

INDUCED POLARIZATION SURVEY <sup>2</sup>  
SKYLARK RESOURCES LTD.

Alamo 1 and 2 mineral claims, Skuhun Creek  
area, Highland Valley, Kamloops M.D., B. C.

Lat.  $50^{\circ}22'N$ , Long.  $120^{\circ}59'W$ , N.T.S. 92I/7

AUTHOR: Glen E. White, P. Eng., Geophysicist

DATE OF WORK: November 10-16, 1982

DATE OF REPORT: November 30, 1982

INDUCED POLARIZATION SURVEY  
ASSESSMENT REPORT

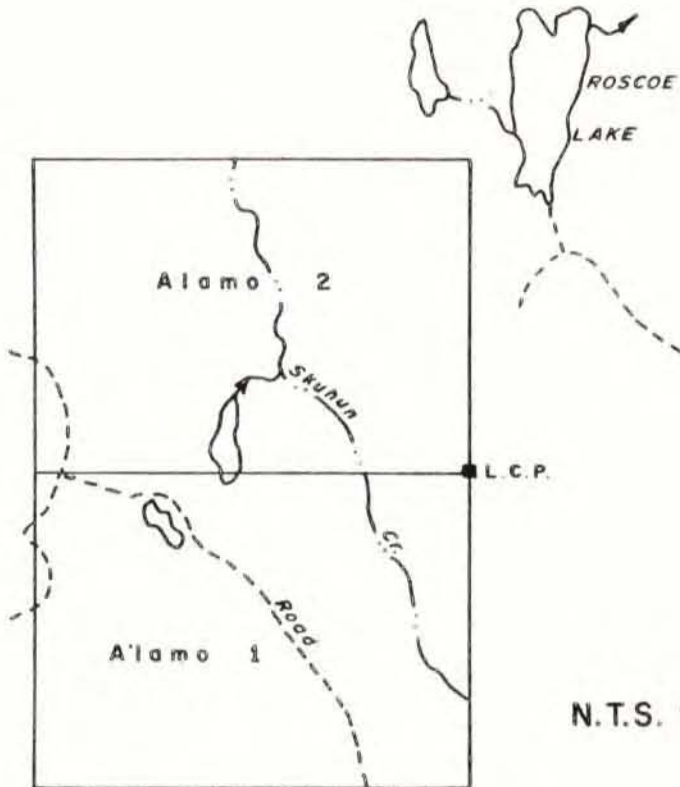
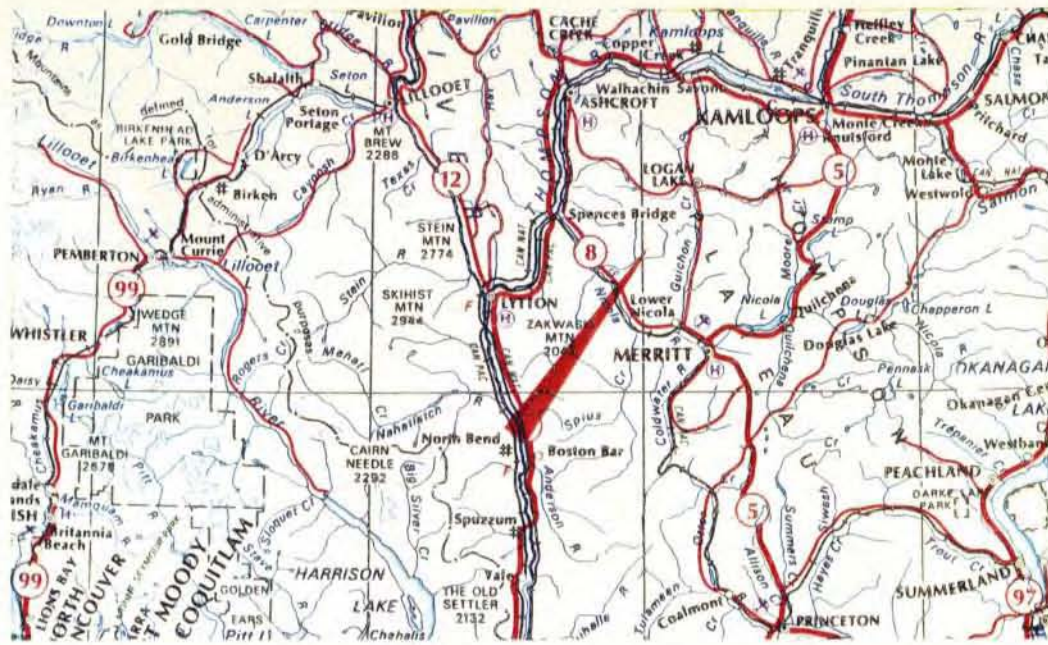
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## C O N T E N T S

	<u>PAGE</u>
Introduction.....	1
Property.....	1
Location and Access.....	1
General Geology.....	2
Induced Polarization Survey.....	3 - 4
Discussion of Results.....	5
Conclusion and Recommendations.....	6
Instrument Specifications.....	7
Statement of Qualifications.....	8
Cost Breakdown.....	9

### ILLUSTRATIONS

- Figure 1 - Claims and Location Map
- Figure 2 - Detailed Claims Map
- Figure 3 - Induced Polarization - Chargeability
- Figure 4 - Induced Polarization - Apparent Resistivity



N.T.S. 92 I/7

**SKYLARK RESOURCES LTD.  
ALAMO CLAIMS  
LOCATION AND CLAIMS MAP**

*Gen. E. White  
geophysical consulting  
services Ltd*

### INTRODUCTION

This report covers an induced polarization survey that was conducted over the Alamo 1 and 2 mineral claims for assessment purposes. The survey was conducted during the days November 10-16, 1982 by Glen E. White Geophysical Consulting & Services Ltd. on behalf of Skylark Resources Ltd.

The survey was conducted over the northeast corner of the Alamo 2 claim on the possibility that the mineralization near Roscoe Lake may extend onto the Alamo group.

### PROPERTY

The property consists of the Alamo 1 and 2 mineral claims, record numbers 784 and 785 as illustrated on Figure 1.

### LOCATION AND ACCESS

The Alamo mineral claims are located 11 km due west from the southern tip of Mamit Lake on the Highland Valley Plateau at an elevation of some 5200 feet A.S.L., Latitude  $50^{\circ}22'N$ , Longitude  $120^{\circ}59'W$ , N.T.S. 92 I/7.

Access to the property is by bush road up Skuhun Creek which crosses the Spences Bridge-Merrit road, Highway #8, some 26 km from Spences Bridge.

GENERAL GEOLOGY

The mineral claims lie in a physiographic region known locally as the Highland Valley which is characterized by rounded hills up to 6000 feet in elevation and moderately broad valleys. Geologically the area is underlain by a multiphase acid plutonic intrusion termed the Highland Valley batholith which contains Canada's largest open pit porphyry copper mines. Locally the claims area is mapped as underlain by the Bethsaida phase, a relatively young central core phase of the batholith, described as a biotite quartz monzonite. The general Highland Valley area is covered with a mantle of pleistocene glacial till.

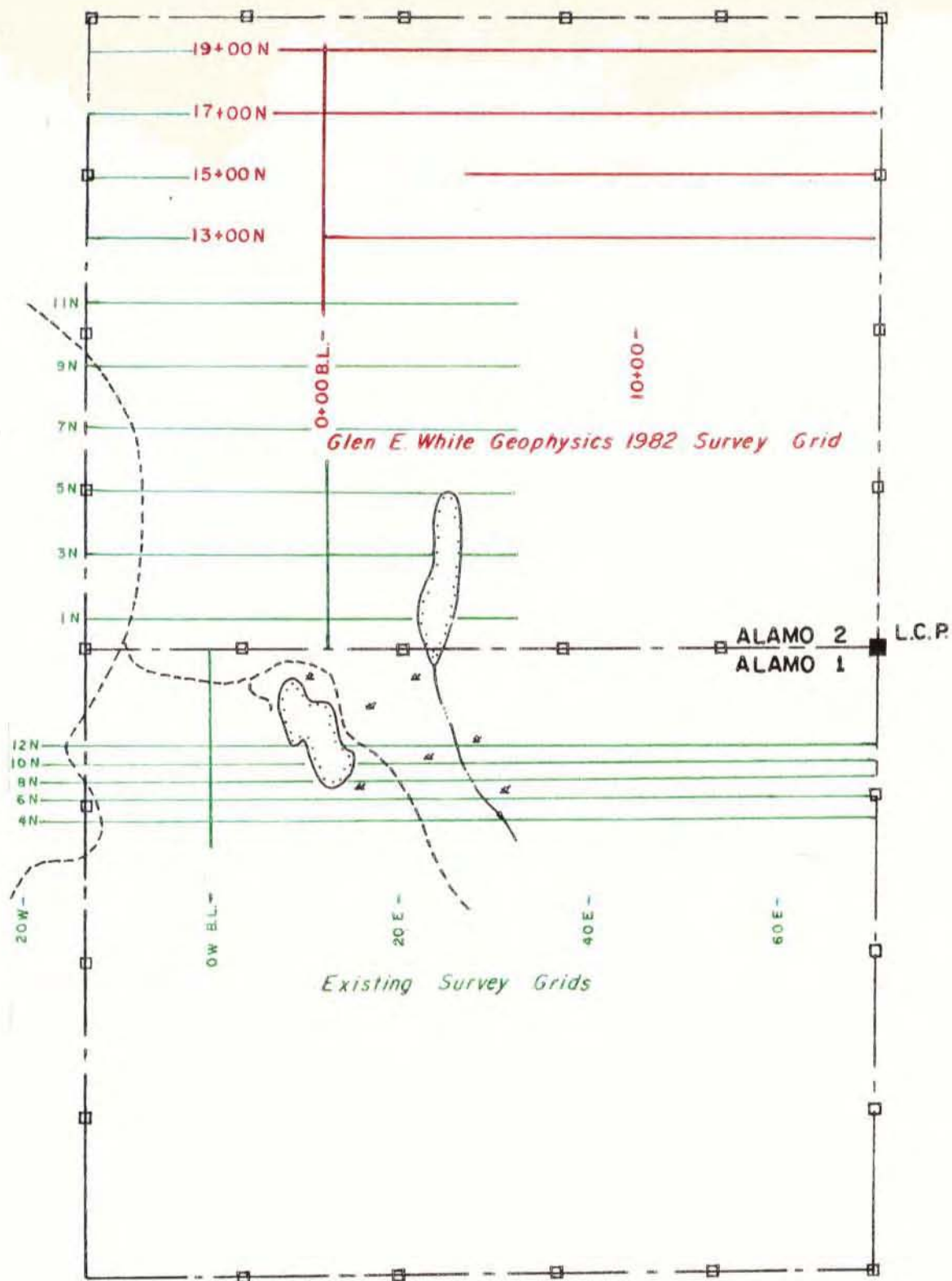
### INDUCED POLARIZATION

The equipment used on this survey was the Hunttec pulse-type unit and Mark III receiver. Power was obtained from a Briggs and Stratton motor coupled to a 2.5 KW 400 cycle, three phase generator, providing a maximum of 2.5 KW D.C. to the ground. The cycling rate is 1.5 seconds "current on" and 0.5 seconds "current off", the pulse reversing continuously in polarity. Power was transmitted to the ground through two potential electrodes,  $P_1$  and  $P_2$ , which were deployed in the three electrode array with an "a" spacing of 100 m and separations of  $n = 1$ .

The data recorded in the field consists of careful measurements of the current (I) in amperes 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. A cycle time of 4 seconds was used with a duty ratio of 2.2 - 1,  $T_p$  .20 ms and  $T_d$  60 ms.

The apparent chargeability ( $M'$ ) in milliseconds, is calculated by  $T_p (M_1 + 2M_2 + 4M_3 + 8M_4) = M'$ , where  $T_p$  is the basic integrating time in tenths of seconds.  $M_1$ ,  $M_2$ ,  $M_3$  and  $M_4$  are the chargeability effects at various times on the voltage decay curve following switch off of the transmitter, measured as a percentage of the primary voltage,  $V_p$  recorded during the "current on" time. By the use of these factors, one can gain an estimate of the decay curve in terms of chargeability for the given time  $T_p$ . This gives a quantitative value to the data measured.

The apparent resistivity, in ohm-metres, 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.



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ALAMO CLAIMS

DETAILED CLAIMS MAP

Glen E. White  
geophysical consulting  
by  
SKYLARK LTD



### DISCUSSION OF RESULTS

A limited amount of frequency induced polarization surveying was conducted by Nielsen Geophysics Ltd. over the western side of the Alamo 2 claim as discussed in a report by P.P. Dielsen, B.Sc., dated March 1982.

The present survey was tied into that survey and the lines extended to the eastern edge of the claim. 7.3 km of linecutting and induced polarization surveying were completed. Figure 2 shows the outline of the claims and the various survey lines.

The chargeability data is illustrated on Figure 3. The property has a thick overburden cover of decomposed granitic material. Thus it is difficult to obtain a good current flow. This survey used multiple current stakes. However, very low background chargeability responses of 1 to 2 milliseconds were obtained. The center of the survey area shows a slight increase in chargeability to some 4 milliseconds. The Highland Valley area is noted for low chargeability anomalies since the copper-molybdenum ore has a low pyrite content. The values of 3 to 4 milliseconds, however, are marginally low and could be caused by an increase in clay content in the overburden.

The apparent resistivity data, Figure 4, shows a pronounced area of high resistivity which can be attributed to variations in the overburden and depth to bedrock. The higher resistivity may possibly indicate shallower overburden conditions.

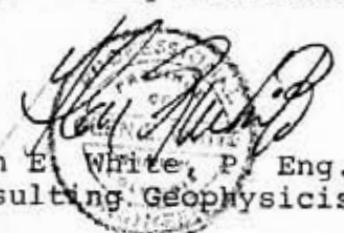
CONCLUSION AND RECOMMENDATIONS

During the month of November, a limited amount of induced polarization surveying was conducted over the northern portion of the Alamo 2 mineral claim on behalf of Skylark Resources Ltd.

A slight increase in response to 4.4 milliseconds above a background of 1.5 milliseconds was obtained in the center of the survey area.

It is recommended that since the overburden is very resistive and possibly deep, that during the spring melt, a series of salt saturated disposable electrodes be placed every 100 m along the lines and surveyed with a separation of  $a = 100$  m,  $n = 1$  to 4. This would give a better current flow and increase the penetration to search for a deep-seated mineral zone.

Respectfully submitted,



Glen E. White, P. Eng.  
Consulting Geophysicist

## INSTRUMENT SPECIFICATIONS

### INDUCED POLARIZATION SYSTEM

#### A. Instruments

- (a) Type - pulse
- (b) Make - Huntec
- (c) Serial No. - transmitter #107 - receiver #3016

#### B. Specifications

- (a) Size and Power - 2.5 KW
- (b) Sensitivity - 300 x 10.5 volts
- (c) Power Sources - 2.5 KW 400 cycle - three-phase generator
- (d) Power - 8 H.P. Briggs and Stratton @ 3000 R.P.M.
- (e) Timing - electronic, remote and direct.
- (f) Readings - (i) amps (ii) volts primary and secondary
- (g) Calculate (i) Resistivity - ohm-meters (ohm-feet)  
(ii) Chargeability - milliseconds

#### C. Survey Procedures

- (a) Method - power supplied to mobile probe along TW 18 stranded wire from stationary set-up
- (b) Configuration - Pole-dipole (three electrode array)  
Plot point midway between  $\mathcal{C}_1$  and  $P_1$

#### D. Presentation

- Contour Maps (i) Chargeability - milliseconds  
(ii) Resistivity - ohm-meters (ohm-feet)

STATEMENT OF QUALIFICATIONS

NAME: WHITE, Glen E., P.Eng.

PROFESSION: Geophysicist

EDUCATION: B.Sc. Geophysicist - Geology  
University of British Columbia.

PROFESSIONAL ASSOCIATIONS: Registered Professional Engineer,  
Province of British Columbia.  
Associate member of Society of Exploration Geophysicists.  
Past 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 Exploration 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.  
Twelve years Consulting Geophysicist.  
Active experience in all Geologic provinces of Canada.

COST BREAKDOWN

<u>Personnel</u>	<u>Date</u>	<u>Wages</u>	<u>Total</u>
R. Hamilton.....	Nov.10-16/82....	\$250/day.....	\$1500.00
B. Robertson.....	"...".....	180/day.....	1080.00
B. Flanigan.....	"...".....	160/day.....	960.00
D. Patterson.....	"...".....	160/day.....	960.00
Meals and accomodations.....@\$50/day.....			1440.00
Vehicle.....			610.00
Instrument: induced polarization unit.....			600.00
Interpretation and reports.....			850.00
Total.....			<u>\$8,000.00</u>

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

11,062

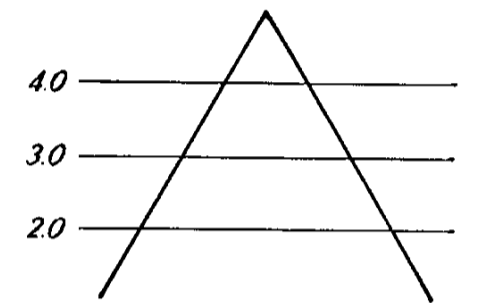
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LEGEND:

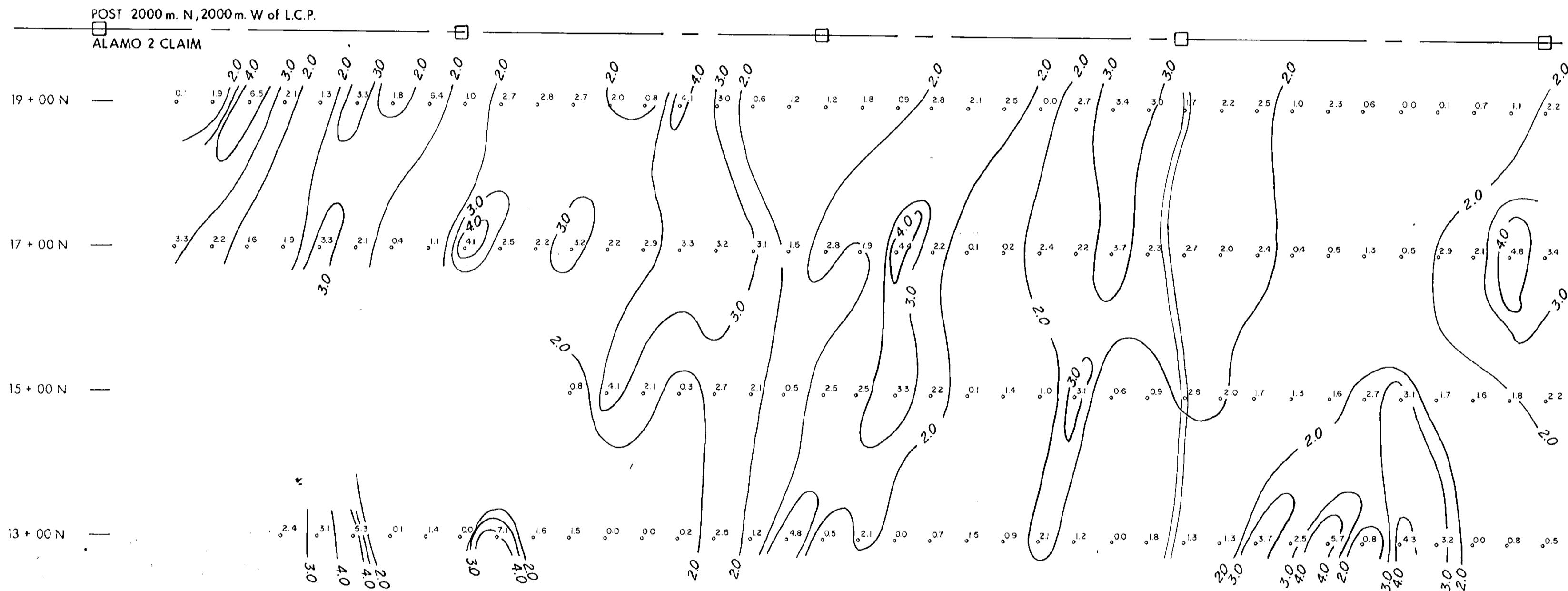
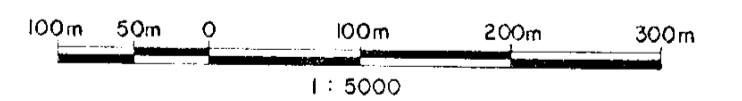
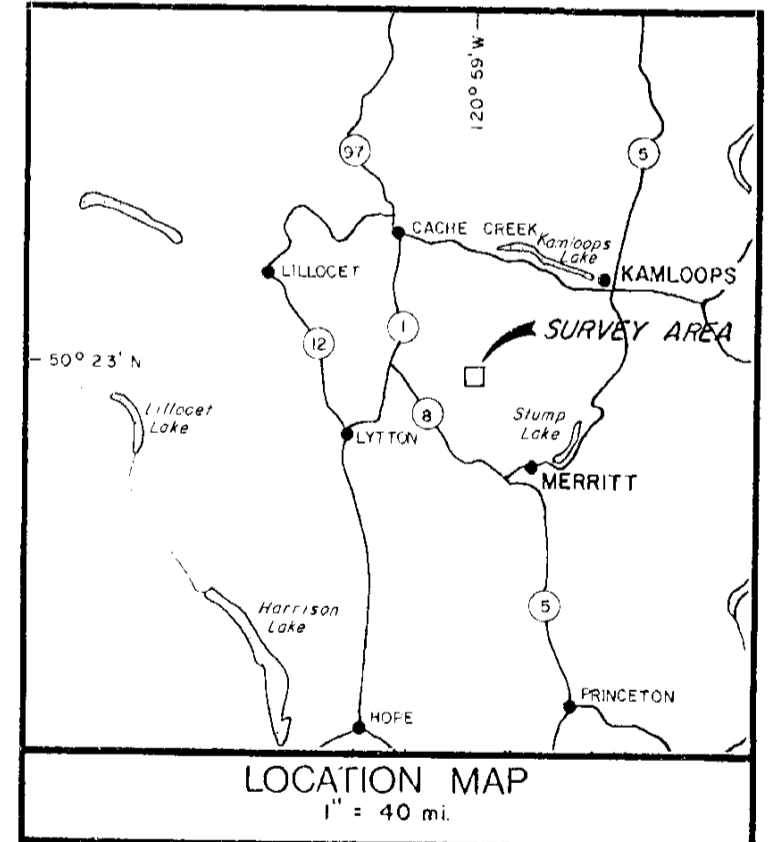
- Road
- Claim Boundary
- Claim Post

CHARGEABILITY KEY



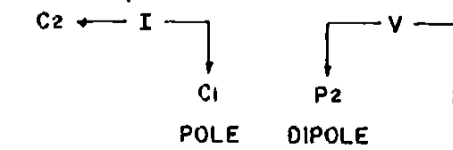
MILLISECONDS

N.T.S. 92I/7



INSTRUMENT:

HUNTEC 2.5 Kw TIME DOMAIN  
α=100m, n=1



To Accompany Geophysical Report on SKYLARK RESOURCES,  
ALAMO CLAIMS  
Date NOVEMBER CLAIMS  
By GLEN E. WHITE - B.Sc. GEOPHYSICIST

SKYLARK RESOURCES LTD.  
— ALAMO CLAIMS —

KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY  
CHARGEABILITY-N=1(MILLISECONDS)

*Glen E. White*  
geophysical consulting  
services Ltd.

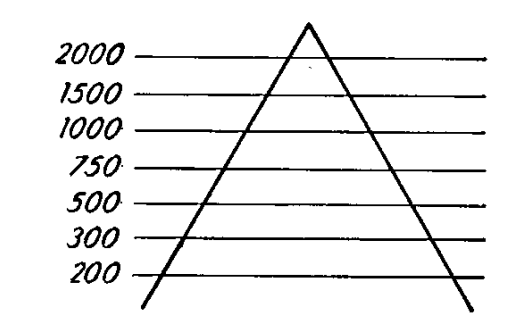
Interpreted By G.E.W.  
Drawn By FINELINE DRAFTING & GRAPHICS  
Checked By G.E.W.  
Date NOV. / 82  
Fig No 3

2 + 00 W 1 + 00 W BASELINE 0 + 00 1 + 00 E 2 + 00 E 3 + 00 E 4 + 00 E 5 + 00 E 6 + 00 E 7 + 00 E 8 + 00 E 9 + 00 E 10 + 00 E 11 + 00 E 12 + 00 E 13 + 00 E 14 + 00 E 15 + 00 E 16 + 00 E 17 + 00 E 18 + 00 E

LEGEND:

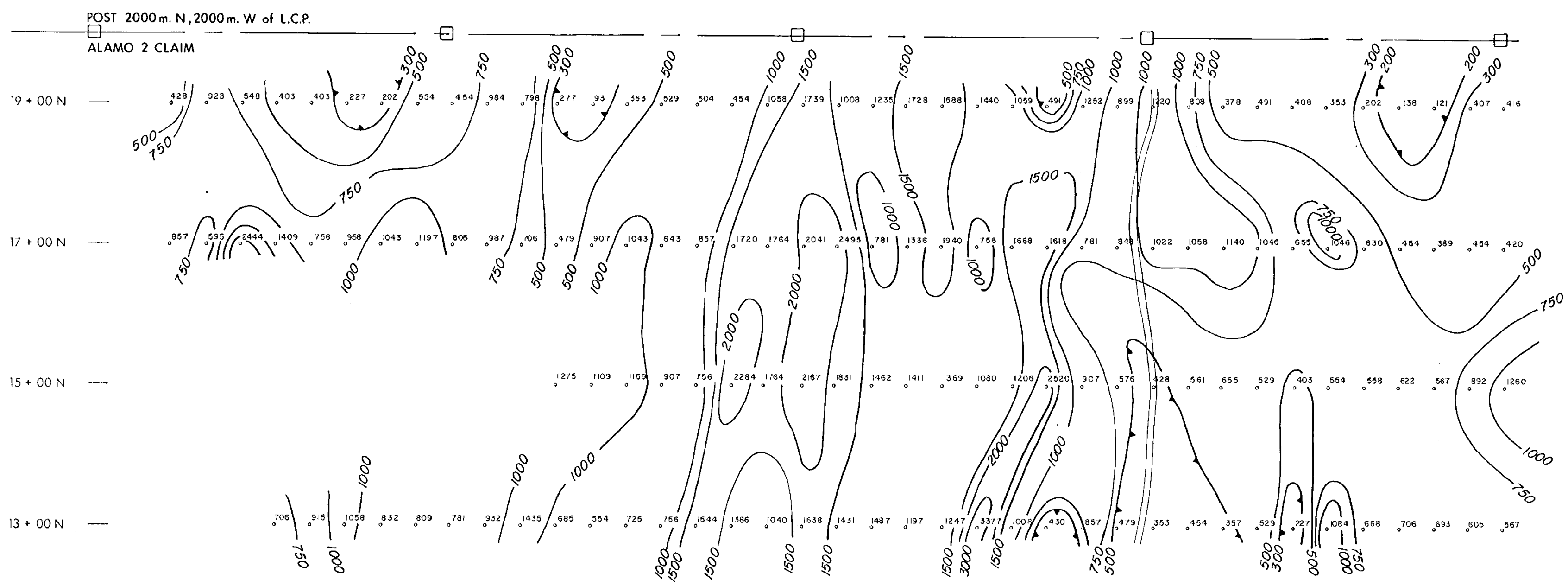
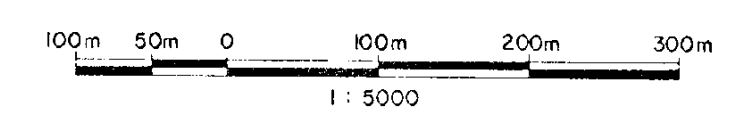
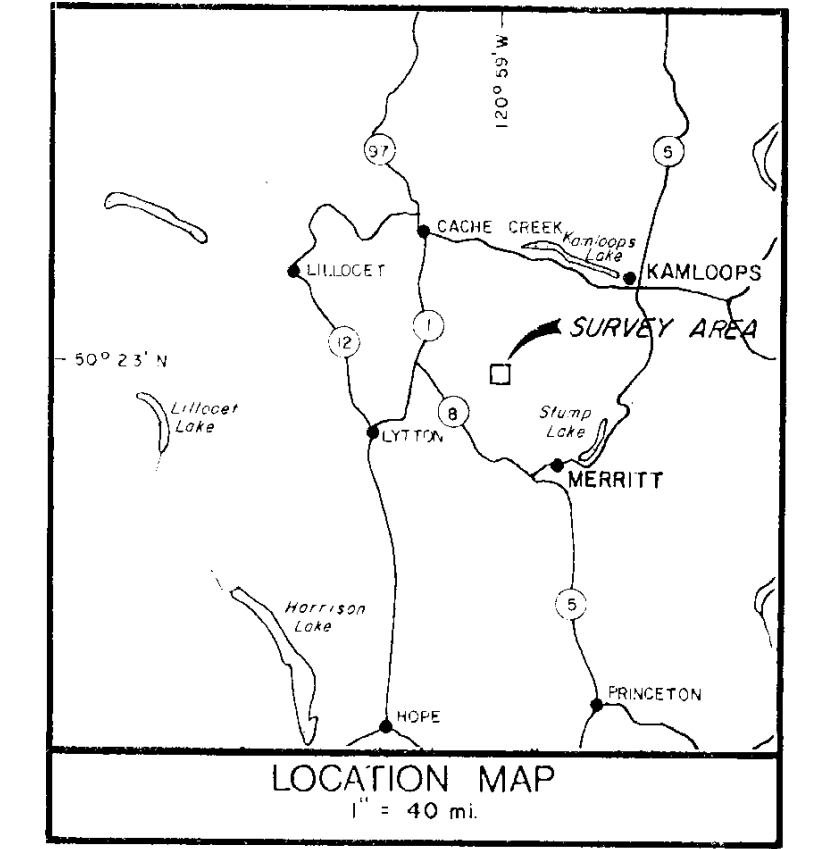
- Road
- - - Claim Boundary
- Claim Post

RESISTIVITY KEY



OHM-METERS

N.T.S. 92I/7.



INSTRUMENT:



HUNTEC 2.5 Kw TIME DOMAIN  
a=100m, n=1  
C2 ← I → V →  
C1 P2 P1  
POLE DIPOLE

To Accompany Geophysical Report on SKYLARK RESOURCES,  
ALAMO CLAIMS  
11.00 NOVEMBER CLAIMS  
By GLEN E. WHITE - B.Sc. GEOPHYSICIST

SKYLARK RESOURCES LTD.  
— ALAMO CLAIMS —  
KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY  
RESISTIVITY-N=(OHM-METERS)

*Glen E. White*  
geophysical consulting  
services Ltd.  
Interpreted By: G.E.W.  
Drawn By: FINELINE DRAFTING & GRAPHICS  
Checked By: G.E.W.  
Date: NOV. / 82  
Fig No. 4