GEOSEARCH CONSULTANTS LIMITED

1752

INDUCED POLARIZATION AND MAGNETOMETER SURVEY

for

ASHLAND OIL AND REFINING COMPANY

on the

BLUE JAY GROUP

NICOLA MINING DIVISION

MERRITT AREA, BRITISH COLUMBIA.

(To Accompany Maps 68-61, 68-61M)

December 11th, 1968.

REPORT ON
INDUCED POLARIZATION SURVEY
IN THE
QUILCHENA CREEK AREA, B.C.
FOR
CHATAWAY EXPLORATION COMPANY LIMITED
BY
CANADIAN AERO MINERAL SURVEYS LIMITED
Project No. 9655

REPORT ON

INDUCED POLARIZATION SURVEY

IN THE

QUILCHENA CREEK AREA, B.C.

FOR

CHATAWAY EXPLORATION COMPANY LIMITED

BY

CANADIAN AERO MINERAL SURVEYS LIMITED

PROJECT NO. 9655

OTTAWA, Ontario,
December 20, 1968.

J.E. Mekarski, B.Sc.,
Geophysicist.

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SUMMARY

During the period from 18 November 1968 to 13 December 1968, an induced polarization survey was carried out by Canadian Aero Mineral Surveys Limited, in the Quilchena Creek area of British Columbia.

A north-northeast trending anomalous zone was encountered in the southwest corner of the Quilchena Creek property. Further work along this zone will be dictated by the results of past drilling by Chataway Exploration Company Limited.

No anomalies were encountered along traverse lines N200 to N280, and no further work is recommended in the area traversed by these lines.

REPORT ON
INDUCED POLARIZATION SURVEY
IN THE
QUILCHENA CREEK AREA, B.C.
FOR
CHATAWAY EXPLORATION COMPANY LIMITED

I. INTRODUCTION

During the period from 18 November 1968 to 13 December 1968, an induced polarization survey was carried out by Canadian Aero Mineral Surveys Limited, in the Quilchena Creek area of British Columbia for Chataway Exploration Company Limited. A total of 87,400 feet or about 16-½ line miles were traversed.

The purpose of this reconnaissance survey was to locate zones of anomalous induced polarization response, which might indicate underlying copper mineralization.

A description of the method of measurement, its application, and instrumentation is included in Appendix A.

II. GEOLOGY

Most of the Quilchena Creek area is covered by Pleistocene sand, gravel, and clay. In the eastern and central part of the property long northerly trending hills have probably been shaped by glacial activity.

Southern and western portions of the property are strewn with cavernous and vesicular Basalt Boulders which probably represent the flat-lying Miocene Valley Basalt. Some outcrops of the above material were also encountered.

In the northeastern portion of the survey area and along some portions of Quilchena Creek greenish andesite was encountered. This probably represents the Triassic Nicola group which is said to underlie most of the survey area.

Granitic rocks were encountered in two places: (1) quartz porphyry at about E124 along line N280, (2) sheared granitic rock at about E122 along line N248. These rocks may belong either to the Jurassic Coast Intrusion, or possibly to the pre-Nicola Iron Mask Batholith.

III. DISCUSSION OF RESULTS

Background induced polarization response of Quilchena Creek area can be subdivided into two general types. One has an apparent chargeability value of about 5 milliseconds, and an apparent resistivity value of about 60 ohm meters. A north-south trending zone of this response is intersected by the survey lines at about E176 (see Profile Presentation, and tentative Chargeability Contour Plan). This zone coincides with areas of overburden. The second type of response has an apparent chargeability of about 9 to 10 milliseconds, apparent resistivity of 200 to 400 ohm meters, and coincides with areas where volcanic rocks are frequently encountered.

A north-northwest trending anomalous zone was intersected at about E120 by lines N150 to N184. A maximum apparent chargeability value of 35 milliseconds was obtained about 200 feet

east of a drill site and trench located at about E114 along line N184.

Limonite gossan, pyrite, and some malachite were encountered in the trench.

The anomalous response encountered may be produced by about 2% of polarizable material.

To determine induced polarization response at depth, line N232 was traversed using an 800 foot electrode spacing. As can be seen from the Profile Presentation, the apparent chargeability along the entire line resembles that associated with volcanic rock. A chargeability value of 11 milliseconds at E204 is not considered significant. Apparent resistivity values obtained (about 100 ohm meters) were consistently lower than those obtained using the 400 foot electrode spacing. Thus, resistivity decreases with depth.

IV. CONCLUSIONS AND RECOMMENDATIONS

A north-northeast trending anomalous zone was encountered along lines N150 to N184 in the southwest corner of the Quilchena Creek property. Since the zone has already been drilled by Chataway Exploration Company Limited, further detailing of the zone will be dictated by results already in hand.

No anomalies were encountered along traverse lines N200 and N280. No further work is recommended in the area traversed by these lines.

Respectfully submitted,

J.E. Mekarski

OTTAWA, Ontario,
December 20, 1968.

J.E. Mekarski, B.Sc.,
Geophysicist.

S. W. Wong Ltd.
10 Feb 69

A P P E N D I X "A"

INSTRUMENTATION

Motor Generator | Voltage Regulator | Transmitter | Receiver

The above block diagram shows the I.P. apparatus employed on this project.

A conventional A.C. motor generator in conjunction with a voltage regulator is used as a current source for a modified Sharpe Instruments Limited transmitter. The transmitter, capable of delivering 2.5 K.V., incorporates an electronic timing device designed by Canadian Aero Mineral Surveys Limited.

The I.P. receiver is the high sensitivity "Newmont" unit, manufactured by Data Control System of Danburry, 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.

SURVEY PROCEDURES

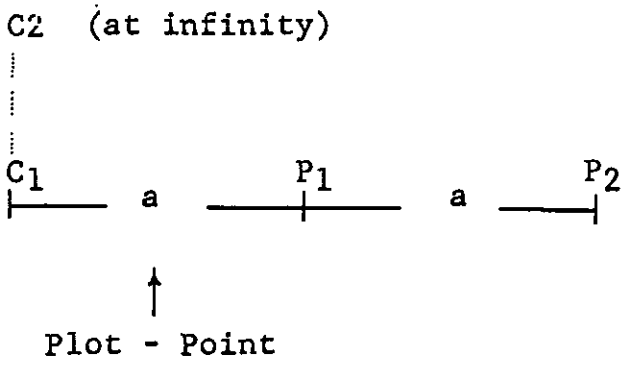
Induced polarization and resistivity measurements were made in the time domain mode of operation. The time cycle of measurement used in this survey consisted of alternate 2.0 seconds "On" and 2.0 seconds "Off" periods with consecutive "On" periods being of reverse polarity. Secondary voltage was measured by integration during the period from 0.45 seconds to 1.10 seconds after cessation of the transmitter current "On" period.

Measurement of the secondary voltage was delayed 0.45 seconds after cessation of the transmitter "On" period to avoid coupling and transient effects.

To conform to standard presentation the integrator time constant was adjusted to give induced polarization readings equivalent to those obtained with a transmitter cycle of 3.0 seconds "On" and 3.0 seconds "Off" with integration of the secondary voltage decay during the first second of the "Off" period.

Throughout the survey, a standard three array electrode configuration was employed, with electrode spacings of 400 and 800 feet.

Values obtained are plotted at the midpoint between the current electrode and the potantial electrode as shown below:



APPLICATION OF INDUCED POLARIZATION METHOD

The induced polarization method is best suited to the detection of disseminated metallic sulfides. Graphite, oxides like magnetite and pyrolusite, as well as clay minerals of the montmorillomite group also produce induced polarization effects. Although considerable study has taken place, the method has not been improved to differentiate the induced polarization effects arising from metallic sulfides, oxides, graphite or from clay minerals.

The induced polarization response is related to the percent by volume, as well as to particle size of the chargeable material. Since polarization is essentially a surface phenomenon, the induced polarization effect from a given volume percentage of chargeable material will increase as the particle size decreases.

DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

TO WIT:

In the Matter of a geophysical survey conducted by Canadian Aero Mineral Surveys Limited on behalf of Chataway Exploration Company Limited, (NPL).

I, Sydney W. Wright, Professional Engineer,

of 301-550 Burrard St., Vancouver,

in the Province of British Columbia, do solemnly declare that an induced polarization survey has been executed by Canadian Aero Mineral Surveys Limited on the Chataway group of mineral claims situated on Quilchena Creek, 4 miles NE of Aspen Grove, British Columbia, between 18 November and 13 December, 1968. The following expenses were incurred:

Wages(including holiday pay):			
A.P.Horne	linecutter Nov8-18, 11 days @ $750/mo	$381.34	
J.Ellefson	linecutter Nov8-22, 15 days @ $600/mo	312.00	
W.Gillies	operator Nov16-Dec14, 29 days @ $600.00	624.00	
J.McGoldrick	labourer Nov25-Dec14, 20 days @ $500/mo	390.00	
S.Nyeste	labourer Nov18-Dec14, 27 days @ $550/mo	485.37	
M.Sanguinetti	geologist Nov8-Dec30, 18 days @ $1000/mo	642.00	
Fringe benefits (Canada pension) total		61.57	
			$2896.28
Geophysical Services:			
Geophysicist and equipment, from 18 Nov. to 13 Dec. 19 days @ $225.00/day		$4275.00	
Mobilization-Demobilization		400.00	
			$4675.00
Camp, food and living expenses			$1279.05
Travel, transportation		$390.90	
Gasoline, maintainance		176.60	
			$ 567.50
	Total		$9417.83

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 11 day of February, 1969, A.D.

Sydney Wright.

L. Jeannotte

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

Sub-mining Recorder

Highway 1
Hope-Princeton

Adit

Creek

Cabin Creek

Cu 6 ft.

Cu 5 ft.

Cu 3 ft.

Cu 2 ft.

Cu 1 ft.

Cu 4 ft.

Cu 8 ft.

Cu 9 ft.

N-280

N-264

N-248

N-232

N-216

N-200 (B.L.)

N-184

N-178

N-160

N-150

Indicated Polarization Survey lines

N 200

1752

10 Feb 1969
S.W. Wright

To accompany geophysical report by J. Mekarski, B.Sc. dated December 20th., 1968.

(1)

CHATAWAY EXPLORATION Co. LTD.

NICOLA M.D.

SKI GROUP
Claim Location and Geophysical Grid

1" = 1175'	May '66; revised Jan. '69	A.G.H.; M.H.S.

E-104 E-112 E-120 E-128 E-136 E-144 E-152 E-160 E-168 E-176 E-184 E-192 E-200 E-208 E-216 E-224

N-280 —

N-264 —

N-248 —

N-232 —

N-216 —

N-200 —

N-184 —

N-178 —

N-160 —

N-150 —

APPARENT RESISTIVITY SCALE — OHM - METERS

1000 500 400 300 200 100 50 40 30 20 10

APPARENT CHARGEABILITY SCALE — MILLIVOLT SECONDS / VOLT

40 30 20 10 0

LEGEND

ELECTRODE CONFIGURATION ..... 3 ARRAY

CURRENT ELECTRODE TO ..... EAST

ELECTRODE SPACING

CHARGEABILITY RESISTIVITY

△——△ a=400' △ - - - - △

o——o a=800' o ——— o

SCALE 1"=400'

APPARENT CHARGEABILITY M_a 1"=10.0 MILLISECONDS

APPARENT RESISTIVITY ρ_a 2"=1 CYCLE = 100 OHM-MET.

(NOTE: LINES N-150 TO N-178 NOT SPACED TO SCALE)

N

(APPROX)

INDUCED POLARIZATION SURVEY

PROFILE PRESENTATION

QUILCHENA CREEK AREA, B.C.

FOR

CHATAWAY EXPLORATION CO. LTD.

1752

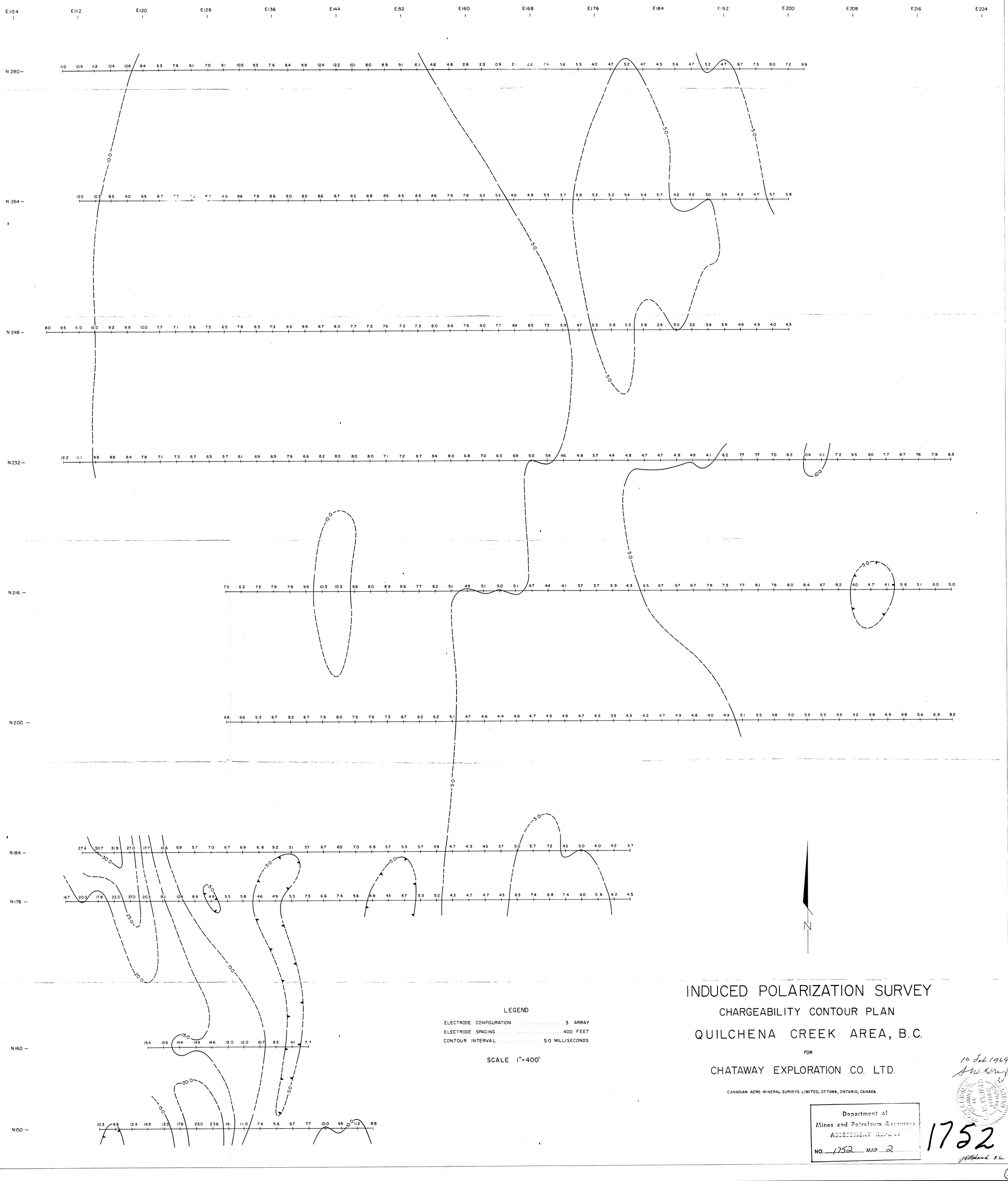
10 Feb 1969

J. G. Chataway

CANADIAN AERO MINERAL SURVEYS LIMITED OTTAWA ONTARIO CANADA

J. G. Chataway P.Eng.

(2)



LEGEND

ELECTRODE CONFIGURATION ..... 3 ARRAY
ELECTRODE SPACING ..... 400 FEET
CONTOUR INTERVAL ..... 5.0 MILLISECONDS

SCALE 1"=400'

INDUCED POLARIZATION SURVEY

CHARGEABILITY CONTOUR PLAN

QUILCHENA CREEK AREA, B.C.

FOR

CHATAWAY EXPLORATION CO. LTD.

CANADIAN AERO MINERAL SURVEYS LIMITED, OTTAWA, ONTARIO, CANADA

10 Sept 1969

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