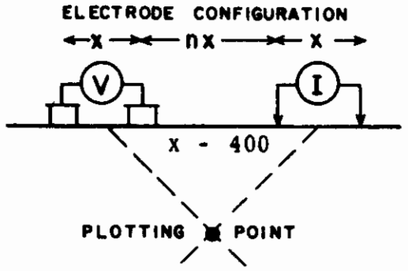
DATE SURVEYED DEC. 1966

APPROVED A

DATE 1/20/67

McPHAR GEOPHYSICS LIMITED

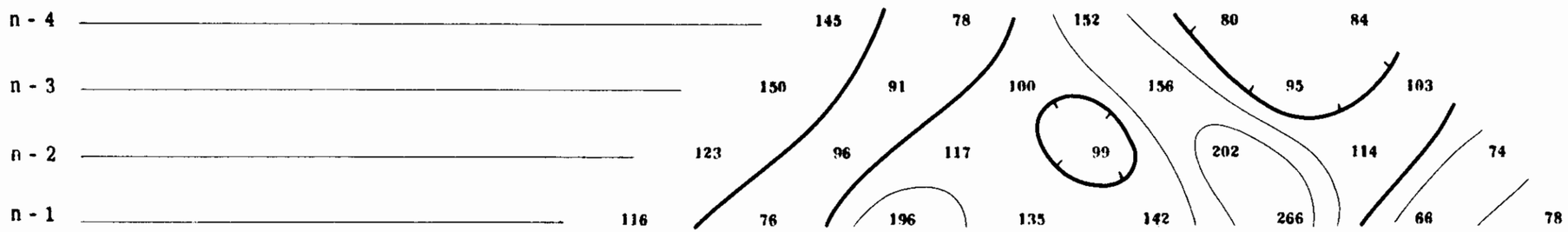
DWG. NO.-I.P.-2638-4



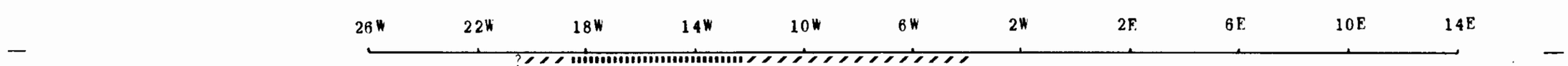
McPHAR GEOPHYSICS LIMITED

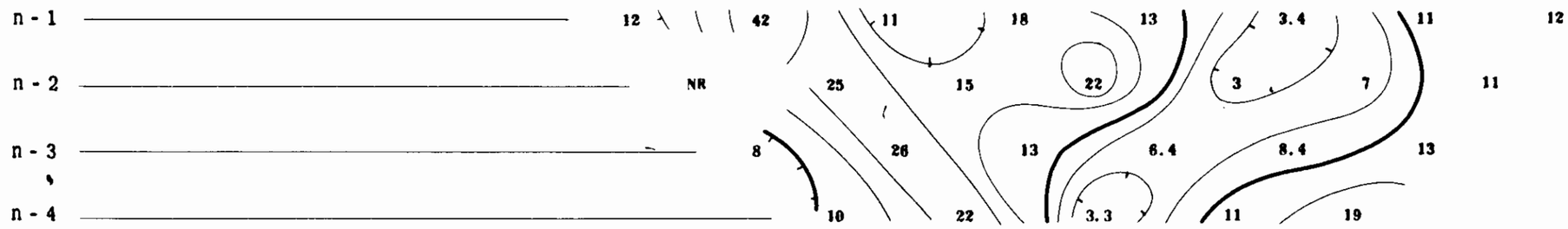
INDUCED POLARIZATION AND RESISTIVITY SURVEY

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



$Pa/2\pi$
(OHM FEET)





(M.F.) a

LINE NO.- 8 N

BUTTLE LAKE MINING COMPANY LTD.
TROJAN CONSOLIDATED MINES LTD.

BRENDA LAKE PROPERTY, PEACHLAND AREA, OSOYOOS M.D., B.C.

Scale-One inch = 400 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE ——————

PROBABLE ··········

POSSIBLE / / / / / / /

932

FREQUENCY 0.375 & 0.75 C.P.S.

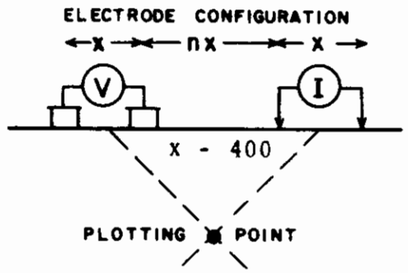
DATE SURVEYED DEC. 1966

APPROVED A

DATE 1/20/67

McPHAR GEOPHYSICS LIMITED

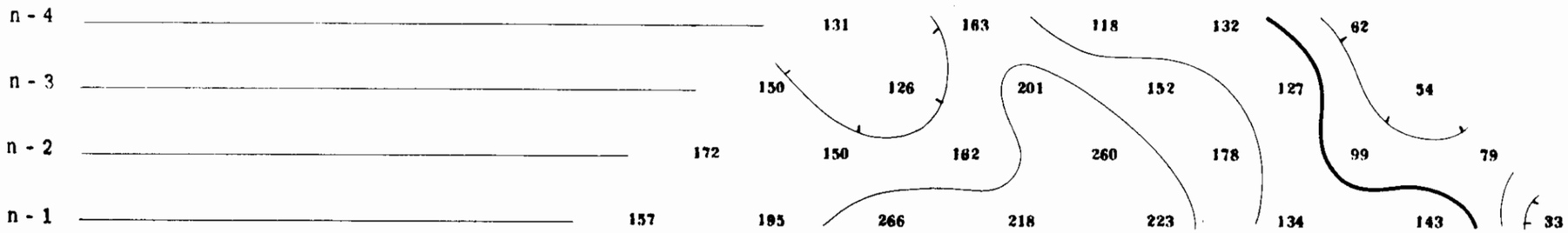
DWG. NO.-I.P.-2638-5



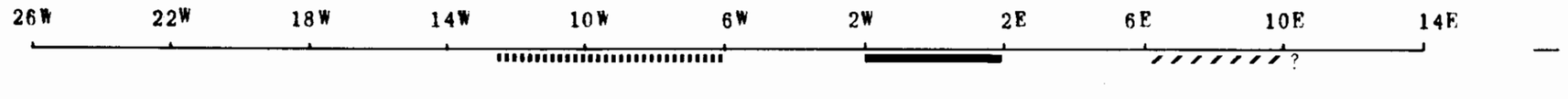
McPHAR GEOPHYSICS LIMITED

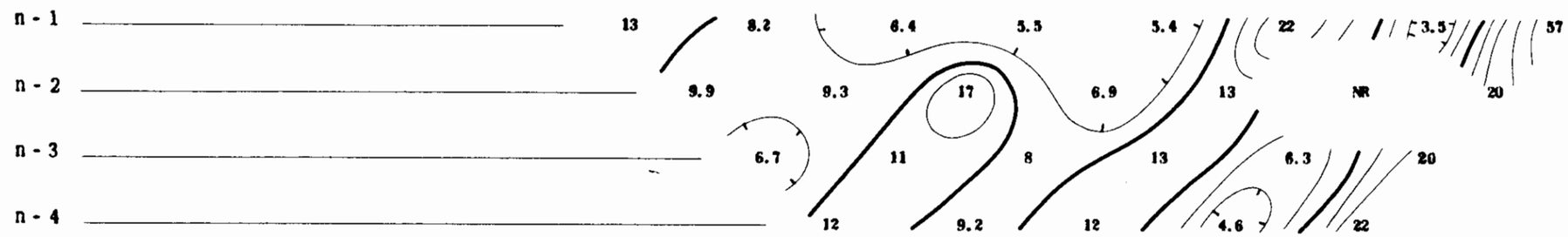
INDUCED POLARIZATION AND RESISTIVITY SURVEY

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



$Pa/2\pi$
(OHM FEET)





(M.F.) a

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE ——————

PROBABLE ■■■■■■■■■■■■■■■■■■

POSSIBLE / / / / / / / / /

BUTTLE LAKE MINING COMPANY LTD.
TROJAN CONSOLIDATED MINES LTD.

BRENDA LAKE PROPERTY, PEACHLAND AREA, OSOYOOS M.D., B.C.

Scale-One inch= 400 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

932

FREQUENCY 0.3/0.6 C.P.S.

DATE SURVEYED DEC. 1966

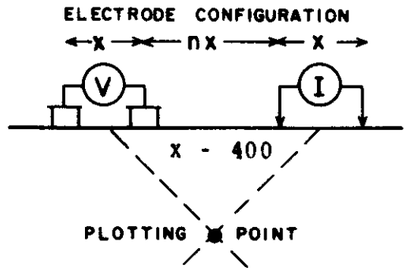
APPROVED A

DATE 1/20/67

McPHAR GEOPHYSICS LIMITED

LINE NO.- 4 N

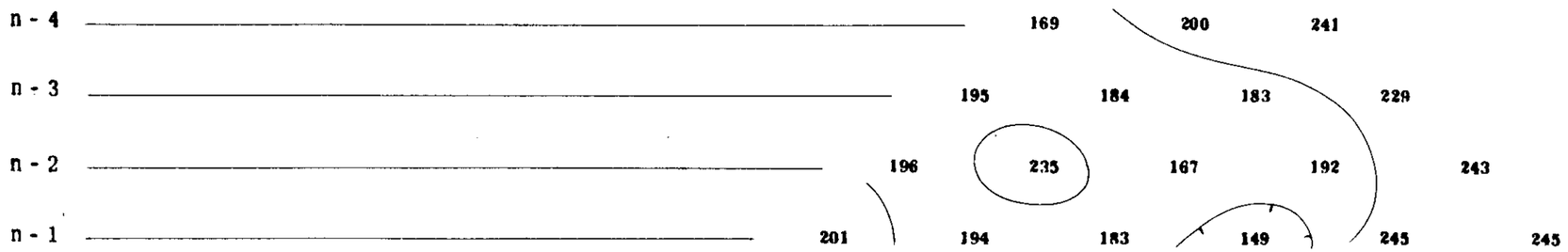
DWG. NO.-I.P.-2638-6



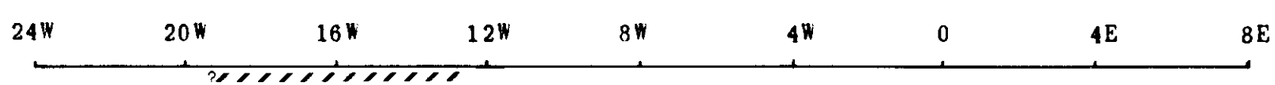
McPHAR GEOPHYSICS LIMITED

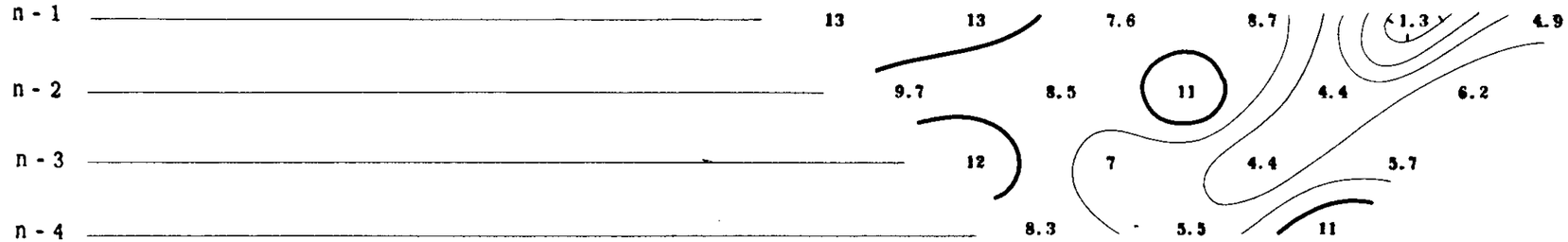
INDUCED POLARIZATION AND RESISTIVITY SURVEY

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



$\rho a/2\pi$
(OHM FEET)





(M.F.) a

LINE NO.-O

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE ——————

PROBABLE ■■■■■■■■■■■■■■■■■■

POSSIBLE / / / / / / / / /

BUTTLE LAKE MINING COMPANY LTD.
TROJAN CONSOLIDATED MINES LTD.

BRENDA LAKE PROPERTY, PEACHLAND AREA, OSOYOOS M.D., B.C.

Scale-One inch= 400 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

932

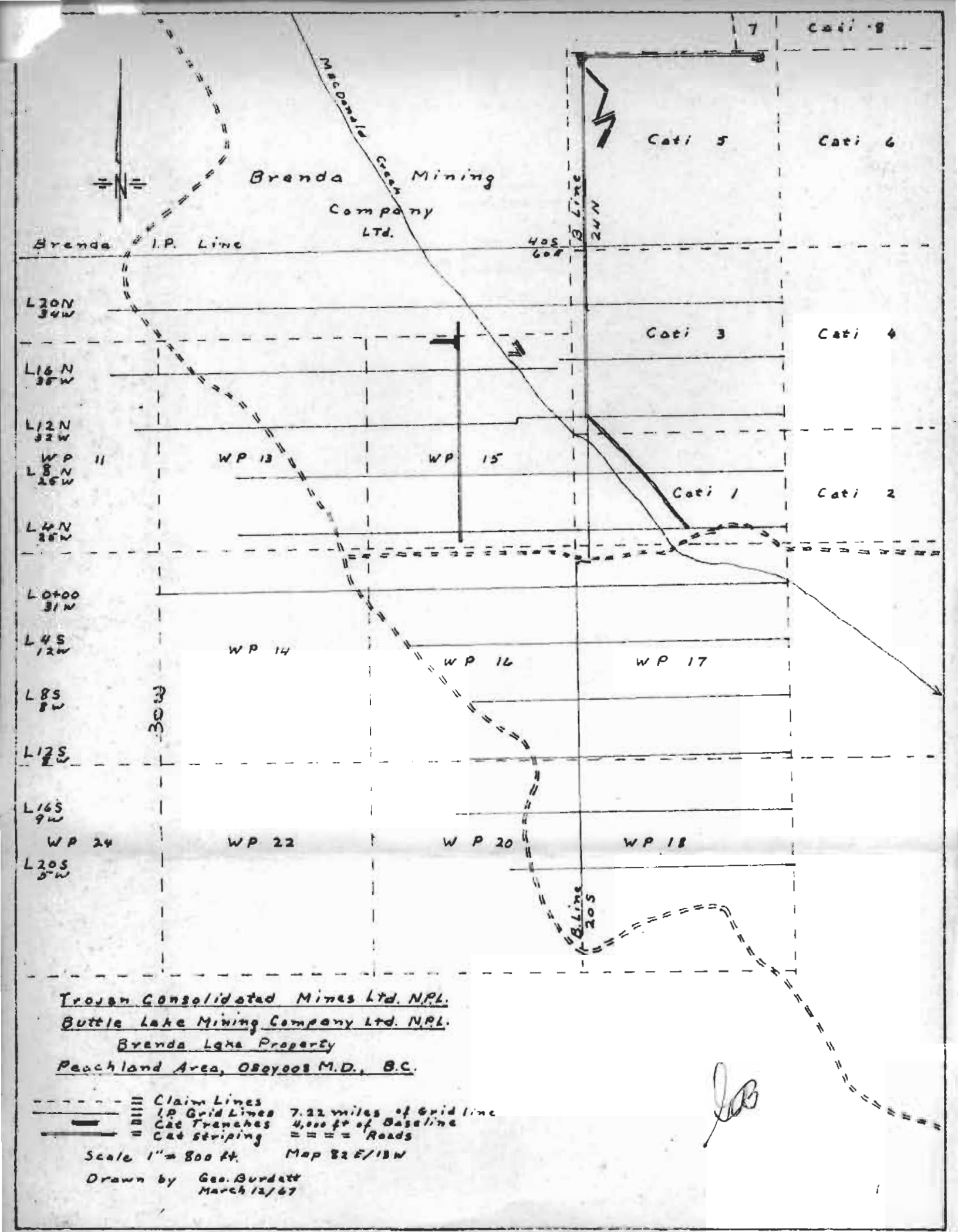
FREQUENCY 0·31 & 5·0 C.P.S.

DATE SURVEYED DEC. 1966

APPROVED

DATE 1/20/67

McPHAR GEOPHYSICS LIMITED



Trojan Consolidated Mines Ltd. N.P.L.
Buttle Lake Mining Company Ltd. N.P.L.
Brenda Lake Property
Peachland Area, Osoyoos M.D., B.C.

= Claim Lines
= I.P. Grid Lines 7.22 miles of Grid line
= Cat Trenches 4,000 ft of Baseline
= Cat Striping = = = = Roads

Scale 1" = 800 ft. Map 82 E/13W

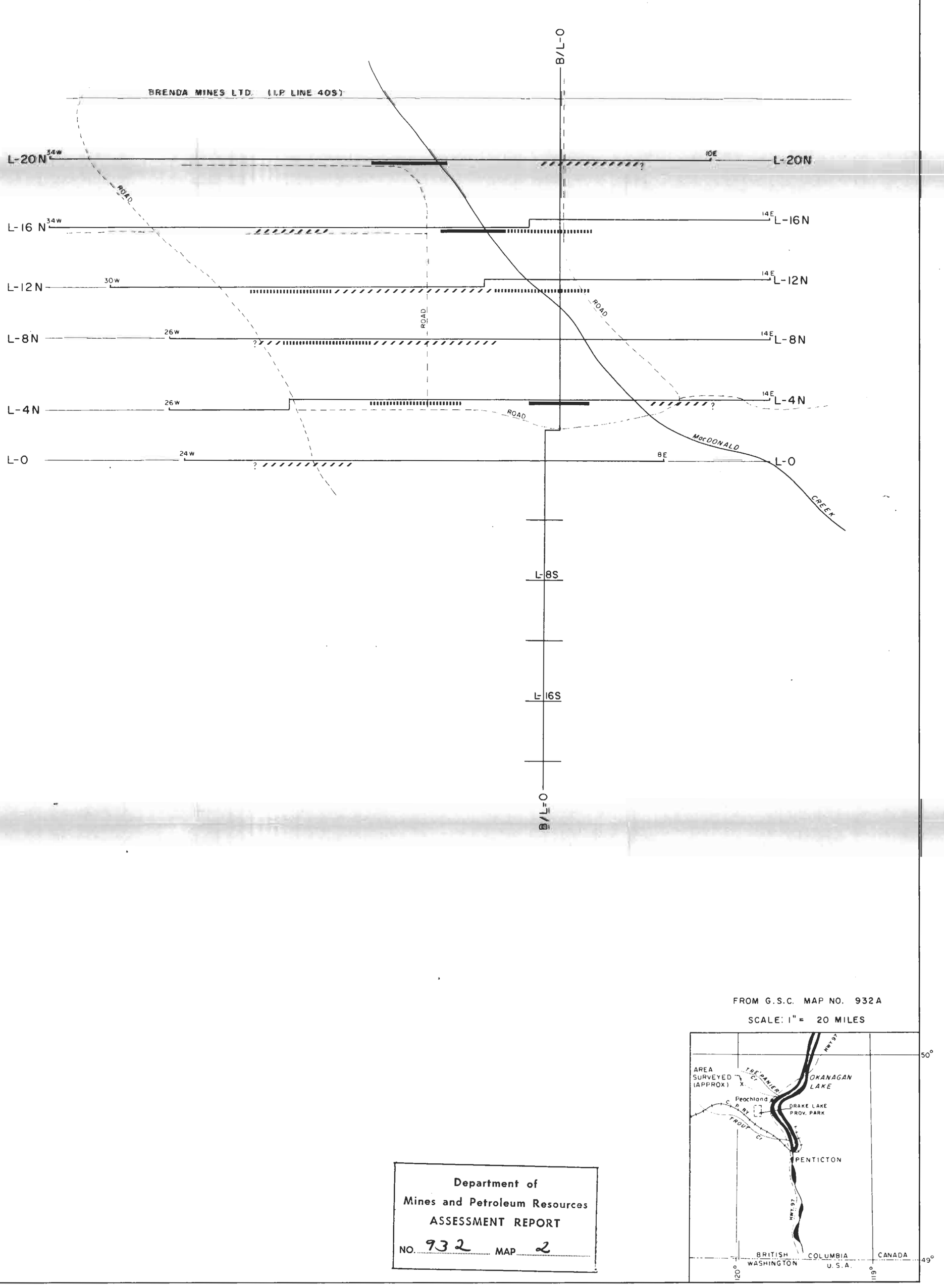
Drawn by Geo. Burdett
March 12/67

DWG. MISC. 3241

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP



FROM G.S.C. MAP NO. 932A

SCALE: 1" = 20 MILES

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 932 MAP 2

N

SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

BUTTLE LAKE MINING COMPANY LTD.
TROJAN CONSOLIDATED MINES LTD.

BRENDA LAKE PROPERTY, PEACHLAND AREA, OSOYOOS M.D., B.C.

SCALE

ONE INCH EQUALS FOUR HUNDRED FEET

932

McPHAR GEOPHYSICS LIMITED
DRAWN
DATE
APPROVED
DATE

DWG. MISC. 3241

DWG. MISC. 3241-R

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP

7

CAT I-8

CAT I-5
9861 (0)

CAT I-6

B/L-0

BRENDA MINES LTD. (I.P. LINE 40S)

L-20N 34W

10E

L-20N

ROAD

CAT I-3
9859 (0)

CAT I-4

L-16 N 34W

14E L-16N

L-12N 30W

14E L-12N

W P-11
9833 (0)

W P-13
9835 (0)

ROAD

W P-15
9837 (0)

ROAD

L-8N 26W

14E L-8N

CAT I-1
9857 (0)

CAT I-2

L-4N 26W

14E L-4N

ROAD

MacDONALD

L-0 24W

8E L-0

CREEK

W P-12

W P-14
9836 (0)

W P-16
9838 (0)

W P-17
9839 (0)

L-8S

L-16S

W P-24

W P-22

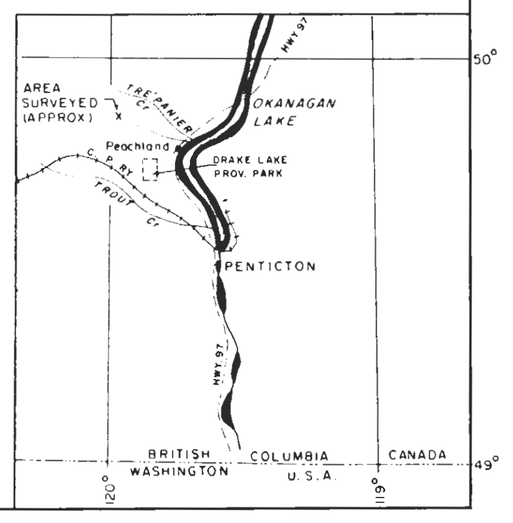
W P-20
9842 (0)

W P-18
9840 (0)

B/L-0

FROM G.S.C. MAP NO. 932A

SCALE: 1" = 20 MILES



N

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

BUTTLE LAKE MINING COMPANY LTD.
TROJAN CONSOLIDATED MINES LTD.

BRENDA LAKE PROPERTY, PEACHLAND AREA, OSOYOOS M.D., B.C.

SCALE

ONE INCH EQUALS FOUR HUNDRED FEET

932

McPHAR GEOPHYSICS LIMITED — DRAWN — DATE: MARCH 1967 — APPROVED — DATE: Nov. 28/67

McPHAR GEOPHYSICS LIMITED — DRAWN — DATE: JAN 1967 — APPROVED — DATE: 11/25/67

DWG. MISC. 3241-R