

GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORTS

FOX GEOLOGICAL SERVICES INC.

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**GEOPHYSICAL REPORT**

Gold Commissioner's Office  
VANCOUVER, B.C.

on the

**MAC 5, 6, 7 AND 8 MINERAL CLAIMS  
PAULA CREEK PROPERTY**

**OMINECA MINING DIVISION**

**BRITISH COLUMBIA**

**NTS 93K/13E**

**54°52'N 125°34'W**

by

**P. E. Fox, Ph.D., P. Eng.**

**FOX GEOLOGICAL SERVICES INC.  
1409 - 409 Granville Street  
Vancouver, BC V6C 1T8**

**Work Paid for by  
SPOKANE RESOURCES LTD.  
#480 - 650 West Georgia Street  
Vancouver, BC V6B 4N9**

**August 18 , 1995**

**FILMED**

**24,033**

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

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**SUMMARY**

This report summarizes results of a work program conducted on the Mac 5, 6, 7 and 8 mineral claims in the Omineca Mining Division of central B.C. A 23.8 line-kilometre Induced Polarization/Resistivity survey was performed between the period July 26 and August 3, 1995. The survey was conducted over a portion of the Camp Zone mineralized stock and the untested Pond and Peak Zones to allow for correlation.

**CONCLUSIONS**

The Camp Zone stock was found to be situated on the eastern flank of an ovate area of low chargeability and coincident moderately-low resistivity. The Pond and Peak Zones were found to have similar geophysical signatures.

## **INTRODUCTION**

This report summarizes results of a 23.8 line kilometre geophysical IP survey conducted between July 26 and August 3, 1995 on the Mac 5, 6, 7 and 8 claims, Omineca Mining Division, southeastern B.C. The program was designed to further evaluate geochemical and geophysical anomalies in the Pond and Peak Zones and allow for correlation to previously delineated mineralization at Camp Zone.

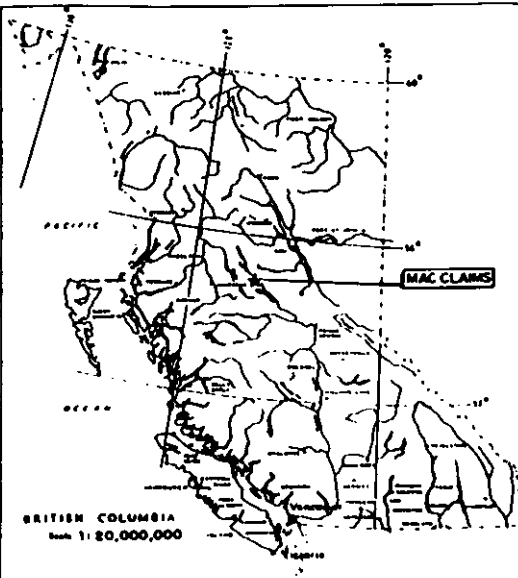
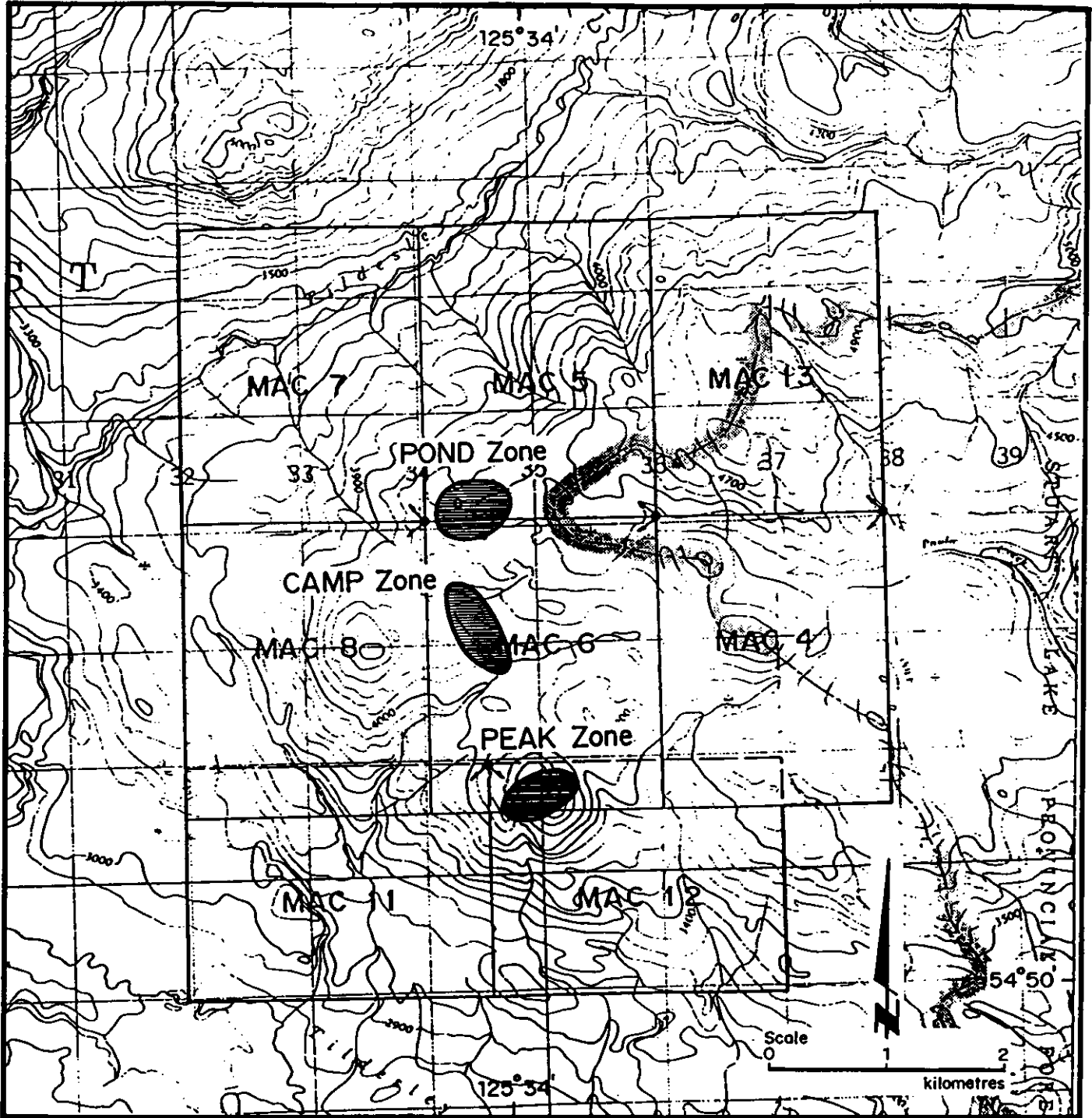
## **LOCATION, ACCESS AND PHYSIOGRAPHY**

The Paula Creek Property is situated in the Babine Lake area of central British Columbia, approximately 100 kilometres east of Smithers (Figure 1). The centre of the claim block lies at 54° 52' north latitude and 125° 34' west longitude. Access is presently by helicopter; the nearest permanent helicopter bases are located in Smithers and Fort St. James.

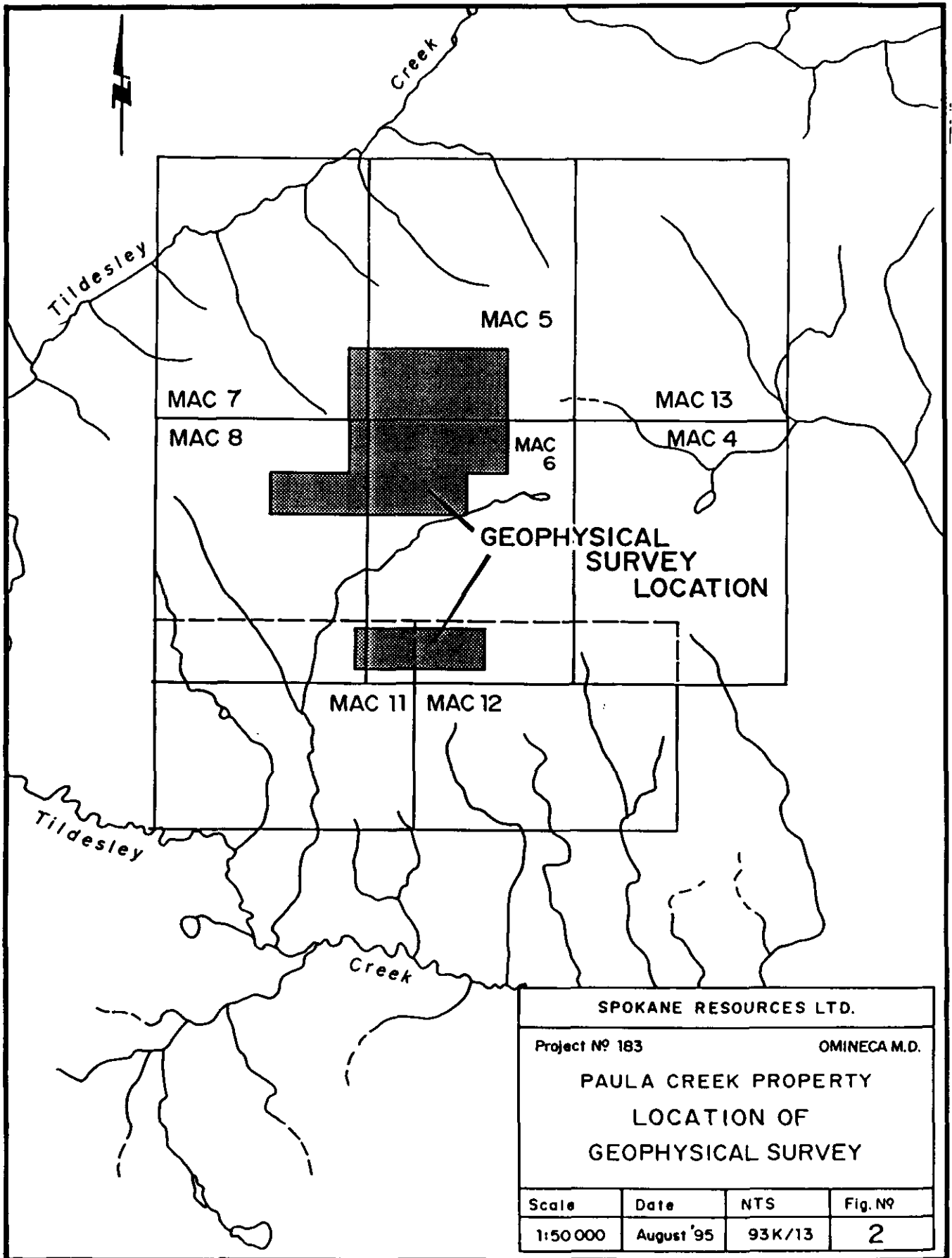
The claims lie within the Hogen Mountain Ranges, on the eastern slopes of Mount Sidney Williams. The claims are characterized by gently rolling hills ranging in elevation from 900 metres to 1,500 metres. Slopes are forested with conifers and minimal underbrush. Flat-lying areas are swampy with scrub brush and muskeg.

## **CLAIM INFORMATION**

The Paula Creek Property consists of eight contiguous, 20-unit modified grid claims currently under option from Rio Algom Exploration Inc. (Figure 2). Details of the claims are set out below. All are in good standing and appear to have been staked in accordance with the Mineral Act. Expiry dates tabulated below assume that current work is accepted for assessment purposes.



<b>SPOKANE RESOURCES LTD.</b>			
Project No. 183		OMINECA M.D.	
<b>PAULA CREEK PROSPECT</b>			
<b>LOCATION MAP</b>			
Scale	Date	NTS	Fig. No.
1:50,000	June 1995	93K/13	1



Claim Name	Record #	Units	Years	Expiry Date
Mac 4	238565	20	0	September 13, 1999
Mac 5	238566	20	1	September 13, 2000
Mac 6	238567	20	1	September 13, 2000
Mac 7	238651	20	1	July 25, 2000
Mac 8	238652	20	1	July 25, 2000
Mac 11	238736	20	0	December 22, 1999
Mac 12	238737	20	0	December 22, 1999
Mac 13	241120	20	0	August 5, 1999

## REGIONAL GEOLOGY

The most recently published geological work in the area is that by J. E. Armstrong (GSC Memoir 252, Fort St. James map area, Cassiar and Coast District). Map 907A and a subsequent compilation (GSC Map 1424A Parsnip River) show the Paula Property to be underlain by carboniferous and Permian greenstones, argillites and cherts of the Cache Creek Group with general north-northwest trend. In the vicinity of the property, these are intruded by peridotites and gabbros of the Mesozoic Trembleur intrusions and large and small bodies of Upper Jurassic to Lower Cretaceous granodiorites of the Omineca intrusions.

Map 1424A shows some early Cretaceous granodiorite intrusions intruding Cache Creek Group and other rocks to the southeast of the property. No mineralization is noted on the property in any published reports or maps. GSC Geophysics Paper 5316, 1:63,360 Tildesley Creek, displays strong north-northwesterly trends with local changes in the vicinity of the property.

## PROPERTY GEOLOGY

The geology of the property, as set out below, is based on previous mapping and drilling by Rio Algom in 1989. McClintock (1983), Holmgren et al (1984) and Cope (1989) report that the property is predominantly underlain by intermediate to basic volcanoclastic rocks which are correlative with the Mississippian-Triassic Cache Creek Group. The volcanoclastic rocks are composed of intercalated massive fine tuff and fine to coarse lapilli tuff, pale to dark green in colour. Angular lapilli, comprising up to 80% of the fragmental layers, are up to 2 cm. across and surrounded by a fine matrix. Light to dark grey, massive limestone is exposed in the northeast corner of the claim block.

Numerous intrusions invade the layered rocks. The oldest is a dark green serpentinite forming northwest-trending outcrops in the south-central portion of the property. The serpentinite is composed predominantly of radiating laths of tremolite and fibrous talc and weathers to a distinctive orange-buff colour. A fault contact with quartz monzonite was intersected in drill hole 89-6. Above the fault contact, mineralized quartz veins are present, suggesting that the serpentinite predates the mineralizing event related to the acid intrusions. The serpentinite is assumed to be related to the Trembleur intrusions of Upper Paleozoic age, a large body of which lies immediately east of the property on Mount Sidney Williams.

A 2.5-kilometre by 3-kilometre stock of biotite-hornblende granodiorite is exposed in the south-central portion of the claims. It is composed of pale yellow-white euhedral 1 mm to 3 mm feldspar phenocrysts, 1 mm to 2 mm biotite books and subhedral black hornblende crystals. Quartz phenocrysts to 8 mm are common. Regionally, this stock is assigned an Early Jurassic age.

In the centre of the claim block, a 500-metre by 300-metre stock of porphyritic quartz monzonite has been outlined. This intrusive is typically medium-grained, pale yellow-green to pale grey-green in colour, and is composed of 30% anhedral to subhedral quartz phenocrysts (2 mm to 7 mm), 20% sericitized feldspar phenocrysts and up to 10% biotite in books to 2 mm, all in a fine grained groundmass. Xenoliths of volcanic rock, a few centimetres to several metres in size, are found near the margins of the stock. Dykes of fine grained porphyritic quartz monzonite are common. The quartz monzonite body is host to stockwork quartz-molybdenite mineralization as discussed further below. Dykes of biotite-feldspar porphyry cut both the quartz monzonite stock and the host volcanic rocks. Generally, these dykes are pale grey to tan, medium crystalline with conspicuous 1 mm



to 2 mm biotite books. Locally, the dykes are pegmatitic with perthitic feldspar phenocrysts to 1 cm. These dykes tend to occur near the margins of the quartz monzonite stock, though not exclusively, and are less altered and weakly mineralized.

The youngest intrusive on the property occurs as dykes of dark green, fine grained amygdaloidal andesite. Calcite-filled amygdules, 1 mm to 4 mm in diameter, comprise 5% of these rocks.

Regional greenschist grade metamorphism of the volcanic rocks has resulted in a dark green schistose rock with abundant chlorite and minor amounts of fine disseminated pyrite. Hornfelsing along the contact of the acid intrusions has further altered the volcanic rocks to a dark, brownish-green massive rock with abundant biotite, amphibole and up to 5% fine pyrite. In addition, a moderate to intense regional foliation, trending 130° to 160°, overprints the volcanic rocks. Where most intense, the resultant rock type is a pale green to grey-green chloritic phyllite.

Hydrothermal alteration associated with the intrusion of the quartz monzonite stock includes the development of a quartz stockwork, pervasive sericitization of feldspar in the intrusive and the development of lenses of quartz in the surrounding hornfelsed volcanics. The quartz stockwork is characterized by steeply-dipping multi-directional quartz veinlets comprising up to 15% of the quartz monzonite. Vein widths are typically between 1 mm to 5 mm but range up to 2.5 cm.

Intense sericitization of feldspars has occurred within the quartz monzonite stock, imparting a green tinge to the rock. This alteration appears to decrease in intensity with depth. Potassium feldspar alteration is limited in distribution and is largely restricted to vein selvages in the quartz stockwork. Kaolinization has occurred along certain post-mineralization faults.

## **MINERALIZATION**

Molybdenite mineralization is associated with stockwork quartz veining within the quartz monzonite stock and with quartz veins and silicified zones in the proximal volcanics (Cope, 1989). Coarse flaky molybdenite and molybdenite coatings occur along fractures and as vein selvages. Molybdenite also occurs to a minor extent as fine disseminations and sparse, 1 mm rosettes. Molybdenum grades in drill core from the Camp Zone stock range

from 0.011% over 31.4 metres in drill hole 89-6 to a high of 0.062% over 120.4 metres in hole 89-1. Molybdenum grades within the stock generally decrease with depth.

Quartz veins and cross-cutting quartz veinlets in volcanic rocks surrounding the Camp Zone stock carry fine disseminated molybdenite. This mineralization extends outward for some 50 metres or more from the stock. Grades within the mineralized volcanics range from 0.024% molybdenum and 0.04% copper over 94.4 metres in hole 89-5 to 0.102% molybdenum and 0.013% copper over 187.7 metres including 0.20% molybdenum and 0.21% copper over 72.2 metres in 89-12.

An examination of core from holes 89-4 and 89-12 shows that chalcopyrite occurs primarily as disseminations in siliceous zones within the mineralized volcanics. Traces of fine disseminated chalcopyrite also occur within the quartz monzonite stock. Pyrite, as disseminations and fracture fillings, generally exceeds 5% in the proximal volcanics. Background level for pyrite in the more distal volcanics is 2%. Disseminated pyrite within the quartz monzonite typically comprises less than 1%.

#### **1995 WORK PROGRAM**

The 1995 work program, completed between July 26 and August 3, consisted of a 23.8 line-kilometre Induced Polarization/Resistivity Survey conducted by Scott Geophysics Ltd. The survey was conducted over a portion of the Camp Zone mineralized stock and the untested Pond and Peak Zones to allow for correlation.

Survey parameters are given in SCOTT GEOPHYSICS' Logistical Report included in Appendix I.

## RESULTS

Chargeabilities are generally high over the grid area with generally corresponding moderate to high resistivities in areas of high chargeability. The Camp Zone stock is situated on the eastern flank of an ovate area of low chargeability, with chargeabilities in the 12 to +30 millivolt range. The stock is also coincident with an area of decreased resistivity (less than 300 ohm-metres).

The Pond Zone was found to have a similar signature, with a coincident magnetic/geochemical anomaly on the flanks of another ovate chargeability low. An intense, north-northwesterly trending resistivity low (37 to 300 ohm-meters at n=1) abuts the Pond anomalies on the east and another geochemical anomaly that lies north of the Camp Zone stock.

The Peak Zone is partially coincident with moderate resistivity lows, however, chargeabilities in this area are generally higher than at the Camp Zone (+20 millivolts).

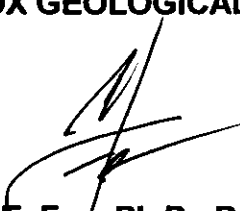
A notable area of low resistivity (17 to 20 ohm-metres at n=1) and corresponding high chargeability (30 to 71 millivolts at n=1), detected at the western end of line 10500N, merits further investigation.

## DISBURSEMENTS

SCOTT GEOPHYSICS LTD.	<u>15,065.60</u>
Total Disbursements	<u>\$ 15,065.60</u>

Prepared by:

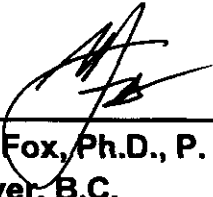
**FOX GEOLOGICAL SERVICES INC.**

  
**P. E. Fox, Ph.D., P. Eng.**  
 August 18, 1995

**CERTIFICATE**

I, Peter Edward Fox, certify to the following:

1. I am a consulting geologist residing at #902 - 2077 Nelson Street, Vancouver, B.C.
2. I am a Professional Engineer registered in the Association of Professional Engineers and Geoscientists of British Columbia.
3. My academic qualifications are:  
  
B.Sc. and M.Sc., Queens University, Kingston, Ontario  
Ph.D., Carleton University, Ottawa, Ontario
4. I have been engaged in geological work since graduation in 1966.



---

**Peter E. Fox, Ph.D., P. Eng.**  
**Vancouver, B.C.**  
August 18, 1995

**APPENDIX I**

**Geophysical Survey Report**

LOGISTICAL REPORT  
INDUCED POLARIZATION/RESISTIVITY SURVEY

MAC CLAIMS  
BABINE LAKE AREA  
BRITISH COLUMBIA

on behalf of

SPOKANE RESOURCES LTD.  
480 - 650 West Georgia Street  
Vancouver, B.C. V6B 4N9

Field work completed: July 23-August 3, 1995

by

Alan Scott, Geophysicist  
SCOTT GEOPHYSICS LTD.  
4013 West 14th Avenue  
Vancouver, B.C. V6R 2X3

August 14, 1995

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1 Introduction	1
2 Survey coverage and data presentation	1
3 Personnel	1
4 Instrumentation	2
5 Recommendations	2
Appendix	
Statement of Qualifications	rear of report
Maps and Materials included in body of report	
Chargeability/resistivity pseudosections	map pocket 1
One (1) floppy disk with all final survey data	map pocket 2
Accompanying Maps (1:5000 scale) (vellum originals, three blackline copies of each)	
Chargeability/resistivity pseudosections - Lines 7600N-8000N	map roll
Chargeability/resistivity pseudosections - Lines 9100N-9700N	map roll
Chargeability/resistivity pseudosections - Lines 9900N-10200N	map roll
Chargeability/resistivity pseudosections - Lines 10300N-10700N	map roll
Chargeability contour plan - triangular filtered values (n=1-5)	map roll
Resistivity contour plan - triangular filtered values (n=1-5)	map roll

## 1. INTRODUCTION

Induced polarization/resistivity surveys (IP surveys) were performed over portions of the Mac Claims, Babine Lake Area, B.C, within the period July 23 to August 3, 1995. The survey was conducted by Scott Geophysics Ltd. on behalf of Spokane Resources Ltd.

The pole dipole array was used on the survey, with an electrode spacing ("a" spacing) of 50 metres and with current pole to receiver dipole separations of 1 to 5 ("n"=1-5), except for Line 7800N which was surveyed at "n"=1-7. The online current electrode was to the west of the receiving electrodes on all survey lines.

This report describes the instrumentation and procedures, and presents the results of the survey.

## 2. SURVEY COVERAGE AND DATA PRESENTATION

A total of some 23.8 line kms of IP survey were completed over the Mac Claims. The chargeability and resistivity results are presented in standard pseudosection format and as contour plans for the triangular filtered values. The legends give details of the form of presentation and contour intervals for each respective plot.

The floppy disk at the rear of this report contains edited ASCII format files of all survey data, with a detailed header and format statement for each individual file.

## 3. PERSONNEL

Dominique Berube, geophysicist, was the party chief on the survey on behalf of Scott Geophysics. Geoff Goodall, geologist, was the representative on behalf of Spokane Resources Ltd.



#### 4. INSTRUMENTATION

A Scintrex IPR12 receiver and TSQ3 (3.0 kw) transmitter were used on the IP survey. Readings were taken in the time domain using a 2 second current pulse (0.125 Hz).

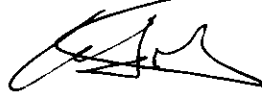
The chargeability plotted on the accompanying pseudosections and plan maps is for the interval 690 to 1050 milliseconds after shutoff.

#### 5. RECOMMENDATIONS

A preliminary examination of the results of the IP survey at the Mac Claims indicates the presence of a large area of moderate to strong chargeability response which merits additional evaluation.

A detailed interpretation of these results, and correlation to geological and geochemical data, is required before any specific recommendations could be made.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'Alan Scott', is written over a horizontal line.

Alan Scott, P. Geos.

Statement of Qualifications

for

Alan Scott, Geophysicist

of

4013 West 14th Avenue  
Vancouver, B.C. V6R 2X3

I, Alan Scott, hereby certify the following statements regarding my qualifications, and my involvement in the program of work described in this report.

1. The work was performed by individuals sufficiently trained and qualified for its performance.
2. I have no material interest in the property under consideration in this report, nor in the company on whose behalf the work was performed.
3. I graduated from the University of British Columbia with a Bachelor of Science degree (Geophysics) in 1970, and with a Master of Business Administration degree in 1982.
4. I am a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
5. I have been practicing my profession as a Geophysicist in the field of Mineral Exploration since 1970.

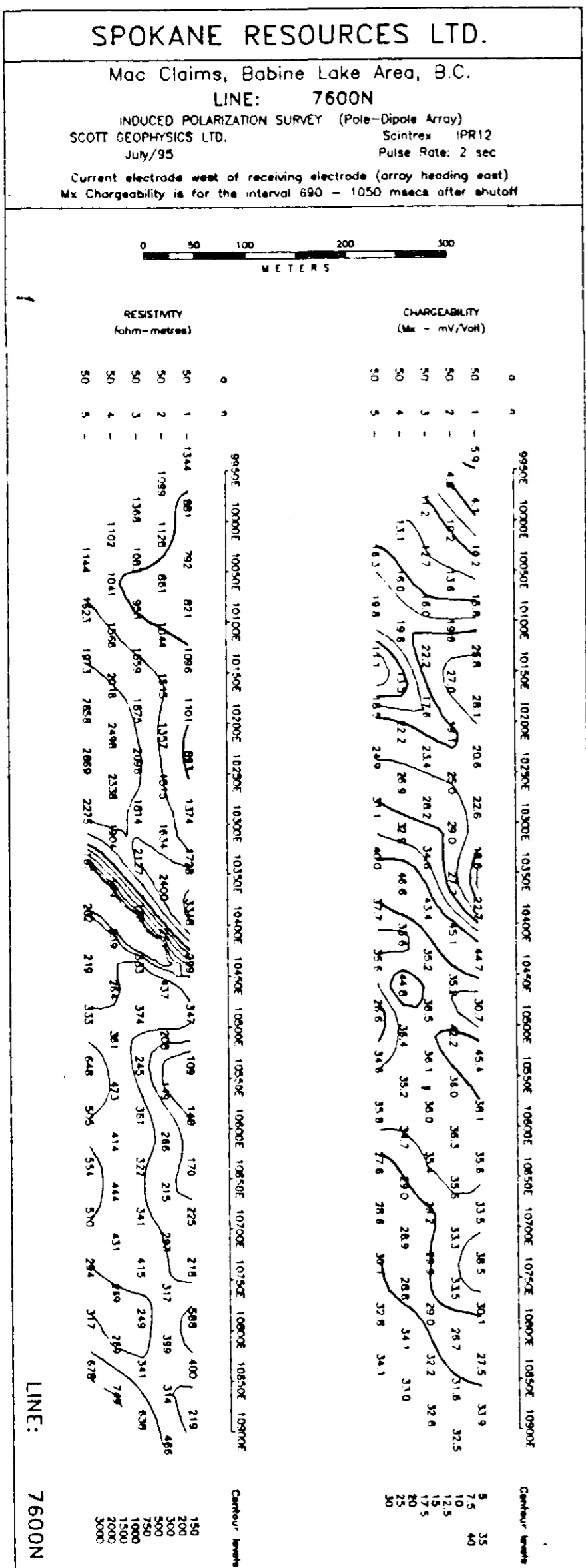
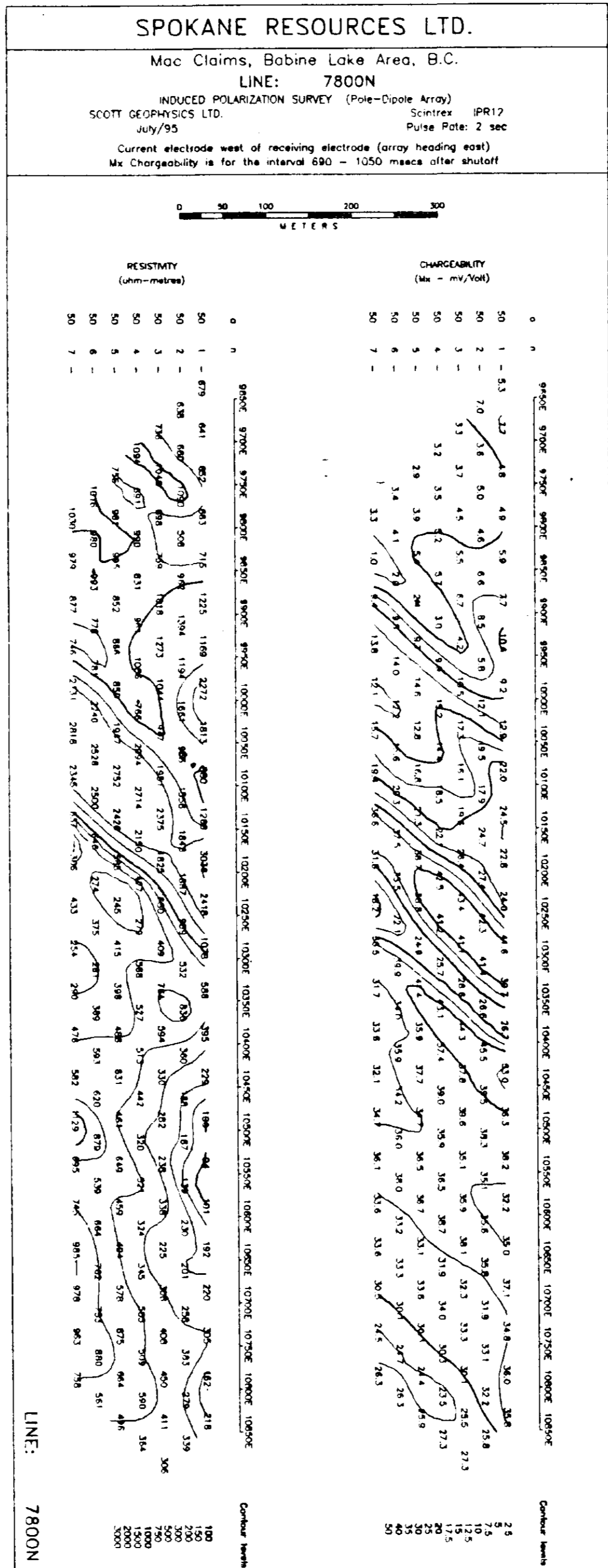
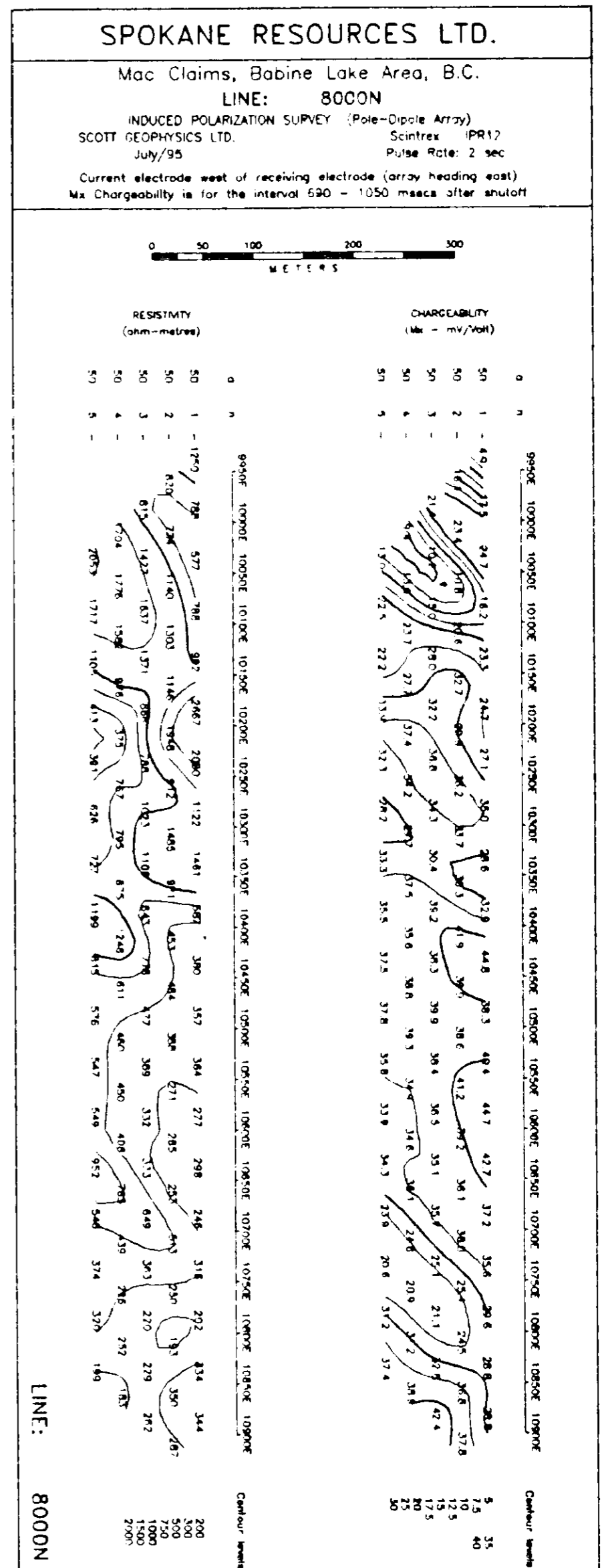
Respectfully submitted,



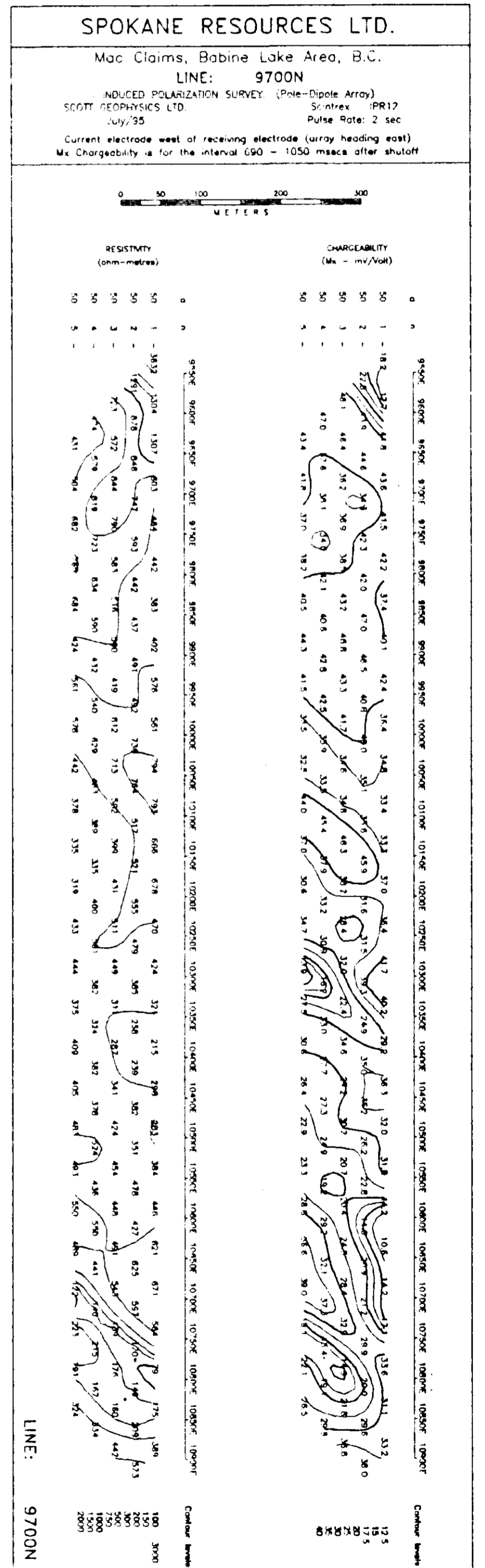
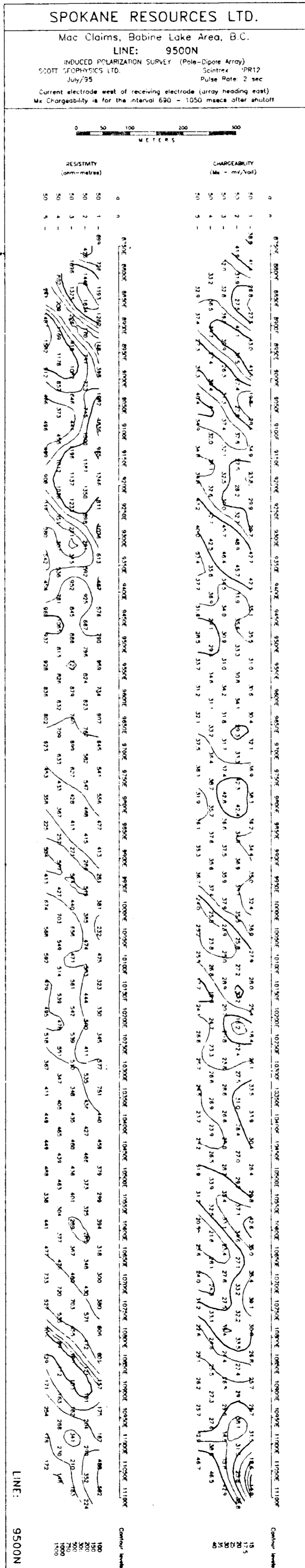
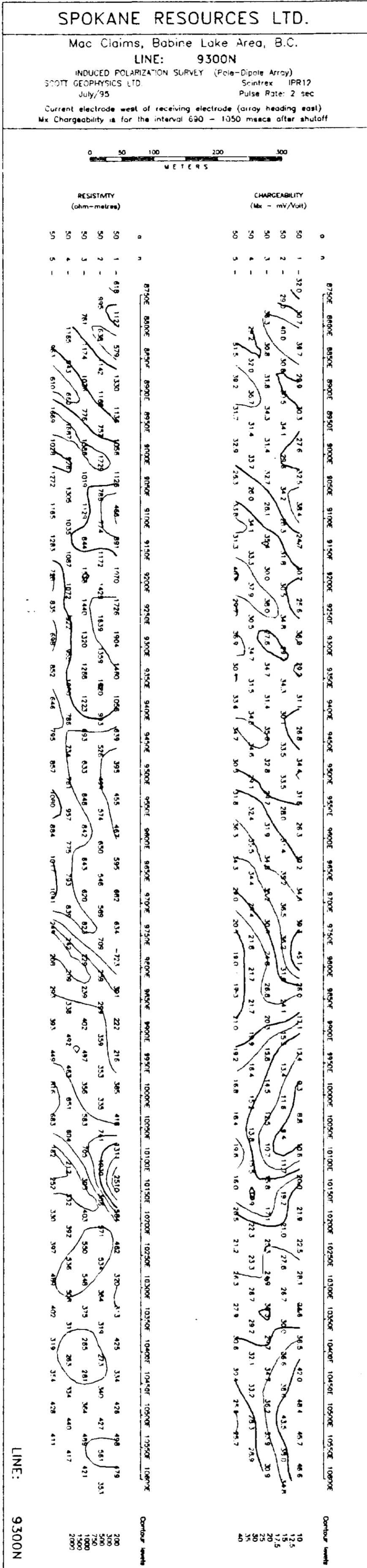
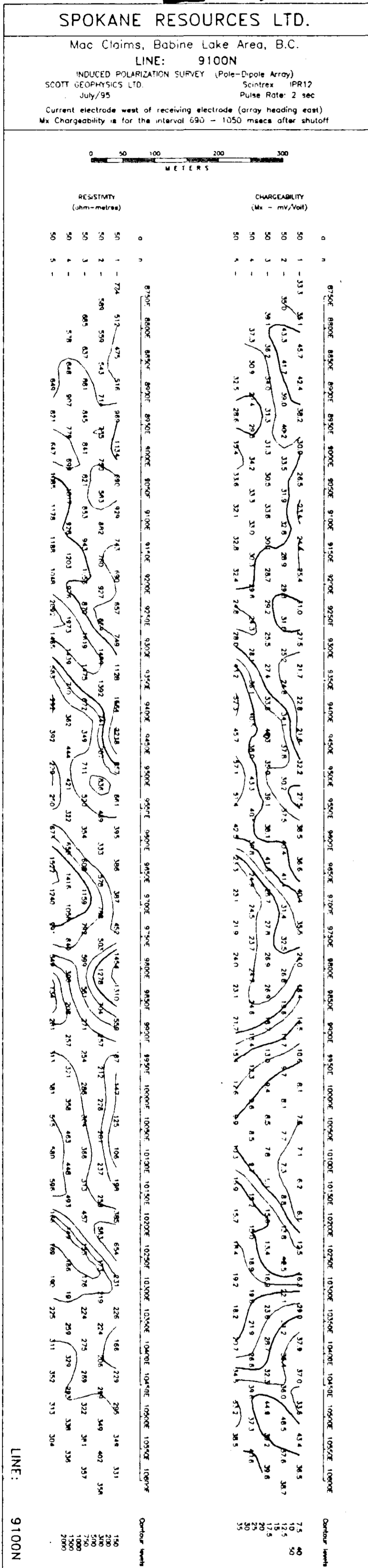
Alan Scott

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

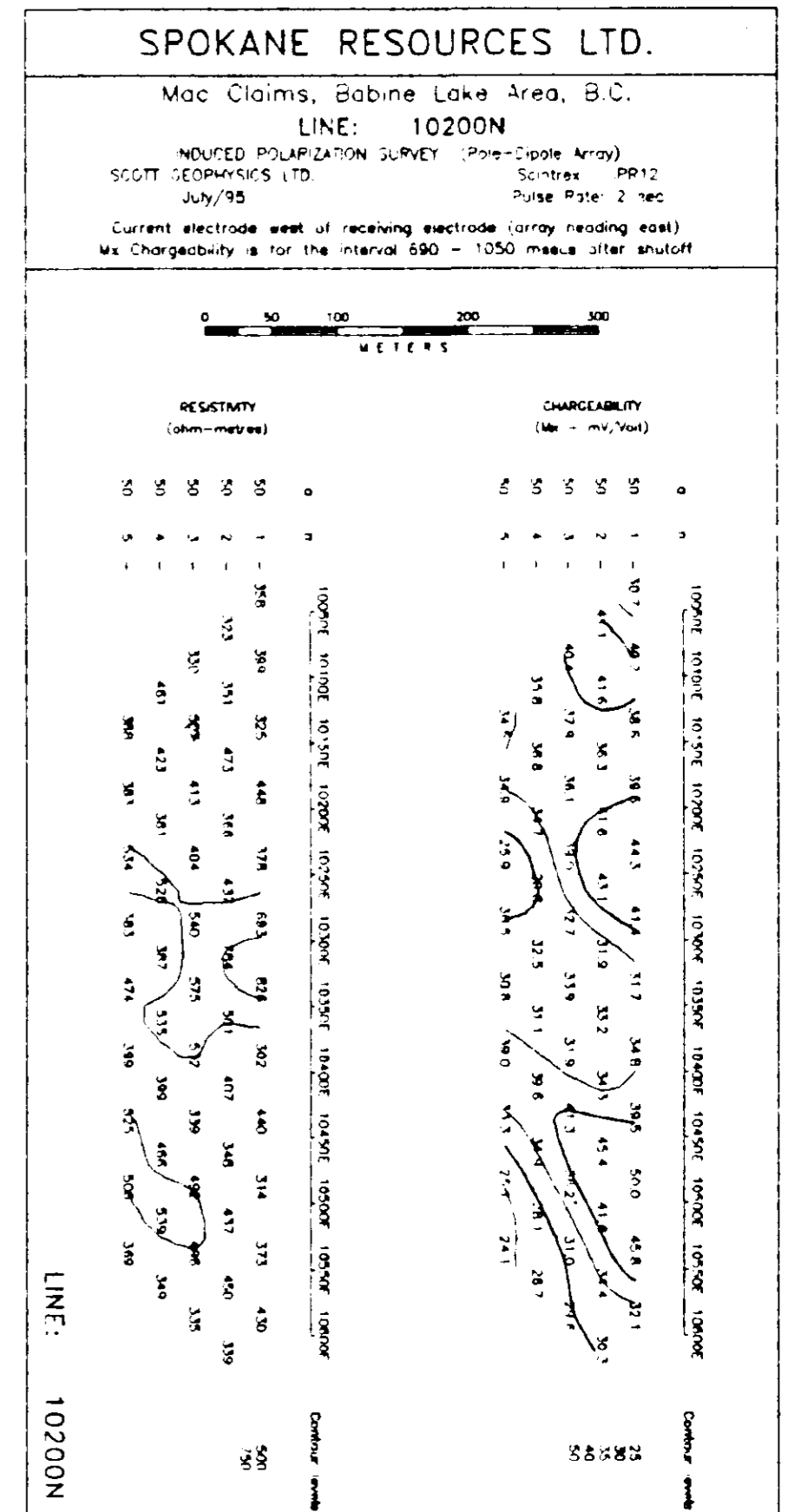
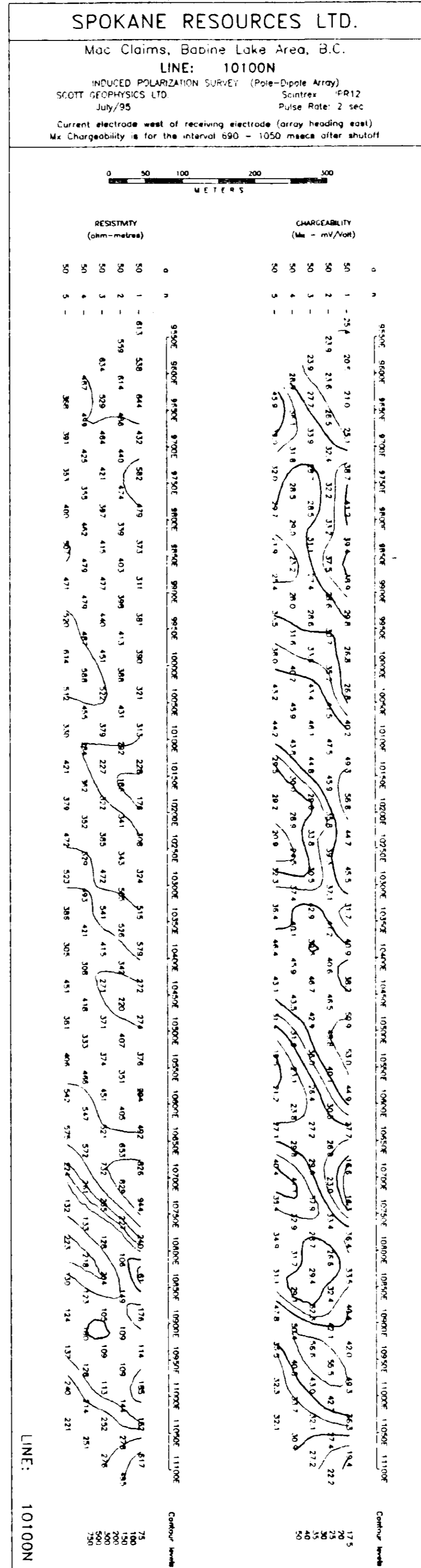
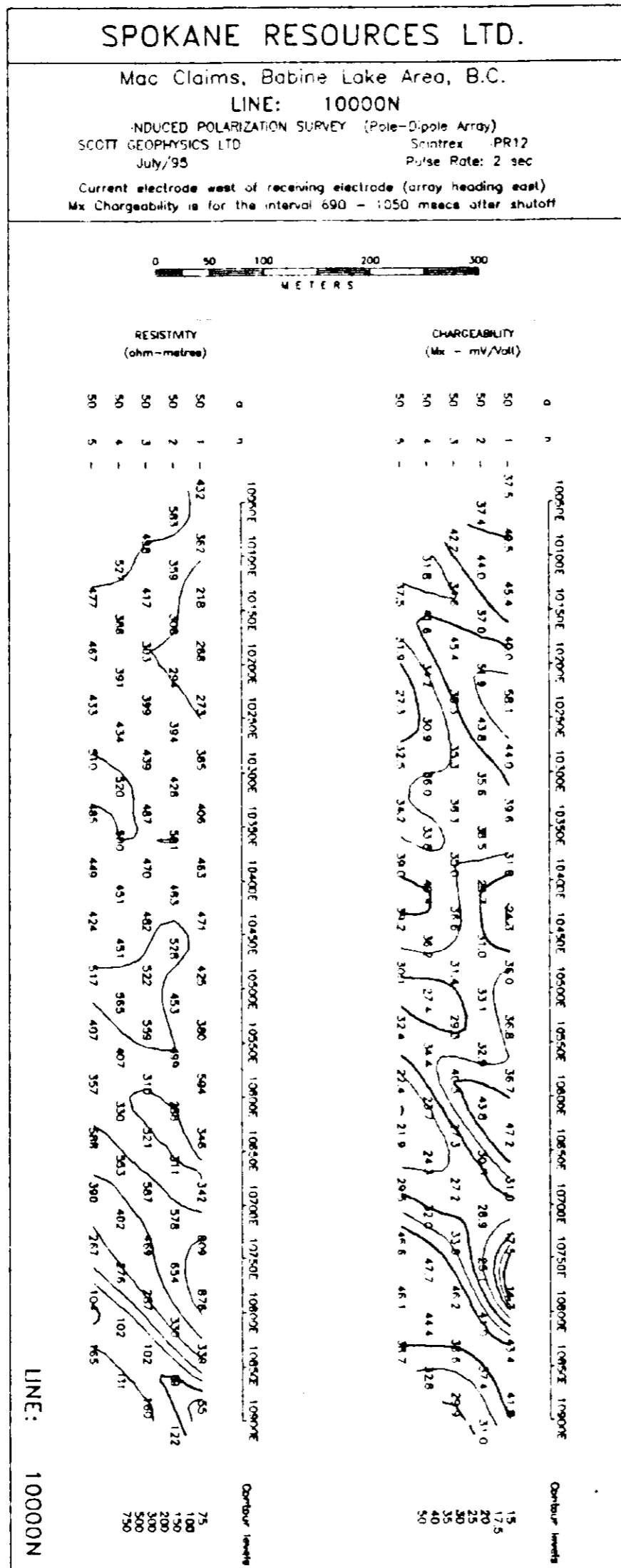
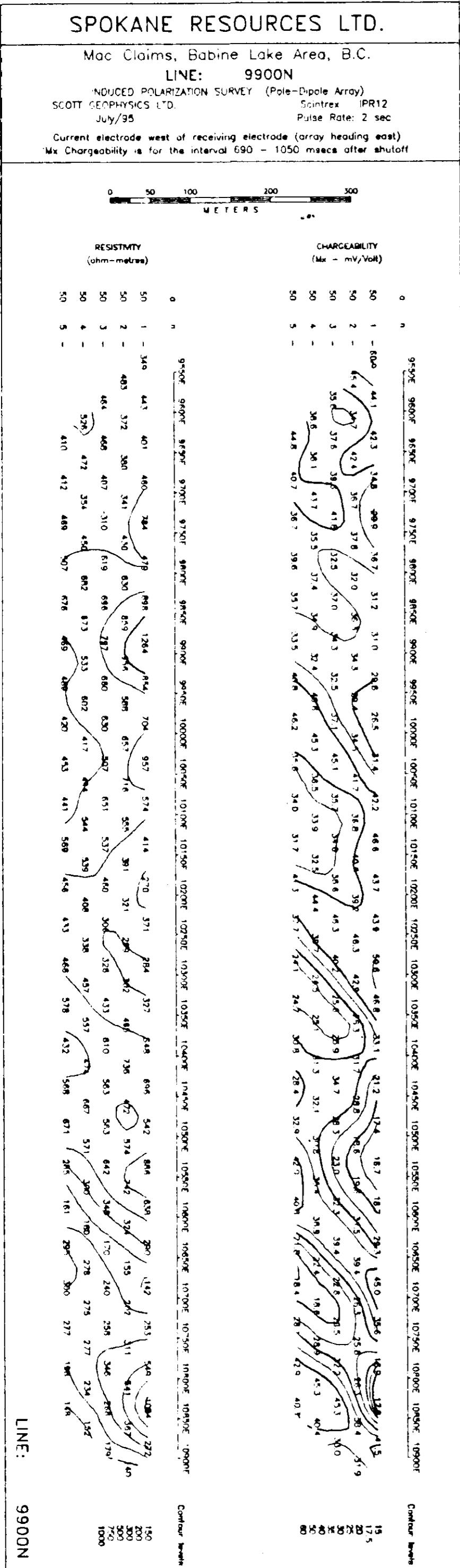
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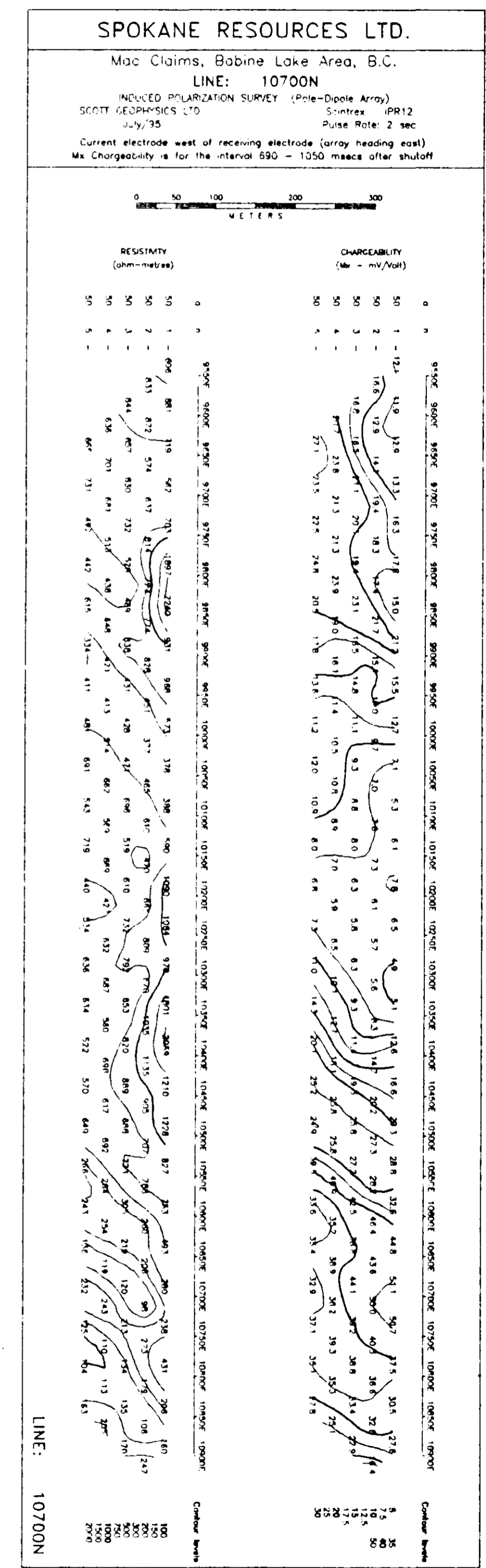
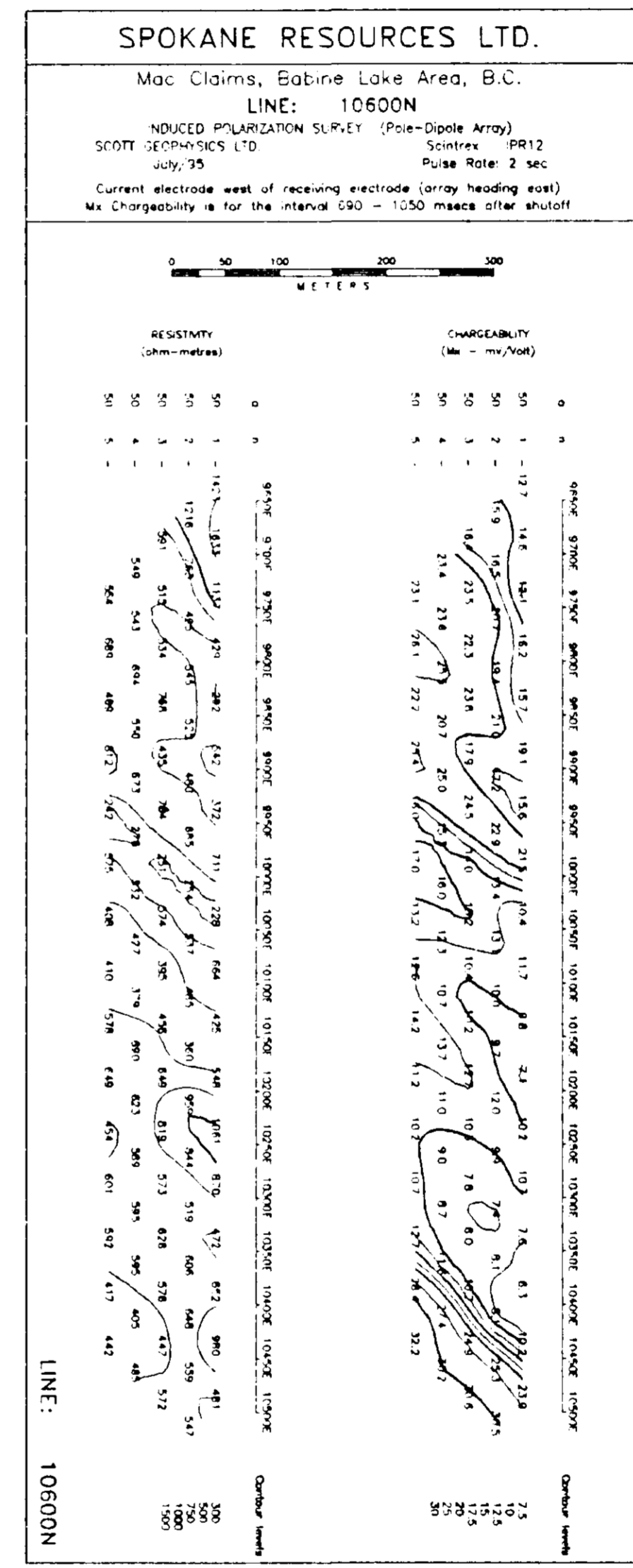
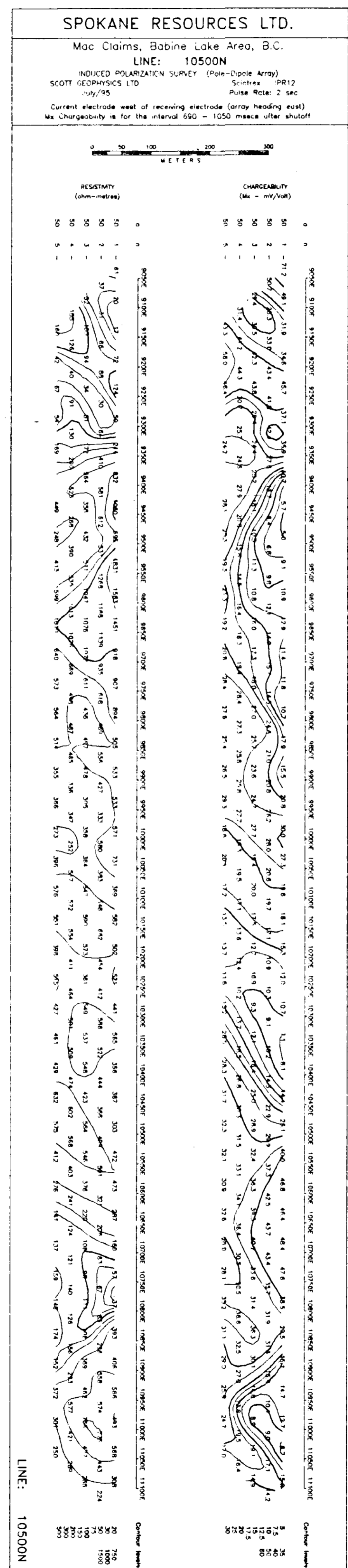
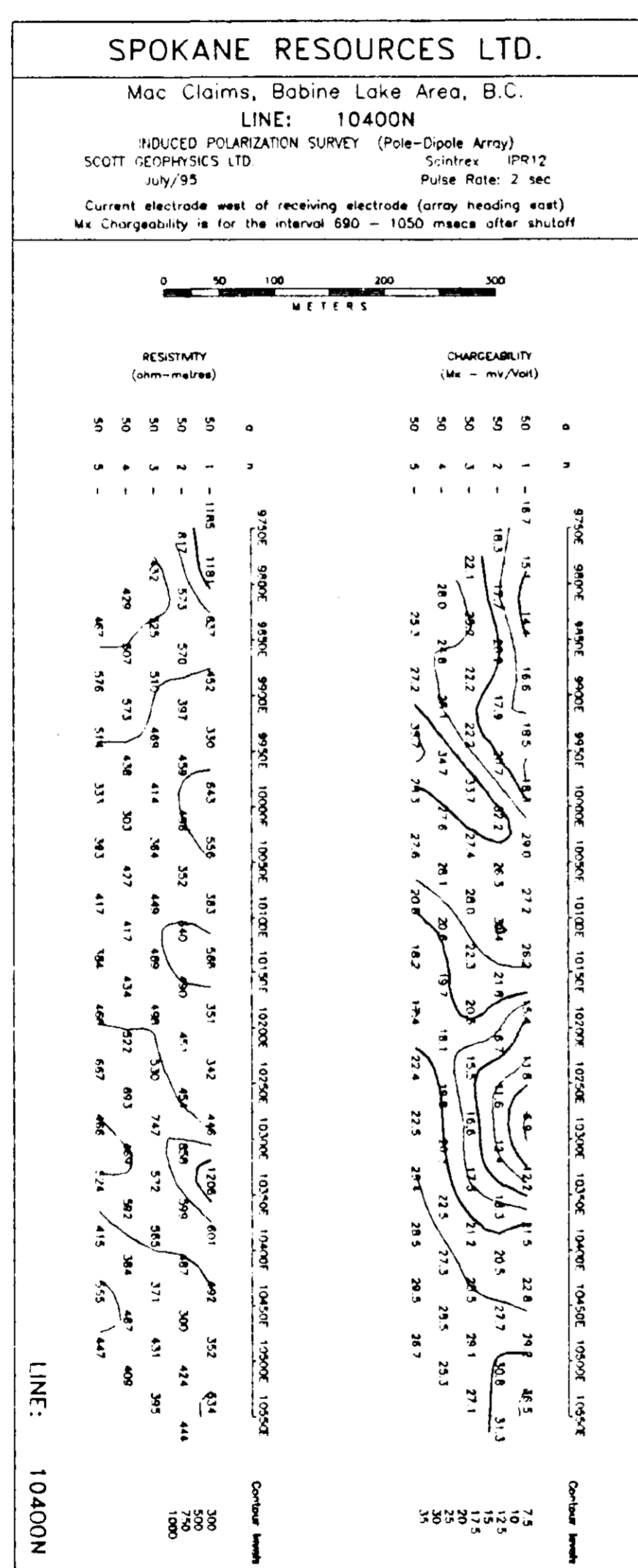
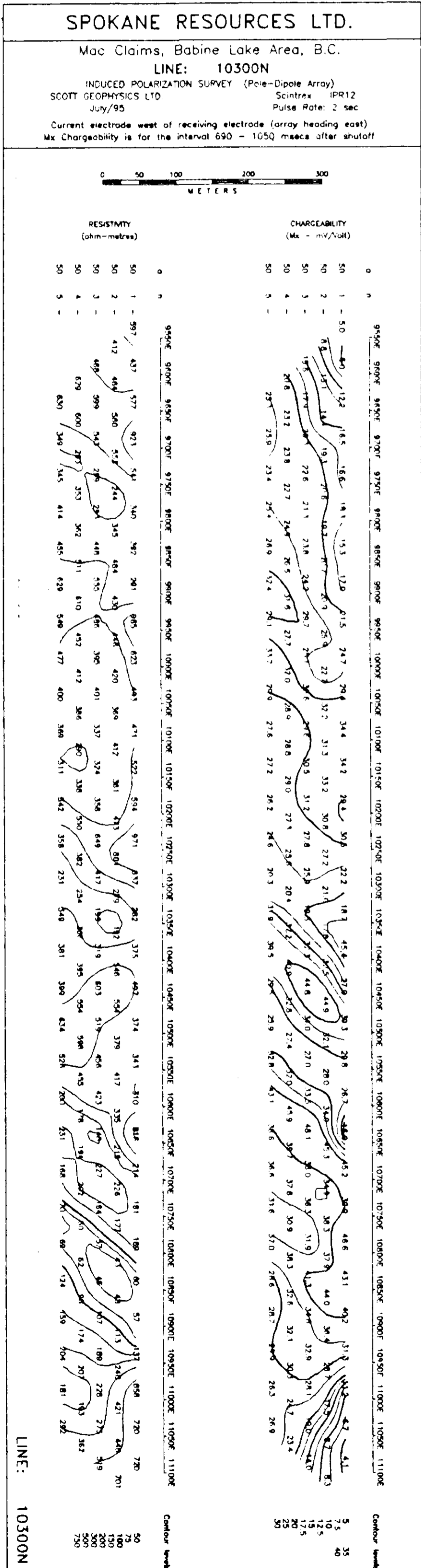
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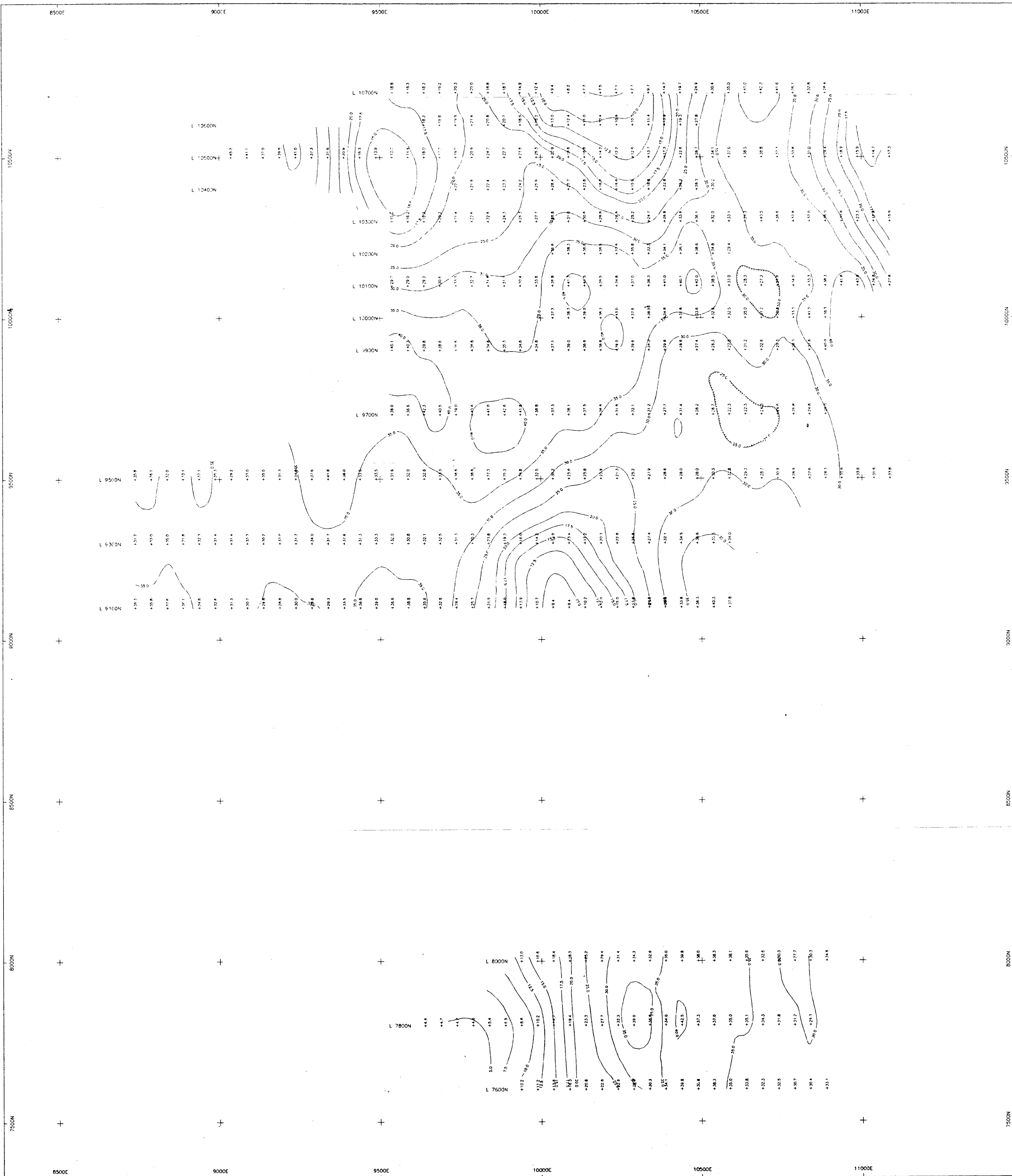


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**SURVEY SPECIFICATIONS**

receiver	Scintrex 1PE12
transmitter	Scintrex 1SG3
pulse time	2 seconds
Max receive window	690-1050 msec
array	pole dipole
a spacing	50 metres
n separations	1,2,3,4,5

the current electrode is located west of the receiving electrodes

Contoured value Filtered Max

Filtered values n = 1 to 5

Contour intervals  
 2.5, 5.0, 7.5, 10.0, 12.5, 15.0  
 17.5, 20.0, 22.5, 25.0, 30.0, 35.0,  
 40.0, 50.0, 60.0 mVolts/Volt

**FILTER DESCRIPTION**

The filtered value gives equal weight to each of the n-separations and is calculated at each n=1 data point.

The filter has the effect of passing a triangle over the data set, such that the value is selected for n=1, two for n=2, three for n=3, etc.

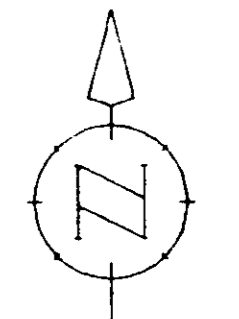
The average of the averages for each of the n-separations is the filtered value for the given n=1 location.

Where there is only a partial set of data, such as at the ends of lines, the average for each n-separation is the average of the existing values.

The filter map gives only general trends, and the pseudosections must be referred to when assessing a given feature.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**24,033**



SPOKANE RESOURCES LTD.

MAC CLAIMS  
 BABINE LAKE AREA, B.C.  
 Chargeability Contour Plan  
 Triangular Filtered Values

DRAWN BY: ars DATE: August/95  
 SCOTT GEOPHYSICS LTD.

