3084

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 3084 MAP

REPORT ON
INDUCED POLARIZATION SURVEY
STARR CREEK PROPERTY
SMITHERS AREA, BRITISH COLUMBIA
ON BEHALF OF
TELKWA MOUNTAIN MINES LTD.

by

Jon G. Baird, B.Sc., P.Eng.

November 23, 1970

CLAIMS:

Name	
RB	1 - 3, 5, 7
TK	1, 3 - 6
PG	17 - 26
SC	13 - 14
SR	11, 13
HK	4 - 5

LOCATION:
Approximately 25 miles southwest of Telkwa, B. C.
Omineca Mining Division
127° 54° NW

93 L / 5E & 6W

DATES OF FIELD SURVEY:
October 2 to October 17, 1970

TABLE OF CONTENTS

SUMMARY

An induced polarization survey on this property has not revealed any significant abnormal chargeability responses. We may conclude that there is little possibility that a large-tonnage, low-grade deposit of sulphide mineralization of economic significance may lie within about 300' of the ground surface near the profiles covered by this survey.

Small bodies, possibly of high grade mineralization, may lie undetected for the electrode spacings used for the survey. If such deposits may be of economic interest, short spacing induced polarization surveying or possibly electromagnetic surveying may be warranted.

REPORT ON
INDUCED POLARIZATION SURVEY
STARR CREEK PROPERTY
SMITHERS AREA, BRITISH COLUMBIA
ON BEHALF OF
TELKWA MOUNTAIN MINES LTD.

INTRODUCTION

During the period October 2nd to October 17th, 1970, a geophysical field party under the direction of Mr. Peter Werder helped lay out survey lines and executed an induced polarization survey in the Smithers area, British Columbia on behalf of Telkwa Mountain Mines Ltd.

The property lies about 25 miles southwest of Telkwa, B. C. and is reached by truck using an unimproved road. The topography of the survey area may be described as quite sloping and open and is well drained by several creeks. The elevation of the property is about one mile above sea level.

The claims covered, in whole or part, by this survey are listed on the title page of this report and are shown on Plate 2 on a scale of 1" = 500'. These claims are held by Telkwa Mountain Mines Ltd.

Seigel Mk VII time-domain (pulse-type) induced polarization equipment has been employed on this property. The transmitting unit had a rating of 2.5 kilowatts and equal on and off times of 2.0 seconds. The receiving unit was a remote, ground-pulse type triggered by the rising and falling primary voltages set up in the ground by the transmitter. The integration of the transient polarization voltages takes place for 0.65 seconds after a 0.45 second delay time following the termination of the current on pulse.

The purpose of an induced polarization survey is to map the subsurface distribution of metallically conducting mineralization beneath

the grids covered. In the present area such mineralization could include bornite, chalcopyrite, molybdenite, pyrite and other metallic sulphide minerals. As well, mineralization such as graphite, magnetite and sericite can give responses not always distinguishable from sulphide mineralization.

The three electrode array was employed for the survey. For this electrode array, one current electrode and two potential electrodes traverse the profiles with an interelectrode spacing called "a". The second or "infinite" current electrode is placed a distance greater than 5a from the measuring point which is defined as the midpoint between the moving current and the near potential electrode. A schematic representation of the electrode array is shown on Plates 3 and 4. For the reconnaissance survey observations were taken for a = 200' and a = 400', the distance between observations being 200'.

On the present property the survey lines were cut oriented N 70° W at 500' intervals. The survey totalled approximately 11.5 line miles.

GEOLOGY

The geology of the Starr Creek Property has been studied by Toru Kikuchi, Ph.D., P.Eng. and is the subject of his report dated November 18, 1969. Geological and geochemical maps on a scale of 1" = 500' accompany Dr. Kikuchi's report.

The survey grid is underlain mainly by volcanic rocks of the Upper Jurassic Hazelton Group which have been intruded by Upper Cretaceous granitic intrusive rocks. A hybrid zone containing physical and chemical mixtures of these two rock types contains showings of chalcopyrite, bornite and pyrite as disseminations or fissure fillings. The geochemical soil

sampling programme has several quite localized areas of anomalous copper content.

The target of the present survey was a large-tonnage, low-grade type of ore body, the upper surface of which would occur within 300' of the ground surface.

DISCUSSION OF RESULTS

Plates 3 and 4 respectively show the chargeability and resistivity results in profile form. The vertical scales are 1" = 10.0 milliseconds for chargeability and 1" = 1000 ohm-meters for resistivity. The plan scale is 1" = 400' although in order to accommodate the geophysical profiles, the interline spacing is not to scale.

The chargeability profiles indicate that the observed chargeabilities range between 0.5 and a maximum observed value of 10.0 milliseconds although values above 6.0 milliseconds are not common. This is a normal non-metallic response range for volcanic or intrusive rocks where a uniform distribution of 1% by volume of metallically conducting mineralization in the subsurface is expected to increase chargeabilities to between 10.0 and 15.0 milliseconds. Chargeability responses in excess of 8.0 milliseconds and interpreted to arise from large volumes of rock could be considered worthy of further investigation since deposits of very low concentrations of copper and molybdenum of sufficient dimensions may have economic significance. There are no such indications on the present property.

The observed resistivity values range from about 100 to in excess of 3000 ohm-meters, however the average is in the hundreds of ohm-meters. In general, low and uniform resistivities are seen in the east part of the grid with higher values in the west. The location of the change in

resistivity may coincide with a change in the character of the bedrock and has been shown as a contact on Plate 2. A narrow zone of high resistivities is seen at about 13 E extending from L 6 N to L 8 N. The location of the causative body, possibly a steeply dipping dike, is shown on Plate 2.

Since there are no significant abnormal chargeability responses, we may conclude that there is little possibility that a large-tonnage, low-grade deposit of sulphide mineralization of economic significance may lie within 300' of the ground surface within the survey grid. Small bodies, possibly quite high grade, may occur which would not be detectable with even the 200' electrode spacings. If such bodies may be of economic interest, further induced polarization surveying employing shorter electrode spacings or possibly an electromagnetic survey may be warranted.

Respectfully submitted,

SEIGEL ASSOCIATES LIMITED

Jon G. Baird, B.Sc., P.Eng.
Geophysicist

Vancouver, B. C.
November 23, 1970

BRITISH COLUMBIA

TELKWA MOUNTAIN MINES LTD. (NPL)

LOCATION MAP

STARR CREEK PROPERTY

SMITHERS AREA, BRITISH COLUMBIA

4miles 0 4 miles

Survey by
SEIGEL ASSOCIATES LTD.
October 1970

PLATE 1

DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA. } **In the Matter of** a geophysical survey on behalf of Telkwa Mountain Mines Limited

TO WIT:

I, L. A. Merrifield for Seigel Associates Limited

93L/5E & 6W

of 750 - 890 West Pender Street, Vancouver

in the Province of British Columbia, do solemnly declare that an induced polarization survey has been executed on some RB, TK, PG, SC, SR and HK claims, Smithers area, British Columbia between September 29, 1970 to October 17, 1970. The following expenses were incurred:

(1)	Wages:			
	P. Werder	17 days @ $35.00/day	$595.00	
	O. Bangeter	17 days @ $27.50/day	467.50	
	R. Albert	12 days @ $27.50/day	330.00	
	K. Stoll	12 days @ $27.50/day	330.00	
				$1,722.50
(2)	Transportation & shipping to the job			846.60
(3)	Transportation on the job			405.21
(4)	Food & living expenses			390.89
(5)	Use of geophysical equipment	17 days @ $30.00/day		510.00
(6)	Paid to Seigel Associates Limited to cover geophysicist's supervision, calculating, plotting and fairdrawing data and preparation of final reports.			2,584.27
				$6,459.47

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City of Vancouver, in the Province of British Columbia, this 16th day of June, 1971, A.D.

L. A. Merrifield

A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.
Sub-mining Recorder

★o

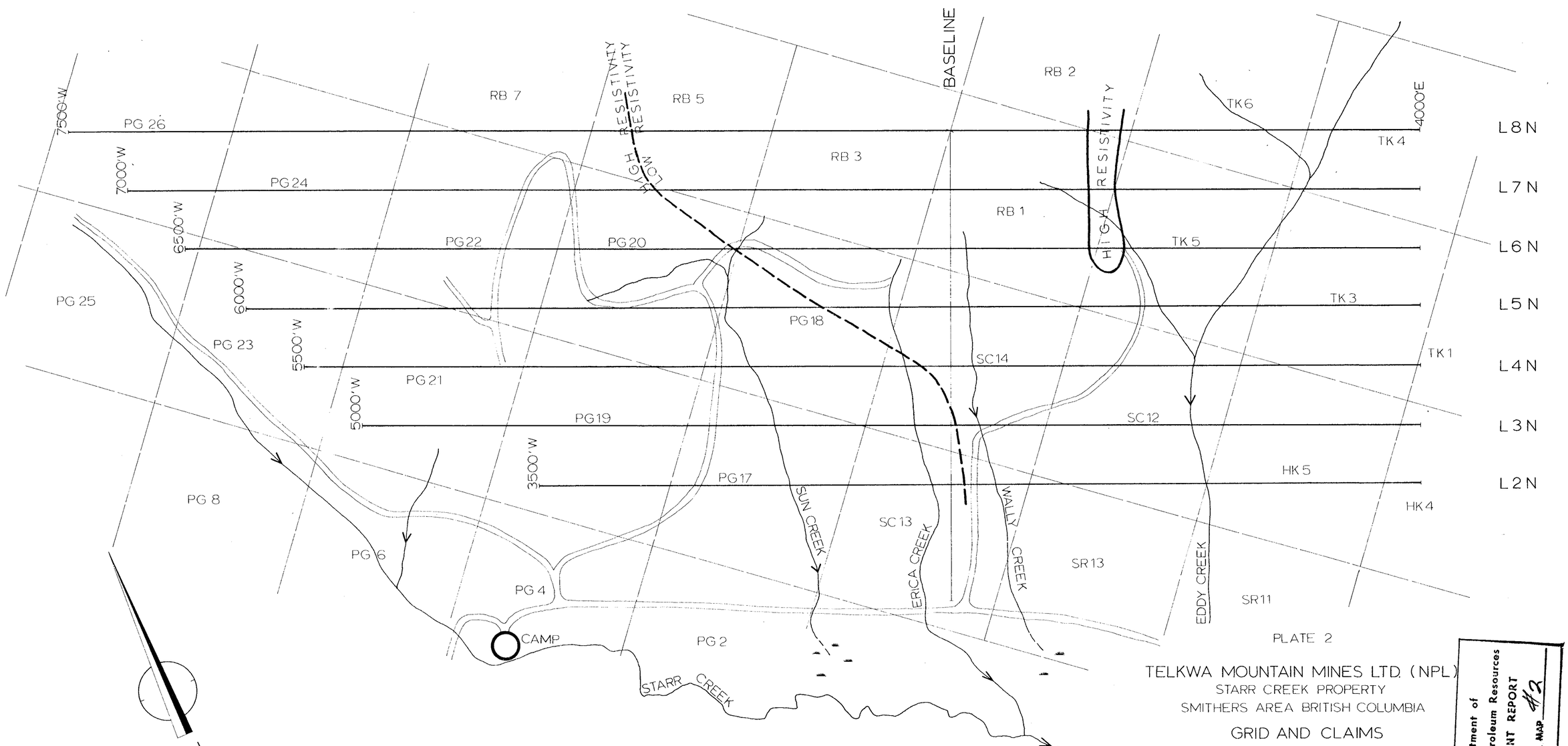


PLATE 2

TELKWA MOUNTAIN MINES LTD. (NPL)

STARR CREEK PROPERTY

SMITHERS AREA BRITISH COLUMBIA

GRID AND CLAIMS

SCALE: 1" = 500'

500 0 500 1000

SURVEY BY SEIGEL ASSOCIATES LTD. OCTOBER 1970

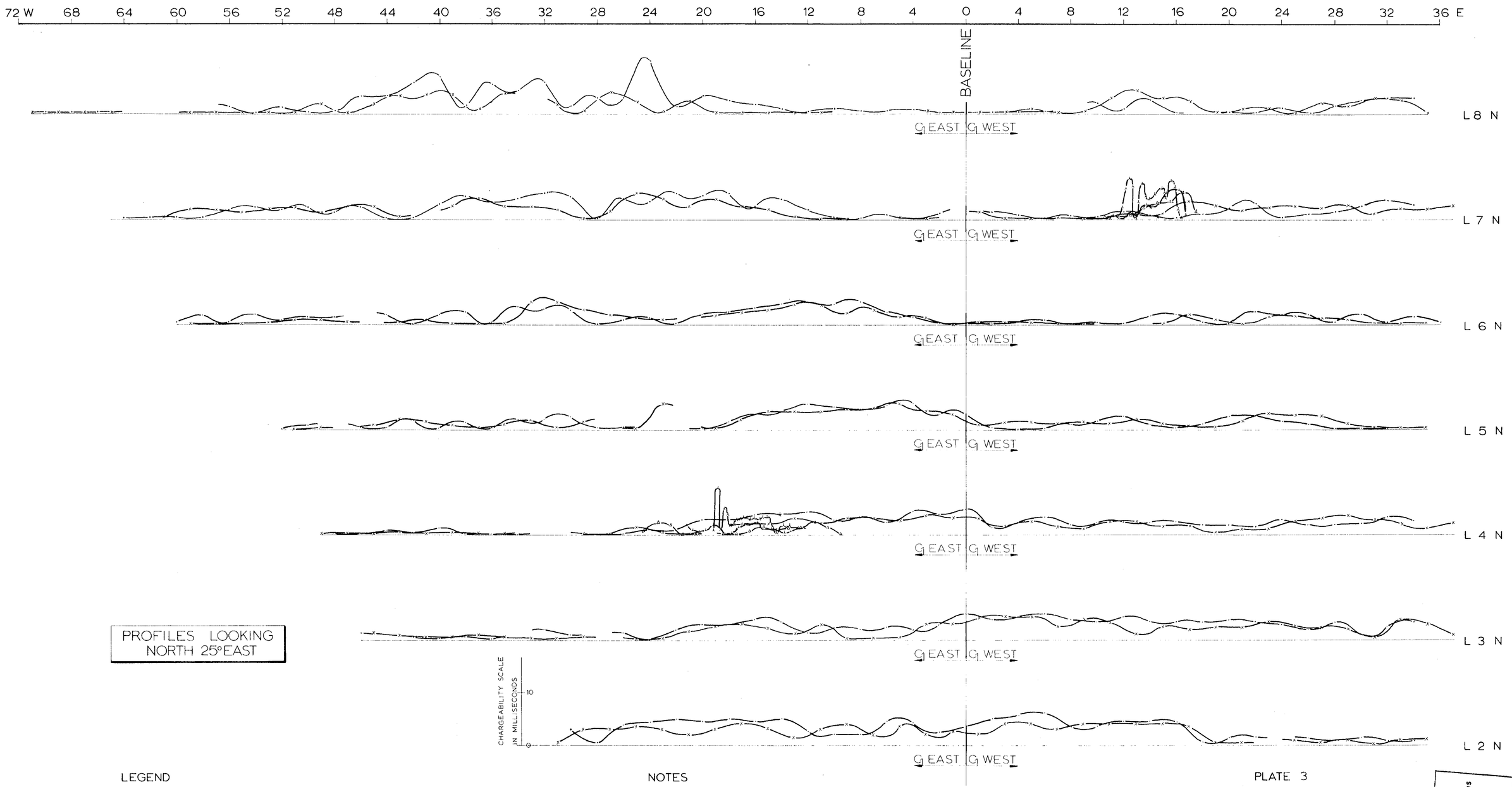
TO ACCOMPANY A GEOPHYSICAL REPORT

BY J.G. BAIRD, DATED NOVEMBER 23 1970

3084

M-2

Richard O. Crosby



PROFILES LOOKING NORTH 25° EAST

LEGEND

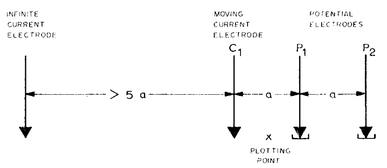
CHARGEABILITY SCALE 1" = 10 MILLISECONDS

ELECTRODE SPACING
- a = 400'
- a = 200'
- a = 100'
- a = 50'
- a = 25'

NOTES

SCINTREX MARK VII INDUCED POLARIZATION INSTRUMENTATION

THREE ELECTRODE ARRAY



EAST OR WEST OF ARRAY AS INDICATED

INTERLINE SPACING NOT TO SCALE

TO ACCOMPANY A GEOPHYSICAL REPORT BY J.G. BAIRD, DATED NOVEMBER 23, 1970

PLATE 3

TELKWA MOUNTAIN MINES LTD (NPL)

STARR CREEK PROPERTY

SMITHERS AREA BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY

CHARGEABILITY PROFILES

SCALE 1" = 400'

400' 0 400' 800'

SURVEY BY SEIGEL ASSOCIATES LTD. OCTOBER 1970

3084

M-3

Richard A. Crosby

72 W 68 64 60 56 52 48 44 40 36 32 28 24 20 16 12 8 4 0 4 8 12 16 20 24 28 32 36 E

BASELINE

L 8 N — G EAST G WEST

L 7 N — G EAST G WEST

L 6 N — G EAST G WEST

L 5 N — G EAST G WEST

L 4 N — G EAST G WEST

L 3 N — G EAST G WEST

L 2 N — G EAST G WEST

5000
4000
3000
2000
1000
0

RESISTIVITY SCALE IN OHM-METRES
1000
0

PROFILES LOOKING NORTH 25° EAST

LEGEND

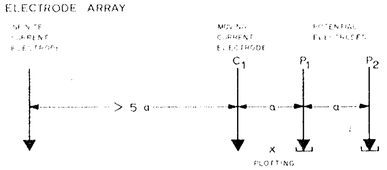
RESISTIVITY SCALE 1" = 1000 OHM-METRES

ELECTRODE SPACING
a = 400'
a = 200'
a = 100'
a = 50'
a = 25'

NOTES

SCINTREX MARK VII INDUCED POLARIZATION INSTRUMENTATION

THREE ELECTRODE ARRAY



G EAST OR WEST OF ARRAY AS INDICATED

INTERLINE SPACING NOT TO SCALE

TO ACCOMPANY A GEOPHYSICAL REPORT BY J.G. BAIRD, DATED NOVEMBER 23, 1970

PLATE 4

TELKWA MOUNTAIN MINES LTD (N.P.L.)
STARR CREEK PROPERTY
SMITHERS AREA BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY
RESISTIVITY PROFILES
SCALE 1" = 400'

400' 0 400' 800'

SURVEY BY SEIGEL ASSOCIATES LTD. OCTOBER 1970

Richard O. Crosby