PETER E. WALCOTT & ASSOC. LTD.

A REPORT

ON

AN INDUCED POLARIZATION SURVEY

QUEEN CHARLOTTE ISLANDS, Skeena M.D., B.C.

FOR

J. C. STEPHEN EXPLORATIONS LTD.

Vancouver, B.C.

BY

PETER E. WALCOTT AND ASSOCIATES LIMITED

Vancouver, British Columbia

JULY 1980

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APPENDIX

INTRODUCTION.

Between May 12th and 21st, 1980, Peter E. Walcott & Associates Limited carried out a small induced polarization (I.P.) programme for J. C. Stephen Exploration Ltd. over parts of their Crescent Inlet property, Queen Charlotte Islands, British Columbia.

Measurements (first to fourth separation) of apparent chargeability (the I.P. response parameter) were made along six pre-selected lines using a 50 metre dipole. Simultaneous measurements of apparent resistivity were also made. In addition some 20 metre dipole work was carried out on Line 0.

The data are presented in contour form on pseudo sections that accompany this report.

PROPERTY, LOCATION AND ACCESS

The property, known as the Crescent claims, is located in the Skeena Mining Division of British Columbia and consists of the following claims.

Claim Name	Number of Units	Record Number	Expiry Date
Crescent 1	20	1411	Jul. 6/84
2	20	1412	Jul. 6/82
3	8	1413	Jul. 6/82
4	8	1414	Jul. 6/82
5	15	1607	Jul. 30/84

The claims are centred around Crescent Inlet on Moresby Island, some 54 kilometres directly south of Sandspit, Queen Charlotte Islands, British Columbia.

Access was obtained by means of fixed wing aircraft from Sandspit.

PURPOSE.

The purpose of the survey was to try to determine what relationship, if any, exists between sulphide occurrences, as should be predicted by the I.P. responses, and the gold values obtained from the soil and rock geochemistry.

PREVIOUS WORK.

Previous work on the property consisted of airborne magnetic surveying, prospecting, geochemical surveying and limited trenching, the results of which are documented in reports by J. T. Shearer of J. C. Stephen Explorations Ltd.

GEOLOGY.

The reader is referred to the same reports by J. T. Shearer.

SURVEY SPECIFICATIONS.

The induced polarization (I.P.) survey was carried out using a pulse type system, the principal components of which are manufactured by Phoenix Geophysics Ltd. and Crone Geophysics Ltd. of Metropolitan Toronto, Ontario.

The system consists basically of three units: a receiver (Crone), a transmitter and a motor generator (Phoenix). The transmitter, which provides a maximum of 2 kw d.c. to the ground, obtains its power from a 400 Hz. three phase alternator driven by a gasoline engine. The cycling rate of the transmitter is 2 seconds "current-on" and 2 seconds "current-off" with the pulses reversing continuously in polarity. The data recorded in the field consists of careful measurements of the current (I) flowing through electrodes C_1 and C_2, the primary voltage (V_p) appearing between the two potential electrodes, P_1 and P_2, during the "current-on" part of the cycle, and the apparent chargeability (M_a) presented as a direct readout (two samples M_a (0.45 - .90 seconds) and N_a (0.90 - 1.35) are taken for 3 current cycles, automatically averaged, adjusted to the $33M_1$ standard and stored, and later compared).

The apparent resistivity (P_a) in ohm metres is proportional to the ratio of the primary voltage and the measured current, the proportionality factor depending on the geometry of the array used.

The survey was originally intended to be carried out using the "dipole-dipole" array. In practise the equipment is set up at a particular station of the line to be surveyed: three transmitting dipoles are laid out to the rear, measurements are made for all possible combinations of transmitting and receiving dipoles, the latter consisting of two porous pots filled with an electrolyte copper sulphate solution "a" feet apart, up to the fourth separation, i.e. n = 4; the equipment is then moved 3 "a" feet along the line to the next set-up.

However the terrain proved too rough to pack around the 80 lb. motor without risk on the rain soaked slopes and after completing Line 0 by leaving the transmitter equipment stationary and running two wires to the current stakes, it was decided to switch to the "pole-dipole" array.

With this system the current electrode, C_1, and the two potential electrodes, P_1 and P_2, are moved in unison along the survey lines. The spacing "na" (n an integer)between C_1 and P_1 is kept constant for each traverse at a distance roughly equal to the depth to be explored by that traverse, while that of P_1 - P2 (the receiving dipole) is kept constant at "a". The second electrode C_2 is kept constant at "infinity".

SURVEY SPECIFICATIONS cont'd

The traverses on the six lines were carried out using a 50 metre dipole and making first to fourth separation measurements (n = 1 to 4). In addition some 20 metre dipole work was done on Line 0.

DISCUSSION OF RESULTS.

The survey lines were run along strike mostly over rocks of the Masset formation - rhyolites, rhyolite breccias, fine to flow banded dacites and related intrusive rocks i.e. gabbros, hornblende feldspar porphyries - at differing topographic altitudes, across a topographic low and up the other side over an unmapped area - presumably underlain by volcanic rocks of the Yakoun formation.

As a result no correlation is expected from line to line and the results are best discussed line by line. However from the overall resulta it would appear that the lower chargeability and higher resistivity readings are associated with the intrusive phases, whereas the slightly higher chargeability and lower resistivity ones appear to be the property of the extrusive rocks.

Line 0.

Several anomalous zones are apparent on the chargeability plots on the southern part of the line. Two of these have narrow near surface causative sources while the other two are larger in extent and are evidenced on the deeper separation results.

No anomalous effects are observed on the northern portion of the line where the resistivity readings are higher presumably indicating the intrusive phase of the Masset.

A resistivity low is obtained around 1 S coinciding with the creek. This low is also observed on Lines 100 W and 100 E and is presumably indicative of a fault zone.

Lower resistivity readings are also observed to the south of this fault indicating a different rock type to underlie this portion - maybe the Yakoun.

Line 100 W.

Two anomalous zones are discernible on this line.

The more northerly one has its strongest response on the smallest separation but is still observed on all four separations. It is associated with lower resistivity values.

The other zone has a strong response on one dipole on all four separations but is only evident across the rest of its entirety on the first separation. It would appear to have a shallow causative source.

DISCUSSION OF RESULTS cont'd

Again higher resistivity readings are mostly obtained on the northern portion of the line similar to Line 0.

Line 100 E.

No anomalous readings are observed on this line.

Again the same resistivity pattern is evident as on the two previous lines - higher resistivities and lower chargeabilities apparently indicating most of the line to be underlain by the intrusive phase of the Masset.

Line 400 E.

A high reading maybe indicative of the start of an anomalous zone was obtained on the north end of the line.

Line 500 E.

A possible anomalous zone was obtained on the first separation centred around 250 S coincident with a trench containing pyrite, pyrrhotite and arsenopyrite in altered rhyolite rocks.

Here the resistivities are lower throughout the whole line apparently suggesting the line to be underlain by extrusive rocks.

Line 600 E.

High chargeability readings were observed particularly on the first separation over most of this line as can be seen from the the speudo section. Abundant pyrite and pyrrhotite were observed in rhyolite breccia at 85 N, 625 E.

Again lower resistivity readings prevailed across the line.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

Between May 12th and 21st, 1980, Peter E. Walcott & Associates Limited carried out a small I.P. survey over parts of a property located on Crescent Inlet, Queen Charlotte Islands, B.C.

Several anomalous situations, presumably indicative of sulphide mineralization, were observed on the six lines traversed by the I.P. survey not all of which coincided with gold or even arsenic soil results.

At this time further bedrock sampling and more detailed mapping are in the process of being completed on the property and as a result the writer recommends that further discussion and planning be carried out on the correlation of this with the geophysics. However he would suggest that attention be paid to the anomalous zone adjacent to the major interpreted structural feature on Line 0.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED

Peter E. Walcott, P.Eng.
Geophysicist

Vancouver,
British Columbia

July 1980

A P P E N D I X

COST OF SURVEY.

Peter E. Walcott & Associates Limited undertook the survey on a daily basis. Mobilization and draughting charges were extra so that the total cost of services provided was $6,157.11.

PERSONNEL EMPLOYED ON SURVEY.

Name	Occupation	Address	Dates
Peter E. Walcott	Geophysicist	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C.	May 12th - 21st, 80 June 15th, July 2, 80
R. Young	Geophysical Operator	" "	May 12th - 21st, 80
J. Walcott	Typing	" "	July 3rd, 1980
J. Winfield	Draughting	J. W. Drafting Services 602 W. Hastings, Vancouver, B.C.	July 4th - 6th, 1980
J.C. Stephens Expl.	Geophysical Assistants	1124 W. 15th St., North Vancouver	May 12th - 21st, 80

CERTIFICATION.

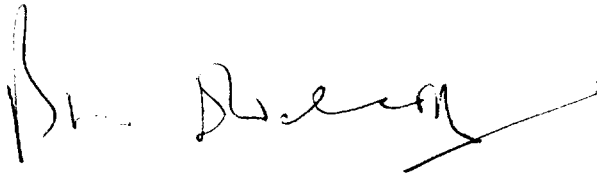
I, Peter E. Walcott, of the Municipality of Coquitlam, British Columbia, hereby certify that:

1. I am a graduate of the University of Toronto with a B.A.Sc. in Engineering Physics, Geophysics Option, in 1962.

2. I have been practising my profession for the last 18 years.

3. I am a member of the Association of Professional Engineers of British Columbia, Ontario and the Yukon Territory.

4. I hold no interests, direct or indirect in the securities or properties of J.C. Stephen Exploration Ltd., nor do I expect to receive any.



Peter E. Walcott, P.Eng.

Vancouver,
British Columbia

July 1980

J.C. STEPHEN EXPLORATIONS LTD.

B.C. GOLD SYNDICATE

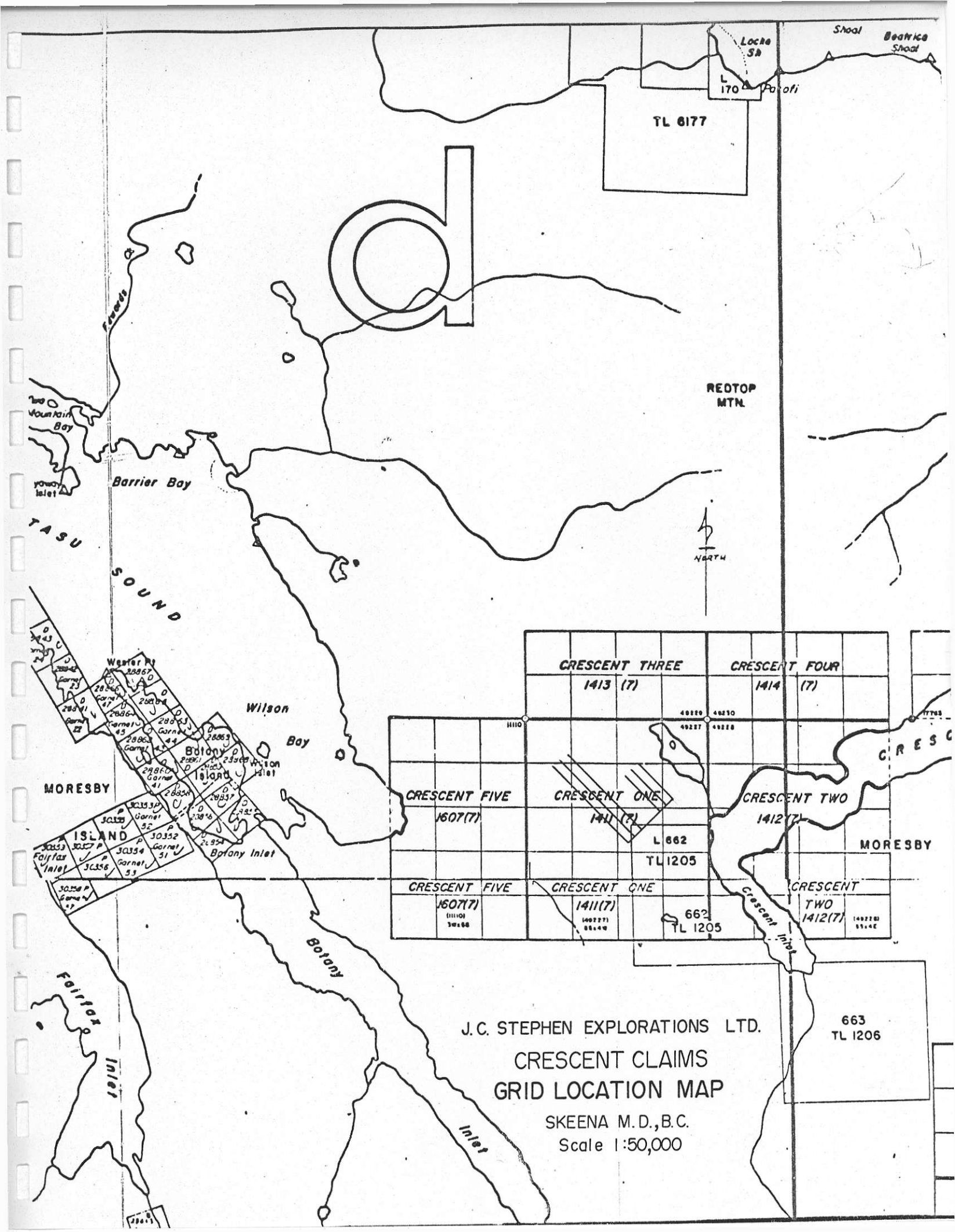
CRESCENT CLAIMS

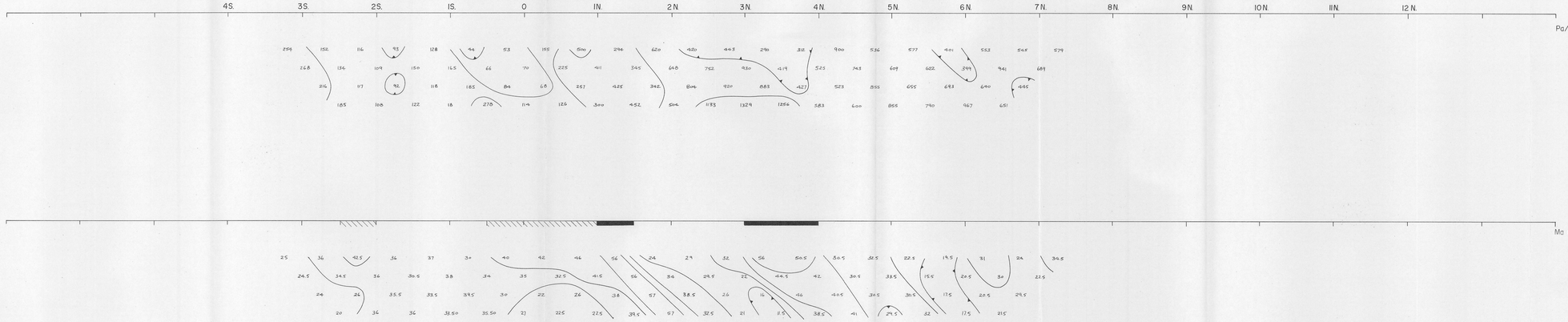
LOCATION MAP

NTS : 103 B/12W, 13W

DATE : MARCH 20 1980

FIGURE 1


Shoal
Beatrice Shoal
Locke Sh
L 170
Pa ofi
TL 6177
REDTOP MTN.
Fawcett
Mountain Bay
Barrier Bay
Fowler Inlet
TASU SOUND
NORTH
Wester Pt
Wilson Bay
Botany Island
Wilson Inlet
MORESBY
ISLAND
Fairfax Inlet
Botany Inlet
CRESCENT THREE 1413 (7)
CRESCENT FOUR 1414 (7)
CRESCENT FIVE 1607(7)
CRESCENT ONE 1411 (7)
CRESCENT TWO 1412(7)
L 662
TL 1205
662
TL 1205
MORESBY
CRESCENT FIVE 1607(7)
CRESCENT ONE 1411(7)
CRESCENT TWO 1412(7)
Crescent Inlet
Botany
Fairfax Inlet
663
TL 1206
J.C. STEPHEN EXPLORATIONS LTD.
CRESCENT CLAIMS
GRID LOCATION MAP
SKEENA M.D., B.C.
Scale 1:50,000



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CRESCENT INLET
QUEEN CHARLOTTES

INDUCED POLARIZATION SURVEY

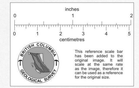
L.- 1+00W.

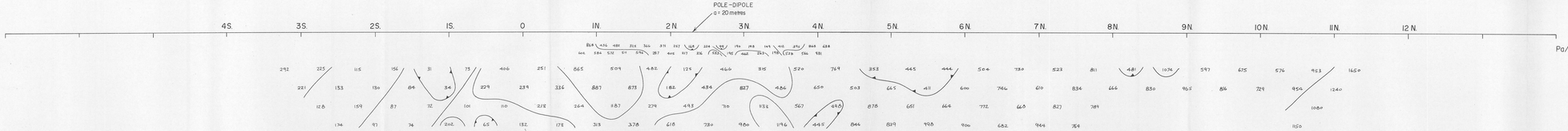
a = 50m

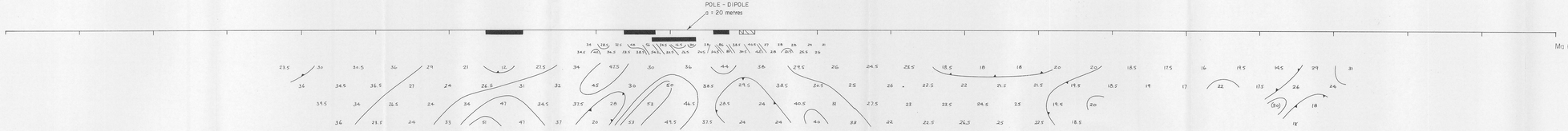
DIPOLE - DIPOLE

SCALE : 1 : 2500

FREQUENCY 5-03HZ.







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INDUCED POLARIZATION SURVEY

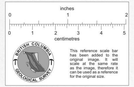
L.-0+00E.

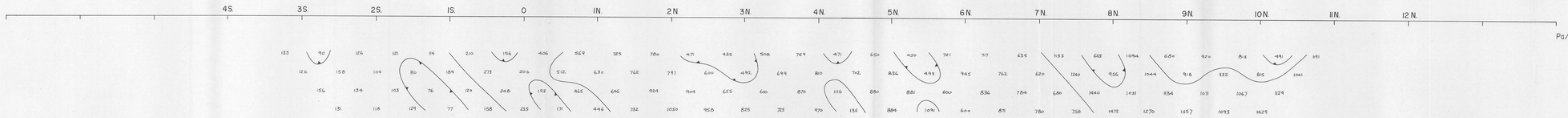
a = 50 m

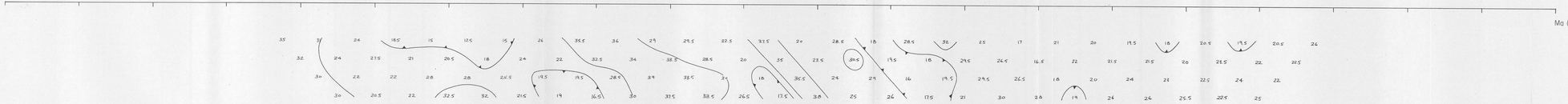
DIPOLE - DIPOLE

SCALE : 1 : 2500

FREQUENCY 5-03 HZ.







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INDUCED POLARIZATION SURVEY

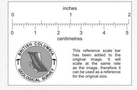
L.-1+00 E.

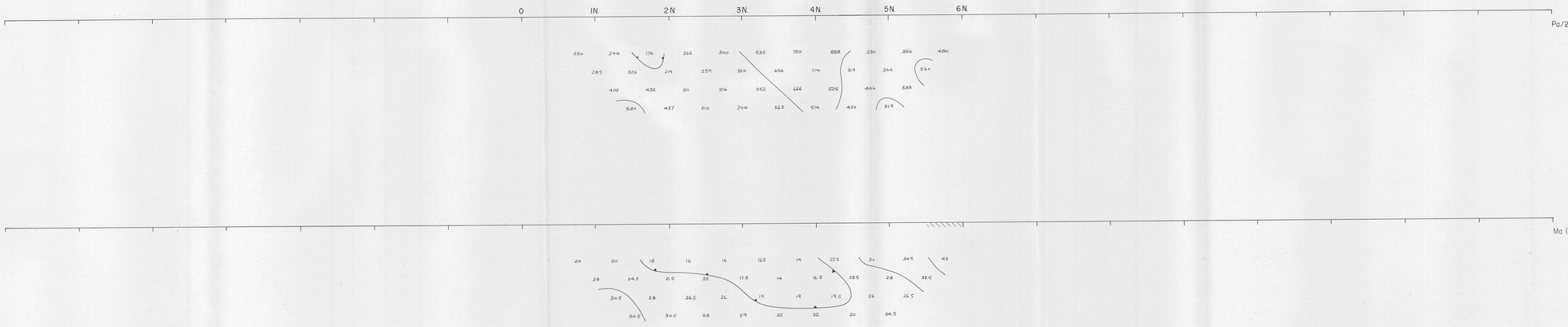
a = 50m

DIPOLE - DIPOLE

SCALE : 1 : 2500

FREQUENCY 5-03 HZ.





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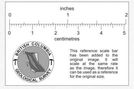
L.-4+00 E.

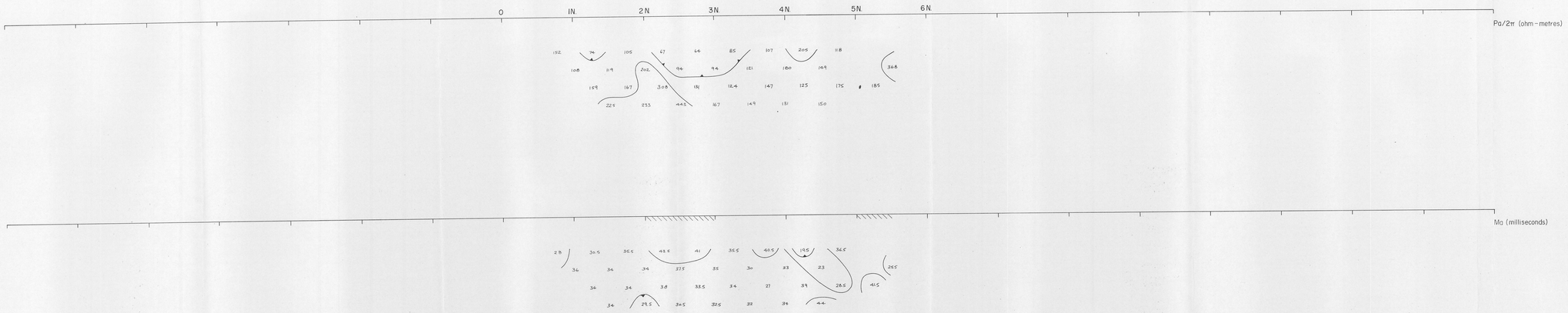
a = 50 m

DIPOLE – DIPOLE

SCALE : 1 : 2500

FREQUENCY 5-03 HZ.





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QUEEN CHARLOTTES

INDUCED POLARIZATION SURVEY

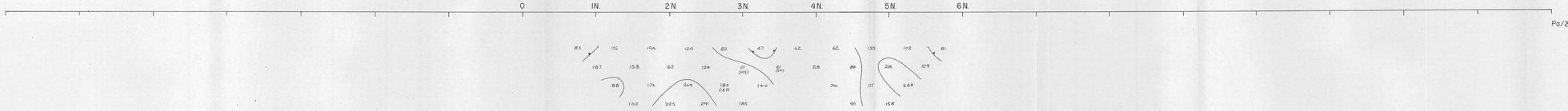
L.– 5+00 E.

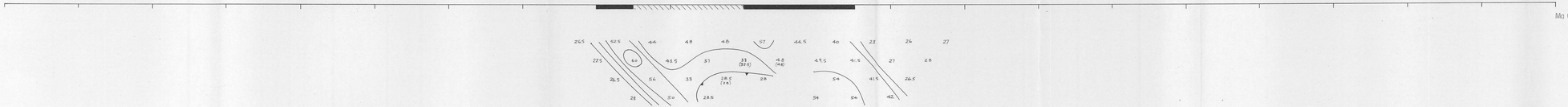
a = 50 m

DIPOLE – DIPOLE

SCALE : 1 : 2500

FREQUENCY 5-0.3 HZ.





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CRESCENT INLET
QUEEN CHARLOTTES

INDUCED POLARIZATION SURVEY

L.- 6+00 E.

a = 50 m

DIPOLE - DIPOLE

SCALE : 1 : 2500

FREQUENCY 5-03 HZ.