

6430

177-#325-# 6430

GEOPHYSICAL REPORT
For
EXPLORAM MINERALS LTD.
On An
INDUCED POLARIZATION SURVEY

TP mineral claims, Winnifred Creek area,
Vernon Mining Division, B. C.
Lat. 49°56'N Long. 118°29'W N.T.S. 82 E/16

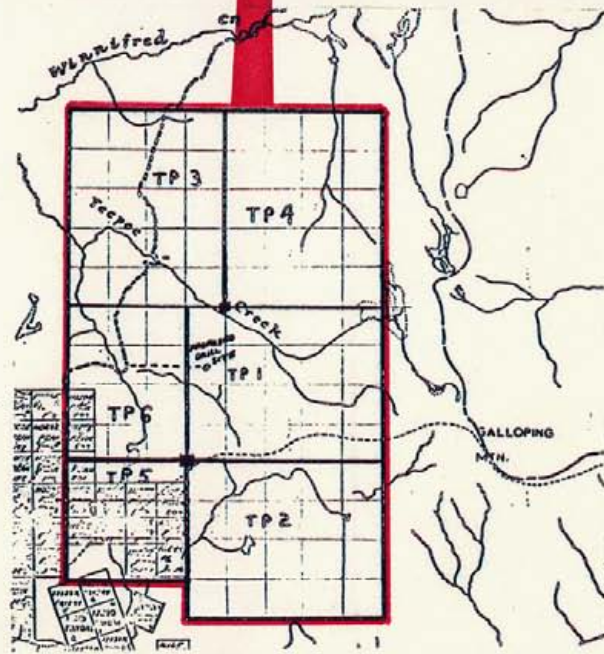
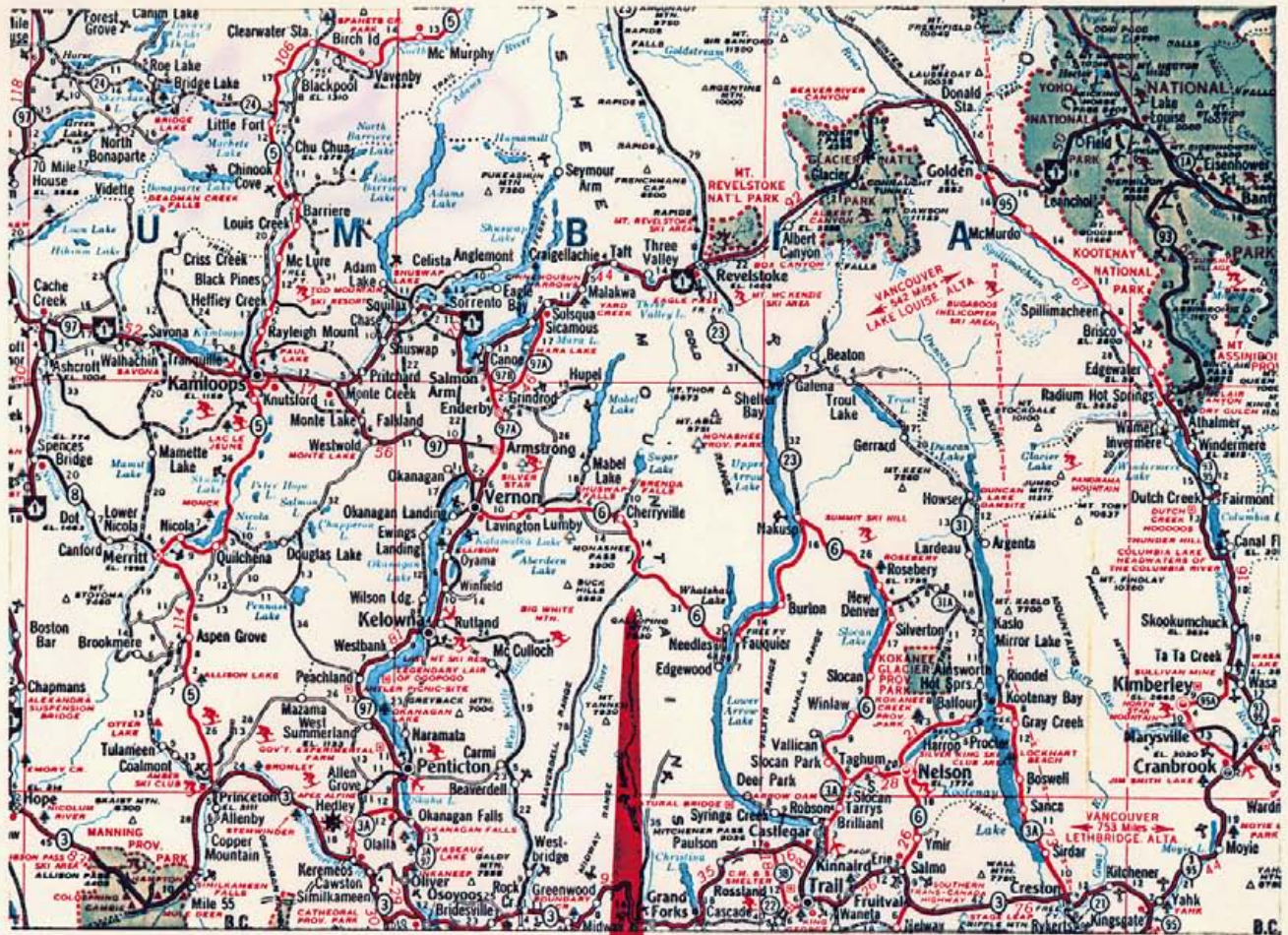
AUTHOR: Glen E. White, B.Sc., P. ENG.
DATE OF WORK: July 11 - 28, 1977
DATE OF REPORT: August 31, 1977

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

NO. _____

Glen E. White

GEOPHYSICAL CONSULTING & SERVICES LTD.



EXPLORAM MINERALS LTD.
 TP CLAIMS
 LOCATION AND CLAIM MAP

Glen & White
 geophysical consulting
 services ltd

Scale: 1" = 40 Miles

AUG. 19, 1977
 FIG. 1

C O N T E N T S

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Figure 1	-	Location and Claims Map	
" 2	-	Induced Polarization - Chargeability	
" 3	-	" " - Apparent Resistivity	
" 4	-	Vertical Magnetic Intensity	
Plate 1	-	Detail Induced Polarization	- 8N
" 2	-	" " "	- 16N
" 3	-	" " "	- 24N

INTRODUCTION

A program of reconnaissance induced polarization and magnetometer surveys was completed over the TP mineral claims, Winnifred Creek area, Vernon Mining Division, B.C., by Glen E. White Geophysical Consulting & Services Ltd. on behalf of Exploram Minerals Ltd.

The purpose of the surveys was to try and delineate the source of a molybdenum geochemical stream anomaly obtained from a regional soil sampling program.

PROPERTY

The property consists of six contiguous mineral claims TP 1 - 6, containing 101 units as illustrated on Figure 1. The survey was conducted in the area of mineral claims TP 1, 3, 4 and 6.

LOCATION AND ACCESS

The mineral claims are located midway between Lightning Peak and Galloping Mountain some 15 miles due west of Needles on Lower Arrow Lake, Latitude $49^{\circ}56'N$, Longitude $118^{\circ}29'W$, N.T.S. 82 E/16, Vernon Mining Division, B.C.

Access to the property is by unimproved bush road from Highway #6 some 23 miles east of Cherryville, a gas station with the last telephone along the road over the Monashee Mountains.

GENERAL GEOLOGY

The area of the mineral claims is shown on geology map 6 - 1957, Kettle River, to be underlain by the Nelson intrusions of granodiorite, porphyritic granite, diorite, monzonite and quartz monzonite and the Valhalla intrusions of granite and porphyritic granite, all of Mesozoic age.

The property is at an elevation of 6000 - 7000 feet A. S. L. and is covered with variable thickness of mountain spruce and Jack pine.

SURVEY SPECIFICATIONS

Survey Grid

The survey grid consists of east-west directed lines spaced 800 feet apart, flagged at 100 foot intervals. Some 17.5 miles of magnetometer surveying, 14.5 miles of reconnaissance induced polarization surveying and some 3 miles of detail induced polarization surveying were conducted.

The Magnetometer Survey

The magnetometer survey was conducted using a Scintrex MF-1 Fluxgate magnetometer. This instrument measures the vertical component of the earth's magnetic field to an accuracy of 10 gammas. Corrections for

diurnal variation were made by tying into previously established base stations at intervals not exceeding one and one half hours. Readings were taken at 300 foot intervals along the traverse lines.

Electrode Array

The data was obtained using the Wenner array. This array consists of two outside current stakes and C_1 and C_2 and two inside potential electrodes P_1 and P_2 which are spaced equal distance apart, known as the "a" spacing, and moved together along a traverse line. A 300 foot "a" spacing was used for this survey.

Induced Polarization System

A time domain Hunttec MK III receiver and a LOPO M-3 transmitter were used for this survey. The data recorded in the field consisted of the current (I) flowing through electrodes C_1 and C_2 , the primary voltage (V_p) appearing between electrodes P_1 and P_2 during the "current on" part of the cycle and four segments, M_1 , M_2 , M_3 and M_4 , in percent of the secondary voltage (V_s) during the "current off". A continuous cycle time of 4 seconds was used with approximately 1.5 seconds on and 0.5 seconds off with the current then reversing in polarity to complete the cycle until stable readings were obtained. A period

of 20 msec. and a delay time of 30 msec. were used. The four M factors were then numerically summed to obtain the area under the decay curve in milliseconds by $T_p (M_1 + 2M_2 + 4M_3 + 8M_4) = M'$. where T_p is the basic integrating time in tenths of seconds. This gives a quantitative value to the data measured.

The apparent resistivity, in ohm-feet, is proportional to the ratio of the primary voltage to the measured current, the proportionality factor depending on the geometry of the electrode array used. The chargeability and resistivity obtained are called "apparent" as they are values which that portion of the earth sampled by the array would have if it were homogeneous. As the earth sample is usually inhomogeneous, the calculated apparent chargeability and apparent resistivity are functions of the actual chargeabilities and resistivities of the rocks sampled and of the geometry of the rocks.

DISCUSSION OF RESULTS

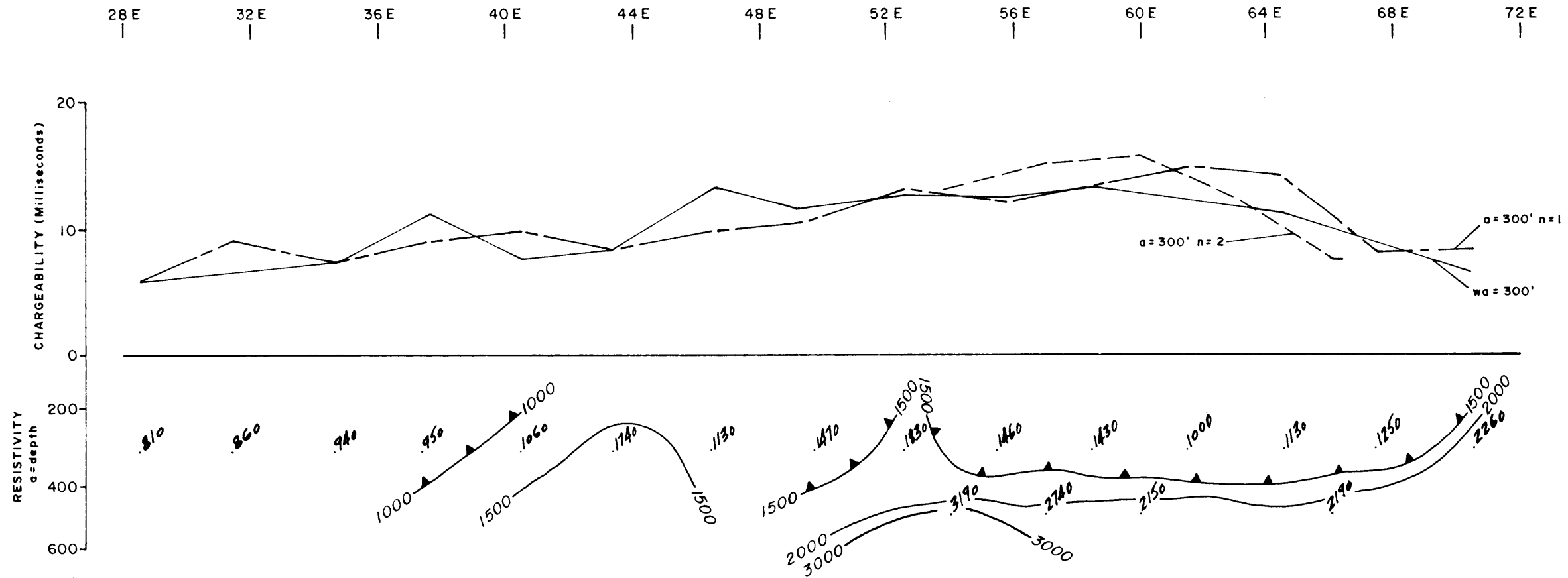
The vertical magnetic intensity map, Figure 4, shows moderate variations from a low of 1000 gammas to a high of 2600 gammas. The data is bimodal with peaks around 1250 gammas and 1450 gammas. The area beneath the 1400 gamma contour forms a large embayment

in the center to northeastern sections of the survey area. The southwestern corner contains a pronounced north-south trending magnetic high zone which likely reflects an increase in ferromagnesium minerals and thus may relate to internal zoning within the plutonic rocks.

The apparent resistivity data, Figure 3, in general reflects variations in the physical properties of the overburden and depth to bedrock. The resistivity values are relatively high which tends to indicate shallow overburden conditions. Particularly high resistivity values 10,000 ohm-feet and greater were detected in the southeastern quadrant of the survey area. These high values as well as indicating shallow overburden conditions, may possibly reflect a change in rock type.

The induced polarization chargeability map, Figure 2, depicts a large center area which rises to a chargeability level of some 5.5 milliseconds above a background of some 2.0 milliseconds. Within this area of high background, two definite anomalous areas of over 10 milliseconds were detected which gave highs of 19.9 and 15.2 milliseconds. Several other anomalies of smaller aerial size were also delineated. Correlation of the vertical magnetic intensity, chargeability and apparent resistivity data indicates that the center area of high chargeability lies within the

EXPLORAM MINERALS LTD.
 DETAILED INDUCED POLARIZATION PROFILES
 LINE 8+00N



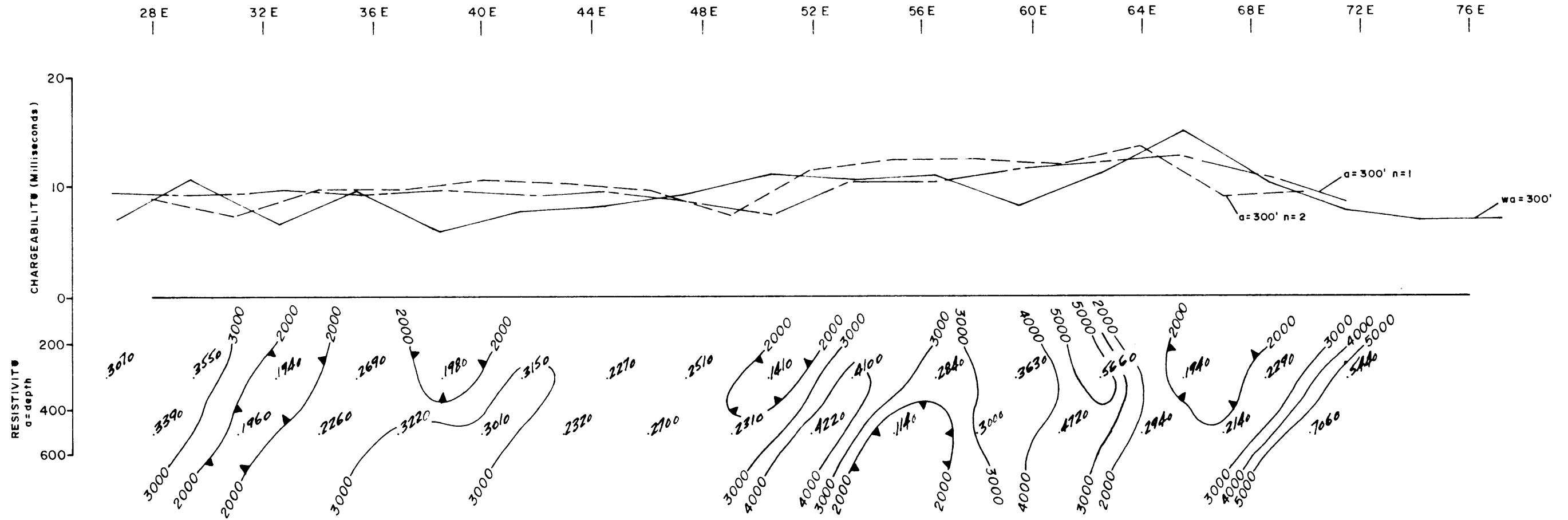
Scale: 1" = 400'

AUG. 19, 1977



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 services Ltd.

EXPLORAM MINERALS LTD.
 DETAILED INDUCED POLARIZATION PROFILES
 LINE 16+00 N



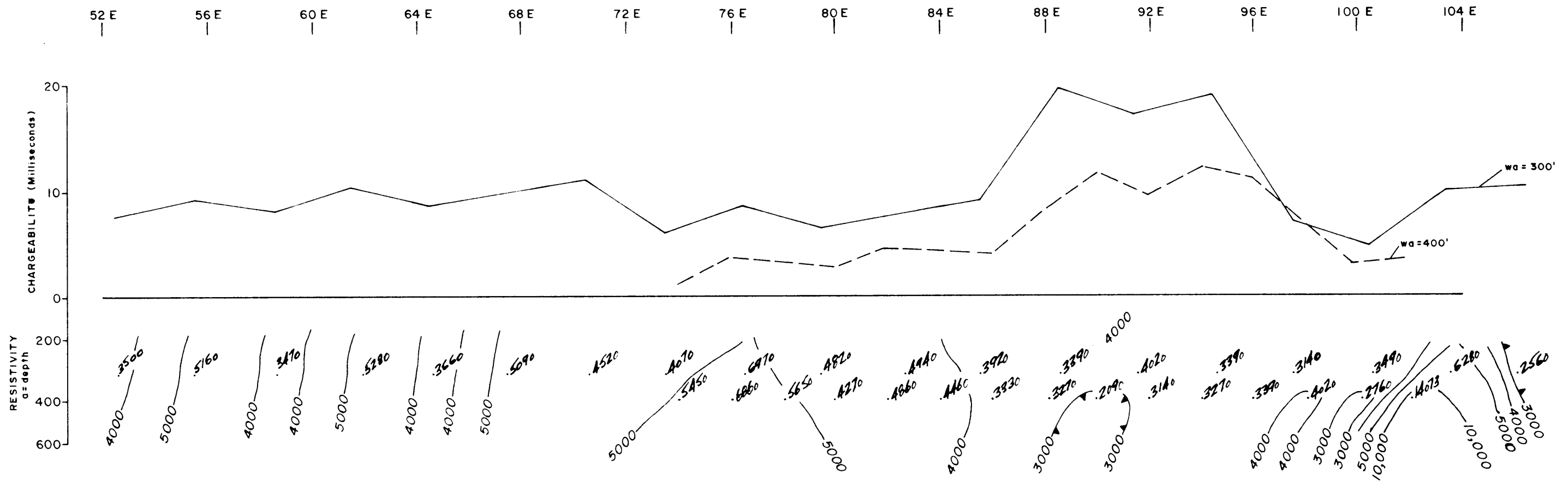
SCALE: 1" = 400'

AUG. 19, 1977



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EXPLORAM MINERALS LTD.
 DETAILED INDUCED POLARIZATION PROFILES
 LINE 24+00 N



Scale: 1" = 400'

AUG. 19, 1977



Glen E. White
 geophysical consulting
 B
 services Ltd.

magnetic low embayment and that the areas of anomalous chargeability above 10 milliseconds flank the strong apparent resistivity highs.

A limited amount of detail induced polarization surveying was conducted as illustrated on Plates 1 - 3. A high powered transmitter (2.5 KW) was imported to test the anomalies to a depth of 500 - 600 feet with the three array. The three array data is illustrated as $a = 300$ feet, $n = 1$ or 2 . The Wenner array shows as $w_a = 300$ feet. Plate 1 confirms the chargeability anomaly on Line 8N with a high of 15 milliseconds at 60E with $a = 300$ feet, $n = 2$ indicating that some 1 - 3% chargeable materials may exist to depth. Plate 2 shows the high chargeability response to be near 16N - 65E. The resistivity data shown is that for the pole dipole array $a = 1$ and 2 . Plate 3 shows a defined anomaly of twice background at $w_a = 300$ feet and 2.75 times background at $w_a = 400$ feet.

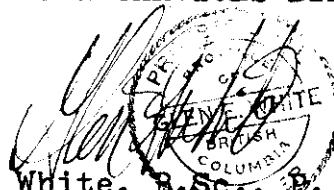
CONCLUSION AND RECOMMENDATIONS

During the month of July 1977 a program of magnetometer and induced polarization surveying was conducted over the TP mineral claims on behalf of Exploram Minerals Ltd.

The surveys delineated several strong chargeability features which may be caused by some 1 - 3% chargeability materials per volume. The anomalies are located in a magnetic low embayment adjacent to a strong apparent resistivity high which would suggest a possible variation in rock type in this area.

Thus, since this is also the general area of the anomalous molybdenum geochemical stream values, it is recommended that chargeability high areas be tested for economic mineralization by diamond drilling.

Respectfully submitted,
GLEN E. WHITE GEOPHYSICAL
CONSULTING & SERVICES LTD.



Glen E. White, B.Sc., P. Eng.
Consulting Geophysicist

A P P E N D I XInstrument SpecificationsMAGNETOMETERA. Instrument

- (a) Type - Fluxgate
- (b) Make - Scintrex MF-1

B. Specifications

- (a) Measurement - Vertical Magnetic Field
- (b) Range - \pm 100 K gammas in 5 ranges
- (c) Sensitivity - Maximum 20 gammas per scale division
- (d) Accuracy - \pm 10 gammas

C. Survey Procedures

- (a) Method - One and one half hour loops
- (b) Corrections - (i) Base
(ii) Diurnal
- (c) Station relationship - each station read for
intensity of vertical magnetic field.

A P P E N D I XInstrument SpecificationsA. Induced Polarization Receiver

- (1) Type - Hunttec MK III time domain
- (2) Sensitivity - $V_p = 10^{-7}$ to 10^{-6} volts 1%
resolution
 $V_p = 10^{-6}$ to 10 volts 0.1%
resolution
- (3) Range - 30×10^{-6} to 10 volts
- (4) Self Potential - \pm 1 volt
- (5) M Factor - 0.1%
- (6) Power - 0.7 ampere at 12 volts
Rechargeable batteries
- (7) Size - 16" x 9" x 5 3/4"

B. Induced Polarization Transmitter

- (1) Type - Hunttec LOPO M-3
- (2) Maximum Current - 1.5 D.C.
- (3) Maximum Voltage - 1,800 V D.C.
- (4) Load Power - \neq 160 watts @ 75% efficiency
- (5) Load Current - Continuously adjustable
- (6) Cycle time - 2, 4, 8 or 16 seconds

STATEMENT OF QUALIFICATIONS

Name: WHITE, Glen E.

Profession: Geophysicist

Education: B.Sc. Geophysics - Geology
University of British Columbia

Professional Associations: Associate member of Society of
Exploration Geophysicists.

Vice-President of B. C. Society of
Mining Geophysicists.

Experience: Pre-Graduate experience in Geology-
Geochemistry - Geophysics with Anaconda
American Brass.

Two years Mining Geophysicist with
Sulmac Explorations Ltd. and Airborne
Geophysics with Spartan Air Services Ltd.

One year Mining Geophysicist and Technical
Sales Manager in the Pacific north-west
for W. P. McGill and Associates.

Two years Mining Geophysicist and supervisor
Airborne and Ground Geophysical Divisions
with Geo-X Surveys Ltd.

Two years Chief Geophysicist Tri-Con
Exploration Surveys Ltd.

Six years Consulting Geophysicist.

Active Experience in all Geologic provinces
of Canada.

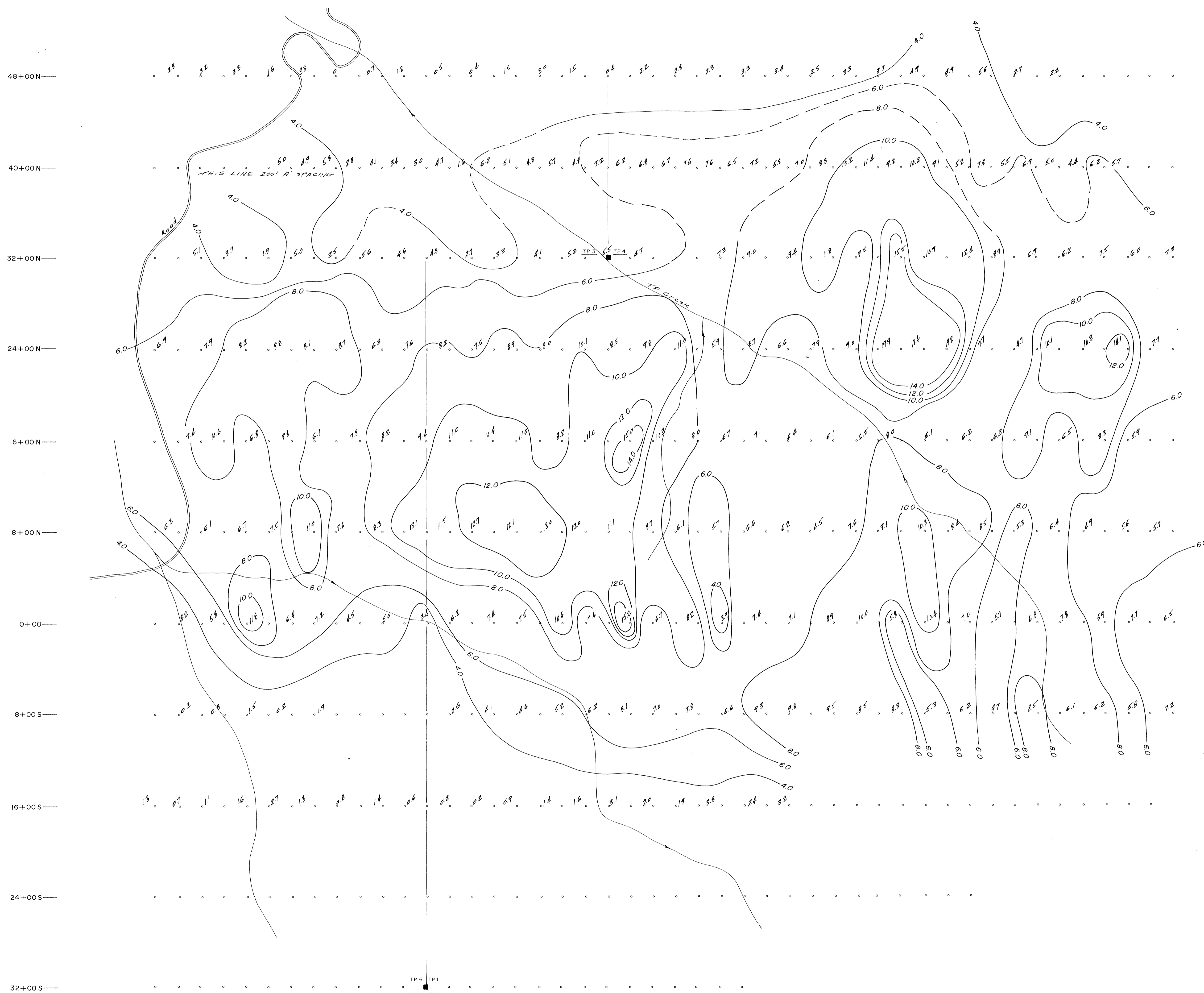
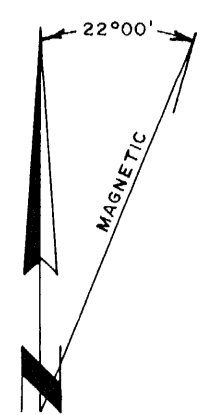
COST BREAKDOWN

<u>Personnel</u>	<u>Dates Worked</u>	<u>Wages</u>	<u>Total</u>
E. MacKenzie.....	July 11,12,16-28/77..	\$112/day..	\$1568.00
R. Saunders.....	"..."..	16-25/77....95/day...	1045.00
D. Johnson.....	"..."..	16-25/77....90/day....	990.00
G. Steblin.....	"..."..	16-28/77....75/day...	1050.00
K. Jones.....	July 11-20/77.....	110/day...	1100.00
G. White, P. Eng...	July 26,27/77.....	150/day....	300.00
Meals and Accomodations.....			1675.00
Instrument Lease - Induced Polarization.....			1190.00
- Magnetometer.....			150.00
Vehicle 4x4 plus gas.....			630.00
Materials.....			152.00
Interpretation, Drafting, Maps and Reports....			850.00
Total.....			<u>\$10,700.00</u>



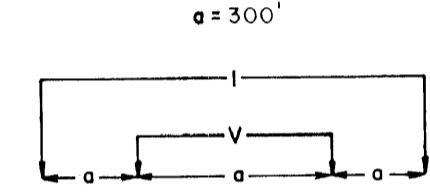
118°29'

—24+00E —32+00E —40+00E —48+00E —56+00E —64+00E —72+00E —80+00E —88+00E —96+00E —104+00E —112+00E

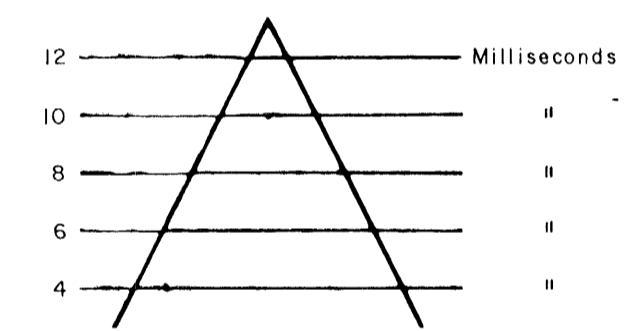


- LEGEND**
- Contour Line, Contour Interval 4,6,8,10,12,14 Milliseconds
 - Stations
 - - - Outline of Claims
 - Claim Posts
 - == Unpaved Roads

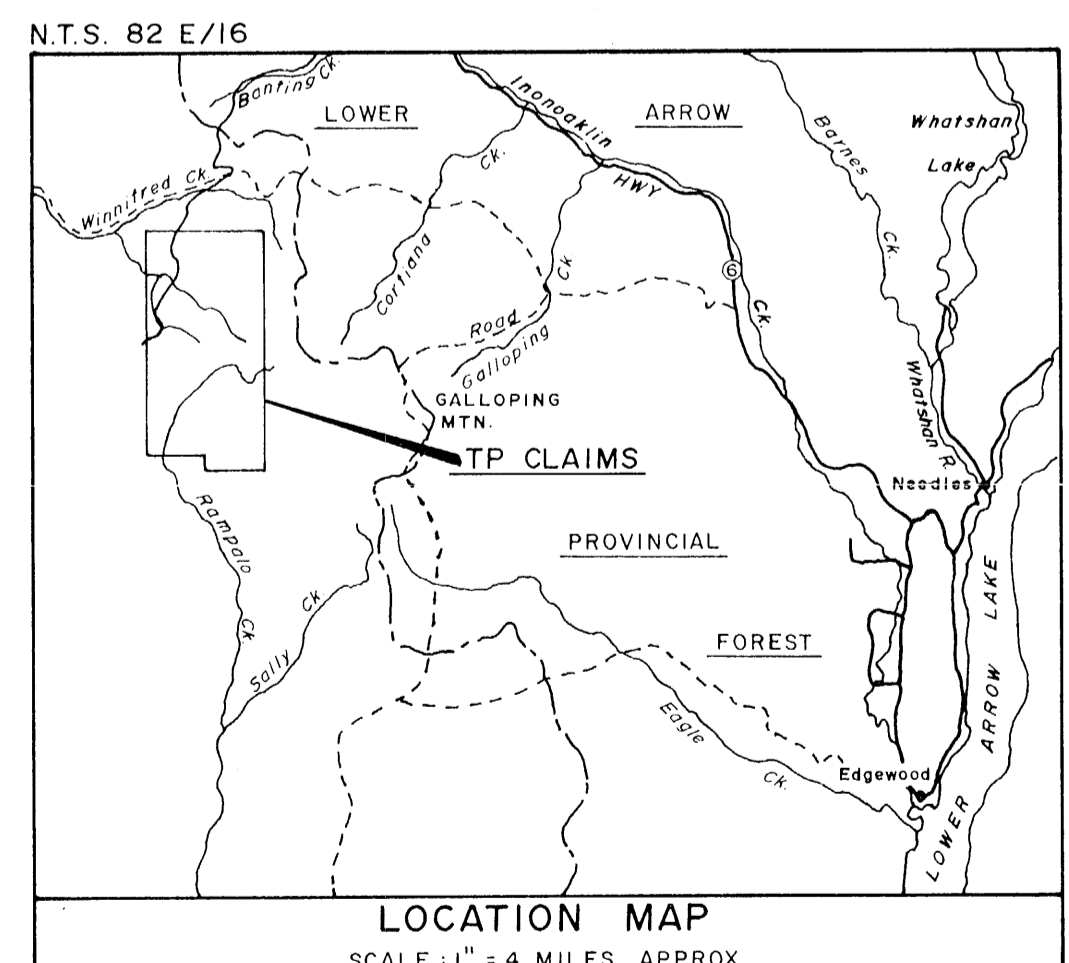
INSTRUMENT : LOPO M-3 WENNER ARRAY



CHARGEABILITY KEY



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. **6430**

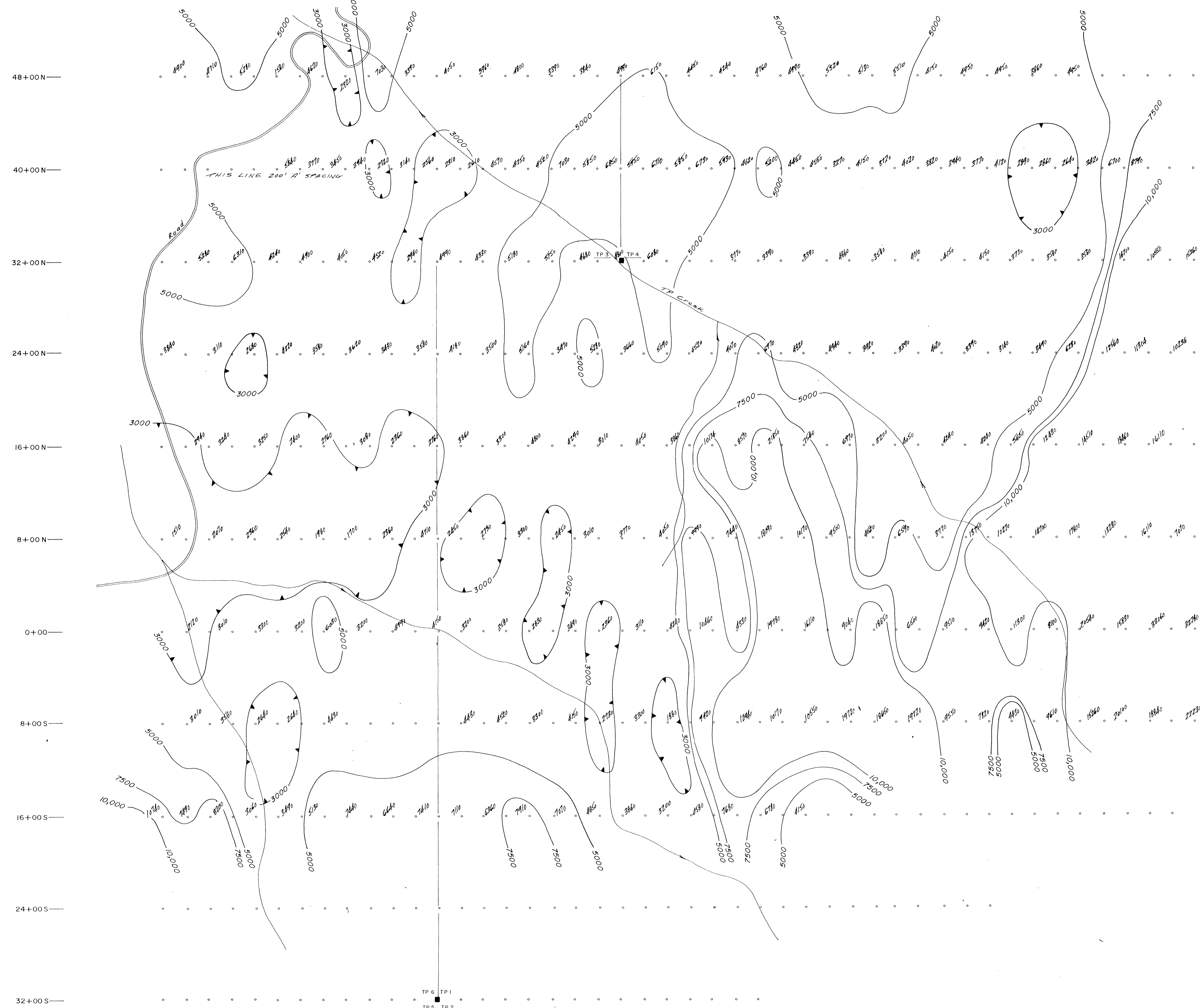
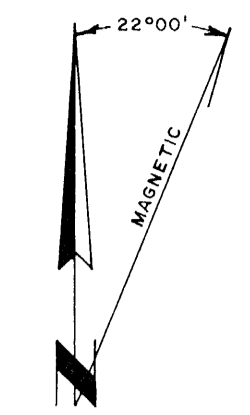


EXPLORAM MINERALS LTD.	
TP CLAIMS	
VERNON MINING DIVISION - BRITISH COLUMBIA	
GEOPHYSICAL MAP	
INDUCED POLARIZATION	
PERCENT CHARGEABILITY (Milliseconds)	
Glen C. White geophysical consulting services Ltd.	INTERPRETED BY: G.E.W. DRAWN BY: T.M. CHECKED BY: DATE: AUG. 19, 1977 FIG No. 2

To Accompany Geophysical Report
THE TP CLAIM GROUP
Date: *Aug 31/77*
By: GLEN C. WHITE
GEOPHYSICIST

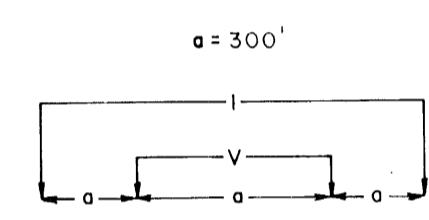
118°29'

24+00E 32+00E 40+00E 48+00E 56+00E 64+00E 72+00E 80+00E 88+00E 96+00E 104+00E 112+00E

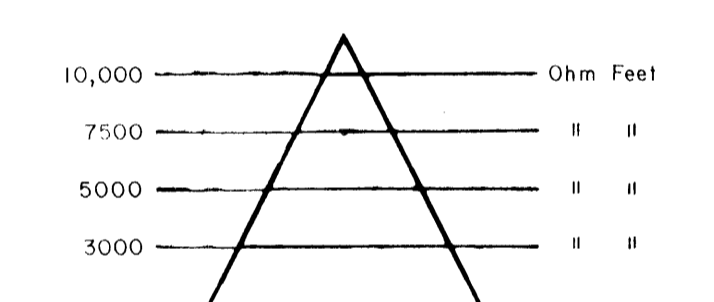


- LEGEND**
- Contour Line, Contour Interval 3000,5000,7500,10,000 (Ohm Feet)
 - Stations
 - - - Outline of Claims
 - Claim Posts
 - == Unpaved Roads

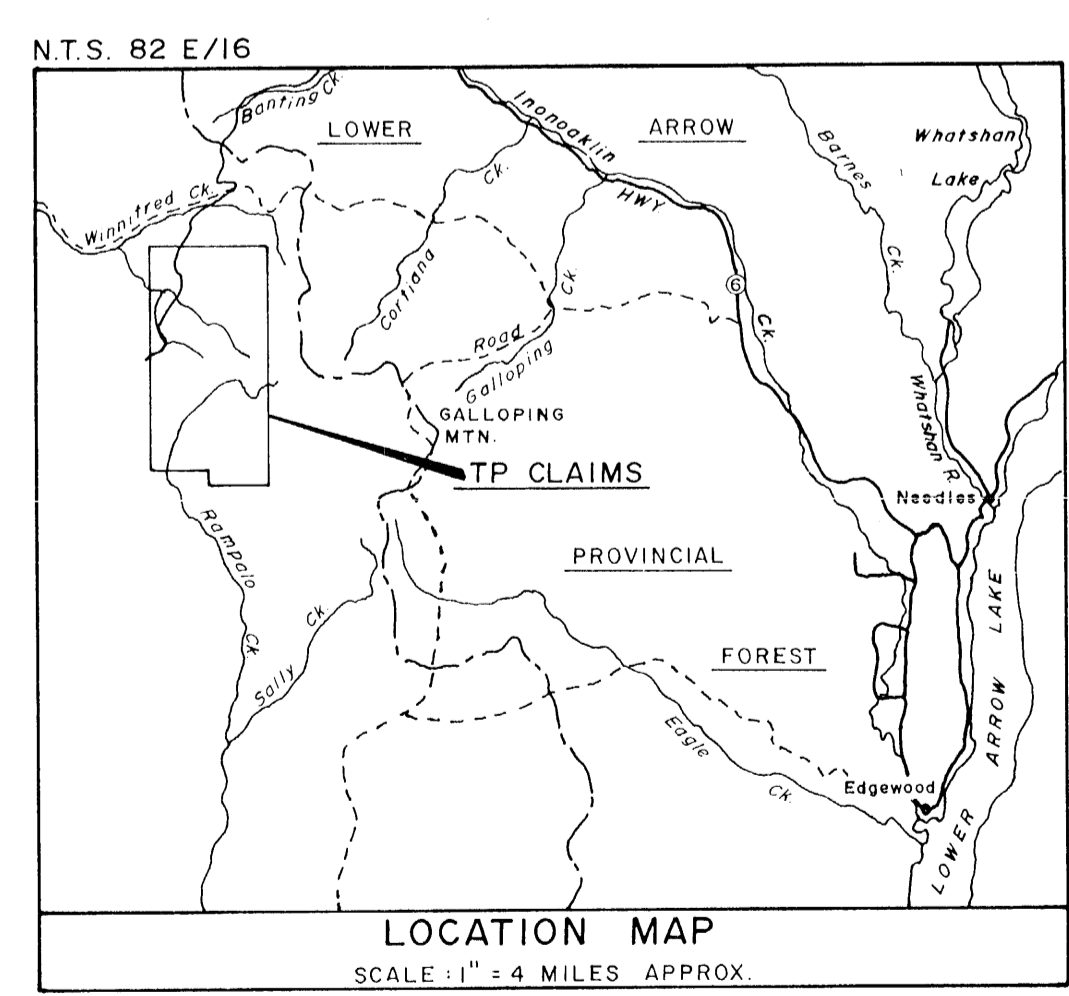
INSTRUMENT : LOPO M-3 WENNER ARRAY



RESISTIVITY KEY



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. **6430**



400 200 0 400 800 1200
1" = 400'

EXPLORAM MINERALS LTD.
TP CLAIMS
VERNON MINING DIVISION - BRITISH COLUMBIA
GEOPHYSICAL MAP
INDUCED POLARIZATION
APPARENT RESISTIVITY (Ohm Feet)

Glen E. White
geophysical consulting
services Ltd.

INTERPRETED BY: G.E.W.
DRAWN BY: T.M.
CHECKED BY:
DATE: AUG. 19, 1977
FIG No.: 3

To Accompany Geophysical
THE TP CLAIM GROUP
Date: 4/2/77
By: GLEN E. WHITE - B.S.
G.E.W. 10076
GEOPHYSICIST

118°29'

24+00E

32+00E

40+00E

48+00E

56+00E

64+00E

72+00E

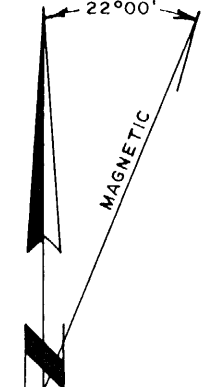
80+00E

88+00E

96+00E

104+00E

112+00E



48+00N

40+00N

32+00N

24+00N

16+00N

8+00N

0+00

8+00S

16+00S

24+00S

32+00S

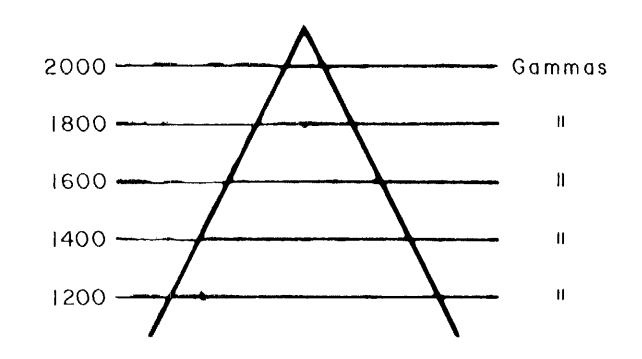


LEGEND

- Contour Line, Contour Interval 1200, 1400, 1600, 1800, 2000, 2200 Gammas
- Stations
- Outline of Claims
- Claim Posts
- Unpaved Roads

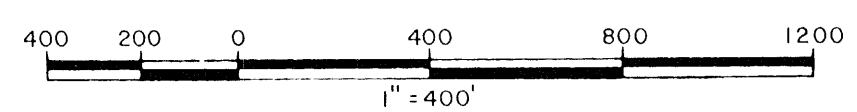
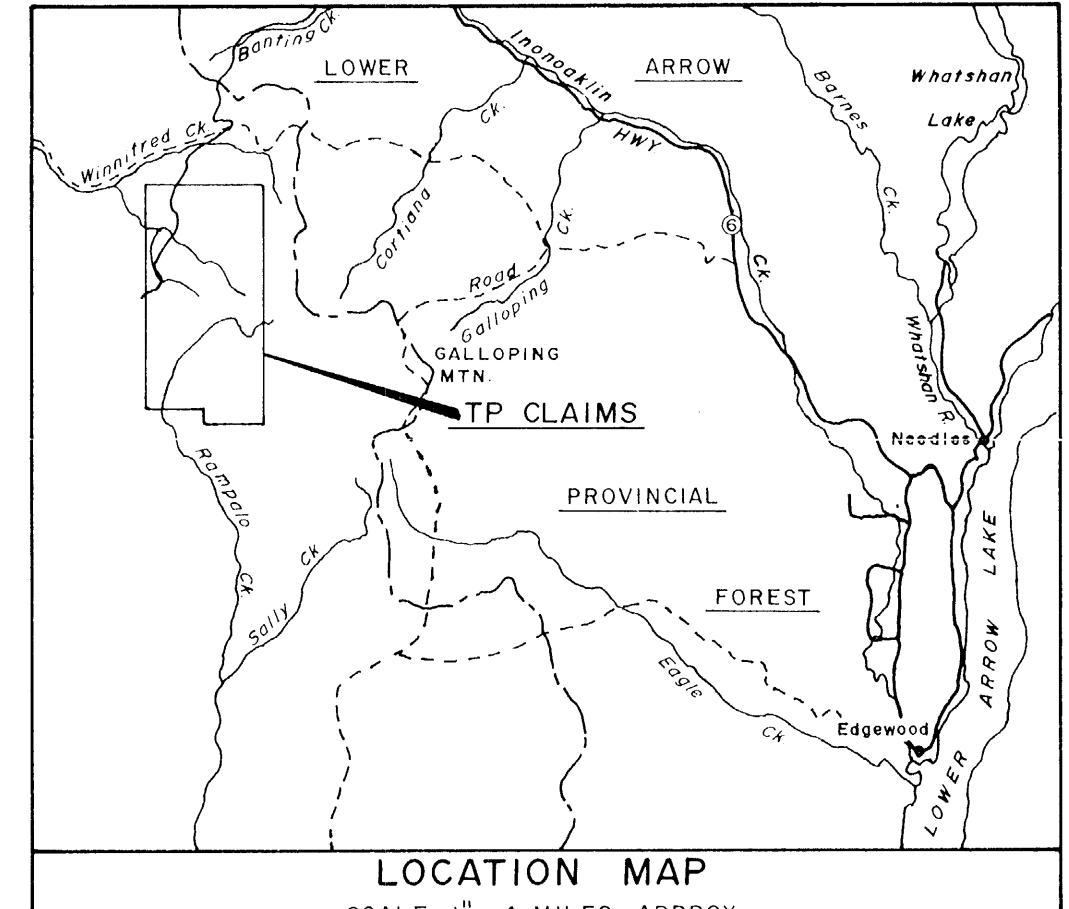
INSTRUMENT: SCINTREX MF-1 FLUXGATE

MAGNETIC KEY



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
No. 6430

N.T.S. 82 E/16



EXPLORAM MINERALS LTD.

TP CLAIMS

VERNON MINING DIVISION - BRITISH COLUMBIA

GEOPHYSICAL MAP

VERTICAL MAGNETIC INTENSITY (Gammas)

Glen E. White
geophysical consulting services Ltd.

INTERPRETED BY: G.E.W.
DRAWN BY: T.M.
CHECKED BY:
DATE: AUG. 19, 1977
FIG. No. 14

To Accompany Geophysical Report
of
THE TP CLAIM GROUP
Date - 1977
By GENE WHITE & S. J. ...
PROFESSIONAL GEOPHYSICIST