

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORTS

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COMINCO LTD.

EXPLORATION

WESTERN CANADA

NTS: 93N/2

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Gold Commissioner's Office
VANCOUVER, B.C.

ASSESSMENT REPORT

I.P./RESISTIVITY SURVEY

FILMED

ON THE

JEAN NORTH PROPERTY

LATITUDE: 55° 05' N

LONGITUDE: 124° 50' W

OMINECA MINING DISTRICT, B.C.

CLAIMS COVERED : CAROL 1, 2, 3, 4
INES 5,6,7,8,9,10,11,12

TIME PERIOD: JUNE 19-30, 1995

GEOLOGICAL BRANCH
ASSESSMENT REPORT

OCT. 1995

24,131

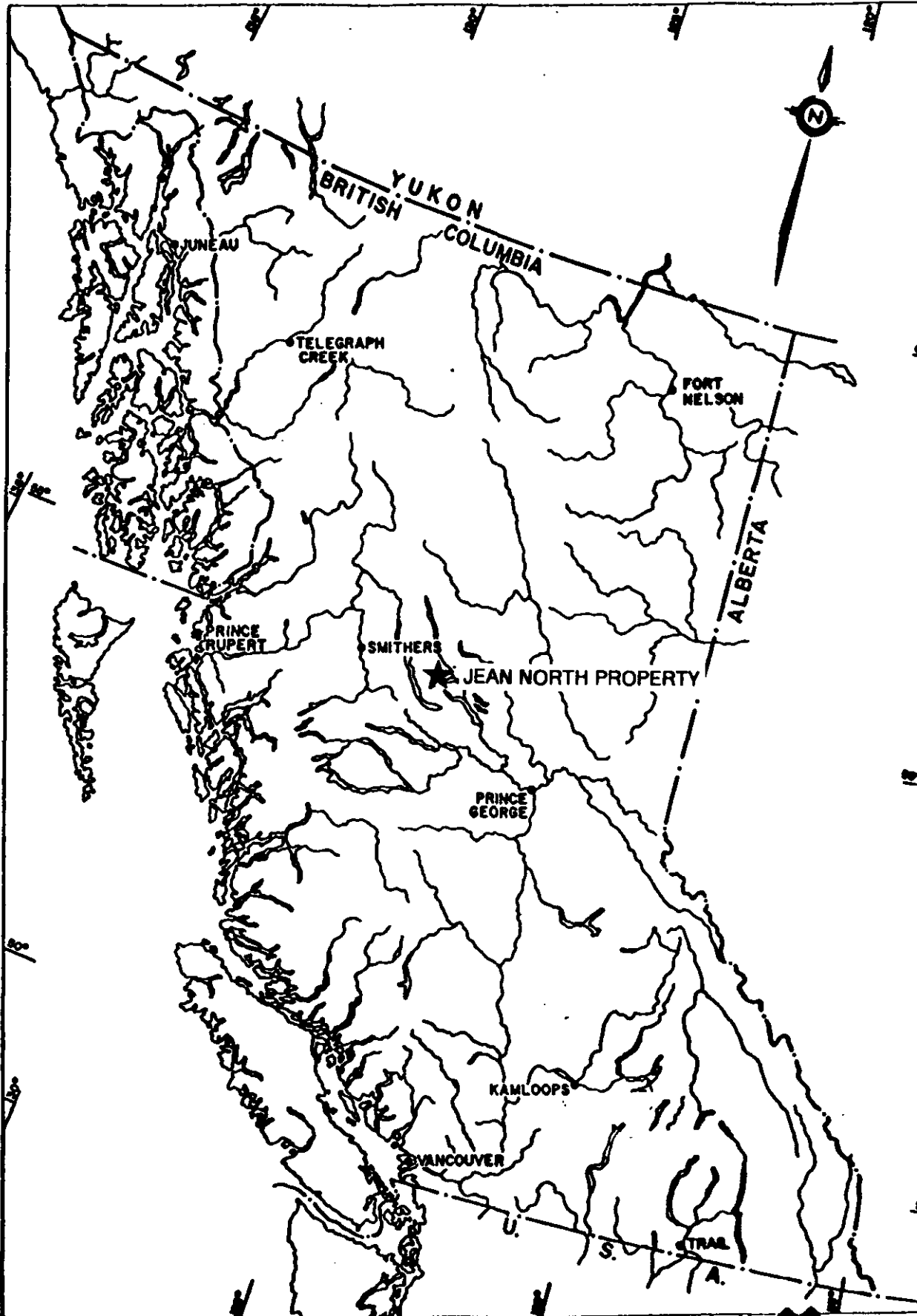
DAVID HALL

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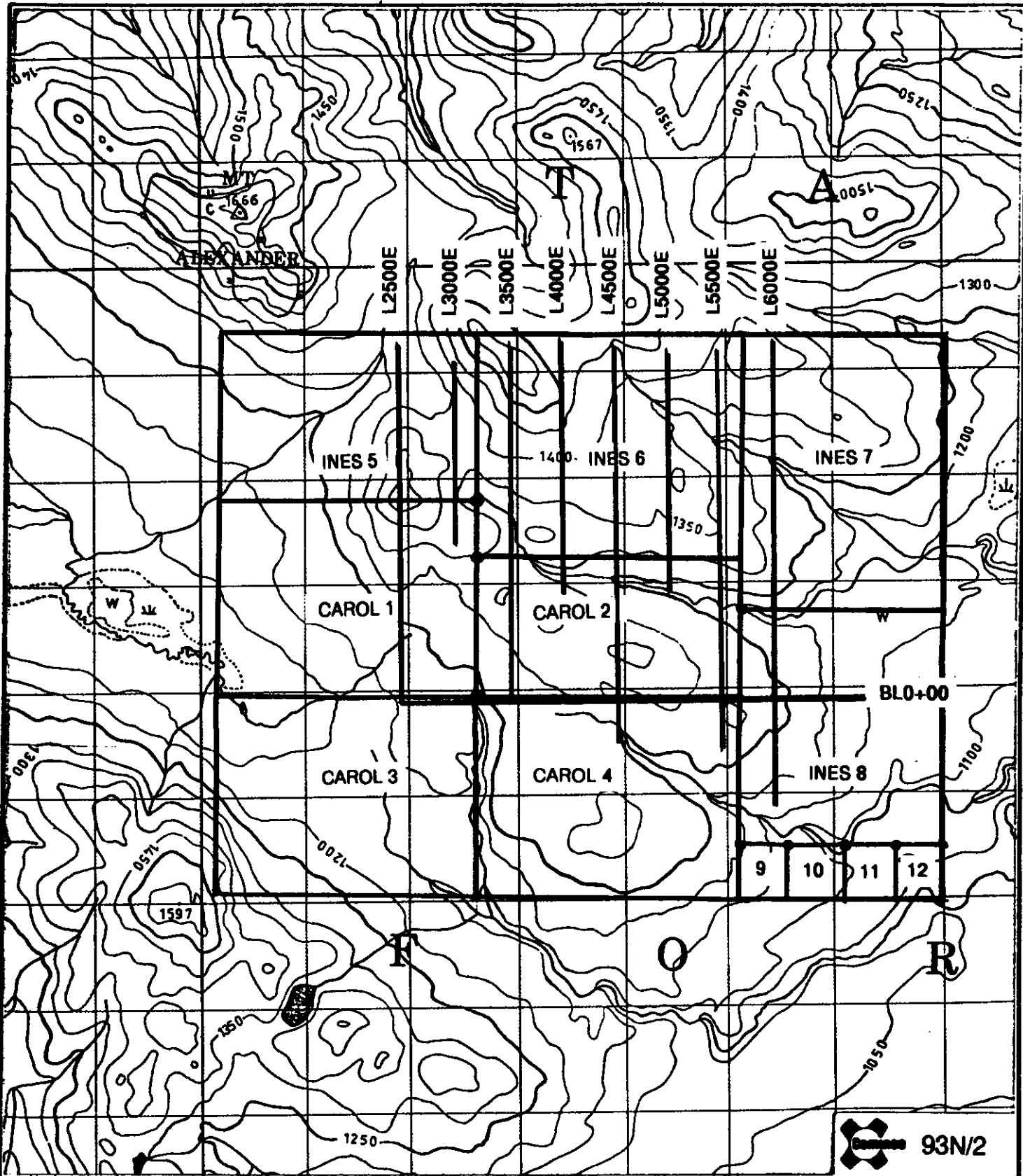
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93N/2

Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

**JEAN NORTH PROPERTY
LOCATION MAP**



Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

**JEAN NORTH PROPERTY
I.P. SURVEY GRID LOCATION
AND CLAIM MAP**

Scale: 1:50,000 Date: OCT. 1995 Plate: 428-95-2

EXPLORATION

COMINCO LTD.

WESTERN CANADA

REPORT

ON

I.P./RESISTIVITY SURVEY

ON THE JEAN NORTH PROPERTY

I INTRODUCTION

During the time period June 19-30, 1995, an Induced Polarization/Resistivity [I.P./Res.] survey was carried out on the Jean North Property by Scott Geophysics Ltd. on behalf of Cominco Ltd. A total of 25.1 line kilometres of I.P./Res. survey was completed.

This survey was to test the potential for Cu/Mo porphyry-style mineralization in the vicinity of the Jean stock. The survey area is extensively masked by glacial cover which limits geological mapping.

This report discusses the geophysical equipment and procedures, then presents and interprets the results.

GEOLOGY

The Jean North property straddles the northwest contact between the Cretaceous-aged, quartz monzonite-granodiorite composite Jean Marie stock to the southwest and Triassic Takla Group mafic volcanic rocks to the north and northeast. The actual contact is commonly a zone of strong shearing located slightly north of the survey baseline. This zone trends roughly east-west through the central part of the grid.

LOCATION AND ACCESS

The Jean North Property is located approximately 80 km north, north west of Fort St. James, B.C. (by air), at latitude 55°05'N, longitude 124°50'W, on N.T.S. 93N/2. Access from Fort St. James is in a northwesterly direction along Stuart Lake for a distance of 48 km. to the Leo Creek Forest Service Road. The Leo Creek F.S.R. travels north to a point about 10 km. south of the property. Access is then by helicopter.

II GEOPHYSICAL SURVEYS

EQUIPMENT AND PROCEDURES

A Scintrex IPR12 multi-channel time domain receiver and a Scintrex TSQ3 3 kw transmitter were used for the I.P./Res. survey. A pole/dipole electrode array was used, with the current electrode to the south of the potential electrodes. The standard 2 second ON/OFF alternating square wave was transmitted.

The IPR12 receiver determines I.P. response by measuring a number of chargeability windows of specific time widths. The chargeabilities plotted on the accompanying pseudosections are the values for the time interval 120 to 1020 milliseconds after transmitter shutoff.

The resistivity values [R] are in units of ohm-metres [ohm-m] and are calculated from the formula:

$$R = \frac{V \cdot K}{I} \quad \text{where } K = 2\pi a n [n+1] \quad a=100\text{m}, n=1,2,3,4$$

V = voltage at receiver [volts]
I = transmitter current [amperes]

The survey procedure is described as follows. The transmitter is stationary and connected to the movable current electrode [pair of stainless steel rods] by well insulated wire on small, easily carried spools. The I.P. receiver moves along the line and for each current location is connected to the ground by a nonpolarizing electrode [porous pot containing CuSO₄] at points 100, 200, 300, and 400 metres from the current electrode. As the IPR12 is a multi-channel receiver readings of n=1-4 can be taken simultaneously. After a set of readings is taken at a particular current station the whole array moves 100 metres and the process is repeated. This continues until the line is finished. At this point the wire carrying the current has been laid out the full length of the line and must be wound in before the next line can be started.

PRESENTATION OF RESULTS

The I.P./Resistivity data is presented in pseudosection form on Plates 428-95-3 & 4, with chargeability and apparent resistivity plotted at a scale of 1:5000. Apparent resistivity is in units of ohm-metres, chargeability values are in units of millivolts/volt [mV/V].

Chargeability anomaly bars are categorized as strong [>50 mV/V], moderate [30-50 mV/V], and weak [15-30 mV/V]. These bars are plotted on the pseudosections to highlight anomalous chargeability zones.

III INTERPRETATION

There is a great deal of variability in the I.P. response across the survey grid. Chargeabilities vary from a low of 5 mV/V to nearly 100 mV/V. Resistivities drop to a low of less than 10 ohm-m and reach a high of approximately 6000 ohm-m.

A feature which is evident cutting across all lines is a very high chargeability (60-100 mV/V), very low resistivity (< 20 ohm-m) zone. This is thought to be within the Takla Volcanics and is possibly a highly conductive graphitic sediment unit.

The westmost line surveyed is L2500E. The south half of this line is in what can be considered background chargeabilities of 3 to 6 mV/V. At 1600N there is clear transition to a zone of higher chargeabilities (20-30 mV/V range). The response is then fairly uniform until the conductive unit is reached at approximately 2900N. Resistivities drop from levels in the 1000-2000 ohm-m. range to less than 50 ohm-m. and chargeabilities jump to nearly 100 mV/V at the contact.

The main feature on line 3000E is the conductive unit which starts at 2250N and continues beyond 3000N.

Chargeabilities are on the increase at the south end of line 3500E. Values appear to start at near background levels and rise to the 25-35 mV/V range. The response is fairly uniform from 300N to 1400N. The conductive sediments are reached at 1800N at which point chargeabilities are in the 50-80 mV/V range and resistivities are less than 50 ohm-m. The conductive zone is only about 300 metres wide on this line. There is a transition to a moderately resistive, highly chargeable unit at about 2800N which continues to the north end of the line.

The south end of Line 4000E is on the edge of the conductive unit which is approximately 200 metres wide on this line. Near the the north end of the line we again see the moderately resistive, strongly chargeable unit.

Line 4500E is in low chargeabilities at its south end. At approximately 400N there is a transition to a zone of anomalous chargeabilities which last until 1000N. The strongly conductive unit appears between about 1250N and 1400N. Much of the north end of this line is in highly anomalous chargeabilities and fairly low resistivities (< 500 ohm-m.).

Similarly, much of line 5000E is in highly anomalous chargeabilities. The very low resistivities associated with these are indicative of graphitic sediments.

Line 5500E is weakly anomalous from 150S to 650N. This is associated with relatively high resistivities (3000-5000 ohm-m.). There is a transition to higher chargeabilities and lower resistivities from 800N until the conductive sediments are hit at 1450N.

The south end of line 6000E is in low chargeabilities. Two weakly anomalous zones are apparent centered at 100S and 250N. The conductive sediments are evident at approximately 1250N perhaps interbedded with more resistive, chargeable material.

IV CONCLUSIONS

Scott Geophysics Ltd. surveyed 25.1 km of I.P./Resistivity on behalf of Cominco Ltd. on the Jean North Property during the period June 19 to 30, 1995.

The survey indicated areas of widely varying chargeability and resistivity response. Near the baseline is a zone approximately 1 km wide trending roughly east-west across the grid. The zone is identifiable by its moderately anomalous chargeabilities (15-40 mV/V) and moderate resistivities and is thought to be within or at the edge of the Jean stock. North of this and parallel to it is a zone of highly chargeable, conductive material, likely graphitic sediments within the Takla volcanics.

Report by : David C. Hall
David C. Hall,
Geophysicist

Approved for D.W. Moore
Release by : D.W. Moore,
Manager, Exploration
Western Canada

Distribution:

- [2] Mining Recorder
- [1] D. Wagner- Geologist, Western District
- [1] Western District, Central Files
- [1] Geophysics File, Vancouver, B.C.

APPENDIX I

IN THE MATTER OF THE B.C. MINERAL ACT
AND IN THE MATTER OF A GEOPHYSICAL PROGRAMME
CARRIED OUT ON THE JEAN NORTH PROPERTY
LOCATED 80 KMS NORTHWEST OF FORT ST. JAMES, B.C.
IN THE OMINECA MINING DISTRICT OF THE
PROVINCE OF BRITISH COLUMBIA,
MORE PARTICULARLY
N.T.S. 93N/2

STATEMENT

I, David C. Hall, of 3476 W. 22nd Avenue, in the City of Vancouver, in the Province of British Columbia, make oath and say:

1. That I am employed as a geophysicist by Cominco Ltd. and, as such have a personal knowledge of the facts to which I herein-after depose;
2. That annexed hereto and marked as "Exhibit A" to this statement is a true copy of expenditures incurred on a geophysical survey on the Jean North Property;
3. That the said expenditures were incurred from June 7-30, 1995, for the purpose of mineral exploration on the above noted property.



David C. Hall
Geophysicist
Cominco Ltd.

Dated this 31 day of October, 1995
at Vancouver, B.C.

APPENDIX II - EXHIBIT "A"

STATEMENT OF EXPENDITURES
JEAN NORTH PROPERTY - JUNE, 1995

1. LINE CUTTING: JUNE 7-16, 1995 INVOICE FROM HOBSON CONTRACTING (SMITHERS, B.C.) (31.05 KMS CUT & CHAINED + MOBILIZATION/DEMOB.)	\$ 27,592.62
2. HELICOPTER (CAMP MOBILIZATION/DEMOB.)-4.5 HRS.	\$ 3,015.00
3. INDUCED POLARIZATION SURVEY: JUNE 19-30, 1995 INVOICE FROM SCOTT GEOPHYSICS LTD.(VANCOUVER)	\$ 23,453.00
4. REPORT WRITING, DRAFTING	\$ 1,425.00
TOTAL	<u>\$ 55,485.62</u>

APPENDIX III

CERTIFICATION OF QUALIFICATIONS

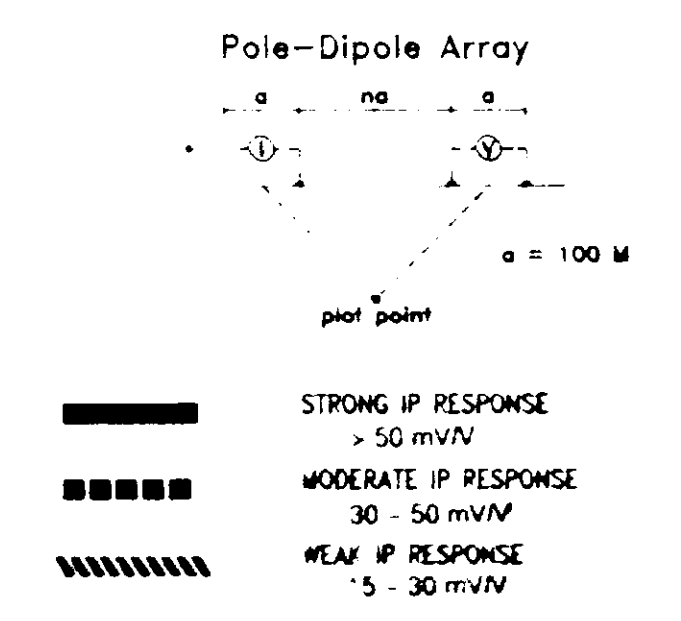
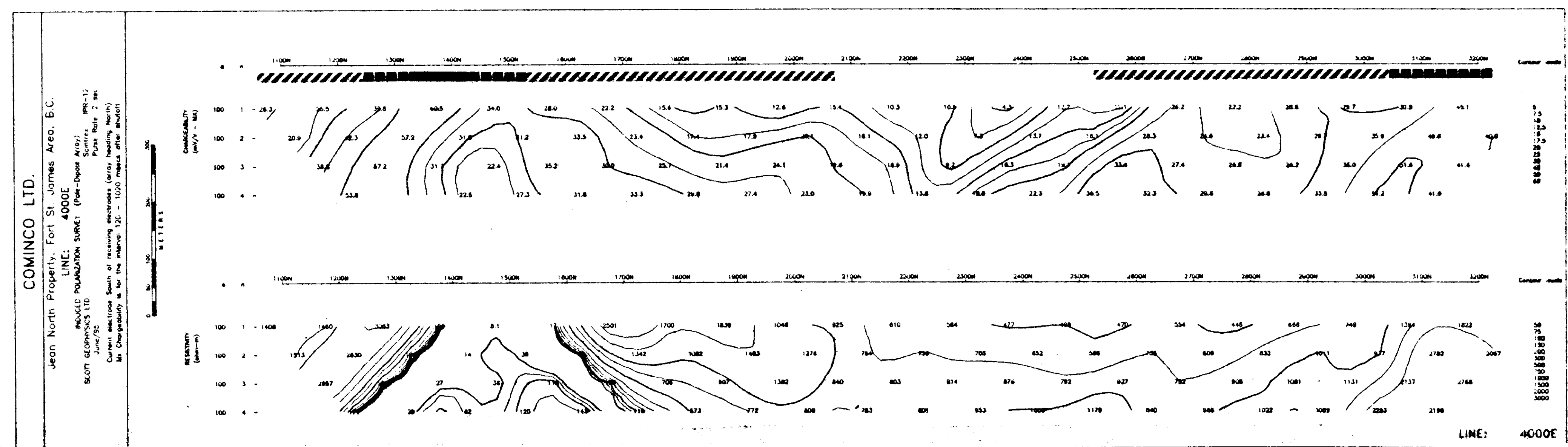
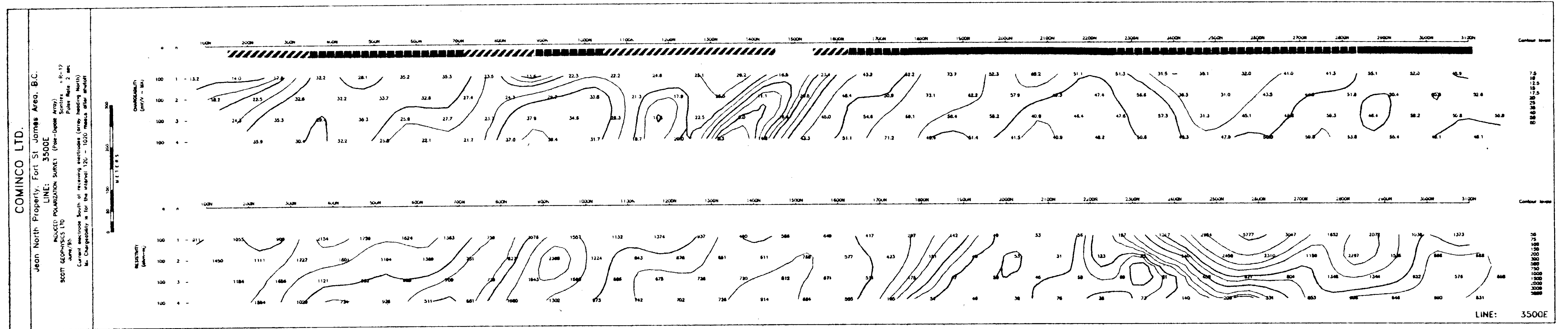
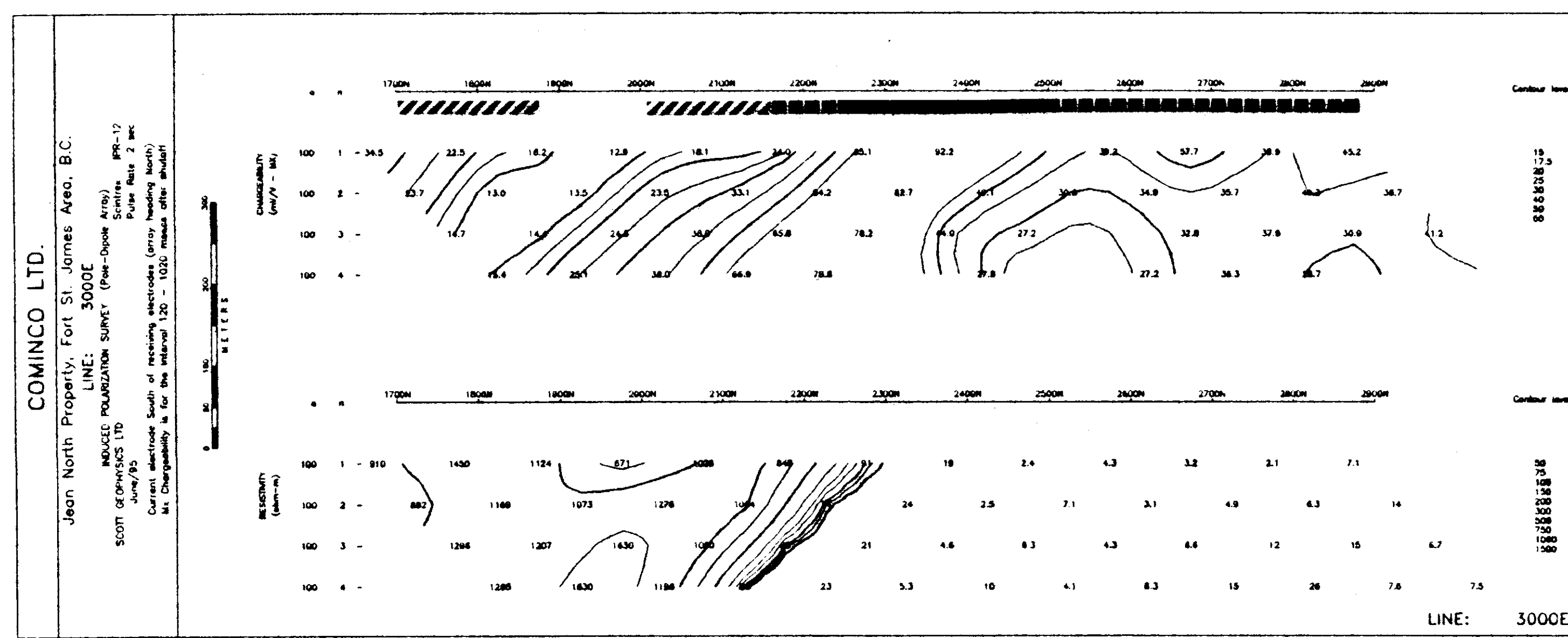
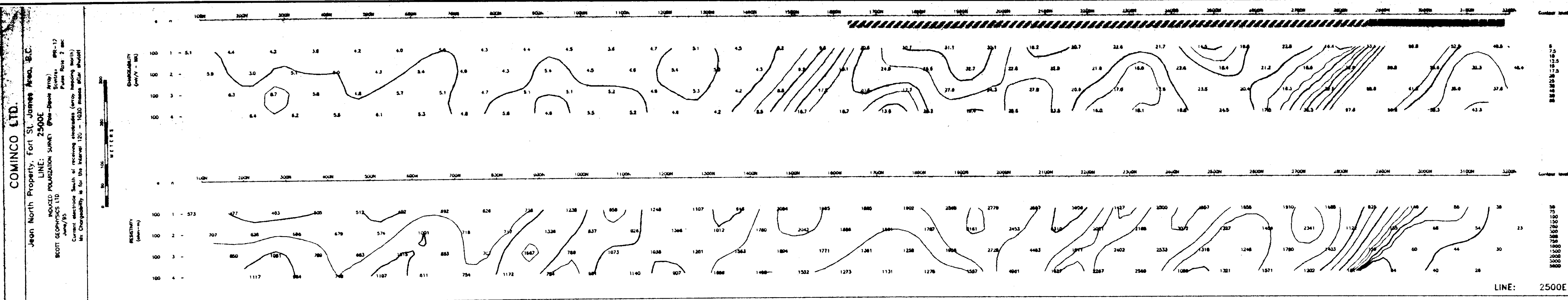
I, DAVID C. HALL, of 3476 W. 22nd Avenue, in the City of Vancouver, in the Province of British Columbia, do hereby certify:

- i. THAT I graduated with a B.Sc. in Geophysics from the University of Manitoba in 1976.
- ii. THAT I have been actively practising Geophysics from 1976 to 1995, and am presently an employee of Cominco Ltd.



David C. Hall, B.Sc.
Geophysicist

October, 1995



**HYDROLOGIC BRANCH
 ASSESSMENT REPORT**

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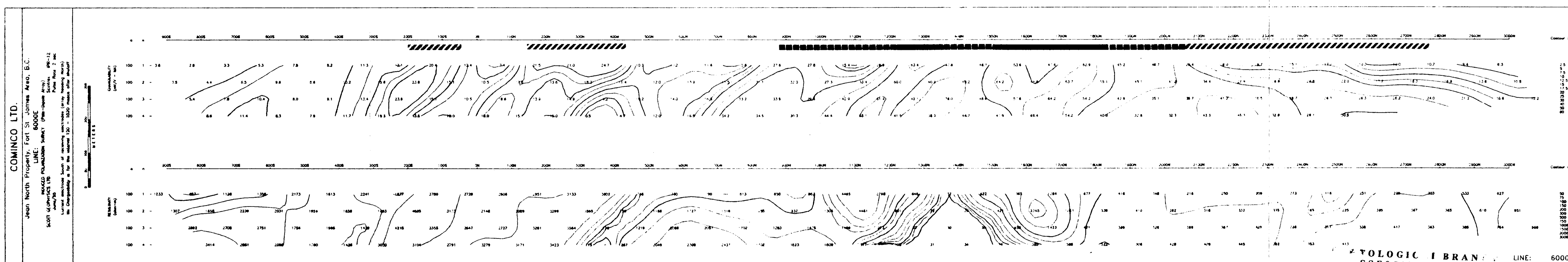
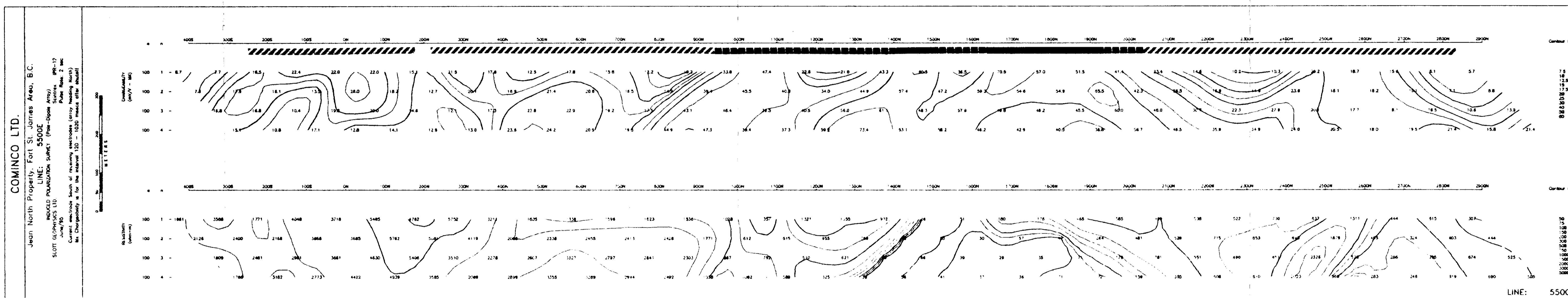
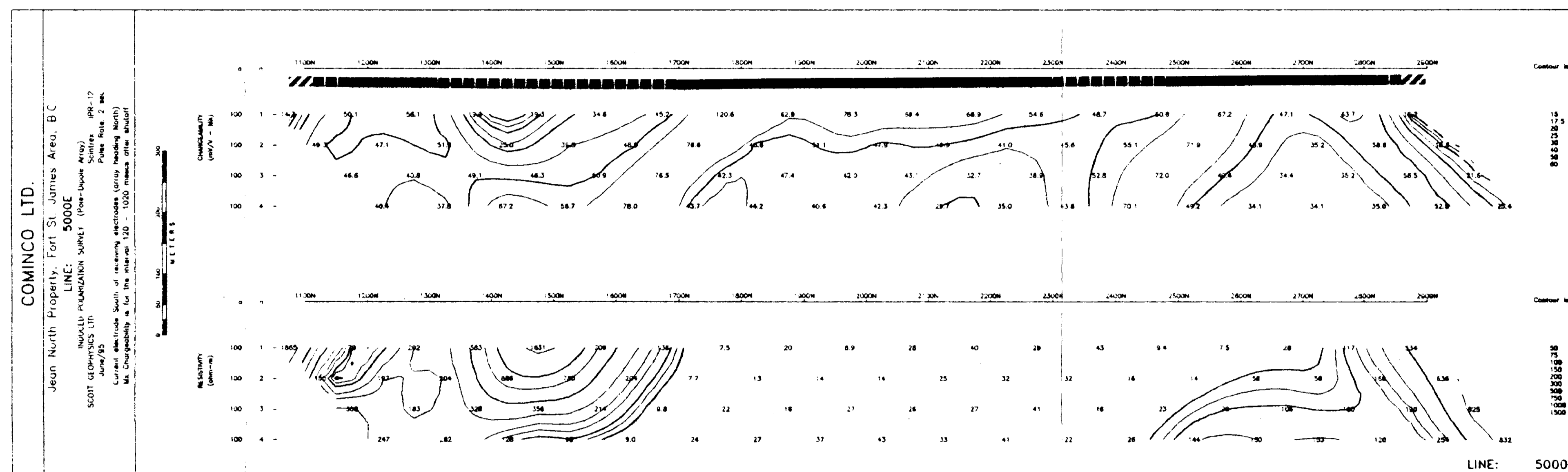
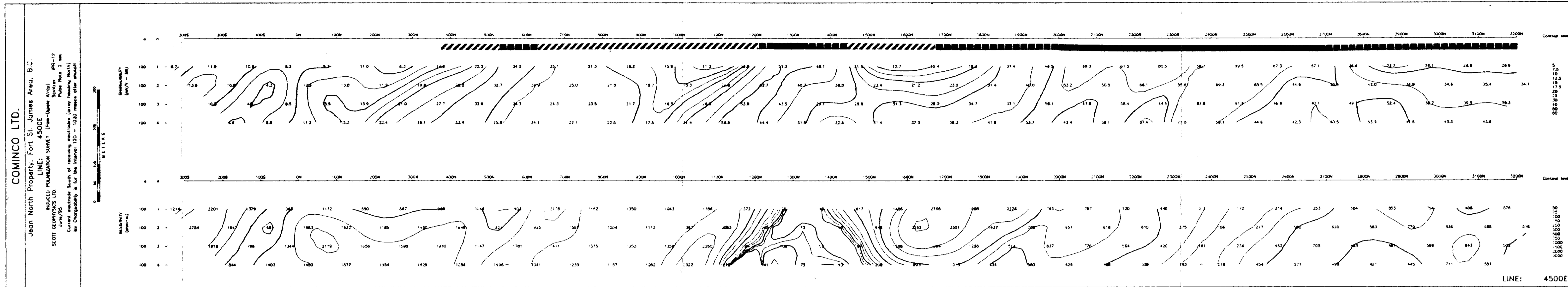
2 5 10 20 50 100 METERS

JEAN NORTH PROPERTY

CHARGEABILITY / RESISTIVITY
 PSEUDOSECTIONS

Lines: 4000E, 3500E, 3000E, 2500E

1 5000 October 1995 428-55-4



Pole-Dipole Array



a = 100 M

- STRONG IP RESPONSE
50 mV/V
- MODERATE IP RESPONSE
30 mV/V
- WEAK IP RESPONSE
15 mV/V

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ASSESSMENT REPORT

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JEAN NORTH PROPERTY		NTS
		93-N/2
CHARGEABILITY / RESISTIVITY PSEUDOSECTIONS		
Lines: 6000E, 5500E, 5000E, 4500E		
Scale: 1:5000	Date: October 1995	Page: 426 of 3