2441

GEOPHYSICAL REPORT ON THE INDUCED POLARIZATION SURVEY FOR A. BOETTGER AND GEOFAX SURVEYS LTD. ON THE PINE CLAIM GROUP, 22 MILES S.E. OF MERRITT, LAT. 50° - 00', LONG. 120° - 20', PARADISE LAKE MAP 92 H/16, EDITION 1, A S E SERIES A 721, ~~KAMLOOPS~~ NICOLA MINING DIVISION, B.C.

REPORT BY S.A. MOURITSEN, P.ENG. AND G.A. MOURITSEN P.GEOPH., DATED OCTOBER 27, 1969.

TABLE OF CONTENTS

INTRODUCTION:

On May 29, 1969 Geofax Surveys Ltd., Party No. 1 left Calgary for Merritt to carry out an Induced Polarization survey for A. Boettger and Geofax Surveys Ltd. on the Pine Group of mineral claims. Camp was set up on the property and field operations began on May 31st. The survey was completed on June 14th and the crew demobilized to Calgary.

During the survey, 309 effective readings were taken comprising 42,600 ft. of line plus 7200 feet rerun on longer electrode spacings.

CONCLUSIONS:

Please see the Chargeability Contour Map and the Resistivity Contour Map.

The I.P. Survey revealed:

1. An anomaly trending NE-SW lying under the north half of Pine Claim No. 28, the larger part of Pine 26 and extending into the south half of Pine 24. That part of the anomaly displaying chargeabilities greater than 3 times background has dimensions of 1200 feet in width and 3000 feet in length. As seen on the Chargeability map, the area surrounding the anomaly having chargeabilities greater than 2 times the background covers a very large area. The combined area of chargeabilities greater than two times background lies in a large NE-SW trending zone of very low resistivities.

2. A very definite edge between low and relatively high resistivities generally following the east boundary of Pine claims 4, 16, 3 and 15. East of this general line the resistivities rise abruptly from less than 50 ohm-meters to 150 to 300 ohmeters with maximum further east of 700-1200 ohm-meters and a general low background chargeability averaging 1.5 milliseconds.

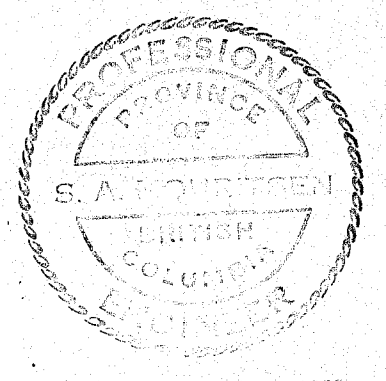
RECOMMENDATIONS:

1. It is suggested that detail I.P. lines should be run as shown in blue on the chargeability map. Minimum electrode spacing should be 400 feet and possibly 600 and 800 ft. spacings should be re-run over the most interesting anomalies. As presently laid out, the detail lines would cover approximately 16,000 feet of line but this coverage may increase if chargeabilities continued relatively high on the longer electrode spacings.

2. Upon completion of the I.P. detailing, diamond drilling should be carried out. The drill holes should be at least 500 feet deep or well into the suspected underlying granite.

3. Further protective staking should be considered. The I.P. detail may show whether 2 claims and a fraction should be staked to fill in the west side of the block between Pine 32 and 22. A line of claims 2 deep north-south and 5 claims long east-west (10 claims) have already been staked by Mr. A. Boettger but they have not been registered. The registration of these claims plus further

staking south should be considered. I.P. reconnaissance across the new staking could be carried out while the crew was on location.



Expiry Date August 1 1970

Respectfully submitted,

G. A. Mouritsen

G. A. Mouritsen, P. Geoph.

PROPERTY LOCATION AND ACCESS

The property is reached by vehicle from Merritt east to Quilchena on Nicola Lake, then south via trail to Minnie Lake then east and south to the property. For this route, refer to the Merritt Map NTS 92 I/SE and the Tulameen Map Sheet 92 H/NE. In a straight line, the Pine Claims lie 22 miles S. E. of Merritt, B. C. in the ~~Kamloops~~ Nicola Mining Division, Latitude 50° - 00', Longitude 120° - 20'. Access on the property was by 4 wheel drive Jeep Wagoneer along the Forestry trails and on foot along the cut lines. Much dead fall and some swamp was encountered. The surface is mainly covered by glacial overburden and very few outcrops were found.

The claims were staked by Mr. A. Boettger and consist of Pine #1 to Pine #32.

METHOD OF SURVEY AND INSTRUMENT DATA

I. P. Instrument:

The instrument used was a Huntec Pulse-type system capable of delivering 2500 watts to the ground. The system is comprised of 3 subsystems: a generator, a transmitter and a receiver. The generator provides the source of prime power for the transmitter which produces a rectangular current pulse to the ground. The cycling rate is 1.5 seconds "current on" and 0.5 seconds "current off"; the succeeding pulses are of opposite polarity. The receiver operates remotely and is triggered by the decay of the transmitter current. The readings for the primary potential (V_p)

and secondary potential (V_s) are taken by the null balance method with the input signal balanced over a period of time to reduce noise effects.

I.P. Electrode Array

Please see the legend accompanying the "Chargeability and Resistivity Profiles." The array consists of one current electrode (C_1) and two potential electrodes (P_1 and P_2) which are moved together down the line. The fourth electrode (C_2) is placed at an "infinite" distance from the other three electrodes (where "infinity" = 7 to 10a). The normal 3 array method with a = 200 feet was used throughout the survey for the reconnaissance lines. Where re-runs were required to better delineate relatively high chargeabilities, a normal 3 array method with a= 400 feet was used. The latter was employed on lines 3000S, 9, 10 and 11.

I.P. Data

All maps and profiles are plotted on a scale of 1 inch = 500 feet. The horizontal scale on the lines plotted on the chargeability and Resistivity Profiles is 1 inch = 500 feet but the position of the lines are not to scale with reference to each other.

I.P. Terms

Background: the average chargeability in the area believed to be economically barren rock.

Primary Zone: where the chargeability increases to a value equal to or greater than three times the background. This increase should be accompanied by a subsequent decrease in Resistivity.

A "Prime Zone" then would be represented by a chargeability of 4.5 plus milliseconds.

Secondary Zone: where the chargeability increases to a value equal to two times but less than three times the Background. This increase should also be accompanied by a decrease in Resistivity. For the Pine claims a "Secondary Zone" would be represented by chargeabilities of 3.0 to 4.4 milliseconds. Secondary zones may become Primary Zones upon further detailing or become a secondary target for further exploration after all primary zones have been exhausted.

DISCUSSION OF RESULTS

It should be remembered that the penetration of the I.P. system is equal to the electrode spacing. For this survey, the penetration is 200 feet for the reconnaissance lines and 400 feet on the re-runs. It is noted that on the 400 ft. re-runs on lines 9, 10 and 11, a marked increase in the chargeabilities and subsequent decrease in the Resistivities occurred, suggesting that better mineralization may lie at the 400 ft. depth. All contouring considered the higher chargeabilities and lowerresistivities where 400 ft. spacings were used.

Two diamond drill holes were attempted to test the anomaly. D D #1 lies 250 north of the 200 W station on Line 11. This hole was taken to 261 feet before it had to be abandoned because

the drill was too light. The hole did not reach the suspected underlying granite. The core from this hole revealed a monotonous repetition of varve type bentonitic clays, sands and banded sandstones, the grains of which were mainly angular, varying from coarse to fine. The rock type appears to be a volcanic ash deposited in quiet water. A spectrograph of samples of the core taken 159 to 210 ft. depths showed .7% strontium, .03% Cu, .005 to 0.1% lead and the usual amounts of the rock forming minerals. Drill sludge caught between the 0 to 10 ft. and 98 to 108 ft. depths assayed .018% MoS_2.

Diamond drill hole #2 located at the 300 W station of Line 11 penetrated only 16 feet before it had to be abandoned. The formation penetrated was similar to D D #1.

Case histories of I.P. surveys in the general area describe chargeabilities over anomalous zones to vary between 6 and 8 milliseconds. The anomaly on the Pine Claims shows maximum chargeabilities of 6.5 to 6.8 milliseconds, values believed to be typical of low grade sulphide mineralization.

APPENDIX

Personnel List

The following personnel were employed on this survey:

B. DeBoeck	Party Chief and Operator
R. Clemis	Transmitter Operator
N. Bedwani	Geological Assistant
R. Lochhead	Assistant.

geofax surveys ltd.

803, 628 - 17 AVE. S.W., CALGARY, ALBERTA
TELEPHONE 264-6420

Invoice 6908

July 31, 1969.

To A. Boettger and Geofax Surveys Ltd.
(Pine Claims)

CHARGES re INDUCED POLARIZATION SURVEY

Induced Polarization Survey(15 operating days @ $335.00 per)..	$5025.00
4 days Standby charges(Half standard rate)	720.00
Interpretation and Supervision ...	1300.00
4 Wheel Drive Vehicle (Transportation on property)	300.00
	$ 7345.00

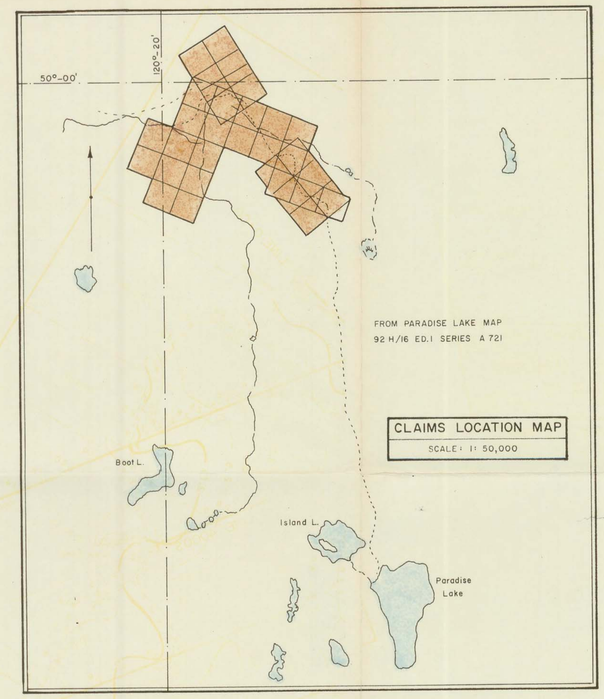
BREAKDOWN OF WAGES PAID TO INDUCED POLARIZATION CREW

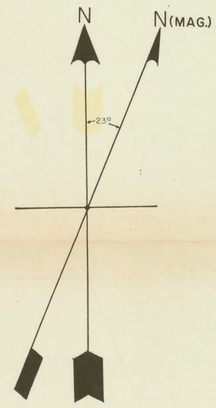
PERSONNEL	DAYS	DATES	RATE/MONTH	AMOUNT PAID
B. DeBoeck	15	May 31-June 14/69	$550.00	$ 275.00
R. Clemis	15	" " " "	450.00	225.00
N. Bedwani	15	" " " "	800.00	400.00
R. Lochead	15	" " " "	400.00	200.00
				$ 1100.00

PROFESSIONAL ENGINEER
G. A. MOUNTSEN
PROVINCE OF ALBERTA

Expiry Date August 4, 1970

G. A. Mountsen





To accompany a report by S.A. Mouritsen, P. Eng. and G.A. Mouritsen, P. Geoph., on the PINE CLAIM GROUP, 22 miles SE of Merritt, Lat. 50°-00', Long 120°-20', Paradise L. Map 92 H/16, Edition 1, ASE Series A 721, Nicola ~~Kamloops~~ Min. Div., B.C., dated October 27, 1969.

LEGEND

CHARGEABILITY ≧ 3x'BACKGROUND'

CHARGEABILITY ≧ 2x'BACKGROUND'

BACKGROUND = 1.5 MILLISECONDS

SUGGESTED I.P. DETAIL

2441

G.A. Mouritsen

S.A. Mouritsen

INDUCED POLARIZATION SURVEY

CLIENT A. BOETTGER
GEOFAX SURVEYS LTD

PROJECT PINE GROUP OF MINERAL CLAIMS

CHARGEABILITY

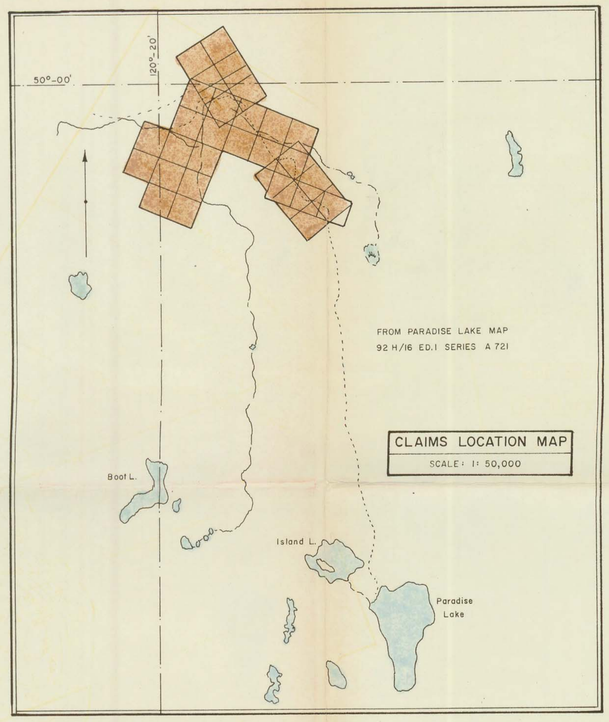
CONTOUR INTERVAL .5 MILLISECONDS

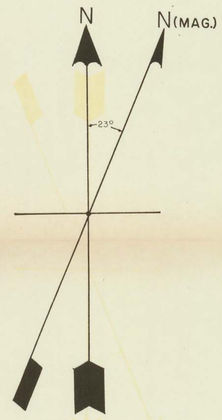
SCALE 1 Inch = 500 Feet

DATES OF SURVEY MAY 31 to JUNE 14, 1969.

NICOLA ~~KAMLOOPS~~ MINING DIVISION, B.C.

GEOFAX SURVEYS





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G. A. Mouritsen

S. A. Mouritsen

LEGEND

- RESISTIVITY < 50 OHM-METERS
- RESISTIVITY = 50-100 OHM-METERS
- RESISTIVITY > 100 OHM-METERS

2441

INDUCED POLARIZATION SURVEY

CLIENT A. BOETTGER
GEOFAX SURVEYS LTD

PROJECT PINE GROUP OF MINERAL CLAIMS

RESISTIVITY IN OHM-METERS

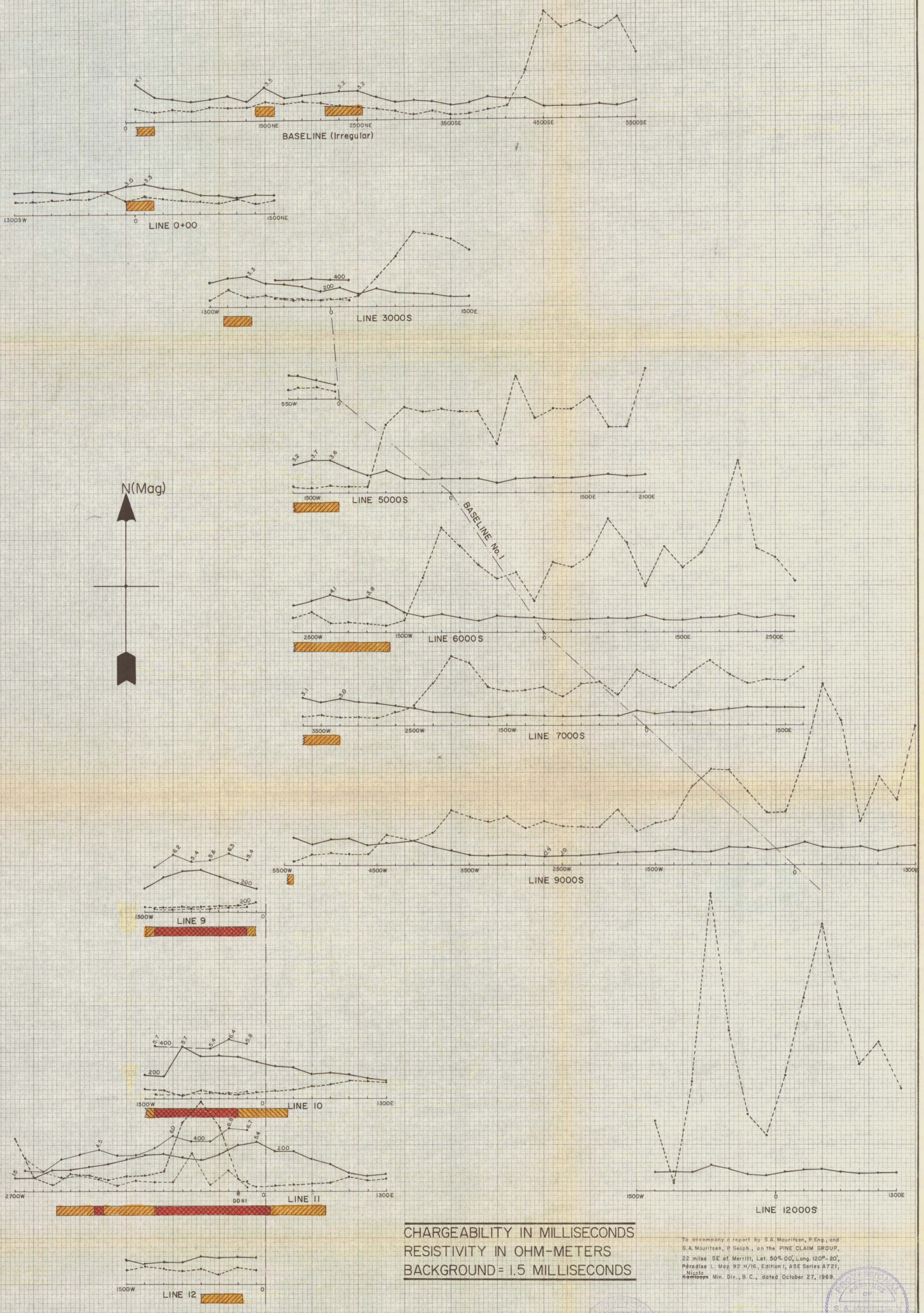
CONTOUR INTERVAL 50 OHM-METERS

SCALE 1 Inch = 500 Feet

DATES OF SURVEY MAY 31 to JUNE 14, 1969.

NICOLA ~~KAMLOOPS~~ MINING DIVISION, B.C.

GEOFAX SURVEYS



CHARGEABILITY IN MILLISECONDS
RESISTIVITY IN OHM-METERS
BACKGROUND = 1.5 MILLISECONDS

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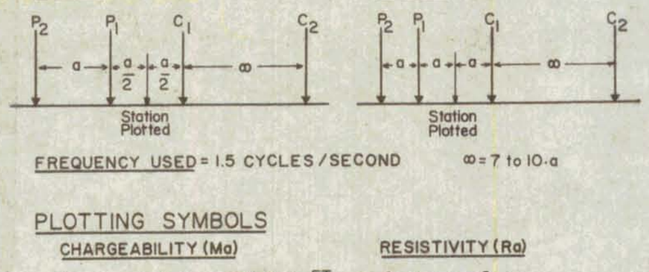
SCALES
5 Milliseconds
200 Ohm-meters

LEGEND

ELECTRODE SPACING — 3-ARRAY

NORMAL

SPECIAL



FREQUENCY USED = 1.5 CYCLES / SECOND n = 7 to 10-a

PLOTTING SYMBOLS

CHARGEABILITY (Ma)		RESISTIVITY (Ro)
———	a = 400 FT.	— — —
———	a = 200 FT.	— — —
———	a = FT.	— — —

ANOMALOUS ZONES

PRIMARY ZONE (Chargeabilities ≧ 3×Background)

SECONDARY ZONE (Chargeabilities ≧ 2×Background)

INDUCED POLARIZATION SURVEY

CLIENT
A. BOETTGER
GEOFAX SURVEYS LTD

PROJECT
PINE GROUP OF MINERAL CLAIMS

CHARGEABILITY & RESISTIVITY PROFILES

CONTOUR INTERVAL

SCALE
1 Inch = 500 Feet

DATES OF SURVEY
MAY 31 to JUNE 14, 1969.

NICOLA ~~KAMLOOPS~~ MINING DIVISION, B.C.

GEOFAX G SURVEYS

2441