



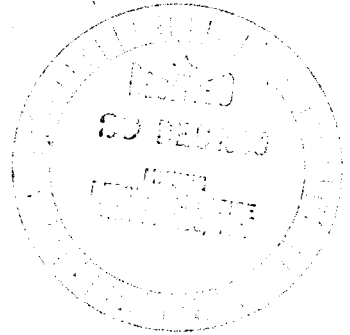
A GEOPHYSICAL REPORT ON
AN INDUCED POLARIZATION SURVEY
K-CU CLAIM GROUP

- for -

WHITE RIVER MINES LTD. (N.P.L.)
AUGUST 7 to 22, 1969

- by -

A. R. DODDS, B. Sc.
J. B. PRENDERGAST, M.A., P. Eng.



This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$1,260

D. B. Craig, R.G.

Geologist or
Mining Engineer

Considered as representation work under
Section 50 of the Quartz Mining Act.

[Signature]
Commissioner of Yukon Territory

**A REPORT ON
AN INDUCED POLARIZATION (I. P.) SURVEY
K-CU CLAIM GROUP**

FOR

WHITE RIVER MINES LTD. (N. P. L.)

BY

HUNTEC

A Division of Kenting Exploration Services Limited

CALGARY, ALBERTA

SEPTEMBER, 1969

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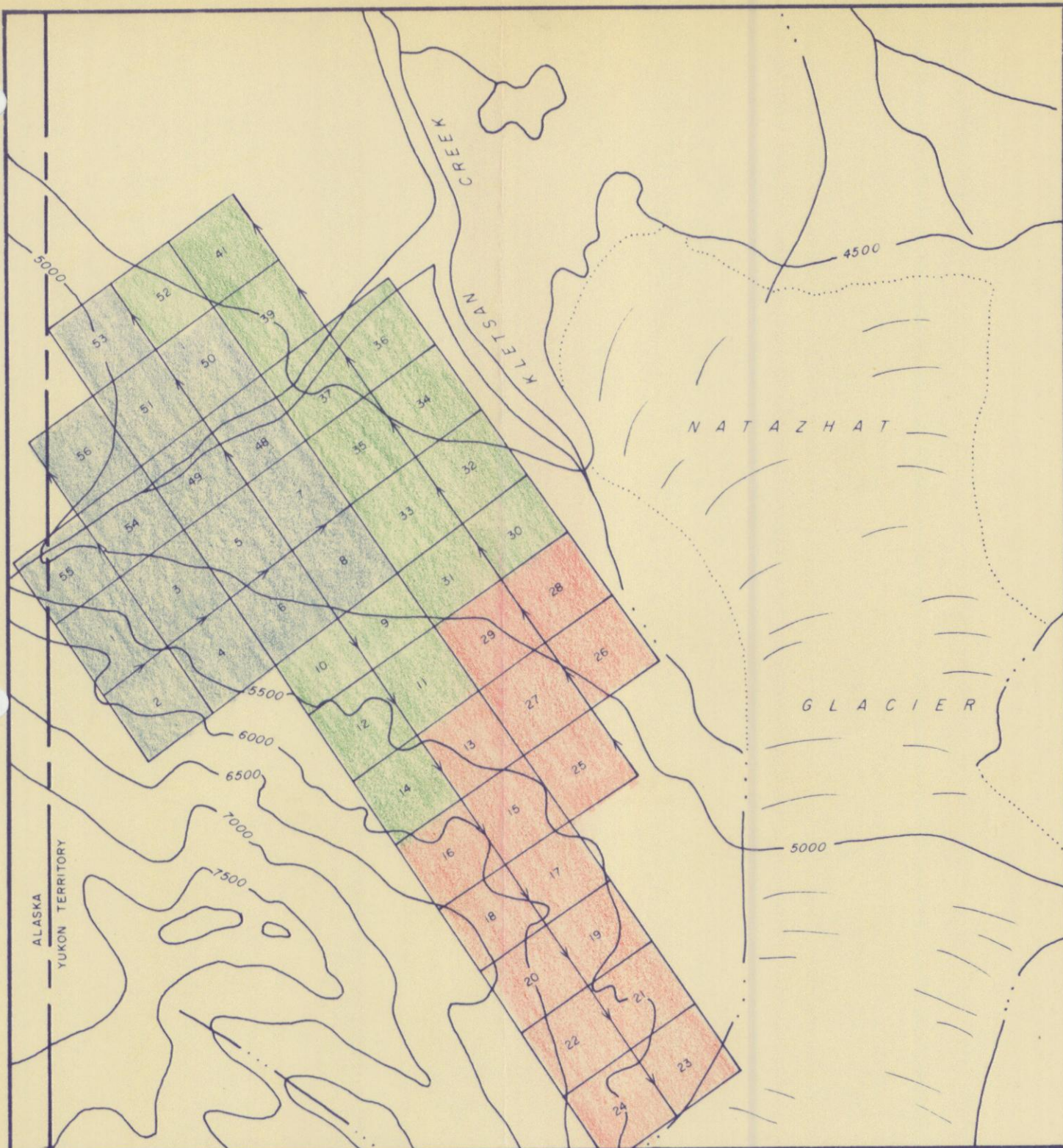
INTRODUCTION

The Induced Polarization (I.P.) survey described in this report was carried out by Hunttec Division, Kenting Exploration Services Limited for White River Mines Limited (N.P.L.) between August 7 and August 22, 1969.

The survey covered part of the K-Cu Claim Group, located west of Burwash Landing in the southwest corner of Yukon Territory. The Property adjoins the Yukon - Alaska border. A list of the claims covered is given in the Appendix to this report.

The field crew was managed by V. Esbensen and supervised from Calgary by A. R. Dodds, both of Hunttec.

The survey covered 13.35 miles of lines at 400 foot intervals, measurements being taken every 200 feet along the lines.



WHITE RIVER MINES LTD. (N.P.L.)

MacDonald Consultants Ltd.

GROUPING:

- Group A
- Group B
- Group C



K-CU CLAIMS

SCALE	1" = 1/2 mi
DRAWN	ghs
DATE	DEC '68
NO.	236-2

**LOCATION
MAP**

SURVEY SPECIFICATIONS

The Equipment

The survey was carried out using Induced Polarization pulse-type equipment manufactured in Toronto by Hunttec. The following specifications apply:

Type of Current	Direct Current broken at periodic intervals.
Period	1.5 seconds "current on" and 0.5 seconds "current off". Alternate pulses have reverse polarity.
Integrating time	400 milliseconds
Maximum power available	2.5 kw
Maximum current available	3.0 amps

Measurements taken in the field were:

1. The current flowing through the current electrodes C_1 and C_2 .
2. Primary voltage, V_p , between measuring electrodes during "current on" time.
3. Secondary voltage, V_s , between measuring electrodes during "current off" time.

The apparent chargeability (M_a) in milliseconds is calculated by dividing the secondary voltage by the primary voltage and multiplying by 400, which is the sampling time in milliseconds of the receiver unit. The apparent resistivity is calculated by dividing V_p by

the current and multiplying by the geometrical factor appropriate to the electrode array being used.

Electrode Configuration

This survey was carried out using the "three-electrode array" configuration. In this array, the current electrode C_1 and the two potential electrodes P_1 and P_2 are moved in unison along the line to be surveyed. The quantity "a", or "electrode separation," is the distance between C_1 and P_1 . In this array, the distance between P_1 and P_2 is also kept equal to "a" which, for this survey, was kept at 200 feet.

Detailing over anomalous areas was done by varying the quantity "a", thereby providing information for determining the location of the sources more accurately and assessing their importance.

PRESENTATION AND INTERPRETATION OF RESULTS

Presentation

The reconnaissance data are presented as contoured plan maps of apparent chargeability and apparent resistivity at a scale of one inch to 200 feet. (Dwg. Nos. 1009-1 and 1009-2).

Data for lines detailed with more than one electrode separation are presented in profile form at a scale of one inch to 200 feet. (Dwg. No. 1009-3).

Interpretation

The reconnaissance chargeability measurements over this area show a range from 0.9 to 9.1 milliseconds, with basically two background levels of 1.5 and between 5 and 6 milliseconds. Areas giving the lower background level generally also show low resistivities, both features and levels being typical of overburden or barren, porous sediments. Bedrock may be close to surface in areas showing a chargeability of 6 milliseconds, in which case a maximum sulphide content of 1% may be present.

There are a few areas where higher chargeability readings were observed, but in all cases, these are at most 50% above background and very limited in extent. These zones of possible interest are marked on the chargeability contour map.

Zone I comprises an erratic series of weakly anomalous chargeability values in an area of generally higher chargeability. The contouring as shown may indicate the trends of the sources, but is only one of several possibilities. Resistivities in the zone are the highest in the survey area, the detailing on Line 36W indicating that the surface layers are

more resistive than those underlying. Two possible local sources of higher chargeability are shown underneath the detail profile, both being within 100 feet of surface. The more northerly source appears to be more conductive than the surrounding rocks, but neither source is expected to contain any great volume of massive mineralization.

The contouring for Zone 2 is very tentative, it being quite probable that the two readings comprising this anomaly are not associated. Moreover, the anomaly is in a region of high resistivities and only one reading is clearly above background. The zone is therefore considered to be of only minor significance.

Zone 3 may be more extensive than shown, possibly linking up with the peaks shown on Lines 12W and 8W, and possibly extending further to the southwest. The readings are again only slightly above background, however, and are probably only of small significance. The zone was not detailed because of shortage of time.

The resistivity low and coincident chargeability low in the east corner of the grid correlates with weak E.M. responses in this area, and all of the features probably result from a conductive near surface layer, such as wet overburden.

SUMMARY AND RECOMMENDATIONS

The I.P. survey over K-Cu Claim Group shows considerable variations in chargeability within the range 0.8 to 9.1 milliseconds, most of which are regional and indicative of changes in overburden thickness or rock-type, rather than concentrations of mineralization. Three possible zones of interest have been picked out, all of which are weak, apparently of limited extent, and possibly disjointed. Zone 1 was detailed, indicating possible drilling targets as follows:

DDH 1 - to intersect 100 feet below station 9 + 50S, Line 36W

DDH 2 - to intersect 100 feet below station 5 + 00S, Line 36W.

The most favourable directions for extending the survey area, on the basis of I.P. results, are to the west for a possible intensification of Zone 1 and to the south to further investigate Zone 3.

Respectfully submitted,

HUNTEC,
A Division of Kenting Exploration Services Limited



J. B. Prendergast
J. B. PRENDERGAST M.A., P. Eng.
Manager, Western Division

Expiry Date: May 26, 1970

Sept 22/69.

Andrew R. Dodds
A. R. DODDS, B. Sc.
Senior Geophysicist

APPENDIX A
ASSESSMENT CREDIT DATA

Claims Surveyed

The following mineral claims were covered in whole or in part:

K-Cu 3 - 14 inclusive, 27, 29, 31, 33, and 35.

Miles Surveyed

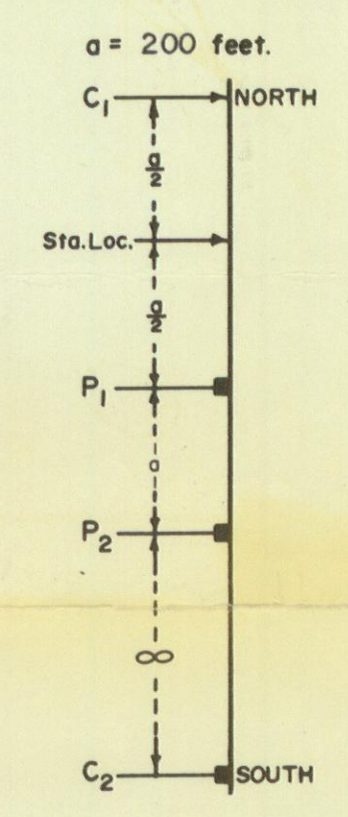
Reconnaissance	13.35 line-miles
Detail	<u>0.70 line-miles</u>
TOTAL	<u><u>14.05 line-miles</u></u>

PERSONNEL

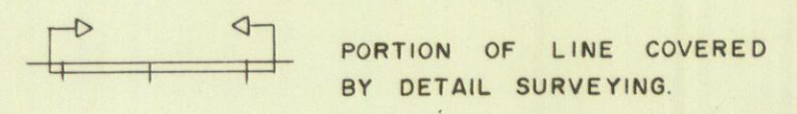
<u>Name</u>	<u>Position</u>	<u>Dates</u>
V. Esbensen	Party Chief	Aug. 7 - 22, 1969
T. Samilski	Operator	Aug. 7 - 22, 1969
E. Longland	Helper	Aug. 9 - 21, 1969
N. Basok	Helper	Aug. 9 - 21, 1969
B. Payne	Helper	Aug. 9 - 21, 1969
A. R. Dodds	Sr. Geophysicist	Sept. 26, 29, 30, 1969
M. Cole	Draftsman	Sept. 22 - 26, 1969
P. Whiteley	Typist	Sept. 30, 1969
I.P. Unit		Aug. 7 - 22, 1969



ELECTRODE ARRAY



LEGEND



WHITE RIVER MINES LIMITED (N.P.L.)
 K-CU CLAIMS, BURWASH LANDING, YUKON TERRITORIES.

INDUCED POLARIZATION SURVEY
 APPARENT CHARGEABILITY CONTOURS

CONTOUR INTERVAL: 1 millisecond

To accompany report by: *Arthur R. Dodds*
 A. R. Dodds, B.Sc., Geophysicist.

HUNTEC DIVISION, K.E.S.L. CALGARY-CANADA

SCALE: 1 inch = 400 feet.

DRAWN: M.C.

DATE: September, 1969

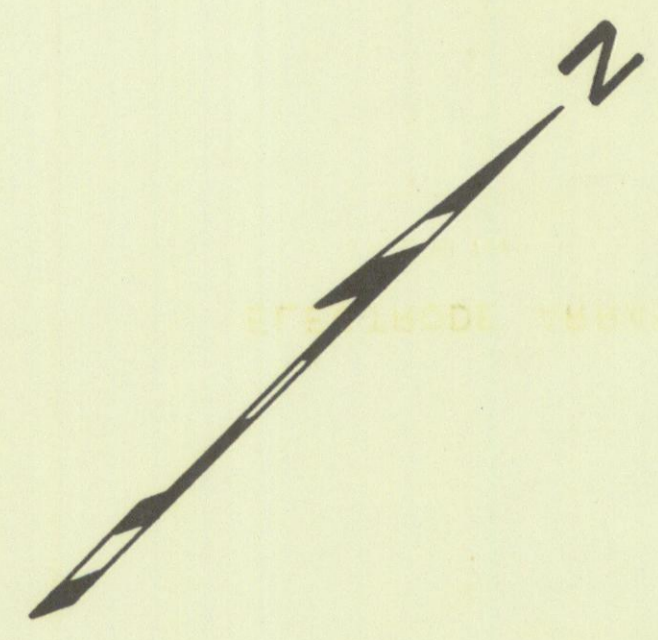
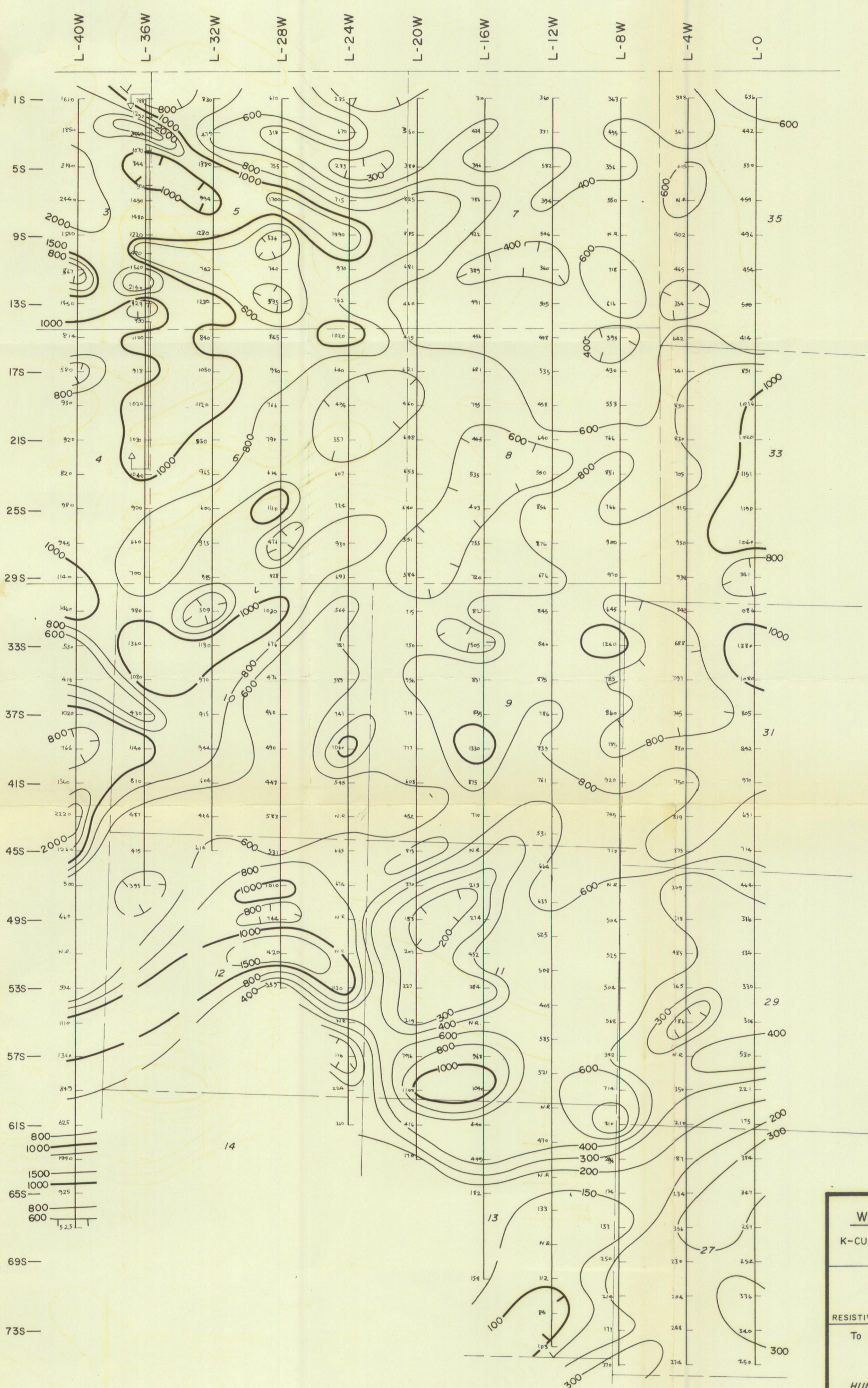
JOB N^o P. H. 1009.

INSTRUMENT PARAMETERS
 ON 1-5 secs.
 OFF 0-5 secs.
 DELAY 0-015 secs.
 INTEGRATE 0-4 secs.

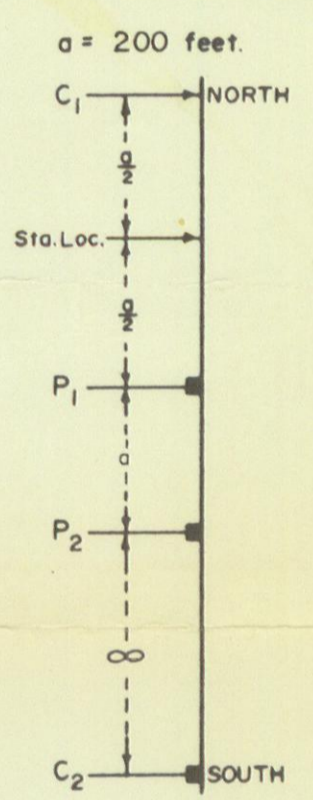
PROFESSIONAL
 OF
 ENGINEERING
 SEPTEMBER 1969
 A. R. Dodds
 DWG N^o -1009-1

Exp. Date: May 28, 1970

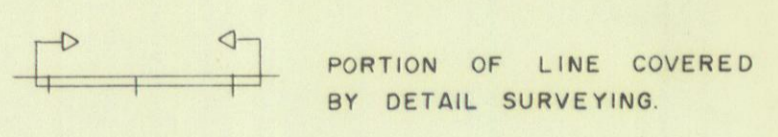
NOTE: Claim Lines Approximate Only.



ELECTRODE ARRAY



LEGEND



61S	625
800	
1000	
1500	
65S	925
800	
600	
52.5	

NOTE: Claim Lines Approximate Only.

WHITE RIVER MINES LIMITED (N.P.L.)
 K-CU CLAIMS, BURWASH LANDING, YUKON TERRITORIES.

INDUCED POLARIZATION SURVEY
 APPARENT RESISTIVITY CONTOURS

RESISTIVITY VALUES IN OHM-METERS
 To accompany report by: *Andrew R. Dodds*
 A. R. Dodds, B.Sc., Geophysicist.

HUNTEC DIVISION, K.E.S.I. CALGARY-CANADA

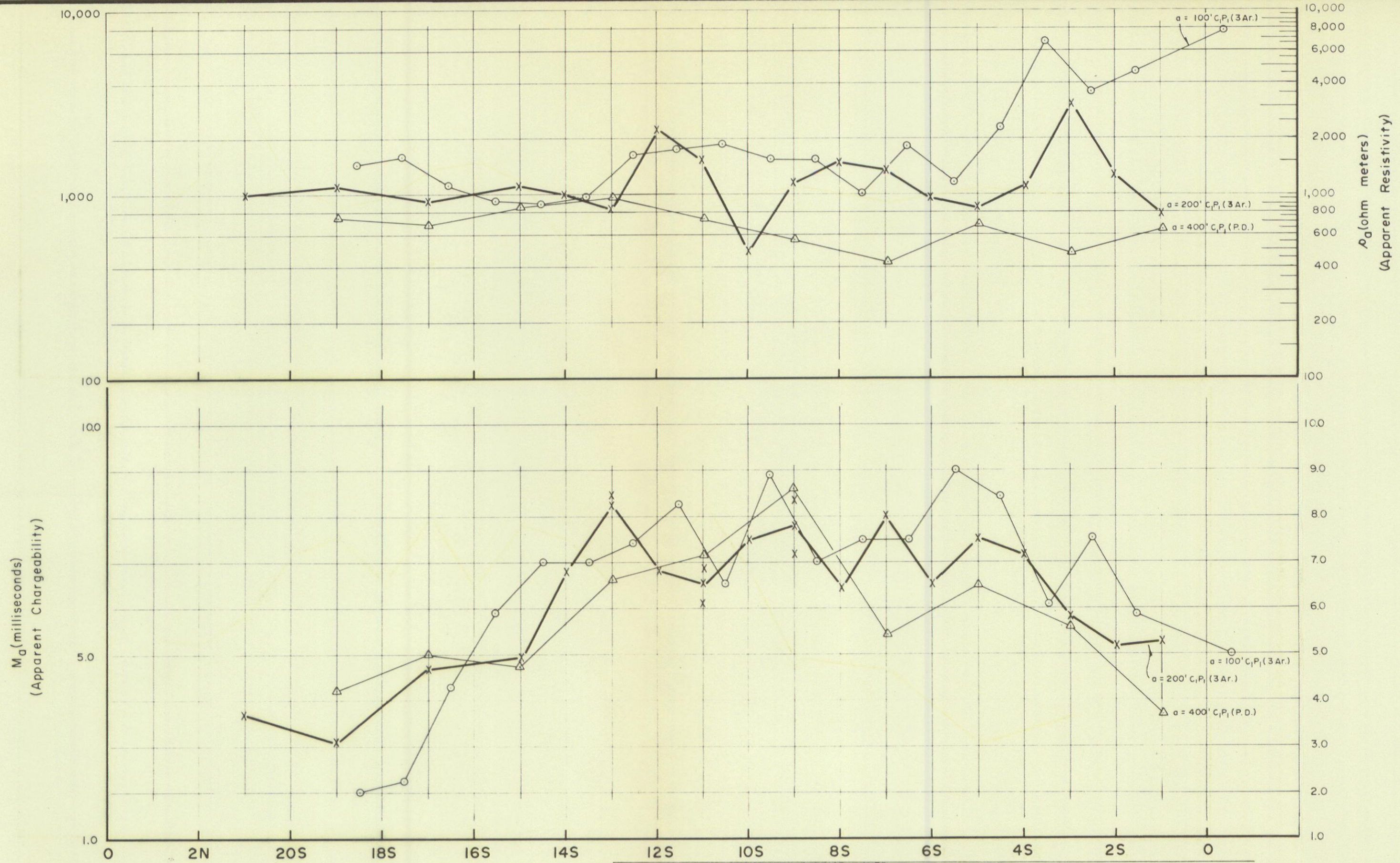
SCALE: 1 inch = 400 feet.
 DRAWN: M.C.
 DATE: September, 1969
 JOB N° P.H. 1009.

INSTRUMENT PARAMETERS

ON	1-5 secs.
OFF	0-5 secs.
DELAY	0-015 secs.
INTEGRATE	0-4 secs.

DWG N°-1009-2

INDUCED POLARIZATION SURVEY.
 DETAIL PROFILE: LINE -36+00W



LEGEND

INTERPRETED CAUSATIVE BODY.

RECOMMENDED D.D HOLE.

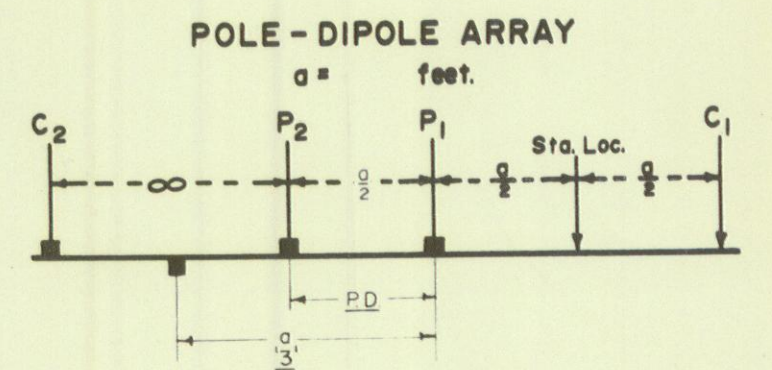
a = 50'

a = 100'

a = 200'

a = 300'

a = 400'



CLIENT:- WHITE RIVER MINES LIMITED (N.P.L.)
 AREA:- K-Cu CLAIMS, BURWASH LANDING, YUKON TERRITORIES.

Horizontal Scale: 1 inch = 200 feet.
 Vertical Scales:
 Chargeability - 1 inch = 2 milliseconds.
 Resistivity - 2 inches = 1 logarithmic cycle (ohm-meters)

To accompany report by: *Andrew R. Dodds*
 A. R. Dodds, B.Sc, Geophysicist.

INSTRUMENT PARAMETERS

ON	1.5 secs.
OFF	0.5 secs.
DELAY	0.015 secs.
INTEGRATE	0.4 secs.

HUNTEC DIVISION - Calgary, Canada -