2181

REPORT ON
INDUCED POLARIZATION SURVEY
ON THE
NORTH CLAIM GROUP, HIGHLAND VALLEY AREA, B.C.
FOR
ORO MINES LIMITED
BY
CANADIAN AERO MINERAL SURVEYS LIMITED
Project No. 013

REPORT ON

INDUCED POLARIZATION SURVEY

ON THE

NORTH CLAIM GROUP, HIGHLAND VALLEY AREA, B.C.

FOR

ORO MINES LIMITED

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CANADIAN AERO MINERAL SURVEYS LIMITED

PROJECT NO. 013

OTTAWA, ONTARIO,
October 31, 1969

Robert W. Stemp, P.Eng.,
Chief Geophysicist

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Accompanying this Report:-

Map Nos. 1 & 2 - Two Apparent Chargeability and Apparent Resistivity profile presentations at the scale of: 1" = 200' — Rear

Map Nos. 3 & 4 - Two Apparent Chargeability Contour Plans. Scale 1" = 200' — Rear

REPORT ON
INDUCED POLARIZATION SURVEY
IN THE
HIGHLAND VALLEY AREA OF BRITISH COLUMBIA
FOR
ORO MINES LIMITED

I. INTRODUCTION

This report pertains to an induced polarization survey carried out by Canadian Aero Mineral Surveys Limited for Oro Mines Limited in the Highland Valley area of British Columbia. The field survey was conducted by Mr. K. Hendry, BSc., between August 21 and September 1, 1969. The geophysical data acquired totalled approximately 17 line miles.

Profiles of the apparent chargeability (i.e. I.P. response) and apparent resistivity are plotted on two plan maps at the scale of 1" = 200'. Two apparent chargeability contour plans are also presented using a contour interval of one millisecond.

II. EQUIPMENT AND SURVEY PROCEDURES

For this survey the D.C. or "pulse" type I.P. method was employed. A conventional A.C. motor generator in conjunction with a voltage regulator is used as a power source for a modified Sharpe Instruments Limited transmitter. The transmitter, capable of delivering 2.5 K.V.A., incorporates an electronic timing device designed by Canadian Aero Mineral Surveys Limited. The I.P. receiver is the self-triggering, high sensitivity "Newmont" unit, manufactured by Data Control Systems of Danbury, Connecticut. This I.P. receiver is equipped with direct chargeability read-out, automatic S.P. buck-out,

and a device to obtain information on the slope of the decay transient.

The time cycle of measurement used in this survey consisted of alternate 2.0 seconds "ON" and 2.0 seconds "OFF" periods with consecutive "ON" periods being of reverse polarity. Measurement of the secondary voltage was delayed 0.45 seconds after cessation of the transmitter "ON" period to avoid coupling and transient effects.

Readings were taken every 200 feet along the lines using a standard three electrode array configuration with 200 feet electrode separation.

III. DISCUSSION OF RESULTS

The I.P. response is very low throughout the area and no recommendations for drilling can be made on the basis of this survey alone. The highest chargeability readings (11.4 milliseconds) were obtained on the north end of line 76E. Both a power line and road lie in this vicinity, and thus cultural interference may account for the higher readings.

If any significant sulphide mineralization exists in the area it would lie at a depth greater than 200 feet below surface.

Respectfully submitted,

R. W. Stemp

OTTAWA, ONTARIO,
October 22, 1969.

Robert W. Stemp, P.Eng.,
Chief Geophysicist.

A P P E N D I X "A"

The following Canadian Aero Mineral Surveys personnel were associated with this project:

K.	Hendry	-	Geophysicist (Field)	-	13 days at $100.00/day
R.W.	Stemp	-	Geophysicist (Ottawa)	-	2 days at $100.00/day
A.	Chrostek	-	Draftsman (Ottawa)	-	55 hours at $ 8.00/hr.

NAME: Robert William Stemp BIRTH DATE: February 22, 1939

POSITION: Geophysicist NATIONALITY: Canadian

EDUCATION:

School: University of Toronto
Major: Engineering Physics (Geophysics option)
Degree: B.A.Sc., 1961
Graduate work (1962)

PRE AERO EXPERIENCE:

1. International Nickel Co. of Canada - Four field seasons of ground geophysics following up airborne results in Northern Ontario.

2. Chevron Oil Co. - One field season of Seismic work in Wyoming, North Dakota and Montana.

AERO EXPERIENCE:

Mr. Stemp has been actually engaged in all types of ground and airborne geophysics with specialization in continuous wave and INPUT airborne EM methods, airborne scintillation spectrometer methods, and D.C. "Pulse Type" induced polarization methods.

January 1963 - February 1964

Conducted ground geophysical surveys throughout Canada and the United States. Duties included planning the surveys, carrying out the field work, and interpreting the results.

March 1964 - July 1965

In charge of mining geophysical activities in the south-western United States and Mexico. This led to the establishment of a permanent branch office in Tucson, Arizona.

August 1965 - December 1966

Primarily involved with the formal interpretation of airborne geophysical surveys in Ottawa.

January 1967 - Present

Chief Geophysicist of Canadian Aero in Ottawa.

SOCIETY MEMBERSHIPS:

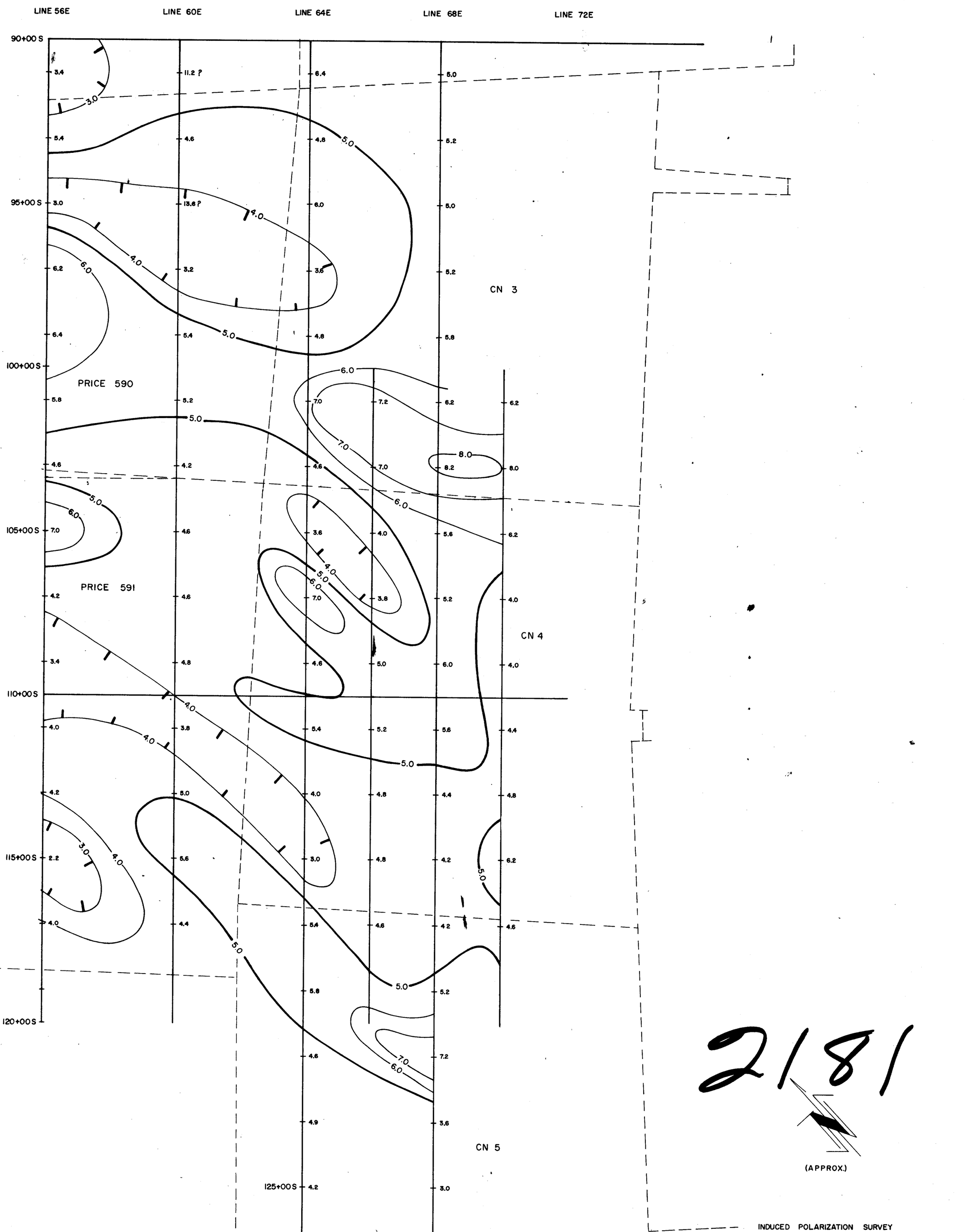
1. Society of Exploration Geophysicists
2. Association of Professional Engineers (Ontario)
3. Canadian Institute of Mining and Metallurgy
4. Canadian Exploration Geophysics Society.

PAPERS etc.

1. Undergraduate Thesis - Aeromagnetic Depth Determinations in the search for oil.
2. Graduate Studies - Lead Isotope Age Determinations of some Sulphide Minerals.
3. Application of Airborne EM and Radiometric Surveys in the search for Base Metals and Uranium in Saskatchewan, presented in Regina, at "Index 67" - August 1967.
4. Field Comparison of In-Phase V.S. INPUT Airborne EM results - presented at an S.E.G. regional symposium in Salt Lake City - March 1968.

LANGUAGES SPOKEN:

English, French.



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Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2181 MAP #3

INDUCED POLARIZATION SURVEY

CHARGEABILITY CONTOUR PLAN

NORTH GROUP
HIGHLAND VALLEY AREA
BRITISH COLUMBIA

FOR

ORO MINES LIMITED

BY

CANADIAN AERO MINERAL SURVEYS LIMITED

SCALE: 1 INCH TO 200 FEET

ELECTRODE CONFIGURATION . . . . . .3 ARRAY
CONTOUR INTERVAL . . . . . .1.0 MILLISECONDS
INDEX CONTOUR . . . . . .5.0 MILLISECONDS
ELECTRODE SPACING. . . . . .200 FEET

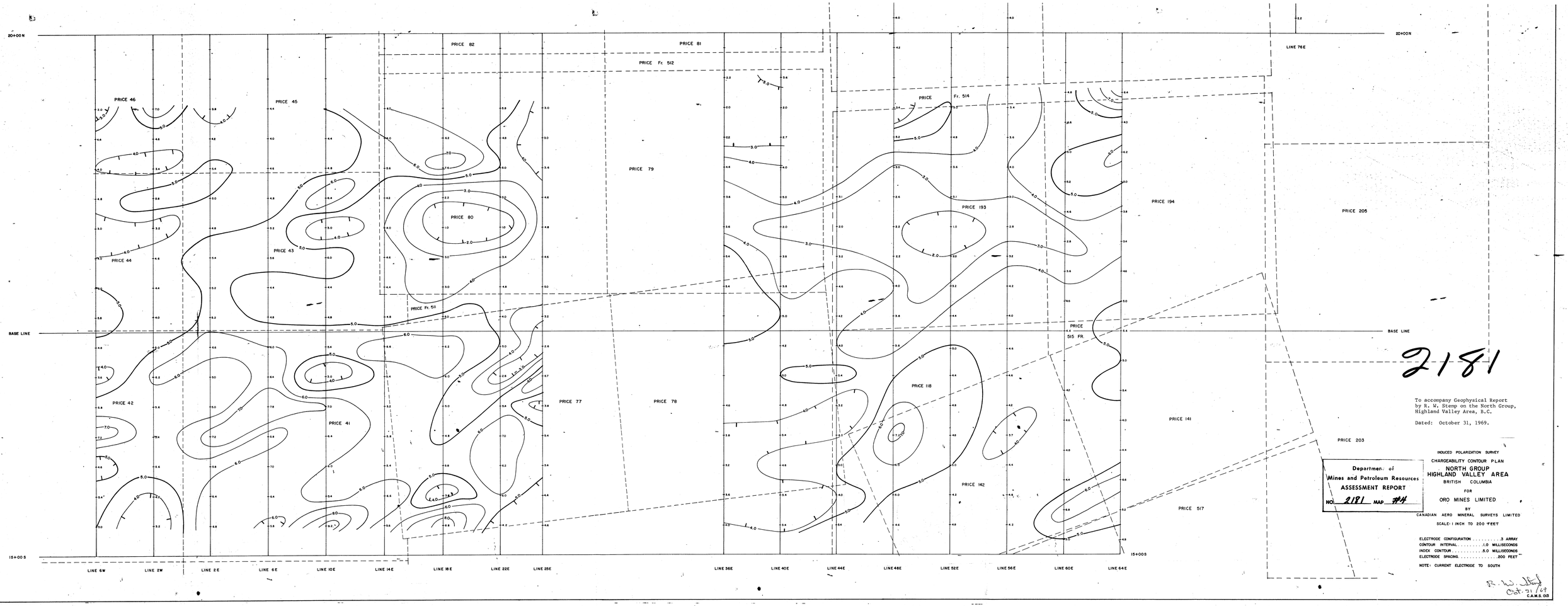
NOTE: CURRENT ELECTRODE TO SOUTH

To accompany Geophysical Report
by R. W. Stemp on the North Group,
Highland Valley Area, B.C.

Dated: October 31, 1969.

R. W. Stemp
Oct. 31/69

C.A.M.S. 013



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INDUCED POLARIZATION SURVEY

CHARGEABILITY CONTOUR PLAN

NORTH GROUP

HIGHLAND VALLEY AREA

BRITISH COLUMBIA

FOR

ORO MINES LIMITED

BY

CANADIAN AERO MINERAL SURVEYS LIMITED

SCALE: 1 INCH TO 200 FEET

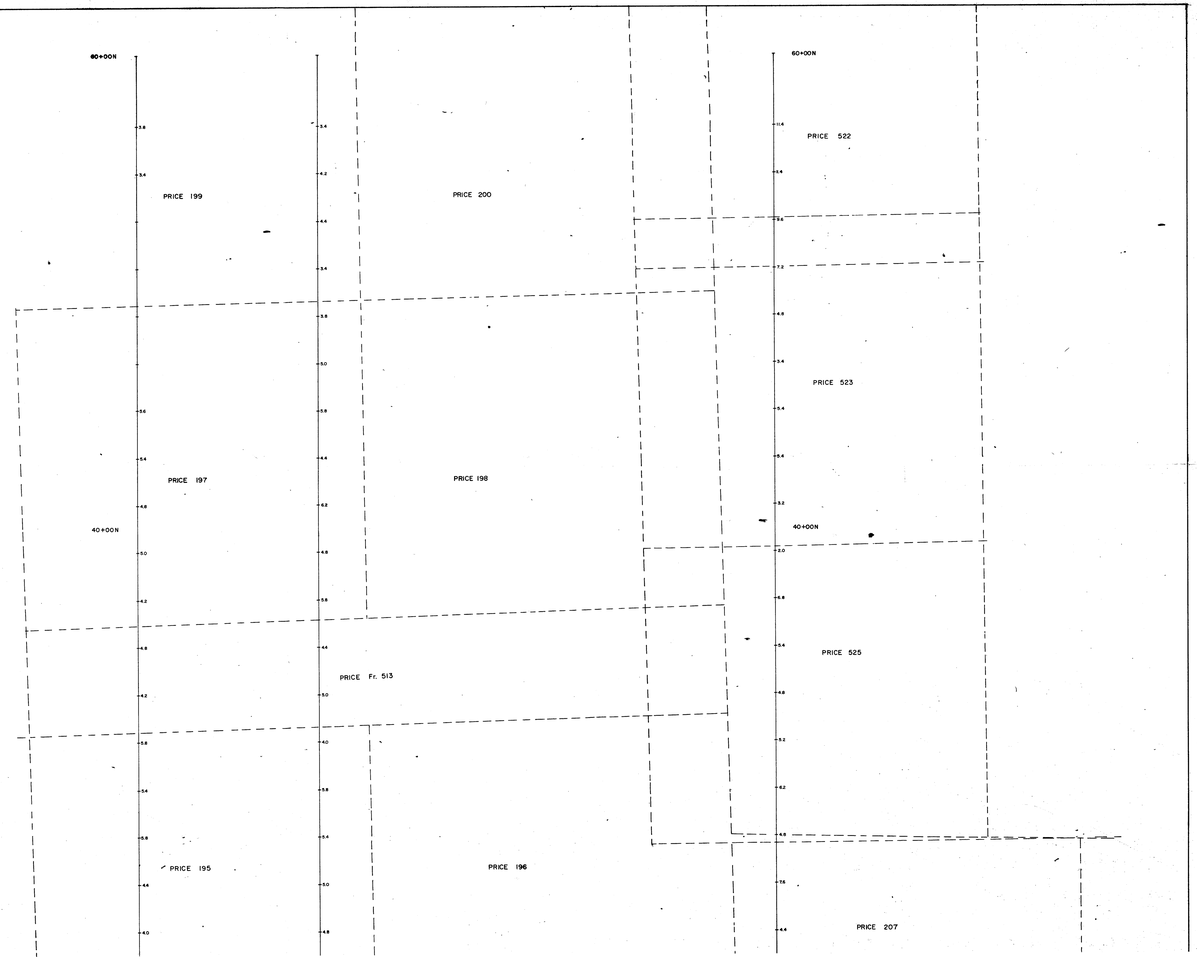
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2181 MAP #4

ELECTRODE CONFIGURATION ..... .3 ARRAY
CONTOUR INTERVAL ..... 1.0 MILLISECONDS
INDEX CONTOUR ..... 5.0 MILLISECONDS
ELECTRODE SPACING ..... 200 FEET

NOTE: CURRENT ELECTRODE TO SOUTH

R. W. Stemp
Oct. 31/69

C.A.M.S. 013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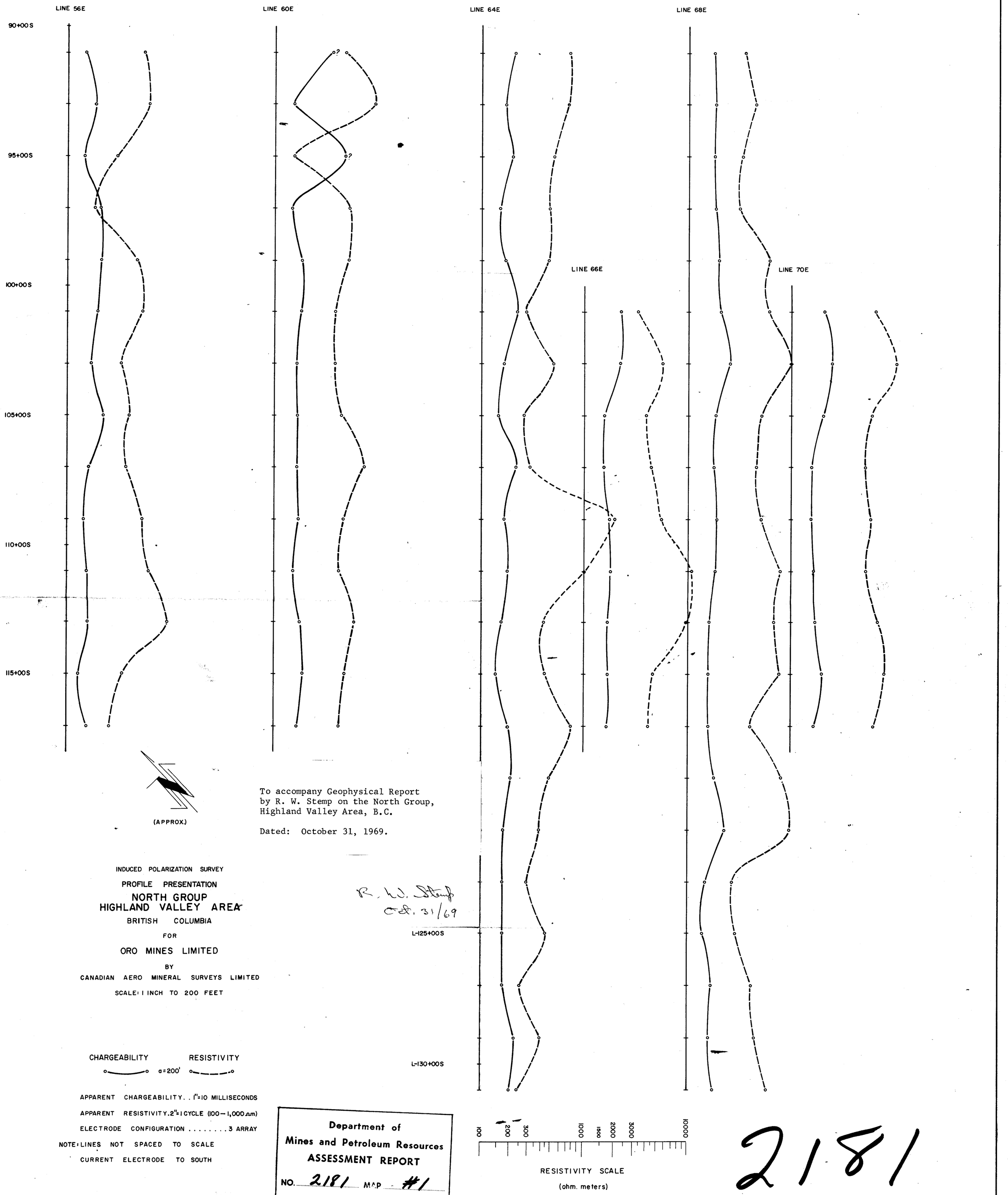

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INDUCED POLARIZATION SURVEY

PROFILE PRESENTATION

NORTH GROUP
HIGHLAND VALLEY AREA

BRITISH COLUMBIA

FOR

ORO MINES LIMITED

BY

CANADIAN AERO MINERAL SURVEYS LIMITED

SCALE: 1 INCH TO 200 FEET

CHARGEABILITY — a=200' — RESISTIVITY

APPARENT CHARGEABILITY. . 1"=10 MILLISECONDS

APPARENT RESISTIVITY. 2"=1 CYCLE (100—1,000 Ωm)

ELECTRODE CONFIGURATION . . . . . 3 ARRAY

NOTE: LINES NOT SPACED TO SCALE

CURRENT ELECTRODE TO SOUTH

100 200 300 1000 1500 2000 3000 10000

RESISTIVITY SCALE

(ohm. meters)

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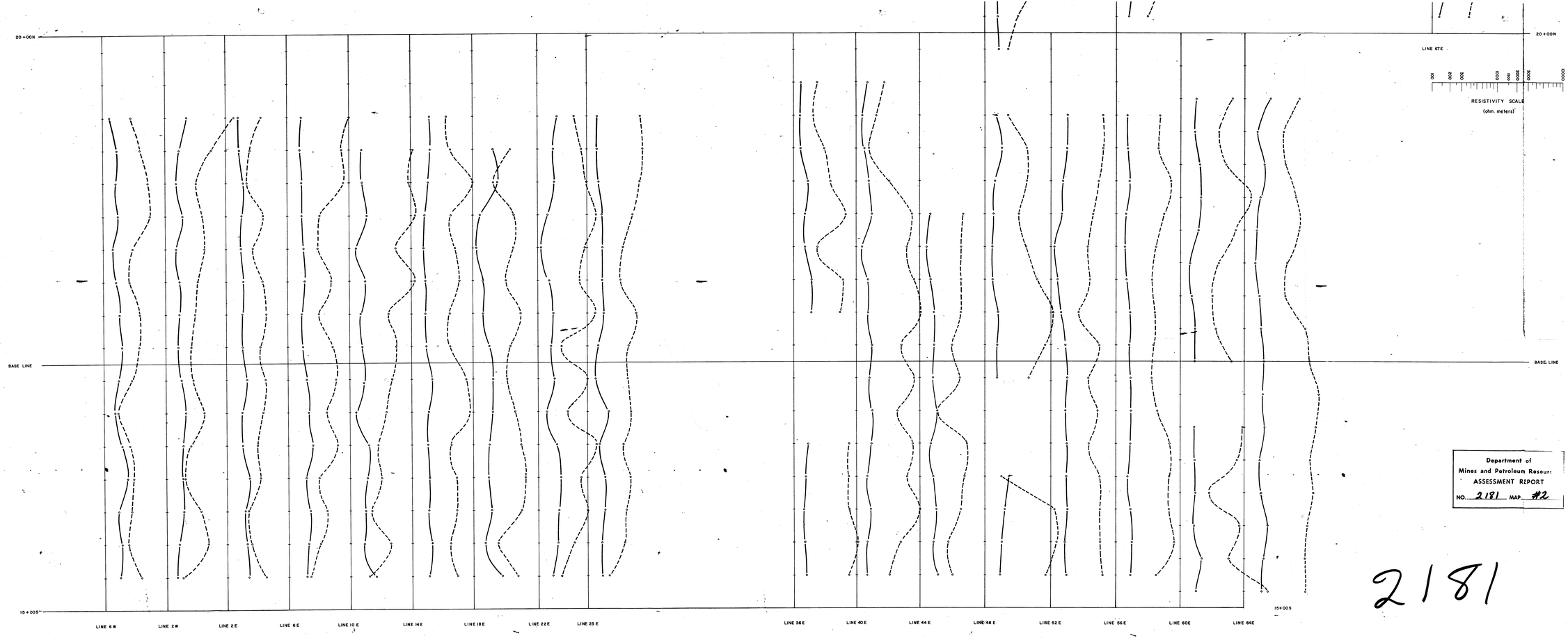

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PROFILE PRESENTATION
NORTH GROUP
HIGHLAND VALLEY AREA
BRITISH COLUMBIA
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CANADIAN AERO MINERAL SURVEYS LIMITED
SCALE: 1 INCH TO 200 FEET

CHARGEABILITY RESISTIVITY
n=0 n=200'

APPARENT CHARGEABILITY...1"=10 MILLISECONDS
APPARENT RESISTIVITY 2"=1CYCLE (100-1,000 ohm)
ELECTRODE CONFIGURATION.....3 ARRAY
NOTE: CURRENT ELECTRODE TO SOUTH

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R. W. Stemp
Oct. 31/69

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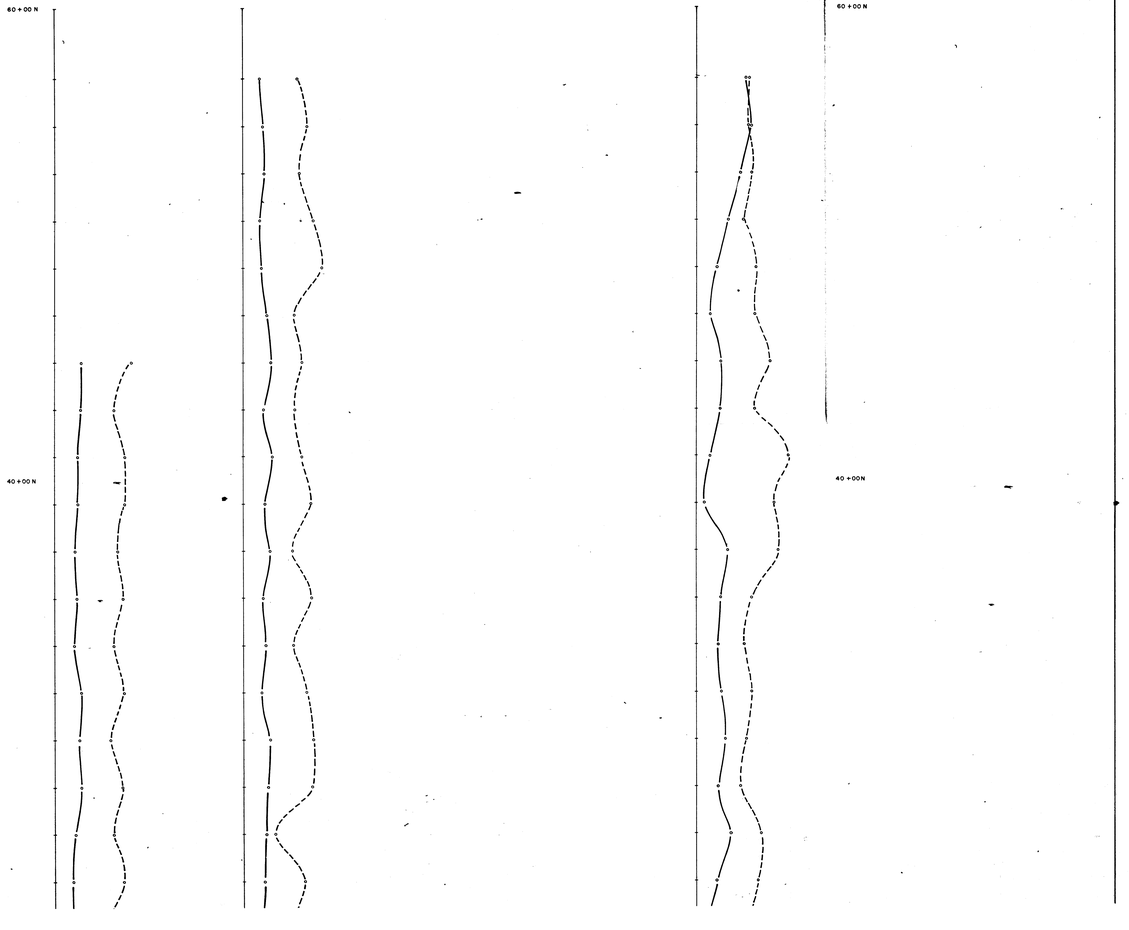
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