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REPORT ON AN INDUCED POLARIZATION SURVEY BARRIERE LAKE AREA, BRITISH COLUMBIA ON BEHALF OF DERRY MICHENER AND BOOTH

by

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

August 13, 1970

CLAIMS:

Name

EBL 1-4, 6, 13-19, 25-32, 37-54, 55A, 56, 56A, 69-76, 78, 81, 82, 85.

REM 1, 3-6, 9-18

LOCATION:

About 18 miles northeast of Barriere, B. C.
Kamloops Mining Division
119° 51° SW

DATES:

May 28 to June 20, 1970

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SUMMARY

An induced polarization survey on the present property has revealed extensive areas of increased chargeability responses. The amplitude of the present responses could arise from bedrock containing 1% to 5% by volume of metallically conducting mineralization such as sulphides, graphite or other minerals known to give induced polarization responses.

Most of the increased chargeabilities appear to arise from within metasedimentary and metavolcanic rocks. It is difficult, on the basis of the present information, to designate areas of greatest economic potential. A programme of percussion drilling comprising several holes is already underway and is expected to yield geological information which, along with magnetic, induced polarization and resistivity results may direct exploration towards the most promising mineralized areas.

REPORT ON AN INDUCED POLARIZATION SURVEY BARRIERE LAKE AREA, BRITISH COLUMBIA ON BEHALF OF DERRY MICHENER AND BOOTH

INTRODUCTION

During the period from May 28 to June 20, 1970, a geophysical field party under the direction of Mr. Francis Bourqui executed an induced polarization survey on some EBL and REM Claims in the Barriere area, British Columbia, on behalf of Derry, Michener and Booth, geological consultants.

As shown on Plate 1, on a scale of 1" = 4 miles, the claims lie northeast of Barriere between North and East Barriere Lakes. The property is accessible by truck. The claims area is well timbered and hilly. The claims covered, in whole or part, by these surveys are listed on the title page of this report and are shown on Plate 2. These claims are held by Royal Canadian Ventures Ltd.

Seigel Mk VI time-domain (pulse-type) induced polarization equipment has been employed on this property. The transmitting unit had a rating of 2.5 kw. and equal on and off times of 2.0 seconds. The receiving unit was a remote, ground-pulse type triggered by the 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 near the lines covered. In the present area such mineralization could

include pyrite, pyrrhotite and chalcopyrite and other sulphide minerals. As well, metallic conductors such as magnetite and graphite can give chargeability responses not always distinguishable from sulphide mineralization.

The accompanying copy of H. O. Seigel's paper entitled "Three Recent Irish Discovery Case Histories Using Pulse-Type Induced Polarization" gives a description of the phenomena involved in this type of survey, the equipment employed, the field procedures and the nature of the results obtained over the various base metal ore bodies.

For the present survey a grid was laid out with base lines oriented N 5° W and grid lines oriented perpendicular thereto at 800' intervals. The present survey totalled approximately 26 line miles.

The three electrode array with electrode spacings of 400' and 200' and station intervals of 200' was employed for reconnaissance purposes. In areas of high chargeabilities for the reconnaissance spacings, additional observations were taken employing the three electrode array and electrode spacings of 100' and 600'.

GEOLOGY

The geology of the present property has been studied by Derry, Michener and Booth and has been explained to the writer by Mr. Ian Thompson by letter, conversation and with a map on the scale of 1" = 400'.

The central part of the survey area is underlain by Permian

and earlier metasediments and metavolcanics comprising argillites, pyllites, schists, limestones and quartzites of the Cache Creek Formation. The east side of the grid is mapped as underlain by gneissic and acidic intrusive rocks which are Jurrassic or Cretacous in age. In places acidic intrusions are found within the Cache Creek rocks.

The target of the present survey was a large tonnage, low grade type of copper ore body which might occur within the Cache Creek Formation. Skarn zones with higher grade copper would be secondary targets.

PRESENTATION OF RESULTS

Plate 2, on a scale of 1" = 400', shows the survey grid, ~~claims~~ and an interpretation of the geology based upon the induced polarization and resistivity results.

Plates 3 and 4, also on the scale of 1" = 400', show the chargeability and resistivity results in profile form. The vertical scales are 1" = 20.0 milliseconds for chargeability and 1" = 1000 ohm-metres for resistivity. In order to accommodate the profiles, the interline spacing is not to scale.

Plates 5 and 6 are chargeability and resistivity contour plans for the 200' electrode spacing, on a scale of 1" = 400'. The actual values are shown plotted at the midpoint between the moving current and first potential electrodes. The contour interval is 10.0 milliseconds for chargeability and the 100, 200, 400, 600, 800, 1200, 1600, and 2000 ohm-metre contours are shown for resistivity. Areas exhibiting chargeabilities in excess of 30.0 milliseconds or less than

400 ohm-metres have been shaded.

DISCUSSION OF RESULTS

The chargeability results indicate that in the northern and southeastern parts of the grid the background values are generally less than 10.0 milliseconds. With this background a uniform subsurface distribution of 1% by volume of metallically conducting mineralization would be expected to add approximately 10.0 milliseconds to the background level. Since deposits of low concentrations of copper and molybdenum sulphides of sufficient dimensions may have economic significance, areas exhibiting chargeabilities in excess of 10.0 milliseconds may be worthy of further investigation.

Most of the area surveyed is seen to exhibit chargeabilities in excess of 10.0 milliseconds and ranging up to peak values above 50.0 milliseconds. These amplitudes indicate that the bedrocks in the increased chargeability areas contain between 1% to 5% by volume of metallically conducting material. Most of the high chargeabilities coincide with the metasedimentary rocks which, experience has shown, usually have high background chargeabilities due to their inherent content of graphite, chlorite, sericite and pyrite.

The resistivity values range from a few hundred to approximately 2000 ohm-metres. Higher resistivities generally coincide with the low chargeability responses in areas mapped as underlain by gneisses or granite. While the resistivity may be affected by changes in the type or thickness of the overburden, this does not appear to be an important factor on the present property since similar amplitudes are seen for both narrow and wide electrode spacings.

Plate 2 shows a schematic interpretation of the areas underlain by the two major rock types based upon the assumption that higher resistivities and lower chargeabilities correspond to granitic rocks while lower resistivities and higher chargeabilities occur within the Cache Creek Formation. A resistivity "contact" is shown which corresponds approximately to the 500 ohm-metre contour interpreted from both the 200' and 400' electrode spacing data. Similarly a 20.0 millisecond "contact" is shown for the chargeability results. Where such interpretations are possible, the interpreted nearest surface locations of confined bodies of high chargeability are shown.

CONCLUSIONS AND RECOMMENDATIONS

The present surveys have indicated extensive areas of increased chargeability responses which may arise from subsurface distributions of from 1% to 5% by volume of metallically conducting material, possibly sulphides or other chargeable rock-forming minerals commonly found in metasedimentary rocks.

Diamond drilling just west of the baseline near L 80 N has intersected sulphides which would explain, at least in part, the high chargeability responses in that area.

It is impossible on the basis of the present geophysical results alone to indicate which zones within the increased chargeability areas may contain the best commerical type mineralization. Since the anomalous sources appear to come near the ground surface, surface geological exmainations, possibly aided by trenching should be carried out in areas where short electrode spacings show high responses such as near 18 W on L 96 N or 7 W on L 80 N. A programme of subsurface

exploration might be begun by diamond drilling in the areas of the highest chargeability responses and as more geological information is gained, to expand the diamond drill programme laterally to cover some of the areas of lower chargeability response. The detail profiles on L 80 N could, for example, indicate several zones high in metallically conducting content, any one of which could contain sulphides of ore grade.

One possibility that must not be overlooked is the fact that the chargeability responses over areas mapped as underlain by intrusive rocks are, in places, of sufficient amplitude that the rock may contain 1% or more by volume sulphide.

Since skarn zones may contain magnetite and pyrrhotite as well as copper sulphides and since the location of contacts may be important geological information, it is recommended that a review by made of the results of a magnetometer survey which is understood to be already completed.

New geological information revealed by a programme of percussion drilling now underway should be related back to the geophysical results to check and improve the present interpretations.

Respectfully submitted,

SEIGEL ASSOCIATES LIMITED

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

Vancouver, B. C.
August 13, 1970

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
TO WIT:

In the Matter of a geophysical survey on behalf of Darry, Michener & Booth

I, J. L. McCrea for Seigel Associates Limited

of 750 - 890 West Pender Street, Vancouver

in the Province of British Columbia, do solemnly declare that an induced polarisation survey has been executed on some EBL and REM claims, Barriere Lakes area, British Columbia between May 28 to June 20, 1970. The following expenses were incurred:

(1)	Wages:			
	F. Bourqui	24 days @ $35.00/day	$840.00	
	R. Albert	24 days @ $27.50/day	660.00	
	R. Duppenthaler	24 days @ $27.50/day	660.00	
	G. Frans	24 days @ $27.50/day	660.00	
	R. Paradis	24 days @ $27.50/day	660.00	
	P. Imfeld	24 days @ $27.50/day	660.00	
			$4,140.00	$4,140.00
(2)	Transportation and shipping to the job.			250.55
(3)	Transportation on the job - 24 days @ $15.00/day Plus 744 miles @ $0.15 per mile			471.60
(4)	Food and living expenses - 199 man days			1,127.02
(5)	Use of geophysical equipment	24 days @ $60.00/day		1,440.00
(6)	Use of camp equipment - 24 days @ $25.00/day			600.00
(7)	Paid to Seigel Associates Limited to cover geophysicist's supervision, calculating, plotting and fairdrawing data and preparation of final reports.			5,030.30
				$13,059.55

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 11th day of September, 1970, A.D.

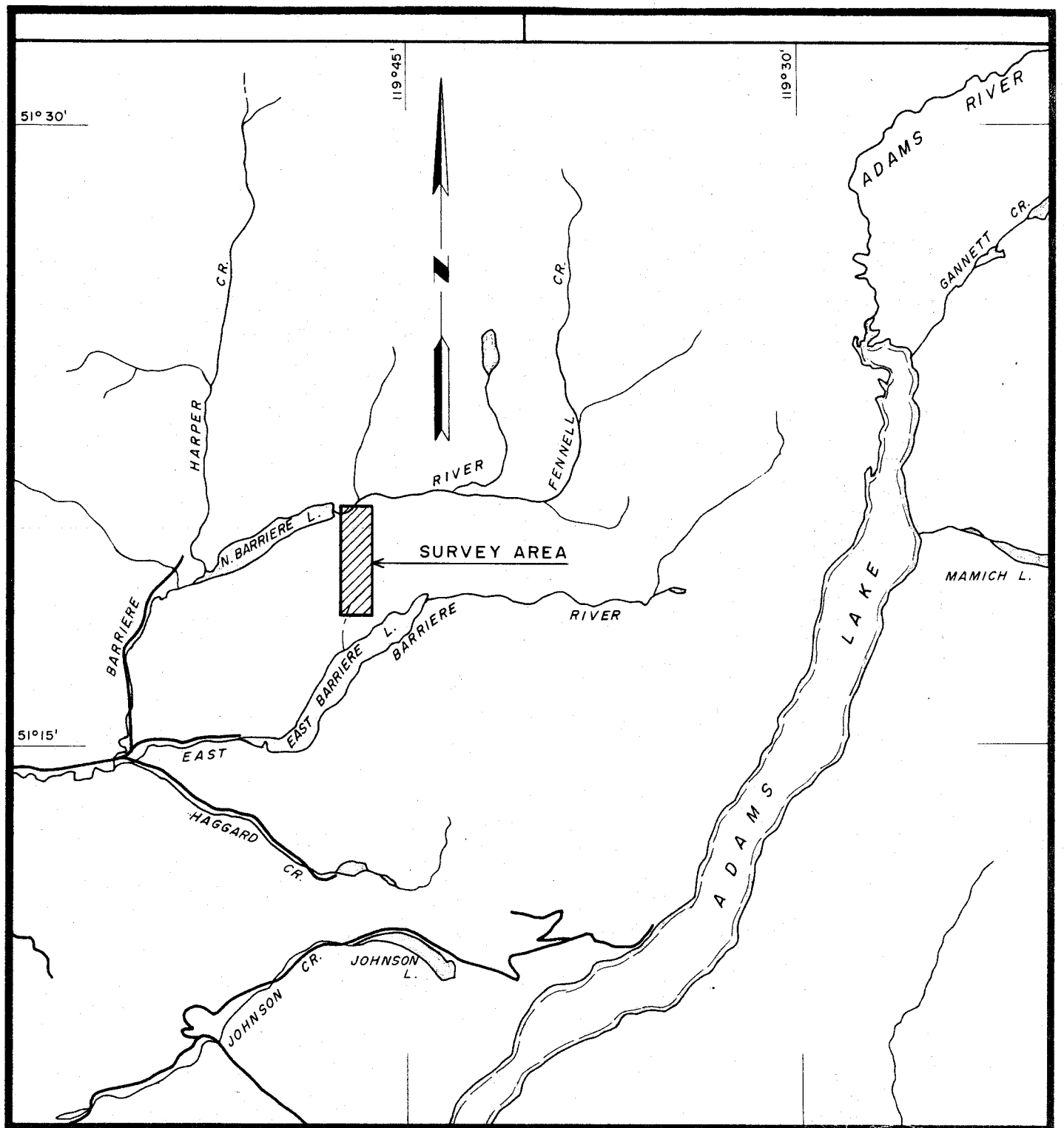
J. L. McCrea

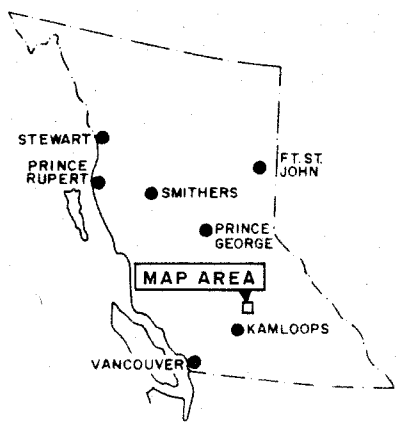
A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

In the Matter of

Statutory Declaration

(CANADA EVIDENCE ACT)





BRITISH COLUMBIA

DERRY, MICHENER & BOOTH

LOCATION MAP

EBL PROJECT

EAST BARRIERE LAKE AREA, B.C.

4 0 4 8

SCALE IN MILES

SURVEY BY
SEIGEL ASSOCIATES LIMITED
JULY 1970

PLATE 1

LEGEND:

HIGH / LOW — RESISTIVITY CONTACT (APPROXIMATELY 500 OHM-METRES)

INDEFINITE / DEFINITE — LOW / HIGH — CHARGEABILITY CONTACT (APPROXIMATELY 20 MILLISECONDS)

xxxxxxxxxx — INTERPRETED NEAREST SURFACE LOCATION OF SOME RELATIVELY CONFINED BODIES OF INCREASED CHARGEABILITY

ZONE OF HIGH CHARGEABILITY AND LOW RESISTIVITY PROBABLY UNDERLAIN BY CACHE CREEK ROCKS

TO ACCOMPANY A GEOPHYSICAL REPORT
BY J.G. BAIRD DATED AUGUST 13, 1970

PLATE 2

DERRY, MICHENER & BOOTH

EBL PROJECT

EAST BARRIERE LAKE AREA, BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY

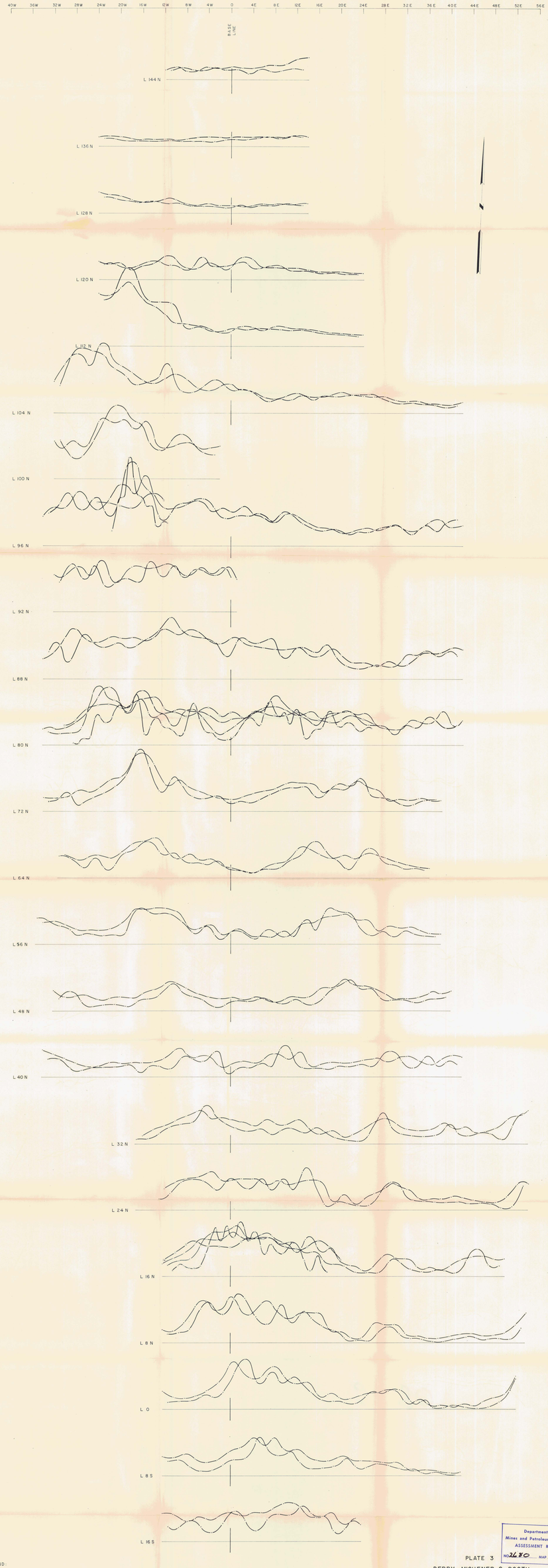
GRID & GEOPHYSICAL INTERPRETATION

SCALE : 1" = 400'

400 200 0 400 800
SCALE IN FEET

SURVEY BY SEIGEL ASSOCIATES LIMITED
JUNE, 1970

J.G. Baird



LEGEND

CHARGEABILITY SCALE 1" = 20 MILLISECONDS

ELECTRODE SPACING
n = 100'
n = 200'
n = 400'
n = 600'

NOTES

SIEGEL MK VI INDUCED POLARIZATION DATA
THREE ARRAY ELECTRODE CONFIGURATION
INTERLINE SPACING NOT TO SCALE

TO ACCOMPANY A GEOPHYSICAL REPORT
BY J.G. BAIRD DATED AUGUST 13, 1970

PLATE 3

DERRY, MICHENER & BOOTH
EBL PROJECT
EAST BARRIERE LAKE AREA, BRITISH COLUMBIA
INDUCED POLARIZATION SURVEY
CHARGEABILITY PROFILES

SCALE: 1" = 400'

SCALE IN FEET

SURVEY BY SIEGEL ASSOCIATES LIMITED
JUNE, 1970

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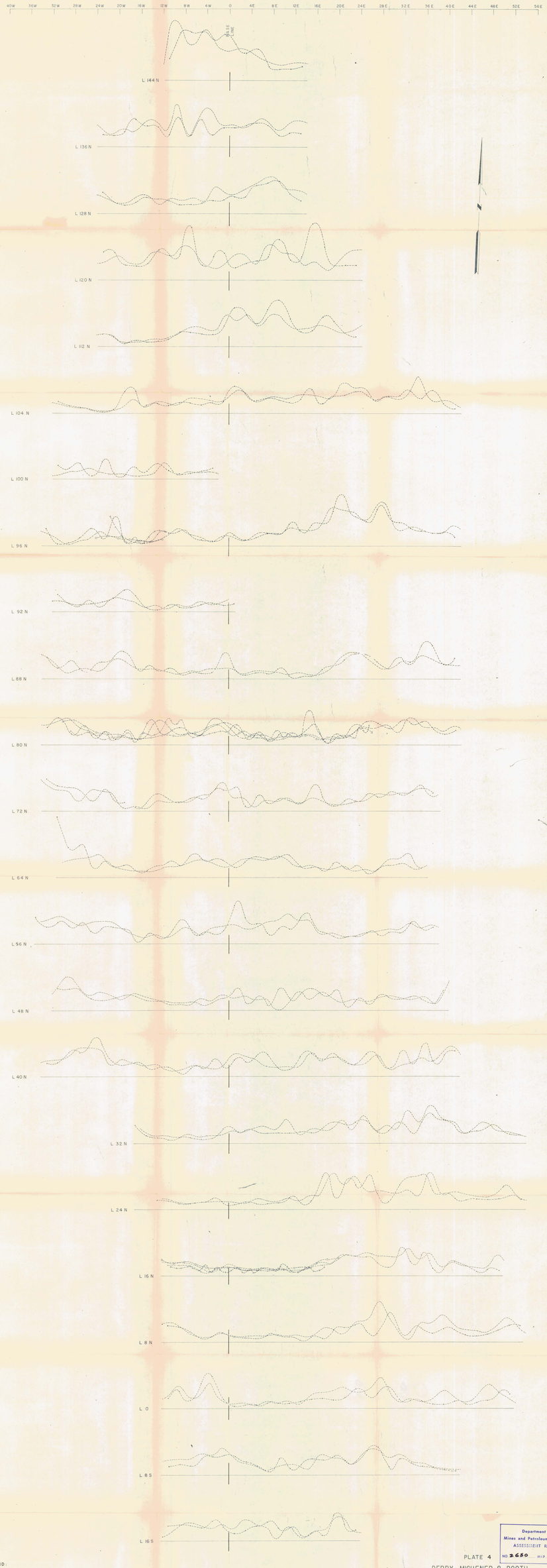

LEGEND:

RESISTIVITY SCALE 1" = 1000 OHM-METRES
ELECTRODE SPACING a = 100'
a = 200'
a = 400'
a = 600'

NOTES:

SEIGEL MK VI INDUCED POLARIZATION DATA
THREE ARRAY ELECTRODE CONFIGURATION
INTERLINE SPACING NOT TO SCALE

TO ACCOMPANY A GEOPHYSICAL REPORT
BY J.S. BAIRD DATED AUGUST 13, 1970

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PLATE 4

DERRY, MICHENER & BOOTH

EBL PROJECT

EAST BARRIERE LAKE AREA, BRITISH COLUMBIA

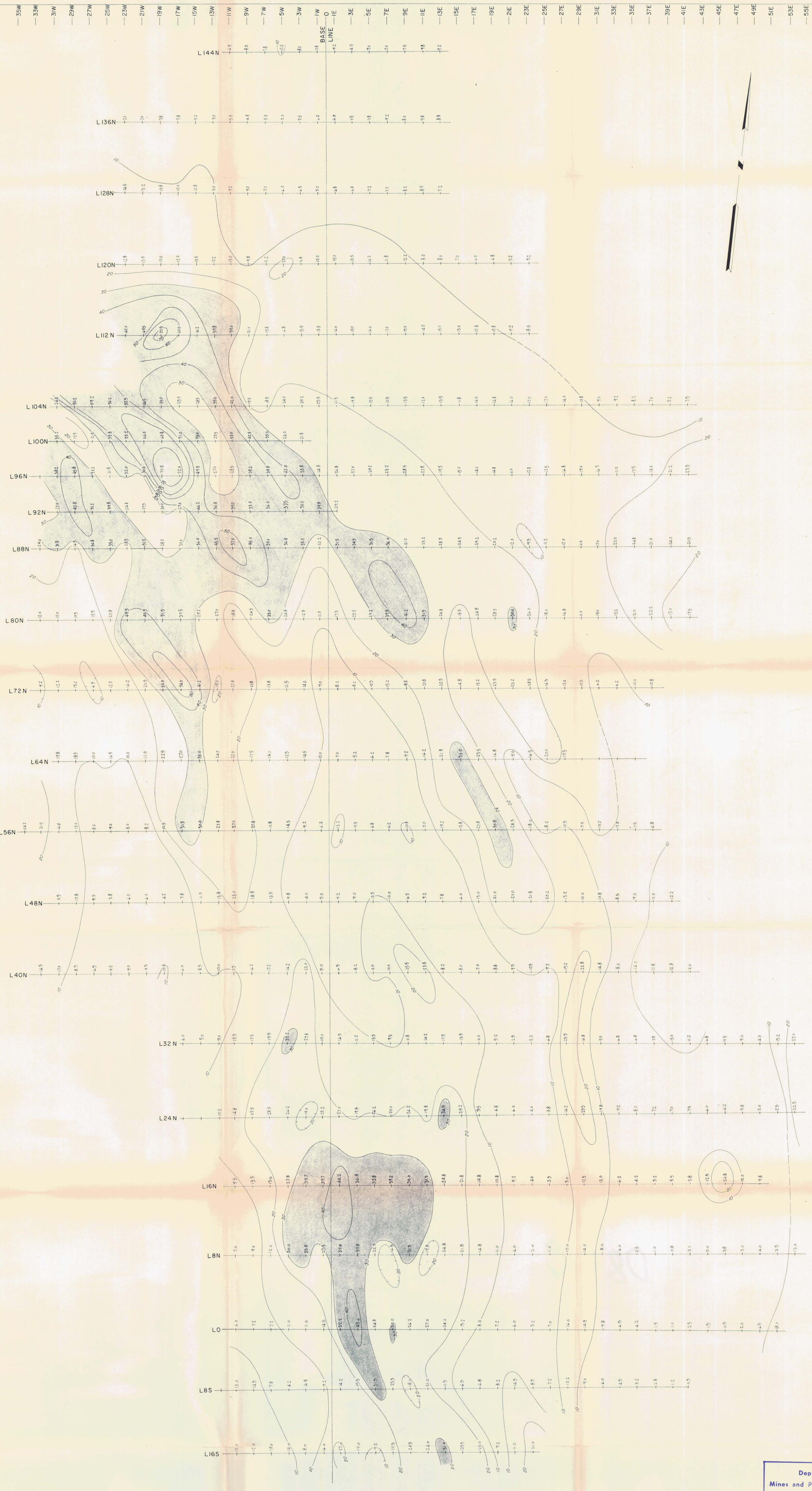
INDUCED POLARIZATION SURVEY

RESISTIVITY PROFILES

SCALE: 1" = 400'

SCALE IN FEET

SURVEY BY SEIGEL ASSOCIATES LIMITED
JUNE, 1970



LEGEND

CHARGEABILITY VALUES IN MILLISECONDS

10 MILLISECOND CONTOUR INTERVAL

NOTES

SEIGEL MARK VI IP INSTRUMENTATION

THREE ELECTRODE ARRAY

TO ACCOMPANY A GEOPHYSICAL REPORT
BY J.G. BAIRD DATED AUGUST 13, 1970

PLATE 5

DERRY, MICHENER & BOOTH

EBL PROJECT

EAST BARRIERE LAKE AREA, BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY

CHARGEABILITY CONTOUR PLAN
200' ELECTRODE SPACING
SCALE: 1"=400'

400 200 0 400 800
SCALE IN FEET

SURVEY BY SEIGEL ASSOCIATES LIMITED
JUNE, 1970

J.G. Baird

LEGEND

RESISTIVITY VALUES IN OHM-METRES

50-100-200-400 CONTOUR INTERVAL

NOTES

SEIGEL MK VI IP INSTRUMENTATION
THREE ELECTRODE ARRAY

TO ACCOMPANY A GEOPHYSICAL REPORT
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PLATE 6

DERRY, MICHENER & BOOTH

EBL PROJECT

EAST BARRIERE LAKE AREA, BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY

RESISTIVITY CONTOUR PLAN - GRID & CLAIMS

200' ELECTRODE SPACING

SCALE: 1" = 400'

400 200 0 400 800
SCALE IN FEET

SURVEY BY SEIGEL ASSOCIATES LIMITED
JUNE, 1970

J.G. Baird