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NOTICE of ADDENDUM  
to accompany

COPPER PASS MINES LTD.,  
INDUCED POLARIZATION SURVEY  
DALVENIE, MAC, and NEW DEAL CLAIMS  
STIKINE PLATEAU AREA, B.C.

by GEOSURVEY EXPLORATION LIMITED  
10147 - 103 Street, Edmonton, Alberta.  
September 6, 1966.

ADDENDUM

1. Add Page A. - Instrumentation
2. Add Page B. - David Malinsky's Qualifications
3. Add the signatures of M. A. Roed, E. Lipsett  
and D. Malinsky to Page 8.

- A -

## INSTRUMENTATION

Equipment employed in the survey was of the frequency domain type and manufactured by Geoscience Incorporated, 199 Bent Street, Cambridge, Massachusetts 02141, U.S.A.

The equipment used consisted of an Induced Polarization transmitter, Model 5170 and an Induced Polarization receiver, Model 5260. The survey was run using the dipole-dipole array and frequencies of 0.3 cps and 3.0 cps.

- B -

QUALIFICATIONS

DAVID MALINSKY

1. I, David Malinsky am a graduate of the Southern Alberta Institute of Technology in Electrical Technology.
2. I have extensive experience in electrical instrumentation at the Department of Technology at the University of Alberta in Edmonton.
3. I trained as an Induced Polarization Operator with Geophysicists and Electrical Engineers of Geoscience Incorporated in the Pine Point Area, Northwest Territories, Canada.
4. I have Induced Polarization experience in the Pine Point Area, Northwest Territories, Northern and Central British Columbia and in the Edmonton, Alberta area.
5. That the accompanying report is based on personal work performed on the property.

Respectfully submitted,  
GEOSURVEY EXPLORATION LIMITED  
per:

*David Malinsky*

David Malinsky

COPPER PASS MINES LTD.

INDUCED POLARIZATION SURVEY  
DALVENIE, MAC and NEW DEAL CLAIMS  
STIKINE PLATEAU AREA, B.C.

GEOSURVEY EXPLORATION LIMITED  
GEOLOGY - GEOPHYSICS - ECONOMICS  
10147 - 103 Street  
Edmonton, Alberta

DATED: September 6, 1966

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APPENDIX

I.P. DATA (POCKET)  
PRELIMINARY GEOLOGIC MAP #1

## INTRODUCTION

Upon the request of Messrs. A. MacDonald and B.G. Linton an induced polarization survey has been carried out on claims belonging to Copper Pass Mines Ltd. The claims (Dalvenie, Mac and New Deal) are located in the west half of the Cake Hill Map Sheet, B.C. (104 I West) two miles southwest of Upper Gnat Lake above timberline at an elevation of approximately 5100 feet (see index map, Figure 1).

## PREVIOUS WORK

The claims and area of the induced polarization survey have been mapped on a scale of 1 inch = 850 feet approximately, by M. A. Roed, Geological Explorations Ltd., July 12, 1966. The report is entitled: Geological Report No. 1, Dalvenie, Mac, and New Deal Claims, Stikine Plateau Area, B.C. Reference should be made to this report for all background information on the property. The geological map and other geological information of the above report has been used in the interpretation of the I.P. data.

## FIELD TECHNIQUES

Equipment employed was of the frequency domain type (Geoscience Incorporated) which is adaptable to back packing. Two-way radio communication was maintained at all times along the lines.

It was decided to run lines every 400 feet along the area of interest (Figure 1) with the base line oriented at N 17°E. Dipole spacings of 150 feet were used and measurements were taken at two, three, four and five dipole lengths between transmitter and receiver position. This procedure would theoretically yield a minimum depth of penetration of approximately 275 feet but due to the conductive nature of the area, the maximum depth of interpretation turned out to be about 150 feet in the ground.

#### CURRENT WORK

Upon preliminary field interpretation several anomalies were discovered. Since the anomalies were judged to be significant detailed geologic mapping was immediately started. Geochemical soil sampling was also started. The results of these surveys will aid in the interpretation of the I.P. data so that the present report is of a preliminary nature. A final report will be written upon completion of the current work wherein all the information available will be coordinated by M. A. Roed, Geological Explorations Ltd. All I.P. profiles are included in this present report as an Appendix.

#### FIELD RESULTS AND INTERPRETATION

The survey results are believed to be good, but since conductivity is high in the area the total depth reached is estimated to be a maximum of 150 feet into the ground.

Two anomalous areas were discovered comprising a small anomaly at the south end of the property and a large anomaly at the north end of the property. Background frequency effects appear to be around 3% to 4% so that any parts of the area with consistent values above this constitute anomalous conditions. All anomalous zones have relatively low resistivity and relatively high metal factors in every case lending support to the presence of mineralization giving an I.P. effect.

A downhill line was run extending 3,450 feet east of the baseline along which an additional anomaly was discovered. Since this is presently being checked in the field, the results of this line are not given in the text. The data is included in the Appendix.

#### South Anomaly

Since calibration factors were estimated for the southern most two lines and since the frequency effect is low relative to the northern anomaly, the southern anomaly is judged to be weak, although anomalous frequency effects were obtained continuously throughout a zone which averages 200 feet in width and extends for approximately 1,800 feet. The anomaly may continue to depth although this was not confirmed. It ends somewhere between Line 4+00 N and 8+00 N and it is open to the south.

The south anomaly is marked by frequency effects of from 5% to 9% averaging between 5% and 6% which is not high for the survey as a whole. However, relatively low resistivity



values (high conductivity) were encountered. The fact that sulfide mineralization is present in the trenches around Line 0+00 supports the extension of the mineralized zone relative to the I.P. anomaly.

A fault has been postulated for this part of the mineralized zone in which the anomaly occurs so that it is reasonable to assume that the mineralization is located along the fault. On this assumption the I.P. anomaly indicates that the faults, and thus the mineralized zone, is dipping to the east at a steep angle (estimated to be between 50 and 70 degrees).

It is possible that the anomalous values on line 8+00 S were influenced by clay and water saturated alluvium of the creek bed.

#### Northern Anomaly

The northern anomaly is characterized by frequency effects of from 5% to 15% averaging around 7%. The anomalous area begins between Line 24+00N and Line 28+00N where it is approximately 300 feet wide and extends 3,300 feet to the north where it increases in width to 600 feet and perhaps 1,000 feet. On Line 52+00AN and 52+00N the anomaly is 1000 feet wide as determined from results of (Line 52+00AN) which was an extra line extended to the west in order to determine the extent of the anomalous area. All other lines in the northern part were not long enough to delineate the western extent of the anomaly.

Frequency effect reaches a maximum of 15.3% on Line 52+00AN at station 2 and 3 east. This part is also relatively conductive and the metal factors are almost the best for the entire survey. The same remarks are true for Line 56+00N except that the frequency effect is slightly lower. As shown on the map (Figure 1). The anomaly may very likely extend to the north.

The north anomaly begins near the south end of showing No. 3 and continues to the north following the Triassic and Earlier metasediments. Pyrite and chalcopyrite have been observed in several places in these metasediments and in trenches of showing No. 3. So it is possible that the metasediments are mineralized to a considerable extent throughout their occurrence as delineated by the anomalous area. In general the frequency effect decreases slightly with depth but this may be due to the narrowing of the mineralized zone.

Since the anomaly may be due to either chalcopyrite or pyrite, or both, it is not possible to be specific about the minerals present. However, the anomaly definitely represents at the least finely disseminated mineralization in the metasediments and it constitutes a minimum area of mineralization to a depth of 150 feet.

Although the present area is generally conductive, comparison to other mining areas may serve to indicate the nature of the present anomalies. Ore bodies at Pine Point

have a general frequency effect of 4% to 5%, rarely higher. The Brenda property near Penticton, B.C. has a frequency effect of 0.25%.

#### CONCLUSIONS

Two I.P. anomalies occur on the property, a southern anomaly and a northern anomaly.

The southern anomaly is judged to be weak but may be reflecting mineralization along a fault zone. Assays and descriptions of surface samples over part of the southern anomaly indicate the presence of massive sulfides in the form of chalcopyrite and pyrite which averages 1.23% copper over 24 feet. The anomaly may be reflecting at least part of this mineralized zone over a width of approximately 200 feet and a length of 1,800 feet.

The northern anomaly, because of its large size, is probably reflecting disseminated mineralization in the meta-sediments. Since the area may be bounded by faults, it is of considerable interest if the mineralization is of economic importance. Only a minimum size of the anomaly is indicated in Figure 1 since it is open to the north and also to the west for most of its length, however, it ranges from 300 to 1,000 feet wide and up to at least 3,300 feet long.

RECOMMENDATIONS

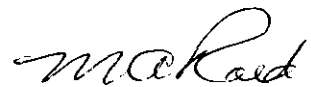
1. We recommend detailed geochemical soil sampling of the northern anomaly in order to determine whether copper is present.
2. We recommend extension of the induced polarization survey to the west and also to the north on the northern anomaly.
3. Depending on the results of recent field mapping, further induced polarization work may be required for tracing the southern anomaly if field geology indicates that the anomaly may have been offset by faulting. Irregardless, the induced polarization should be continued to the south.
4. We recommend diamond drilling of the north and south anomalies providing encouraging results are obtained through current work.

- 8 -

AUTHOR'S NOTE

All readings and calculations in the field have been recorded by David Malinsky, I.P. operator, employed by Geosurvey Exploration Limited. Mr. Malinsky has extensive electronic experience and has conducted I.P. surveys in a variety of areas in Western and Northern Canada.


Interpretation of the data in the survey has been made by Murray A. Roed, P.Geol., and Earl Lipsett, P. Geoph., the professional qualifications of whom follow this note. Mr. Lipsett has also checked the calculations of the survey.



M. A. Roed, P.Geol.



E. Lipsett, P.Geoph.



D. Malinsky

PROFESSIONAL QUALIFICATIONS

M. A. ROED

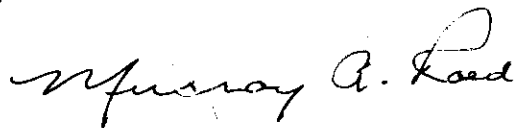
1. I, Murray Anderson Roed, reside at 10620 - Rowland Road, Edmonton, Alberta.
2. I have a B.A. (1959) and a M.A. (1961) in Geology from the University of Saskatchewan, Saskatoon.
3. I am a Professional Geologist registered with the Alberta Association of Professional Engineers.
4. Geosurvey Exploration Ltd. is registered in the Province of Alberta.
5. I possess experience in the following fields of geology: structural and stratigraphic geology; photogeology; geophysics; engineering geology; subsurface coal exploration surficial geology; paleontology.
6. I have worked in the Mackenzie Mountains, Franklin Mountains, Richardson Mountains, Mackenzie River Valley, Rocky Mountains and Foothills, Old Crow Mountains, Keele Range, Eagle Plain, West Coast of Vancouver Island, and Southern Alberta.
7. I belong to the following professional societies:  
Alberta Association of Professional Engineers;  
Geological Society of America; Association of Engineering Geologists; Canadian Institute of Mining and Metallurgy.

8. I have no material interest in the subject property,  
contemplated or otherwise.

Within the scope of this study, all information contained  
within this report is believed to be accurate.

Respectfully submitted,  
GEOSURVEY EXPLORATION LIMITED

per:

A handwritten signature in cursive script that reads "Murray A. Roed". The signature is written in dark ink and is positioned to the right of the typed name.

Murray A. Roed, P. Geol.

PROFESSIONAL QUALIFICATIONS

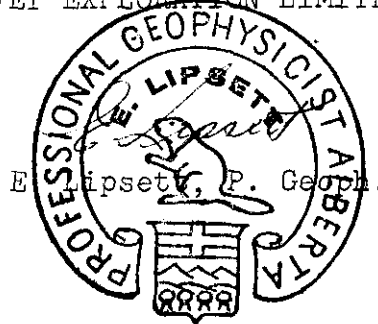
EARL LIPSETT

1. I, Earl Lipsett, reside at 8804 - 142 Street, Edmonton, Alberta.
2. I have a B.Sc. (1948) in Chemistry and Physics from the University of Alberta, Edmonton.
3. I am a Professional Geophysicist registered with the Alberta Association of Professional Engineers.
4. I possess experience in the following fields of exploration: seismology; gravity; magnetics; and electrical-geophysical methods; geochemical methods.
5. I have worked extensively throughout Western Canada including the Northwest Territories and Yukon.
6. I belong to the following professional societies:  
Alberta Association of Professional Engineers; Geophysical Society of Edmonton; Society of Exploration Geophysicists.

I have no material interest in the subject properties, contemplated or otherwise.

Within the scope of this report all information contained within this report is believed to be accurate.

Respectfully submitted,  
GEOSURVEY EXPLORATION LIMITED  
per:



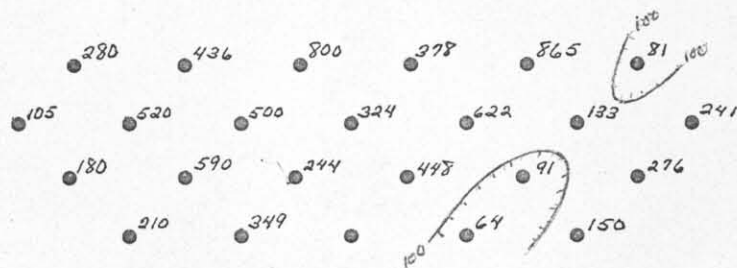
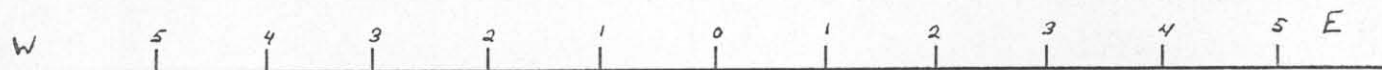


## GEOSURVEY EXPLORATION LIMITED

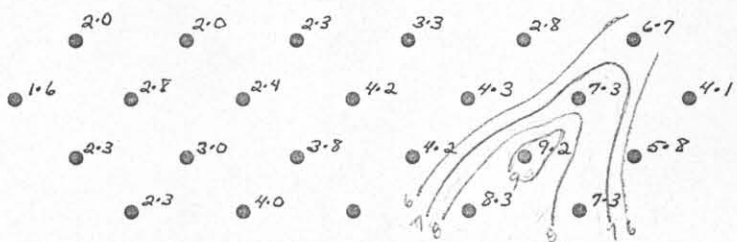
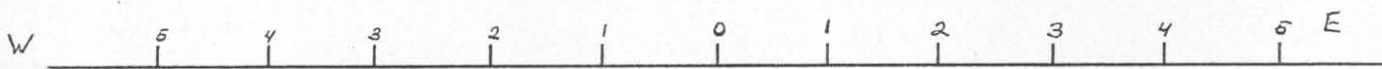
10147 - 103 Street, Edmonton, Alberta

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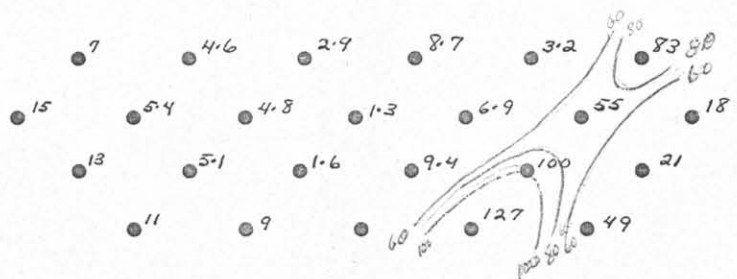
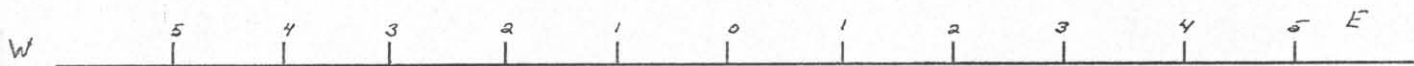
## INDUCED POLARIZATION PROFILE



Resistivity



Frequency Effect



Metal Factor

REMARKS

DATED MDSIGNED Aug 1966

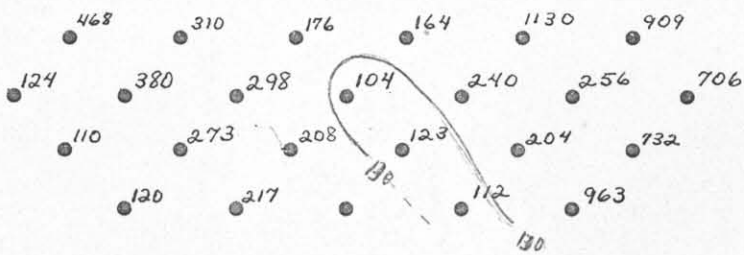
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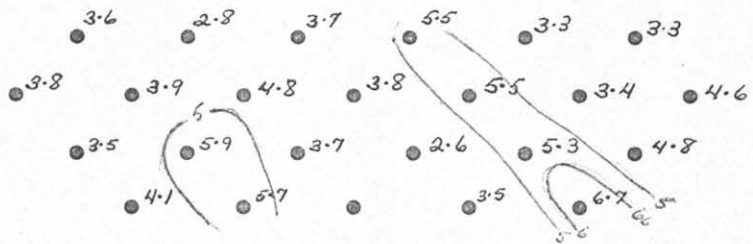
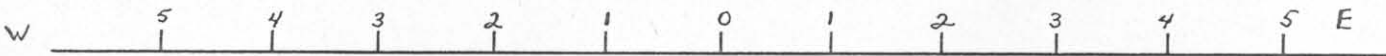
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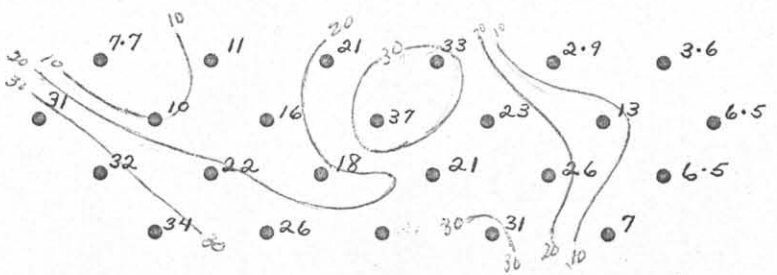
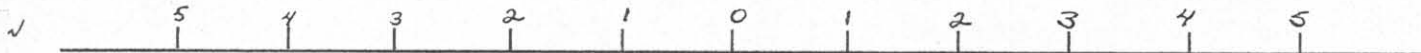
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Resistivity



Frequency Effect



Metal Factor

REMARKS

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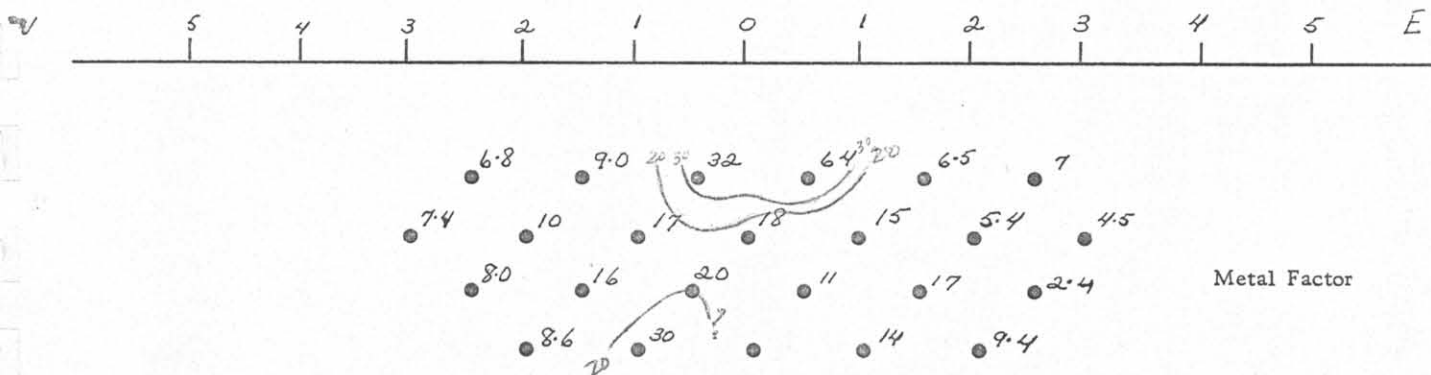
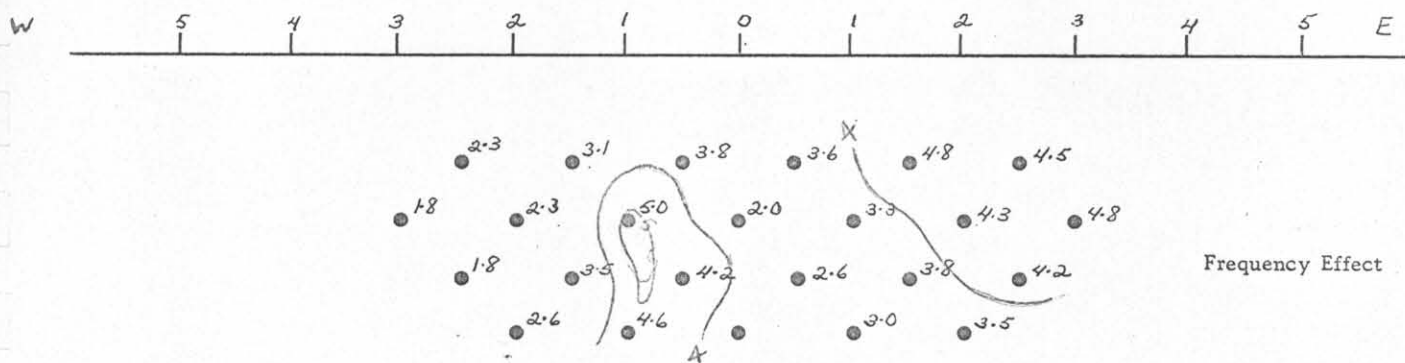
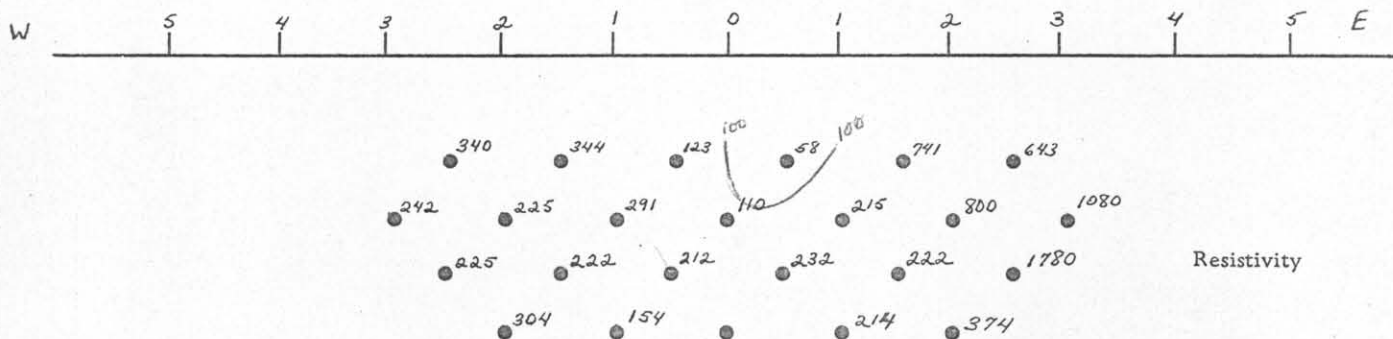
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AREA CPL-GLLINE NO. BLO+00N

## INDUCED POLARIZATION PROFILE



REMARKS

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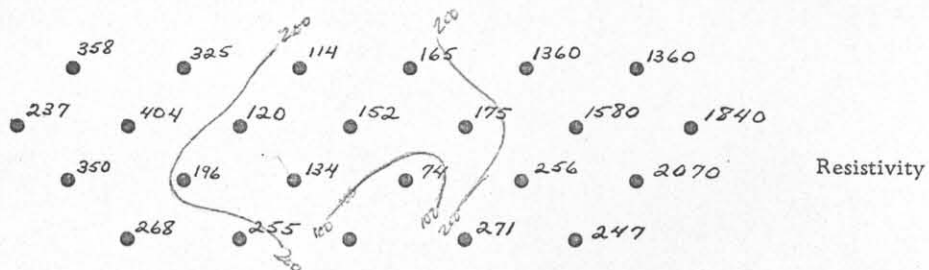
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10147 - 103 Street, Edmonton, Alberta

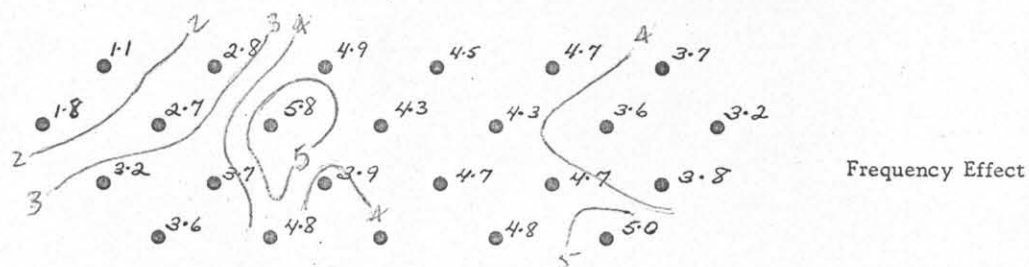
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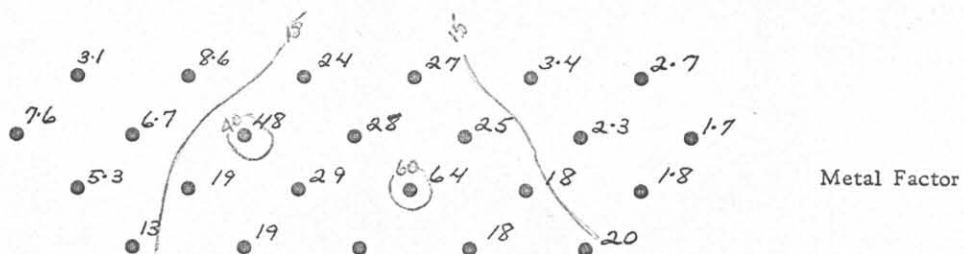
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W 5 4 3 2 1 0 1 2 3 4 5 E



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REMARKS

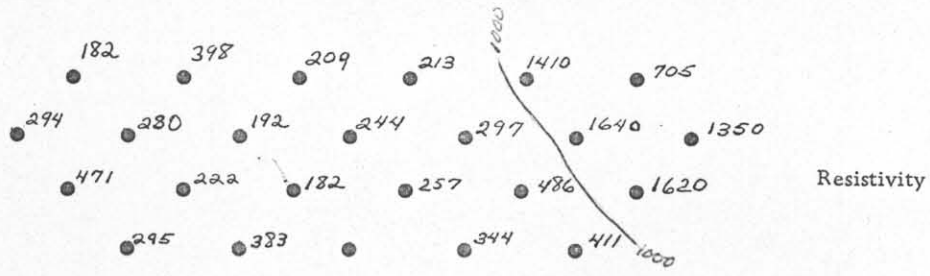
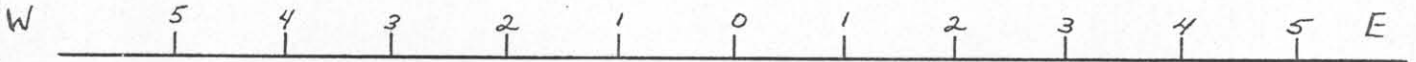
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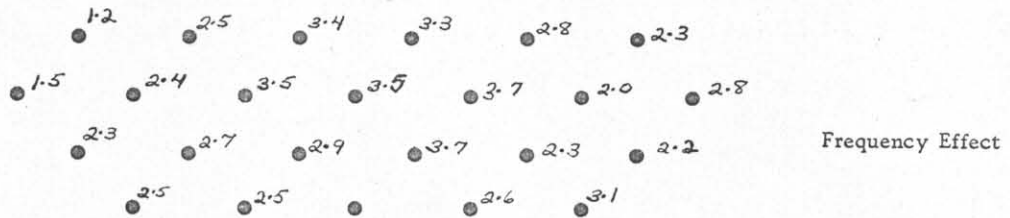
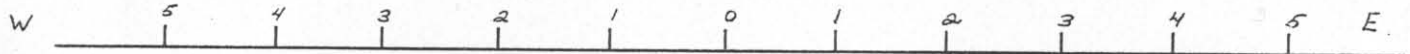
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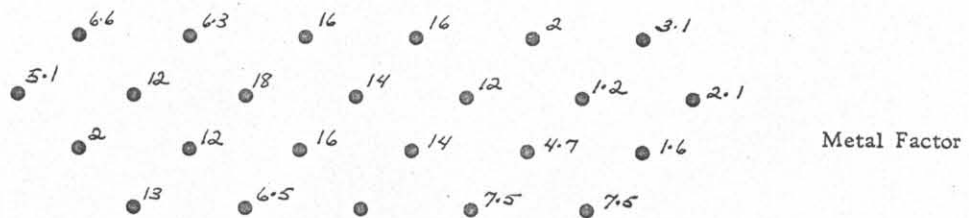
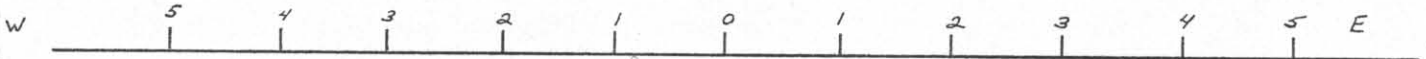
## INDUCED POLARIZATION PROFILE



Resistivity



Frequency Effect



Metal Factor

REMARKS

DATED August 1966  
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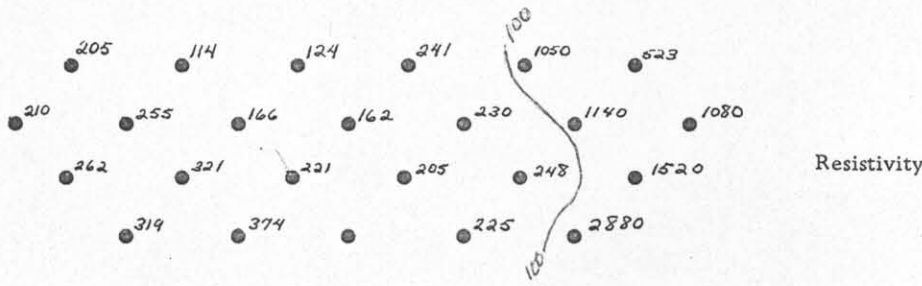
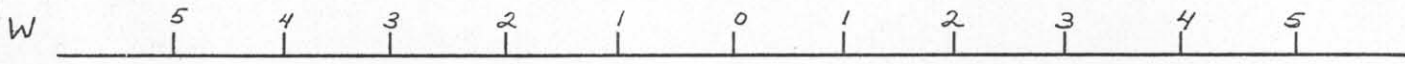
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10147 - 103 Street, Edmonton, Alberta

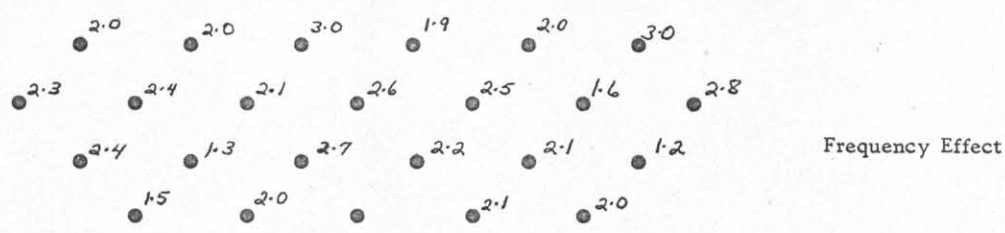
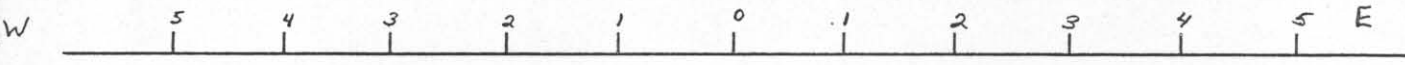
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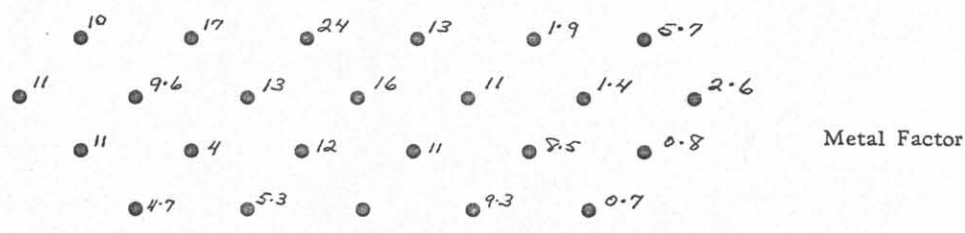
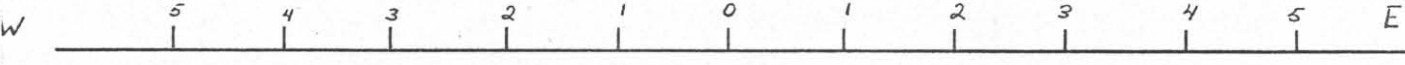
## INDUCED POLARIZATION PROFILE



Resistivity



Frequency Effect



Metal Factor

REMARKS

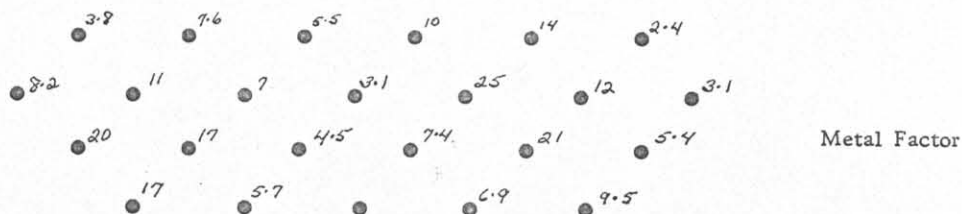
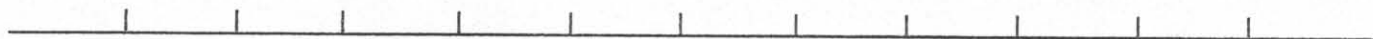
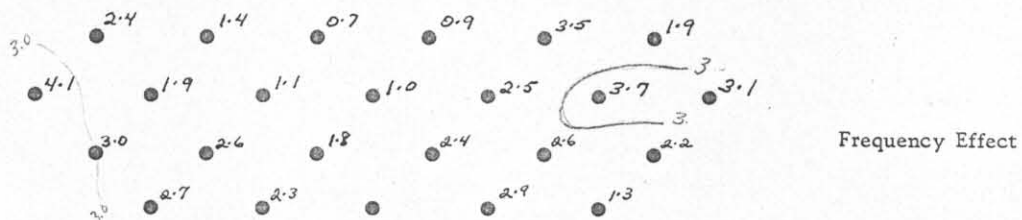
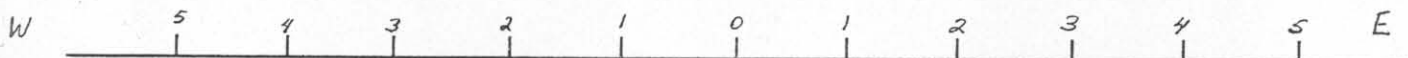
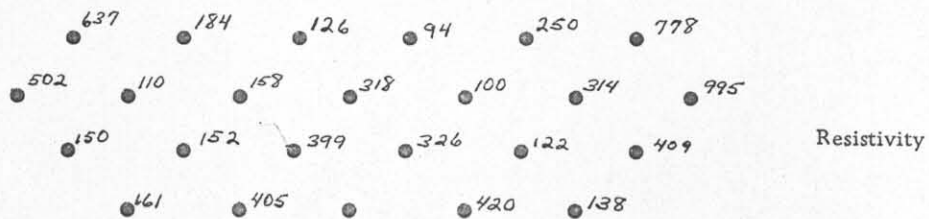
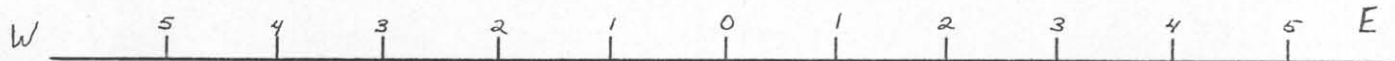
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7 AREA CPI-G1  
LINE NO. BL16+00N

## INDUCED POLARIZATION PROFILE



REMARKS

DATED

August 1966

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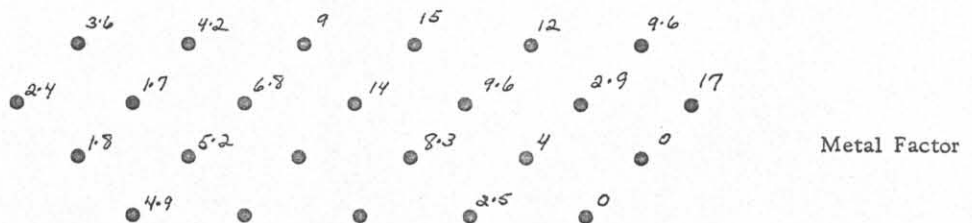
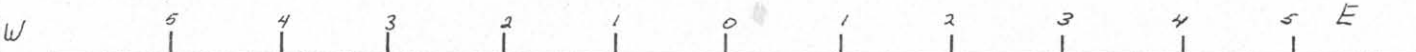
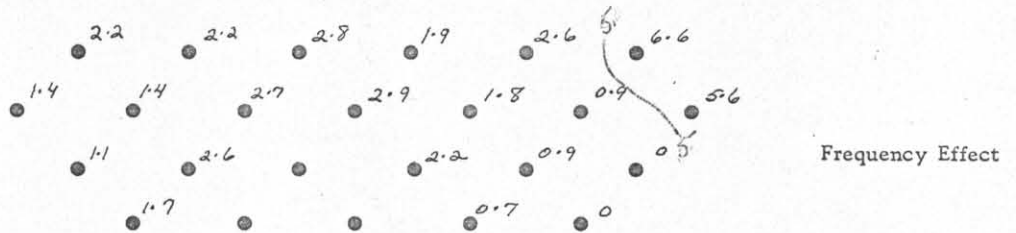
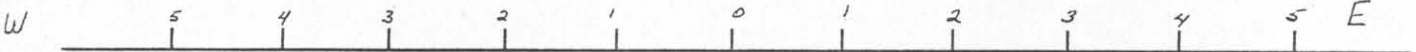
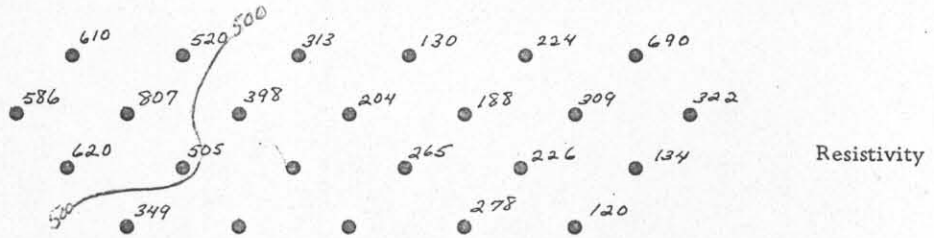
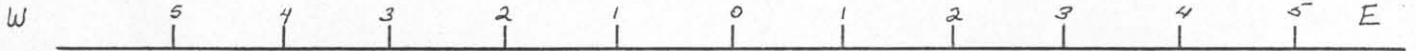
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# GEOSURVEY EXPLORATION LIMITED

10147 - 103 Street, Edmonton, Alberta

AREA CPL-GL  
LINE NO. BL20+00N

## INDUCED POLARIZATION PROFILE



REMARKS

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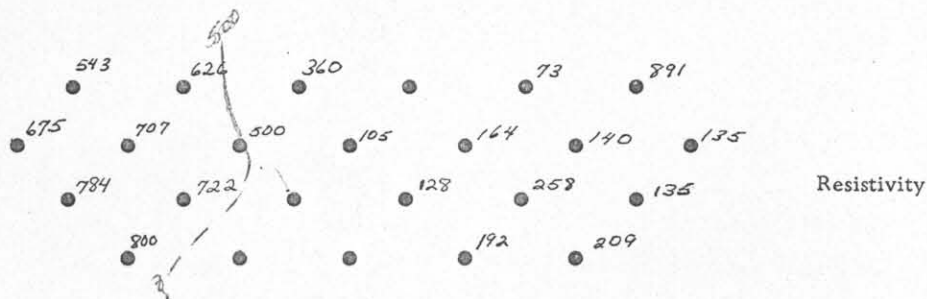
## GEOSURVEY EXPLORATION LIMITED

10147 - 103 Street, Edmonton, Alberta

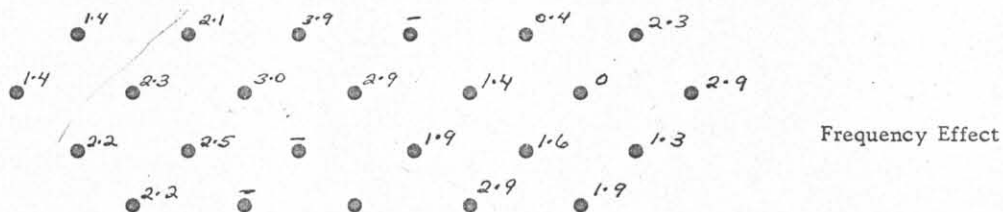
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## INDUCED POLARIZATION PROFILE

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REMARKS

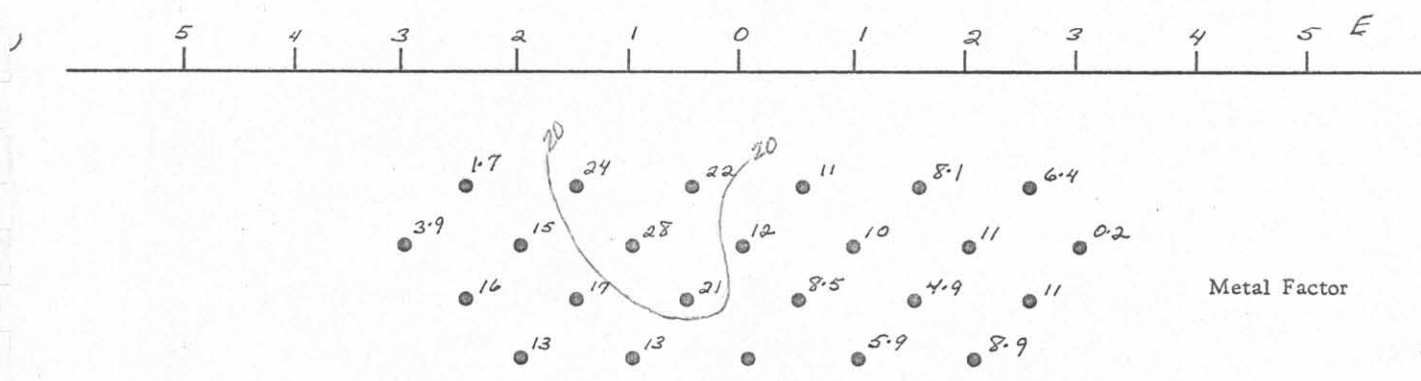
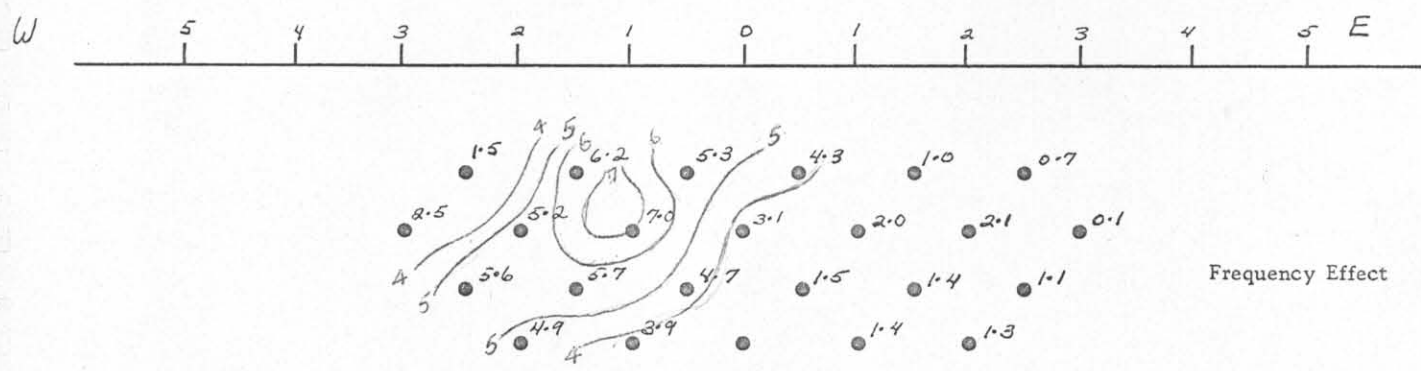
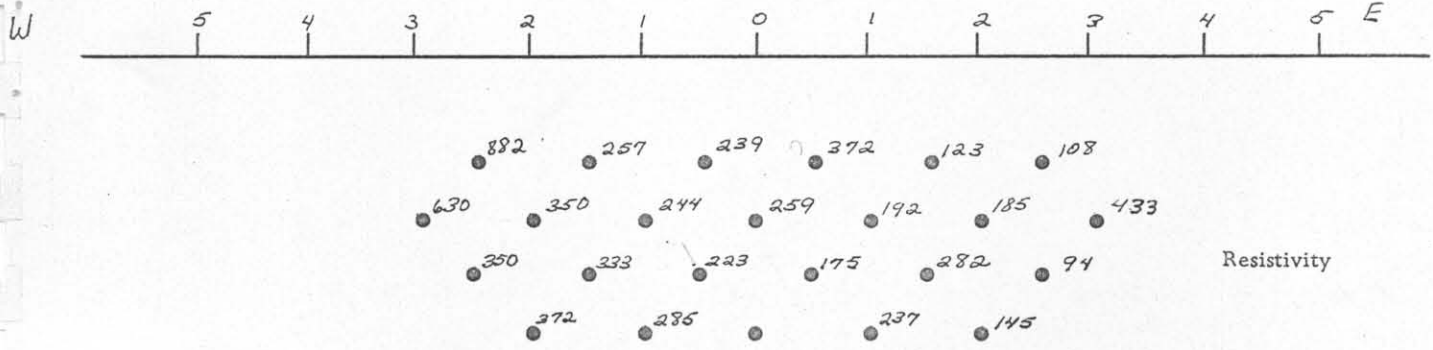
DATED August 1966SIGNED msd

GEOSURVEY EXPLORATION LIMITED

10147 - 103 Street, Edmonton, Alberta

AREA CPL-G1  
 LINE NO. RL28+00N

INDUCED POLARIZATION PROFILE



REMARKS

DATED August 1966  
 SIGNED MAC

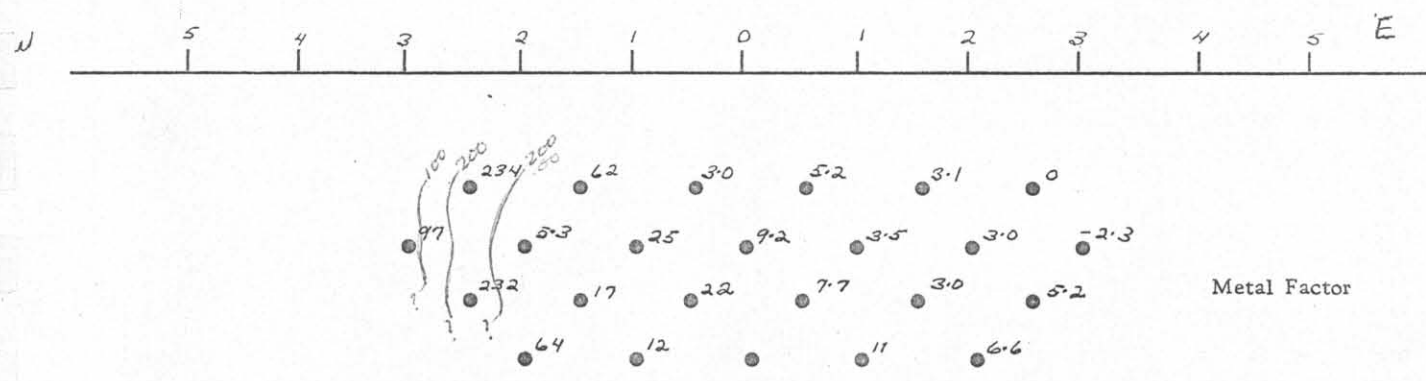
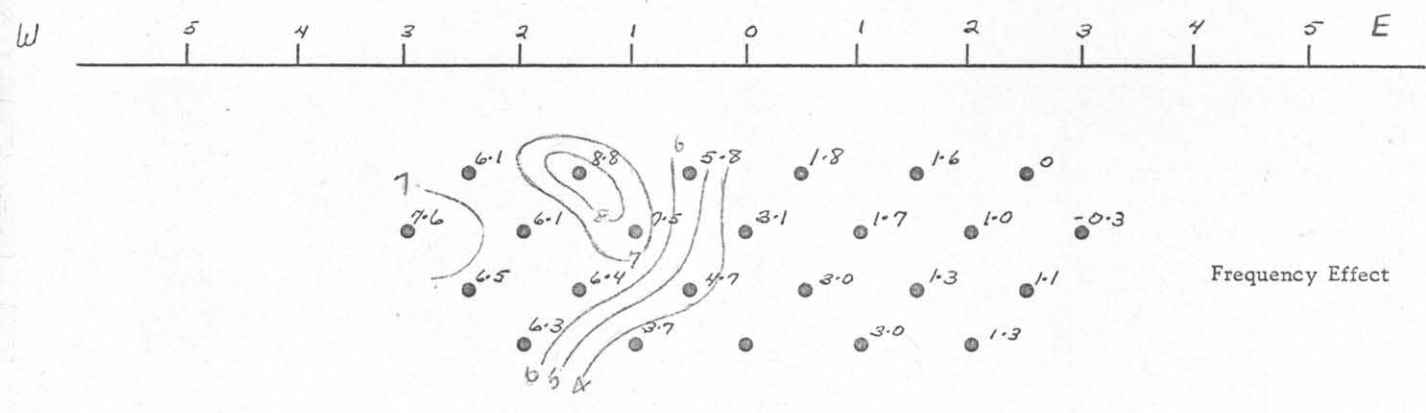
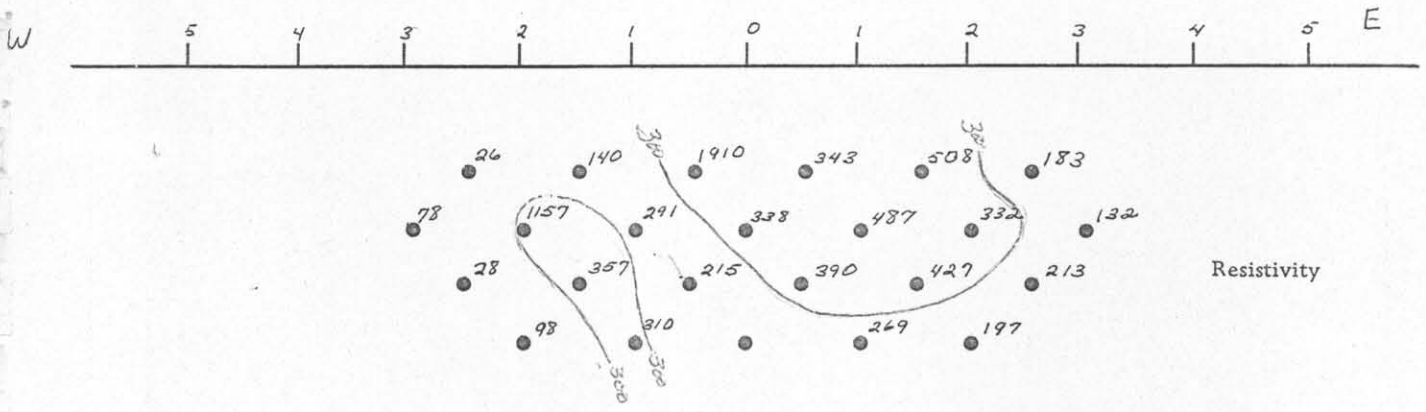
# GEOSURVEY EXPLORATION LIMITED

10147 - 103 Street, Edmonton, Alberta

AREA CPL-G1

LINE NO. RL 32+00N

## INDUCED POLARIZATION PROFILE



REMARKS

DATED August 1966

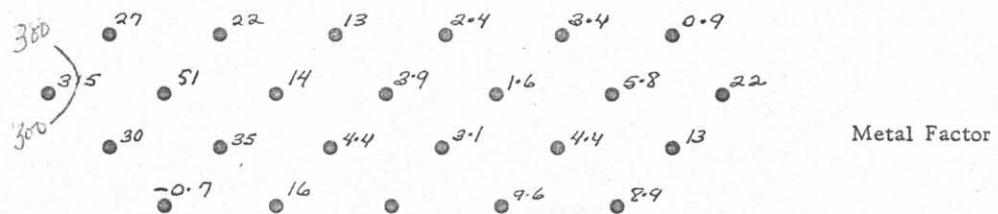
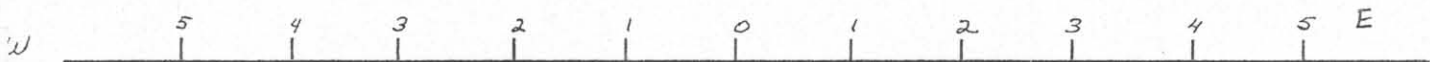
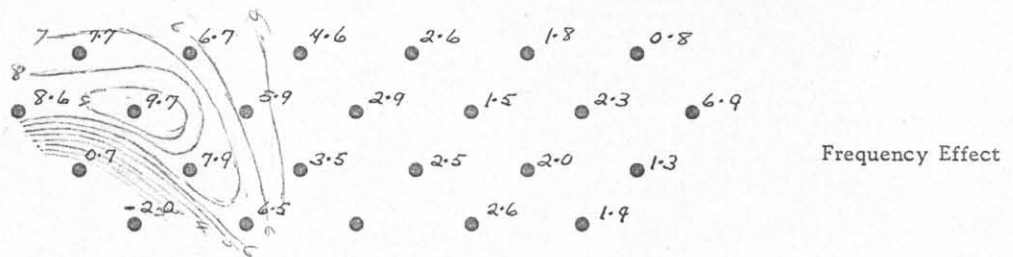
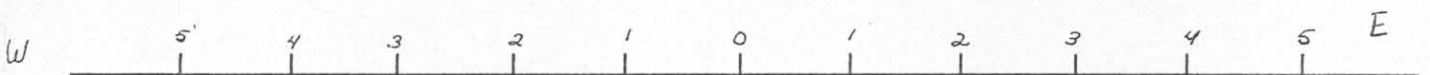
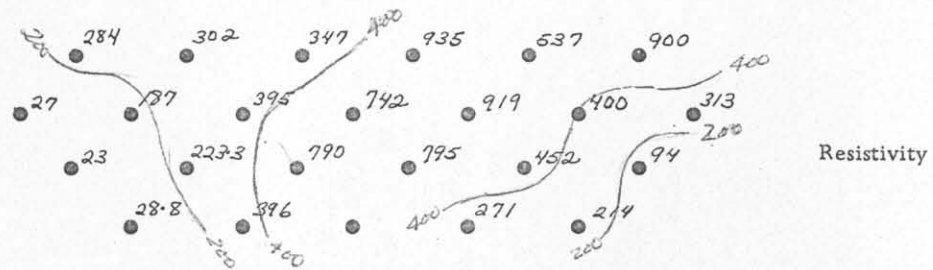
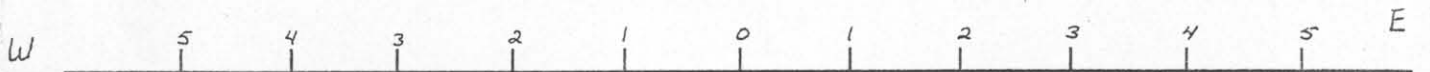
SIGNED mal.

## GEOSURVEY EXPLORATION LIMITED

10147 - 103 Street, Edmonton, Alberta

AREA CPL-GLLINE NO. RL36+00N

## INDUCED POLARIZATION PROFILE



REMARKS

DATED

August 1966

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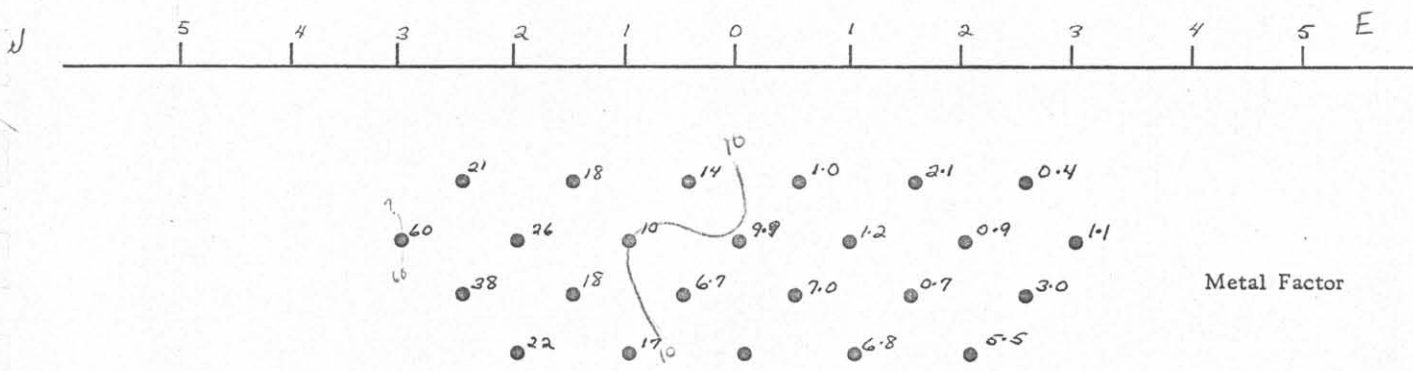
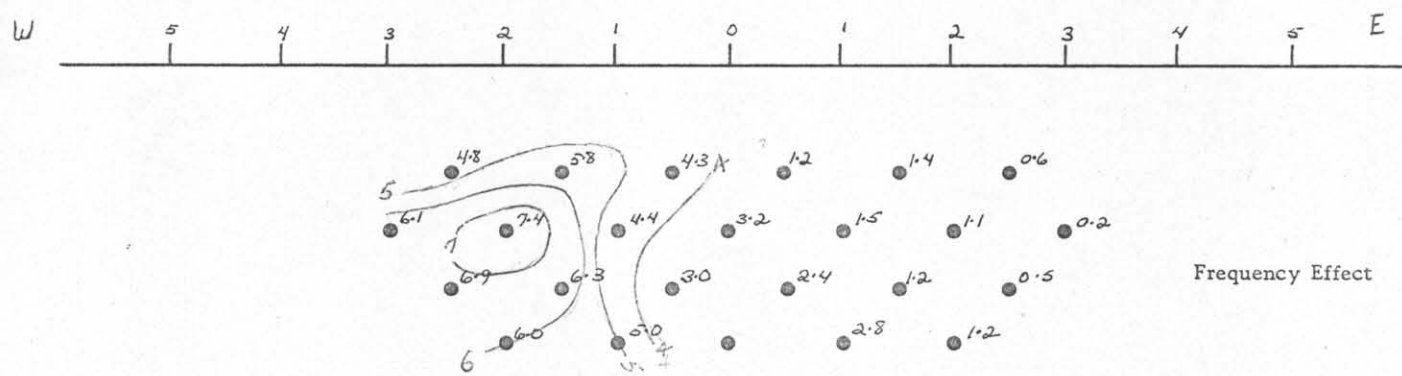
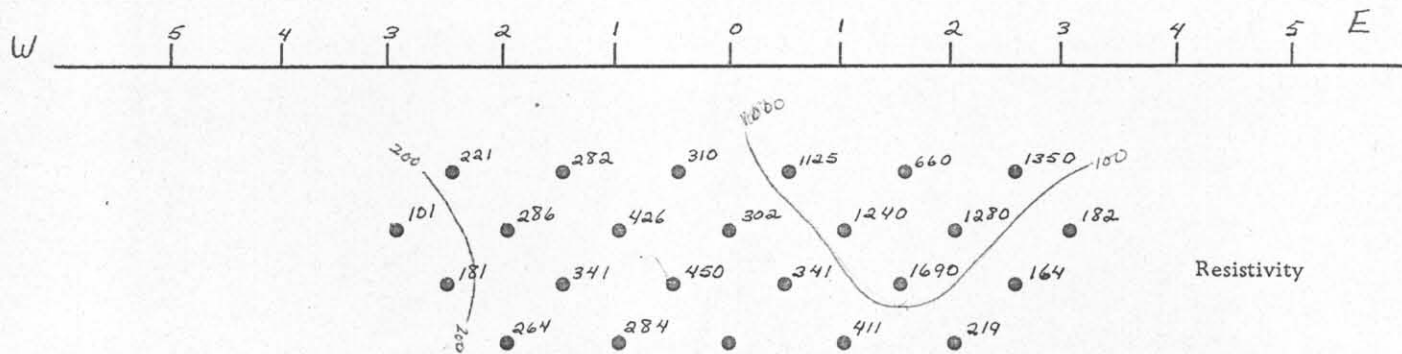
# GEOSURVEY EXPLORATION LIMITED

10147 - 103 Street, Edmonton, Alberta

AREA CPL-GL

LINE NO. BL40+00N

## INDUCED POLARIZATION PROFILE



REMARKS

DATED August 1966

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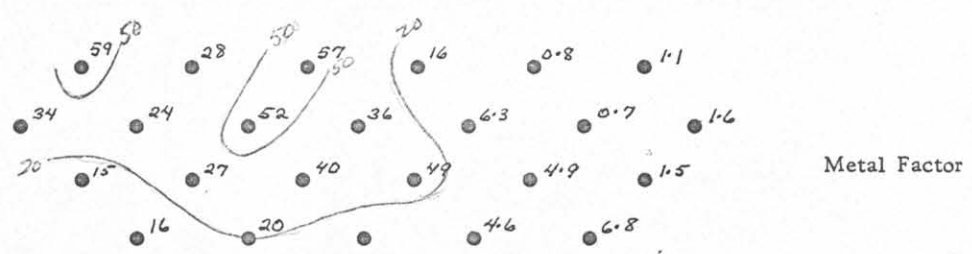
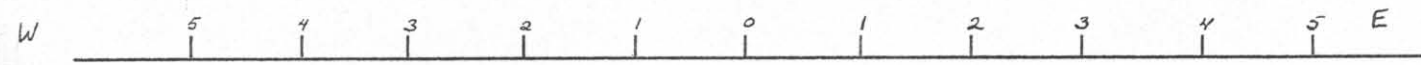
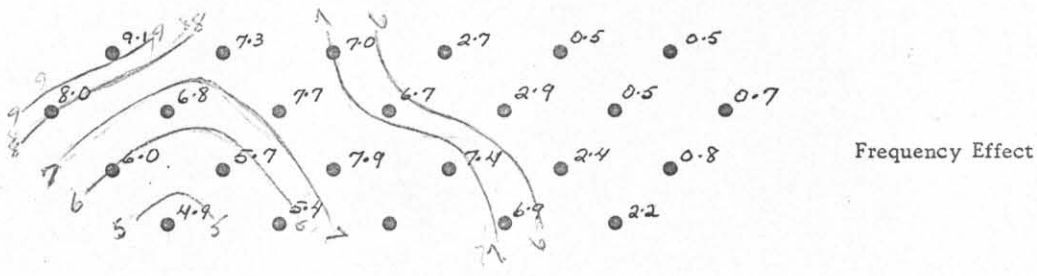
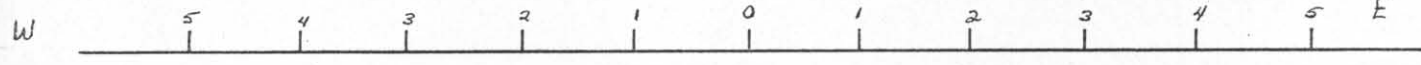
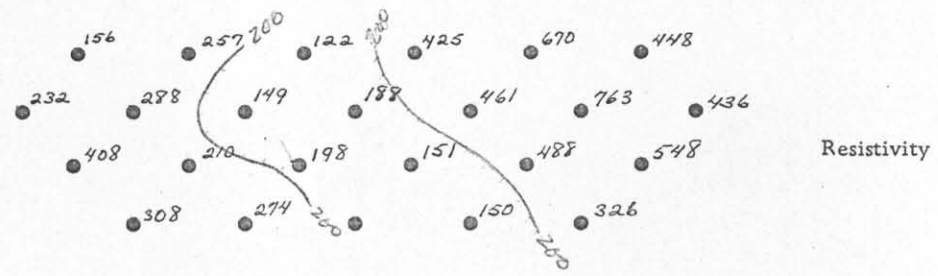
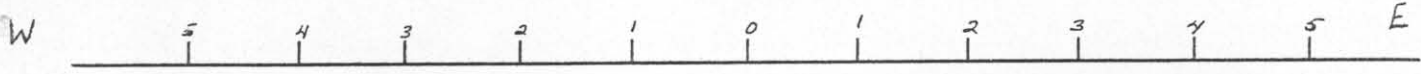


# GEOSURVEY EXPLORATION LIMITED

10147 - 103 Street, Edmonton, Alberta

AREA CPI - G1  
LINE NO. BL 44+00N

## INDUCED POLARIZATION PROFILE



REMARKS

DATED August 1966  
 SIGNED mad.

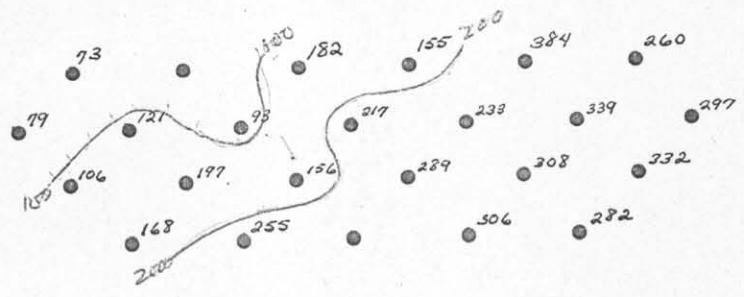
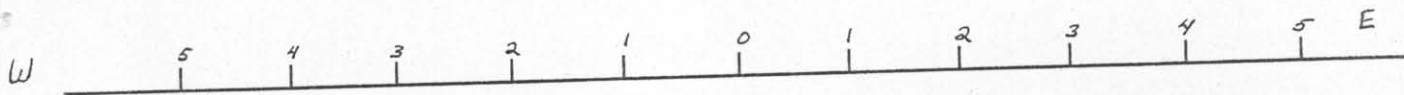
# GEOSURVEY EXPLORATION LIMITED

10147 - 103 Street, Edmonton, Alberta

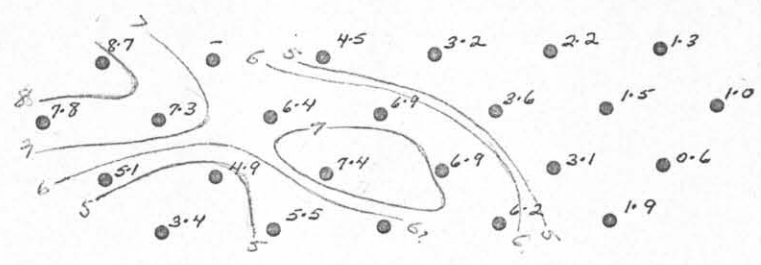
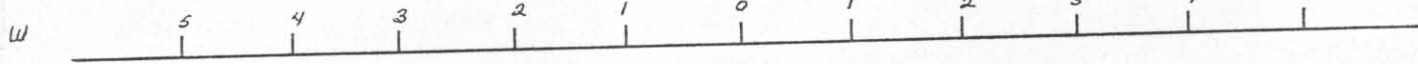
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LINE NO. BL 48 + 00N

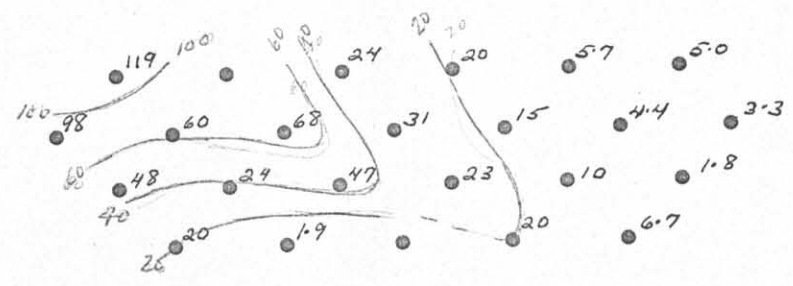
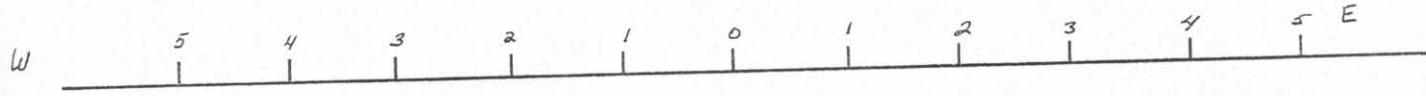
## INDUCED POLARIZATION PROFILE



Resistivity



Frequency Effect



Metal Factor

REMARKS

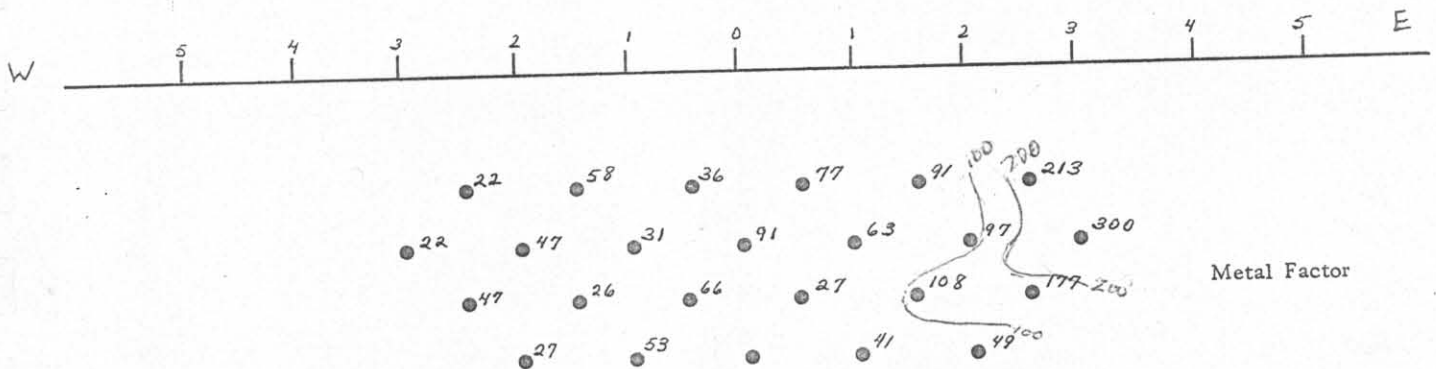
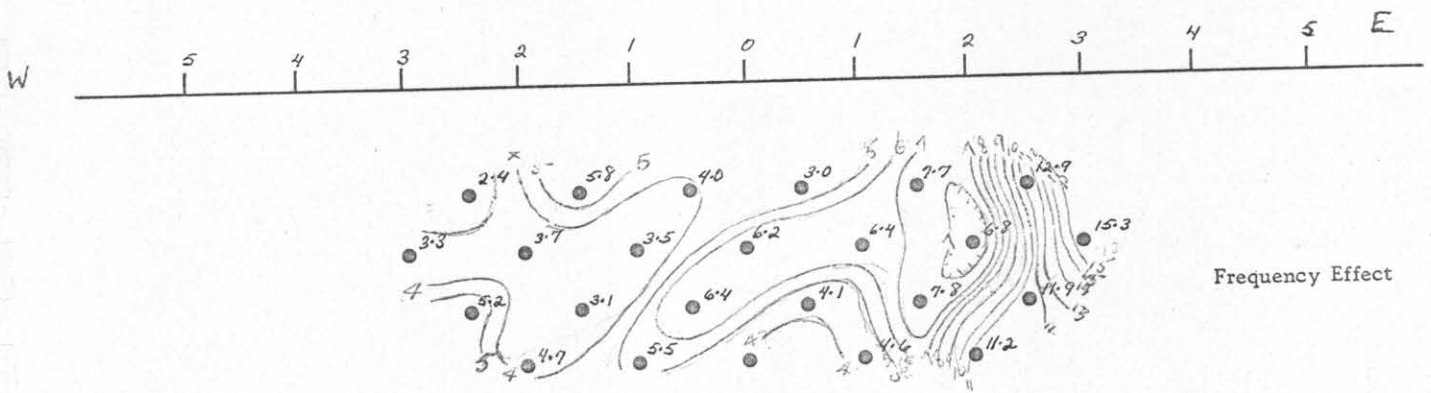
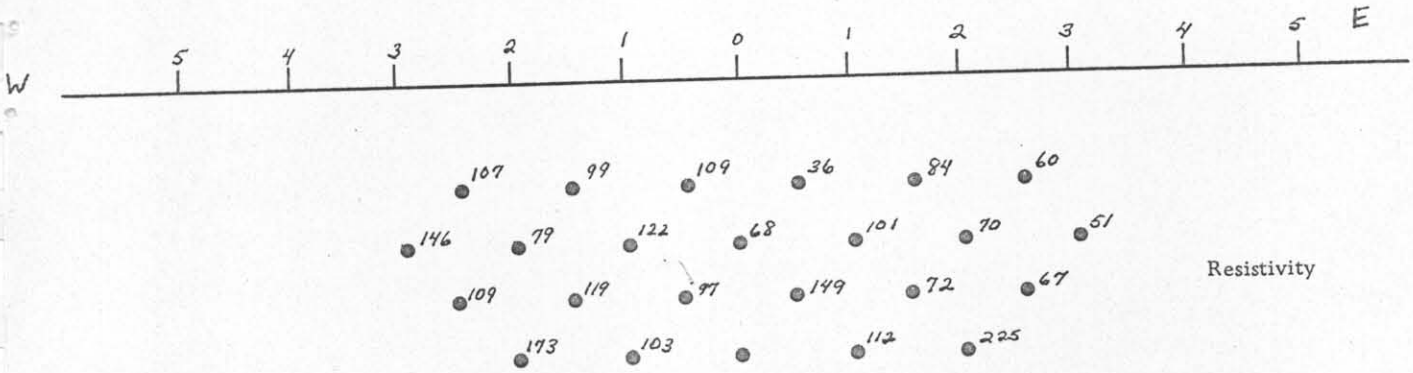
DATED August 1966

SIGNED mead.

GEOSURVEY EXPLORATION LIMITED  
10147 - 103 Street, Edmonton, Alberta

AREA CPL-GL  
LINE NO. BL52+00AN

INDUCED POLARIZATION PROFILE



REMARKS

DATED

August 1966

SIGNED

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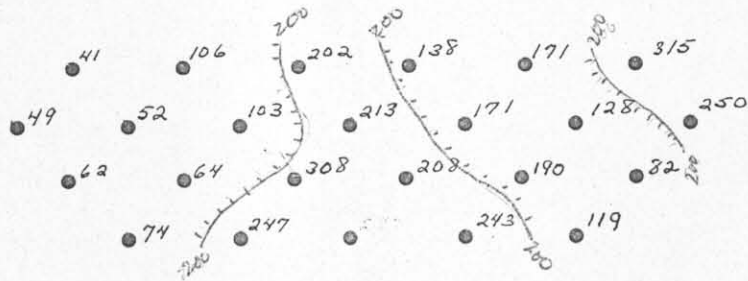
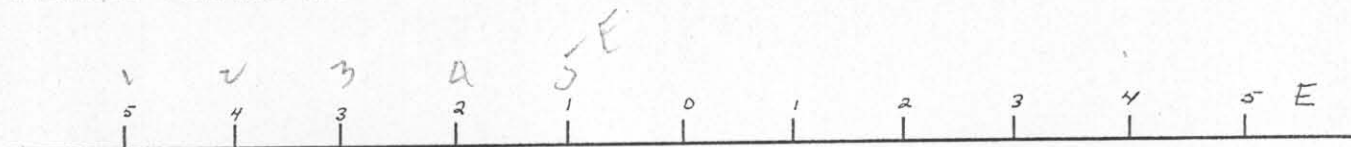
# GEOSURVEY EXPLORATION LIMITED

10147 - 103 Street, Edmonton, Alberta

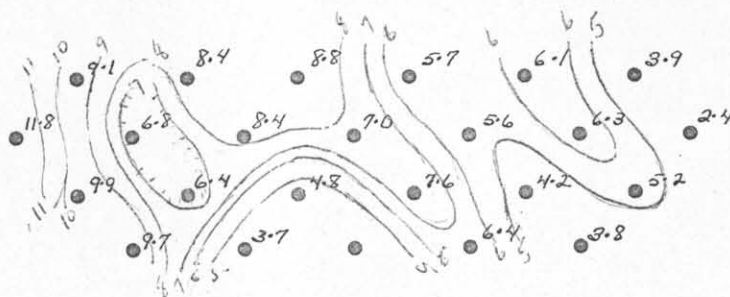
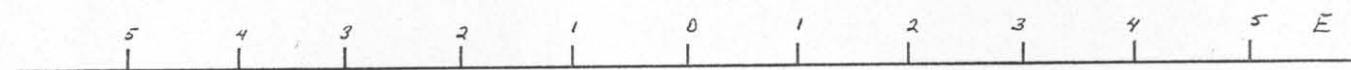
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LINE NO. BLS2+00N

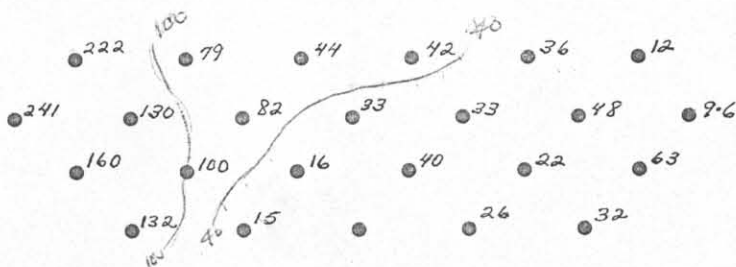
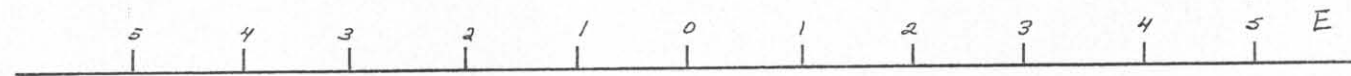
## INDUCED POLARIZATION PROFILE



Resistivity



Frequency Effect



Metal Factor

REMARKS

DATED August 1966

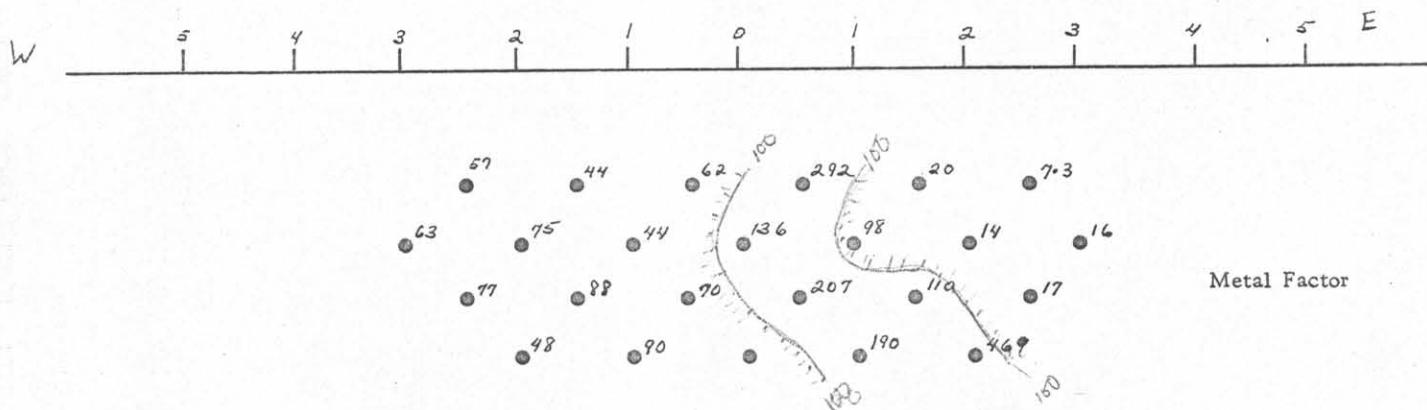
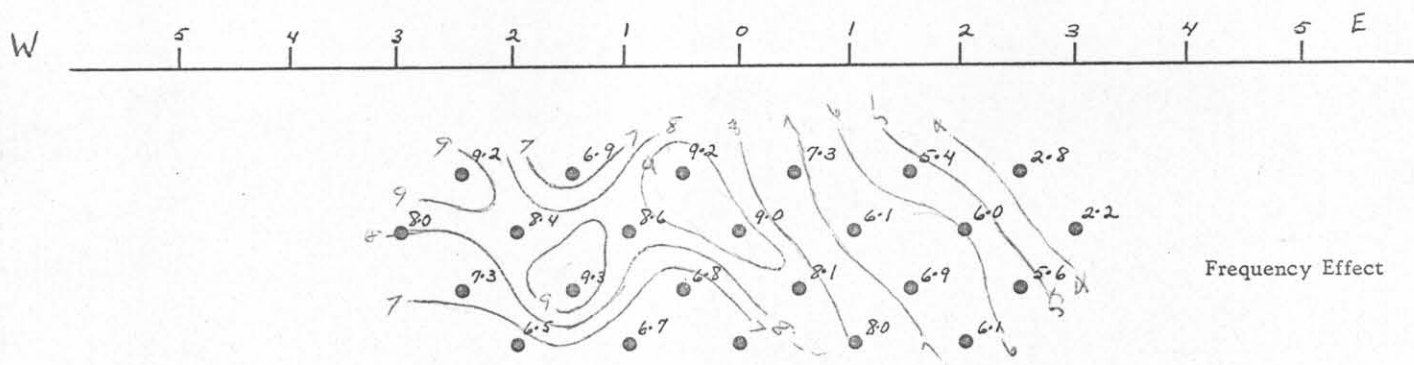
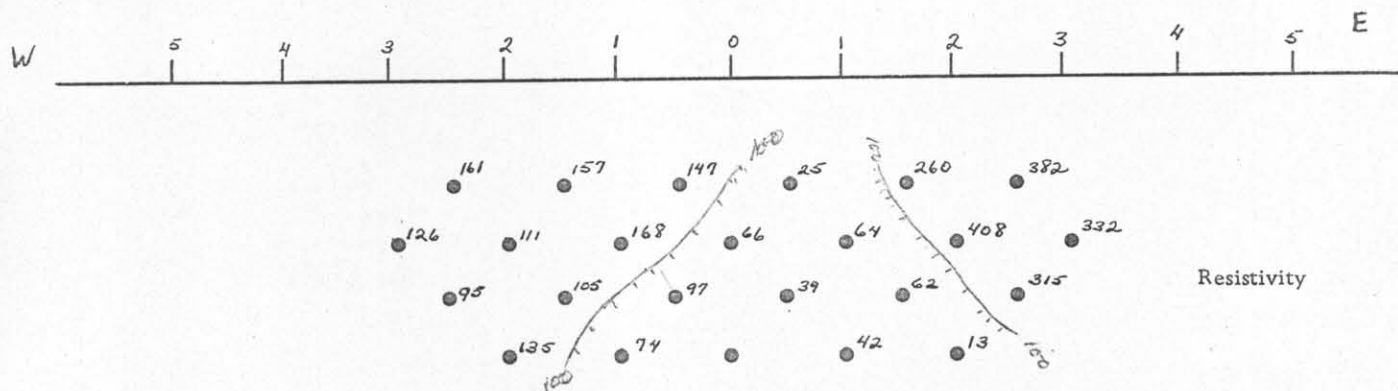
SIGNED mol

## GEOSURVEY EXPLORATION LIMITED

10147 - 103 Street, Edmonton, Alberta

AREA CPL - GLLINE NO. BL 56+00N

## INDUCED POLARIZATION PROFILE

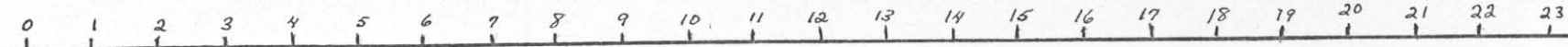
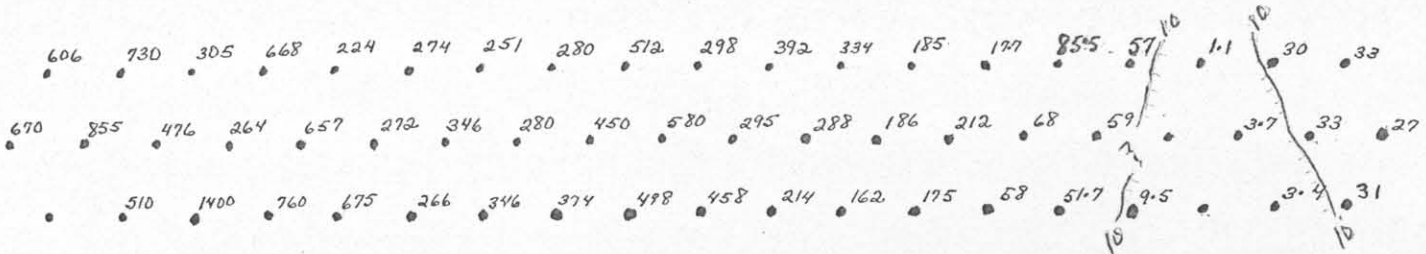
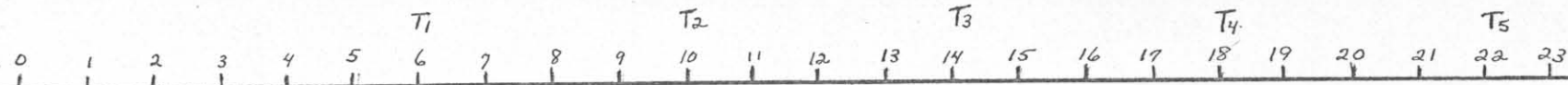
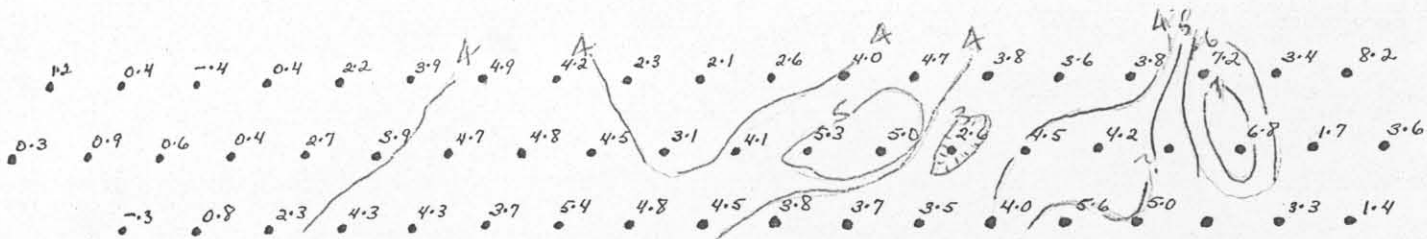
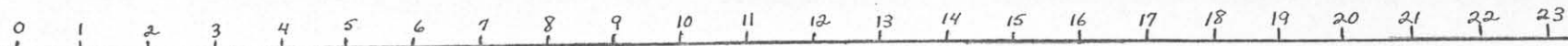


REMARKS

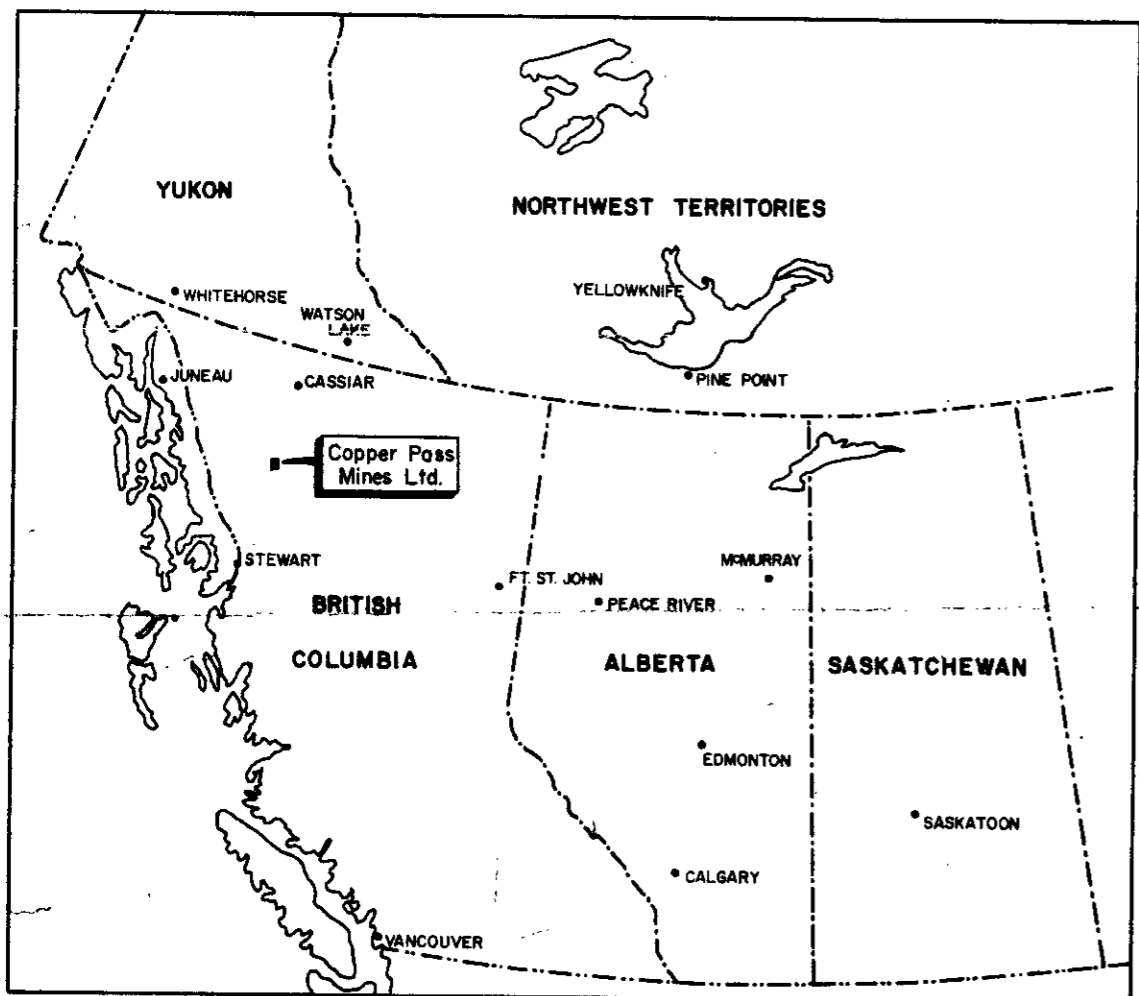
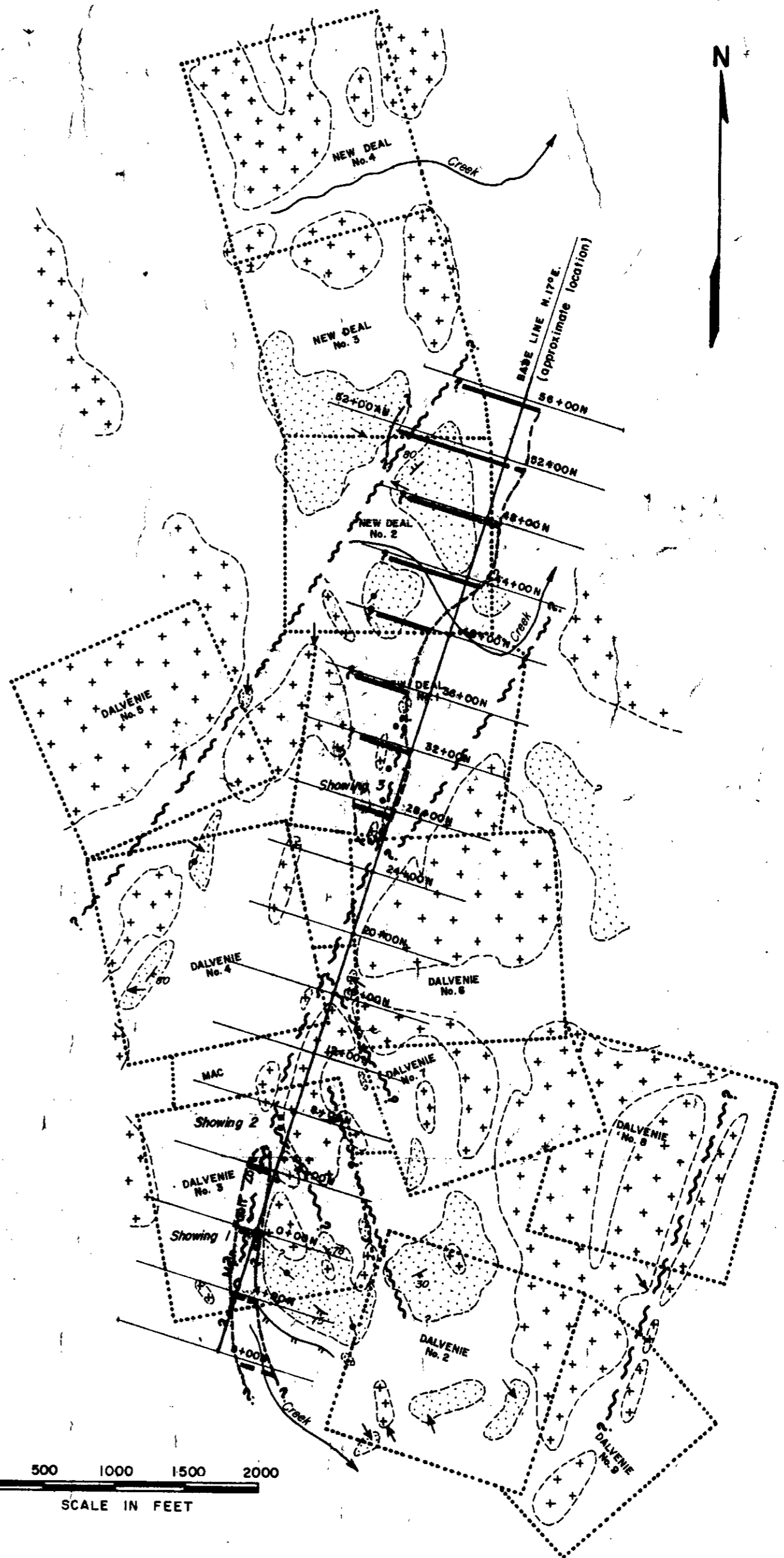
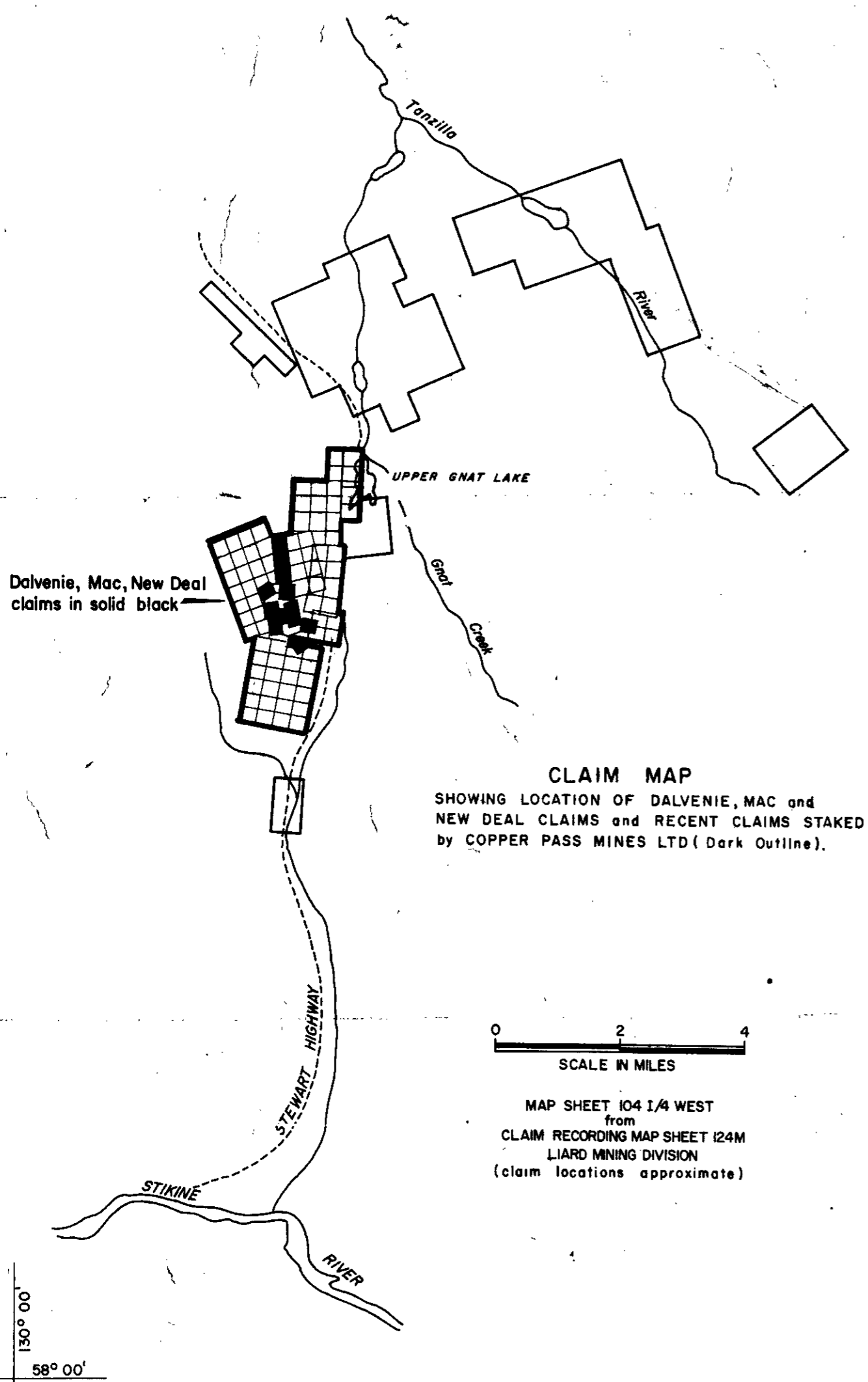
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CPL-GL  
DHL T<sub>1</sub> to T<sub>5</sub>

Downhill Line - exact location unknown,  
awaiting field information.



MAC  
Aug 16



INDEX MAP  
SHOWING LOCATION OF  
REPORT AREA

**LEGEND FOR  
INDUCED POLARIZATION SURVEY  
DALVENIE, MAC & NEW DEAL CLAIMS**

- Approximate Outline of Anomalous Area
  - Anomaly
  - weak Anomaly
- Dated Sept. 6, 1966 GEOSURVEY EXPLORATION LTD.

**LEGEND**

- QUATERNARY
  - Glacial till and recent alluvial and colluvial deposits.
- JURASSIC AND/OR CRETACEOUS
  - ++ Undifferentiated mafic and ultra mafic intrusives.
- TRIASSIC AND EARLIER
  - Argillite, quartzite, siltstone, tuff.
- Approximate boundary of areas of outcrop or intermittent outcrop.
- ~ Fault or shear zone, dip unknown.
- ⊥ Strike and dip symbol, way up of beds unknown.
- || Vertical beds.
- Showing of mineralization, usually gossaned.
- General location of old trenches.
- ⊥ Scarp of stream valley.

FIGURE 1

**PRELIMINARY GEOLOGIC MAP  
and IP GRID**

SCALE: GRAPHIC

—SEPT, 1966—

To Accompany Induced Polarization Survey, Mac  
and New Deal Claims, Stikine Plateau Area, B.C.

Map supplied by M.A. Roed Geologic  
Explorations Ltd.

GEOSURVEY EXPLORATIONS - LIMITED

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