1703

49° 120° N.E.

REPORT OF INDUCED POLARIZATION SURVEY
TOE CLAIMS GROUP, ASPEN GROVE, B.C.
FOR
CONSOLIDATED SKEENA MINES LIMITED

92 H 15/1E

AUTHOR: ROGER J. CAVEN

PREPARED BY

BARRINGER RESEARCH LIMITED
304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA

NOVEMBER - 1968

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INTRODUCTION

The so-called Toe group of claims encompasses an area of Nicola volcanics lying adjacent to a granite contact, the latter forming part of the extensive Pennask Lake granodiorite intrusion, Nicola Mining Division, Aspen Grove, B.C. The volcanic rocks locally contribute to the topographic relief of Wart Mountain. Previous work in the area had disclosed sections of anomalous amounts of trace copper in soils, these broadly grouping in the region of the contact zone, albeit itself largely inferred. Induced polarization surveying of this general environment has recently been carried out to define possible zones of metallic localization.

This geophysical survey operation was carried out by Barringer Research Limited under contract to Consolidated Skeena Mines Limited, the holder of the Toe claims, and under whose authority and direction the present exploration has been conducted. The IP equipment employed was a 7.5 kva high-powered pulse transient unit (Huntec) with a 1 1/2 secs. current-on time, and a 400 msec reading interval. Teaversing was effected on a prepared grid of lines, generally 800' apart and oriented approximately 30° west of north, applying a pole-dipole electrode array with an 'a' spacing of 200' and a distance to the on-line current electrode of 400' (n=2). Field operations were led by Barringer geophysicist Mr. R. Caven, B.Sc. and were completed in the period October to November 1968 for a total of 16.23 line miles at a cost of $9255.00. The results of this programme form the subject of this report, the collected data being presented herein in both profile and contour form on a plan scale of 1"=500'.

DISCUSSION OF RESULTS

Considerable relief in both resistivity and chargeability is very obviously a dominant characteristic of the survey results (Dwg. No. 5-208-6). However at the same time, no clear and consistent contrasts emerge that could be diagnostic to major changes of rock-type in the underlying geology. Resistivity values range from a low of about 250 ohm-metres to peaks in excess of 3500 ohm-metres, but so irregularly that trends in the contour plan (Dwg. No. 5-208-8) are largely the result of bias provided by the traverse direction and spacing. About all that can be said of trends is that the highest resistivity values tend to concentrate towards the southern end of the grid area, and that the most extensive low region lies along the northern extremity, where it probably reflects the presence of the Pennask granodiorite under a possible increasing cover.

This general lack of definitive contrast in the resistivity data is presumably symptomatic of the highly variable nature of the Nicola group of rocks. Geologic observations of outcrop along line 40W, although far from exhaustive, tends to confirm this conclusion. North of the BL, such relatively rare rock exposures that exist point to the existence of flow rocks. At 10S however a transitional type rock was observed, either highly metamorphosed sediment or fine-grained intrusive. At 19S, flow rocks appeared again, while at 36S, this had changed to a coarser textured rock, largely monzonite in character with aplitic or syenitic veins containing large pyrite grains. By 38S, this had changed again to coarse grained syenite with pyrite. Although not recognized in the regional mapping, it would appear from this evidence that a second, and more acid intrusive underlies the Wart Mountain relief. It is to be noted that the occurrence of the intrusive material south of the BL, is additional to the regional mapping.

In this context, the chargeability results as contoured (Dwg. No. 5-208-7) take on some semblance of order. Rather than being an endless succession of erratically distributed highs and lows across the full width of the grid, several zones of reasonably well defined anomaly appear. The best of these occurs north of the BL in the area of the geochemical activity and presumably in the Nicola

volcanic environment. Emerging out of a background of about 3.5 msecs, this zone extends for 4000' peaking to over 12 msecs within and presenting a well formed area of anomaly up to 1000' wide and possibly dipping south for most of the strike distance. As an overtly mineralized zone, the causative body so constituted presents considerable potential, and thus warrants further investigation. Although, as already implied, the zone lacks any distinctive expression in resistivity, it nonetheless broadly coincides with a region of relatively low and steadier values. This could be significant to the inferred mineralization present.

Separating this chargeability from the remainder of the grid south is an almost continuous narrow low feature just north of the BL wherein values dip below 2.0 msecs. Largely associated with increased resistivities, some of them quite sharply resolved, it appears as an individual horizon in the Nicola, probably highly siliceous and cherty. As such, the likelihood is that it represents a sedimentary band within the volcanic succession. South of it, it is noted, the chargeability contours take on much of the confused appearance of the resistivity setting, particularly towards the presumed acid intrusive environment. Certain very local peakings in chargeability eg. at 30S/32W, 34S/40W, 28S/48W, 26S/56W, 20S/64W suggest fractures, and mineralized vein material, but as the contours show there is considerable ambiguity as to how these might be joined up to establish fracture patterns. The pyritized vein observed on line 40W correlates with such an IP peak, and it is worth noting that this particular locality, extending to line 32W, is the only one of the group that possesses some measure of geochemical support.

Outside these events, chargeability anomaly south of the BL can be condensed to four centres. One on line 48W at about 10S is of interest in that it is closed off (within 1000') apparently in the metasedimentary zone and is flanked on the down-slope side by a geochemical anomaly. A somewhat similar anomaly, but without geochemical support, occurs at 22S on line 72W. Exaggerated somewhat by an attendant resistivity high, this anomaly nevertheless is well resolved out of background and remains open to the west, and would command attention if evidence

of interesting sulphides is obtained in the previous situation. Both anomalies in effect could lie on the flank of the southern acid intrusive. At the extreme south end of the grid occur the other two anomaly centres, one on line 15E, and one on line 56W. Neither is known to have any geochemical expression, although coverage on either of them is not necessarily complete. The first is again quite a local event, and can be typically fitted into the category of the fracture controlled vein as before. Its strike is uncertain and may approach nearly north-south. The second is a more substantial anomaly, attaining the strongest single value (14.4 msecs) in the grid area, with a correlating resistivity value standing at about 800 ohm-metres. Presumably closer to the syenitic centre of the acid intrusive mass, this anomaly coudl have future importance and should be considered as an indication of possibilities further south, both within the intrusive and at its southern flank. Geochemistry on this far slope needs be extended to initially assess the chances that might lie in this direction.

CONCLUSIONS AND RECOMMENDATIONS

As a result of this survey, it is concluded that several mineralized sections in the general environment have been indicated. However the locale for these occurrences vary, based on evidence of outcrop more than geophysical expression which for the most part is not definitive of rock-type change. Since the geologic observations made appear to be in some extension of the regional mapping, it becomes highly desirable that more detailed geology be undertaken in the grid area and its immediate environs. In particular, the extent and nature of the intrusive material noted on the south side of the BL needs be more closely established.

Nevertheless, one chargeability anomaly has emerged from the survey that can command immediate attention as a drilling target. This is the major zone lying north of the BL in Nicola rocks, a zone that is associated with geochemical anomaly and is most evidently close to an intrusive contact, certainly of the Pennask granodiorite, and perhaps significantly to the monzonite-syenite complex inferred under Wart Mountain. Thus drilling is recommended for this polarization feature, suitable initial holes being as follows:

DDH #1	Collar	:	23+00N/32+00W
	Bearing	:	grid north
	Depression	:	-60°
	Est. Length	:	400'
DDH #2	Collar	:	20+00N/32+00W
	Bearing	:	grid north
	Depression	:	-60°
	Est. Length	:	600'

DDH #3 Collar : 23+00N/48+00W
Bearing : grid north
Depression : -50°
Est. Length : 600'

The drilling of these holes, it is hoped, will do much to shed light on the nature of the mineralization, its host setting and the potential of the general environment. If encouraging mineralization is encountered, a second target anomaly immediately presents itself. This is the chargeability high that apparently occurs in the metamorphosed zone south of the BL on line 48W. In fact, there is sufficient geochemical support here to consider drilling this anomaly independent of the first; and the additional geologic knowledge it would provide makes the following hole a fair recommendation at this stage, the target being the central resistivity low within the chargeability high:

DDH #4 Collar : 8+00S/48+00W
Bearing : grid north
Depression : -60°
Est. Length : 600'

There remains much of interest in the grid area further west and south, but the pertinent chargeability expressions require fuller definition, and the geochemical sampling needs to be extended down-slope and down-drainage from each of them. Thus the recommendation is made that, concurrent with further geologic mapping in the area, soil sampling be carried out south from lines 40W tO 72W inclusive, and west from line 72W below the summit for at least another three lines (2400'). If this work proves interesting, extended IP can be accorded the two chargeability anomalies that remain open on line 72W (22S) and at the south end of line 56W.

BARRINGER RESEARCH LIMITED

J. B. Boniwell
Chief Geophysicist

R. Caven
Field Geophysicist

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

In the Matter of

Toe Group Mineral Claims
Nicola Mining Division

I, Roger J. Cavén

of Barringer Research Limited, 304 Carlingview Drive, Rexdale, Ontario

in the Province of ~~British Columbia~~ Ontario do solemnly declare that

1. I am a geophysicist and that I worked on, and supervised the Induced Polarization Survey on the Toe Group of mineral claims situate in the Nicola Mining Division from the 4th day of October 1968 to the 7th day of November 1968.
2. The aforesaid work consisted of the following:

29 days survey at $345.00	10,005.00
Less 2.5 days breakdown at $300.00	750.00
Total Cost	$9,255.00

3. All the aforesaid work done for

Consolidated Skeena Mines Limited
1st Floor
1033 West Pender Street
Vancouver 1, B.C.

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 21 day of November 1968, A.D.

Roger Cavén

Jill Turner

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

SUB-MINING RECORDER

★o

BARRINGER RESEARCH LIMITED

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA
PHONE: 416-677-2491
CABLE: BARESEARCH

November 20, 1968

Chief Gold Commissioner
Victoria, B.C.

Dear Sir: Re: Roger J. Cavén - Geophysicist

The following is a statement of qualifications of Mr. Roger J. Caven, Geophysicist who is employed by our Company and who did an Induced Polarization Survey of the Toe Group of Mineral Claims in the Nicola Mining Division:-

Graduated from University of Toronto, May 1967, B.A.Sc., Engineering Science (formerly Engineering Physics), Geophysics option.

Membership Association:

Associate Member of the Engineering Institute of Canada. Registered as Engineer in Training Association of Professional Engineers of Ontario.

Associate Member of the Society of Exploration Geophysicists.

Associate Member of the Canadian Association of Physicists, Earth Science Division.

Age: 37 years

Experience with Geological Survey of Canada, Department of Public Works of Canada and presently with Barringer Research Limited.

He intends to apply for registration as Geophysicist in British Columbia as soon as possible.

Yours truly,

BARRINGER RESEARCH LIMITED

Per: Roger Caven

BARRINGER RESEARCH LIMITED

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA
PHONE: 416-677-2491
CABLE: BARESEARCH

November 20, 1968

Consolidated Skeena Mines Limited
1st Floor
1033 West Pender Street
Vancouver 1, B.C.

Re: Toe Group of Mineral Claims

The following personnel were working on the Induced Polarization Survey on the Toe Group of Mineral Claims, Nicola Mining Division near Aspen Grove, B.C., during the period from October 4th 1968 to November 7th 1968:-

Roger J. Caven, Geophysicist, Party Chief, Instrument Operator - October 4th to November 7th

David Henry, Physicist, Instrument Operator - October 4th to October 21st

Emil Nagy, Electronic Technician, Field Helper and Transmitter Operator - October 4th to November 7th

John Johnston, Field Helper and Transmitter Operator - October 4th to November 7th

Stuart Connacher, Field Helper and Transmitter Operator - October 4th to November 7th

Leroy Voigt, Field Helper - October 23 to November 7th.

Yours truly,

BARRINGER RESEARCH LIMITED

Roger J. Cavén

BARRINGER RESEARCH LIMITED

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ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

DATE: November 29th, 1968

PROJECT: 208.35

PERIOD COVERED:

PROGRESS BILLING:
SHIPPING REPORT:
WORK REPORT:
FED. SALES TAX: N/A
ONT. SALES TAX: N/A

• Consolidated Skeena Mines Ltd.,
• 1033 W. Pender Street,
VANCOUVER 1, B.C.
•

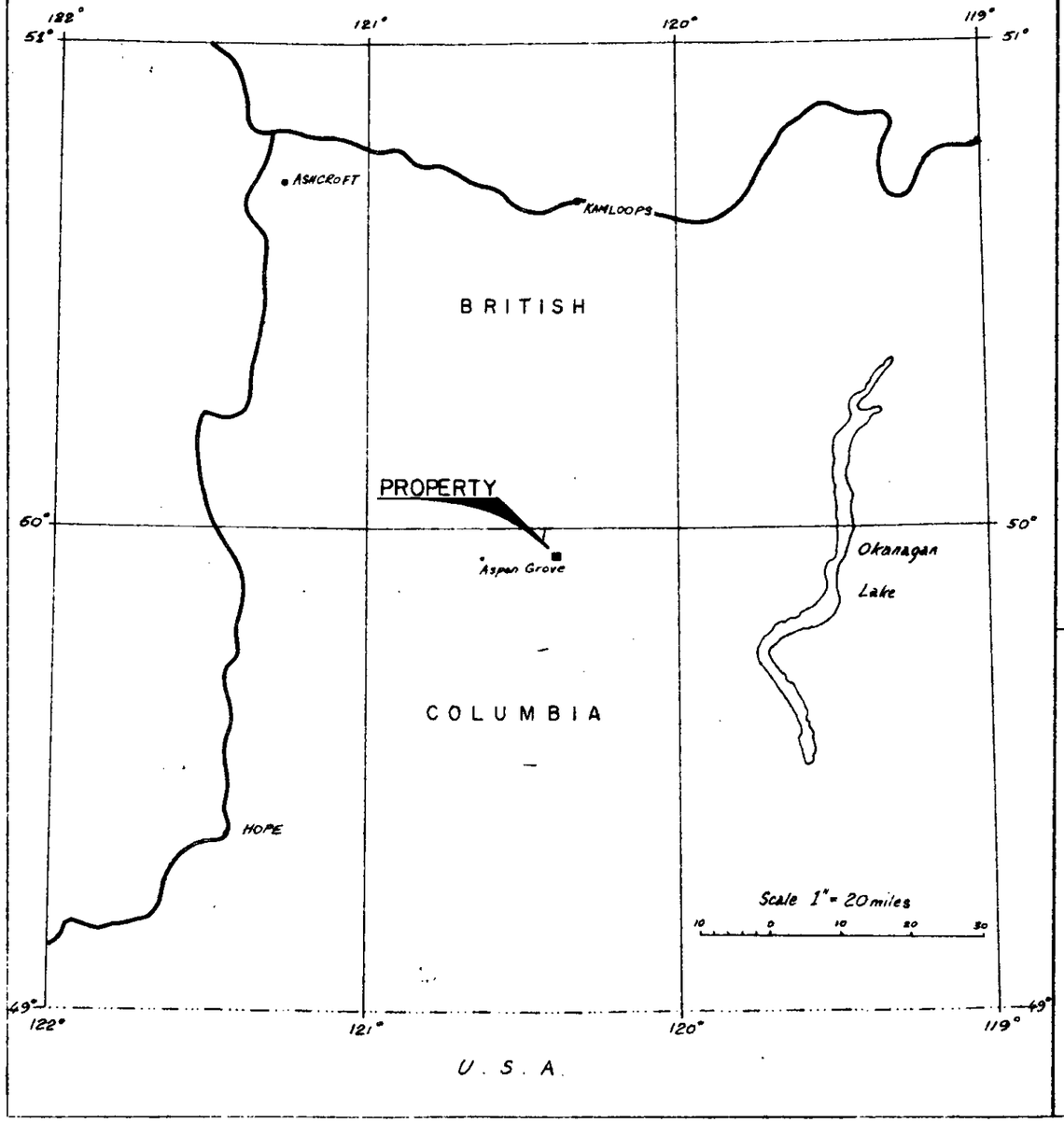
TERMS: NET

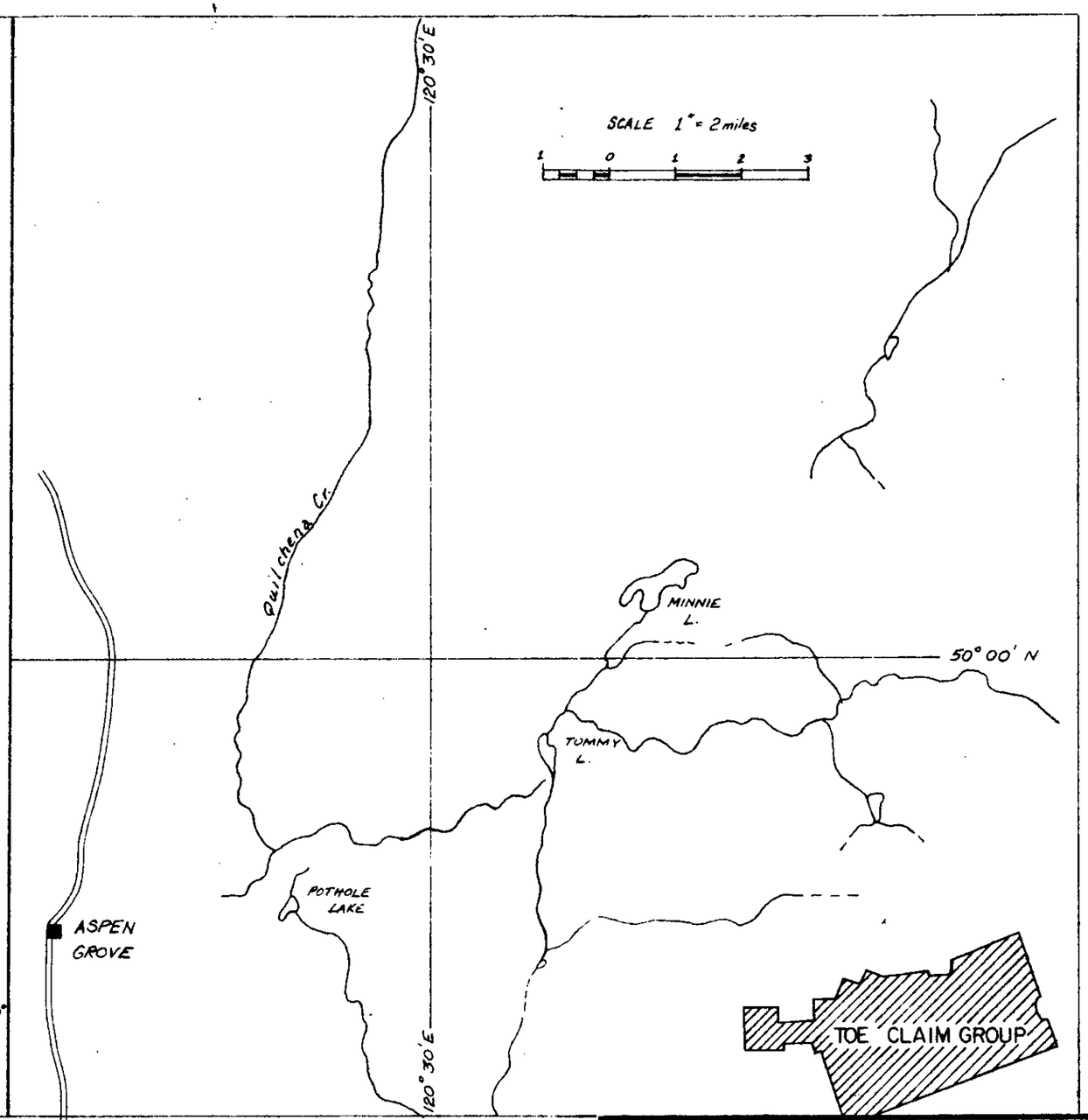
AUTHORITY: Contract Agreement dated August 20th, 1968

TO: Induced Polarisation Survey, Asper Grove Area, B.C.

Toe Group of Claims		
Field operations:		
4th October - 7th November, 1968		
29 days @ $345.00	10,005.00	
less: 2½ days equipment breakdown @ $300.00	750.00	
Total cost		9,255.00
less: Progress billing #2, our invoice #4249 dated November 21st, 1968		7,185.00
Balance due		2,070.00

INVOICE Nº 4283





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Work undertaken by
BARRINGER RESEARCH LTD, Toronto, Canada.

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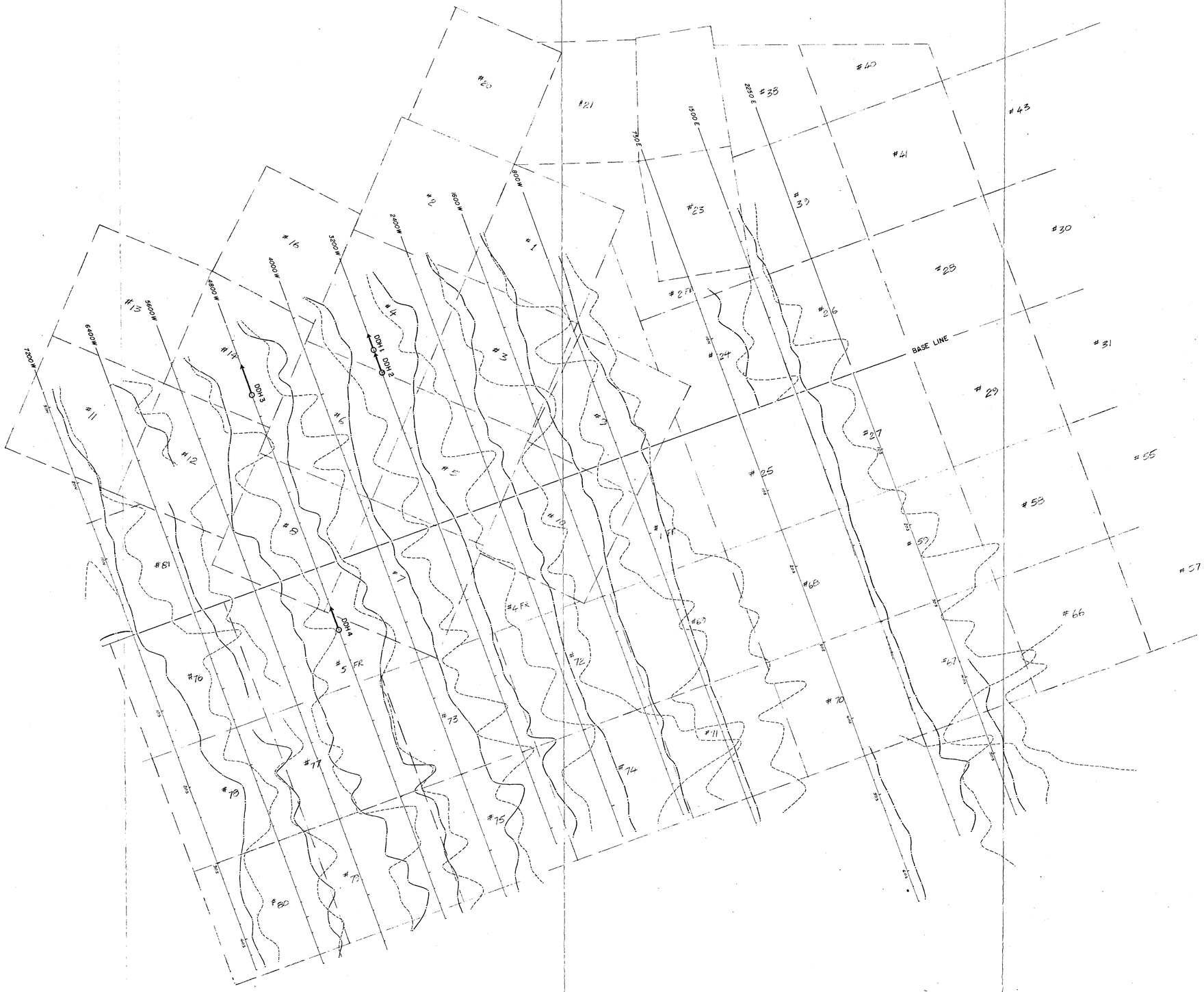
TOE CLAIM GROUP, PARADISE LAKE, B.C.

LOCALITY PLAN

SEPT. 1968 | DWG. 5-208-5



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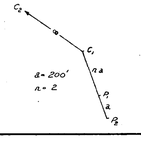

LEGEND

——— (a = 200, n = 2) Chargeability — Scale 1" = 10 millisecs

- - - - (a = 200', n = 2) Resistivity — Scale 1" = 1000 ohm metres

1703

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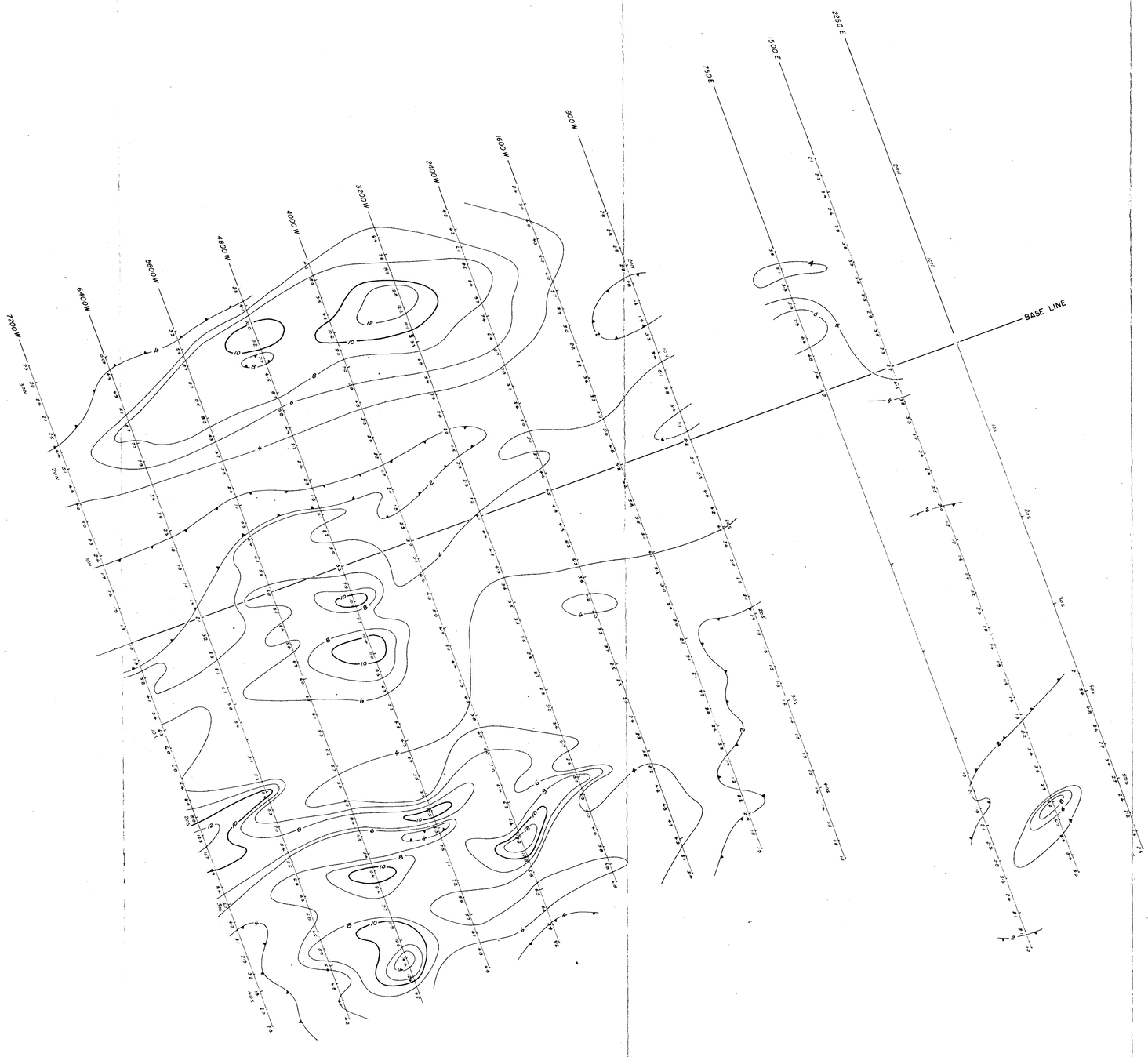
TOE CLAIM GROUP, PARADISE LAKE, B.C.

INDUCED POLARIZATION & RESISTIVITY SURVEY

POLE - DIPOLE

NOVEMBER 1968	Scale 1" = 500'	DWG. 5-208-6



LEGEND

Contour interval 2 millisecs

10 Contour

2 Contour

Depression

N

A

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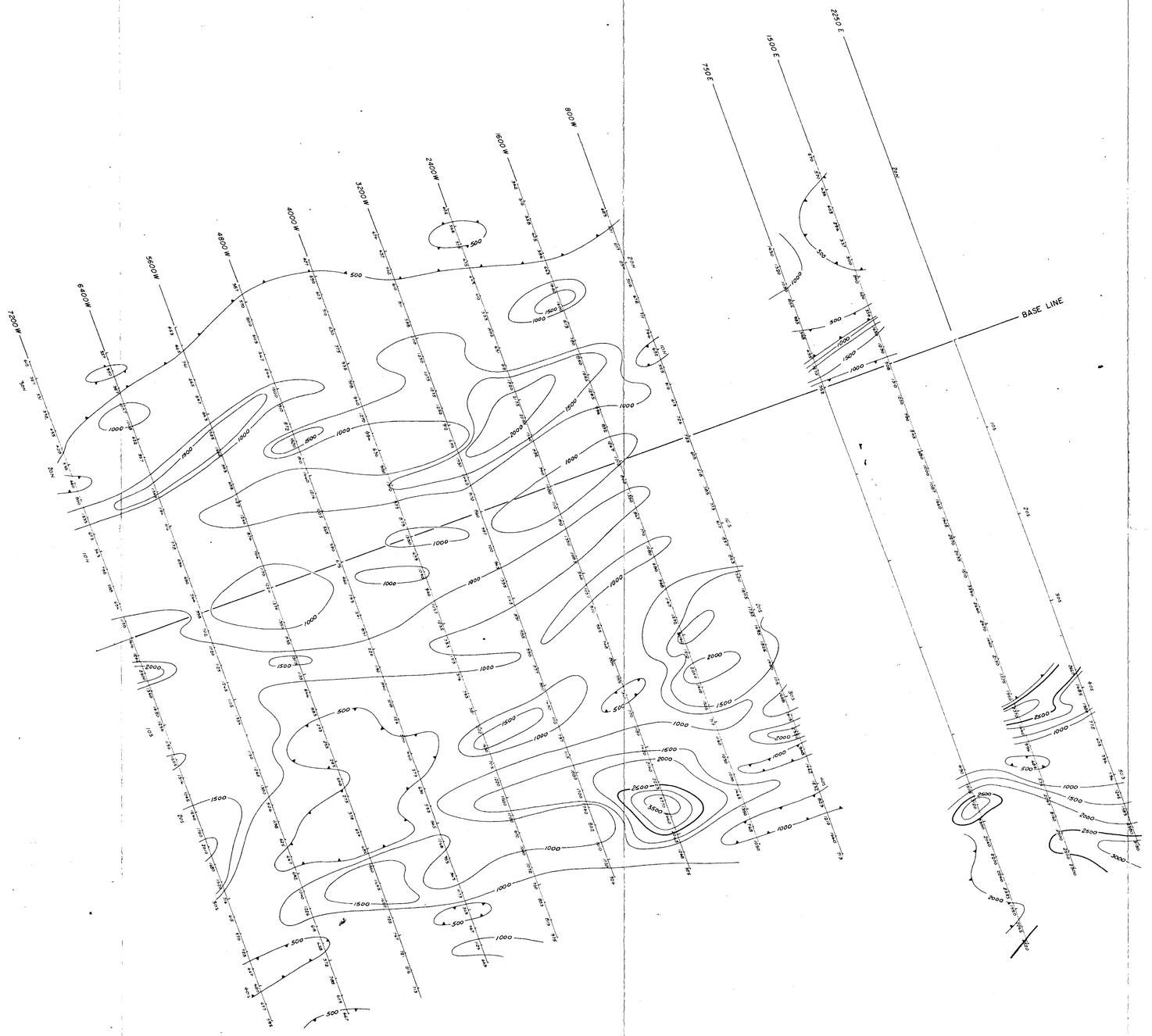
TOE CLAIM GROUP, PARADISE LAKE, B.C.

CHARGEABILITY CONTOURS
a = 200' n = 2

NOVEMBER 1968 | Scale 1" = 500' | DWG. 5-208-7



LEGEND

Contour interval 500 ohm metres

2500 Contour

500 Contour

Depression

N

-A-

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1703 MAP 3

1703

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CONSOLIDATED SKEENA MINES LTD. (N.P.L.)

TOE CLAIM GROUP, PARADISE LAKE, B.C.

RESISTIVITY CONTOURS

a = 200' n = 2

NOVEMBER 1968 | Scale 1" = 500' | DWG. 5-208-8