86-1007-15503

AN ASSESSMENT REPORT

ON

A TIME DOMAIN INDUCED POLARIZATION SURVEY

ON THE FORD AND WOOF MINERAL CLAIMS CHASE, BRITISH COLUMBIA KAMLOOPS M.D. NTS BZM/4E Lat. 51°00.9' Long. 119°38.8' BZL/13E FOR

THE ADAMS PLATEAU JOINT VENTURE PARTNERS Owner: Utah Mines Ltd. Operator: Adams Exploration Ltd. BY

> John Lloyd M. Sc., P. Eng. LLOYD GEOPHYSICS LIMITED VANCOUVER, BRITISH COLUMBIA

> > FEBRUARY, 1987

GEOLOGICAL BRANCH ASSESSMENT REPORT

FILMED LLOYD GEOPHYSICS LIMITED

SUMMARY

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During the period July 9 to July 19, 1986, Lloyd Geophysics Limited carried out a time domain Induced Polarization (IP) survey on parts of the FORD and WOOF mineral claims.

The survey outlined a number of strong anomalies. Those anomalies that correlate positively with favourable geology and geochemistry are definitely worthy of further exploration by either trenching or drilling.



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INTRODUCTION

During the period July 9 to July 19, 1986, Lloyd Geophysics Limited carried out a time domain Induced Polarization (IP) survey on parts of the FORD and WOOF mineral claims. These claims are under option from Utah Mines Limited by Clifton Resources Limited on behalf of the Adams Plateau Joint Venture partners, namely Adams Exploration Ltd., Clifton Resources Limited and Izone International Ltd.

The survey was carried out by Mr. David Hall B. Sc., geophysicist, two geophysical instrument operators and two field assistants.

PROPERTY LOCATION AND ACCESS

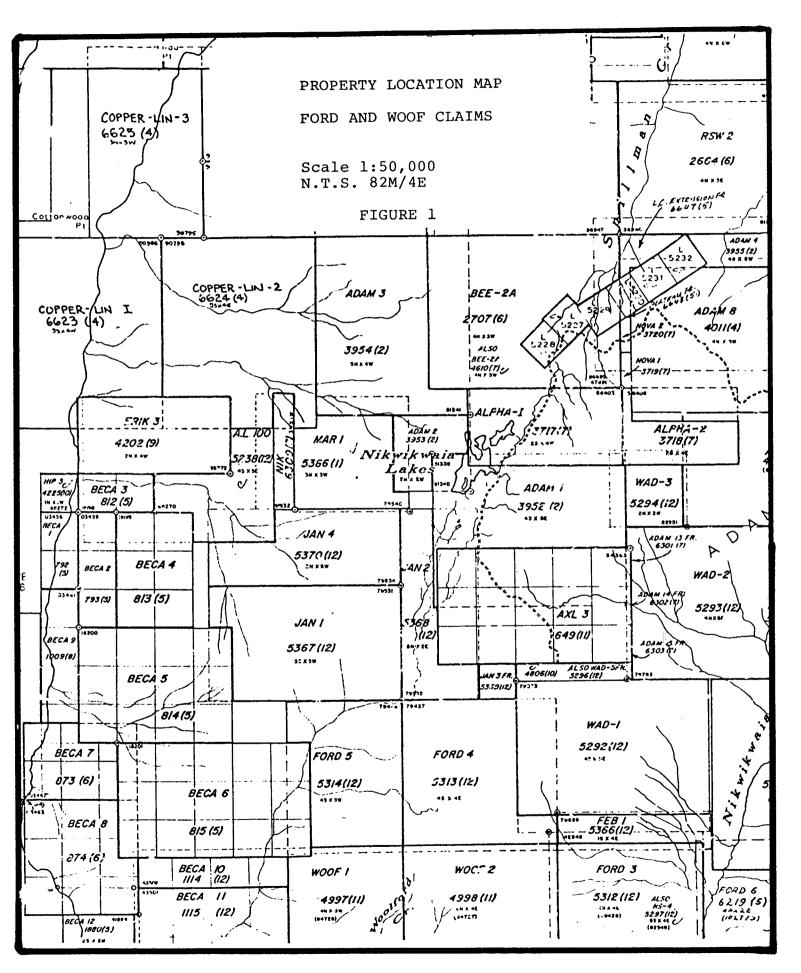
The property, known as the FORD and WOOF mineral claims, is located in the Kamloops Mining Division of British Columbia, and consists of 145 units as follows:

CLAIM	RECORD	EXPIRY
NAME	NUMBER	DATE
Ford 1	5310	Dec. 1990
Ford 2	5311	Dec. 1989
Ford 3	5312	Dec. 1989
Ford 4	5313	Dec. 1990
Ford 5	5314	Dec. 1990
Ford 6	6219	May 1990
Ford 7	6220	May 1989
Woof 1	4997	Nov. 1990
Woof 2	4998	Nov. 1990
Woof 3	4999	Nov. 1988

The claims are located on the Adams Plateau, 70 kilometres northeast of Kamloops at latitude 51°03'N and longitude 119°37'N. See Figure 1.



1.



A 25 kilometre logging road which originates at the south end of Adams Lake provides good access to the property. The claims are at an elevation of about 1,800 metres and contain sub-alpine meadows and grassland as well as stands of merchantable spruce. The area is subject to heavy snowfalls and is generally inaccessible by road from December to June.

GEOLOGY

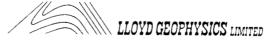
The claims are underlain by intermediate to felsic volcanics of the Eagle Bay Formation. This formation hosts massive sulphide deposits with exceptional precious metal content, as illustrated by the recently discovered Corporation Falconbridge Copper's Silver Zone deposit which contains over 1 million tons grading 0.04 ounces per ton gold; 21.2 ounces per ton silver; 1.16 percent copper; 3.20 percent lead and 2.89 percent zinc.

PURPOSE OF THE IP SURVEY

Sulphide zones which are formed under specific chemical/ geological conditions, from time to time, show metal accumulations in sufficient quantities to support a viable mining operation.

The purpose of the IP survey was to outline for drilling and/or trenching any sulphide zones which are expected to occur on the property under relatively shallow overburden.

3.



INSTRUMENT SPECIFICATIONS

The IP system used to carry out this survey was a time domain measuring system manufactured by Huntec Limited of Toronto, Ontario.

The system consists of a Wagner Leland alternator, driven by a 25 hp Onan engine which supplies in excess of 7.5 kw of 3 phase power to the ground at 400 hertz, a Mark II transmitter and two Mark IV microprocessor controlled receivers.

The Mark II transmitter is a time domain transmitter with a maximum rated power output of 7.5 kw D.C., available at 10 constant voltage settings. Output current for a given voltage tap is determined by the contact resistance at the ground input electrodes. The transmitter cycle time was 8 seconds (or a frequency of 0.125 cycles per second) and the duty cycle [the ratio: (time on)/(time on + time off)] was 0.5. This means the cycling sequence of the transmitter was 2 seconds current "on" and 2 seconds current "off" with consecutive pulses reversed in polarity.

The Mark IV receiver takes full advantage of the microprocessors capabilities, featuring automatic calibration, gain setting, SP cancellation, fault diagnosis and filter tuning. When the instrument is turned on, it automatically tests its analogue and digital circuitry. If a fault is detected its nature and location are indicated on the digital display by a coded error message. When the instrument is not receiving a signal it continuously calibrates itself. During measurement, the instrument automatically adjusts its own gain and corrects for self-potential without operator intervention. In high noise areas, a 60 hertz rejection filter may be selected through the programming sub-panel. This filter is



4.

automatically tuned during the initial calibration cycle, ensuring high rejection at the notch without sacrificing stability. The software automatically corrects for the effect of the rejection filter on the overall frequency response.

Operation of the instrument is controlled by 3 front panel switches and a keypad for requesting data on the digital display. The instrument can be used for the detailed measurement of all significant IP and resistivity phenomena. The instrument can be adjusted to perform single measurements of chargeability (or percent frequency effect) at reduced bandwidth for high speed reconnaissance surveying. Detailed measurements of selected anomalies at expanded bandwidth can be performed with the instrument by selecting switches on the programming sub-panel. Similarly, the delay time, the integration time and a number of other parameters, may also be adjusted in a few seconds, by means of sub-panel switches, to accommodate a wide range of geological conditions. Measurements are calculated automatically every 4 to 8 seconds from the averaged waveform which is accumulated in memory at 2048 sample points.

An analogue meter on the front panel is used for source resistance measurement, ensuring continuity through the input circuit. During operation, it monitors the output of the signal amplifier giving reassurance that the set is responding correctly, and also provides a qualitative indication of the signal to noise ratio. The input stage is a floating differential configuration; either terminal may be connected to the chassis ground when single ended operation is required.

The instrument has 10 equal chargeability channels, M_0 , M_1 , M_2 , M_3 , M_4 , M_5 , M_6 , M_7 , M_8 , and M_9 (see Figure 2). These may be recorded individually, selectively or summed up automatically



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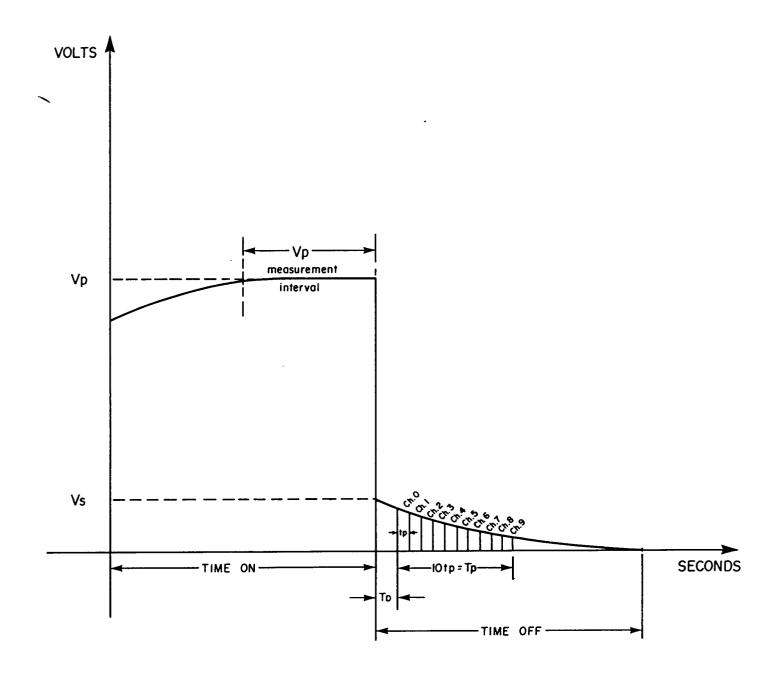




Figure 2

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and displayed on the digital readout by means of the keypad, as the final chargeability reading.

The apparent resistivity (Q_a) in ohm-metres is obtained by dividing the primary voltage (V_p) , which can be displayed on the receiver readout, by the measured current (I_g) , recorded at the transmitter, and multiplying by a factor (K) which is dependent on the geometry of the array used.

For this survey, the delay time (T_d) was fixed at 120 milliseconds and the channel width or integrating interval (t_p) , at 90 milliseconds. This gives a total integrating time (T_p) of 10 t_p which equals 900 milliseconds. Experience has shown that the parameters chosen are compatible with the geological conditions expected to be encountered on the property.

SURVEY SPECIFICATIONS

The pole-dipole array was used for this survey. With this array the one current electrode C_1 and the two potential electrodes P_1 and P_2 are moved in unison along the survey lines. The second current electrode C_2 is grounded an "infinite" distance away, which is at least ten times the distance between C_1 and P_1 for the largest electrode separation.

The dipole length (x) is the distance between P_1 and P_2 . The electrode separation (nx) is the distance between C_1 and P_1 and is equal to or some multiple of the distance between P_1 and P_2 . For a sulphide body of some particular size, shape, depth and true chargeability, the dipole length (x) determines mainly the sensitivity of the array, whereas the electrode separation (nx) determines mainly the depth of penetration of the array.



The 2 main portions of the grid were surveyed on lines either 100 or 200 metres apart. Measurements were taken with x = 25m for n = 1, 2, 3 and 4.

Three additional lines E, F and G were surveyed along roads and line H along constant contour elevation. Measurements on E, F and G Lines were taken with x = 25mfor n = 1 and 2 only and on Line H with x = 25m for n = 1, 2, 3 and 4.

DATA PROCESSING

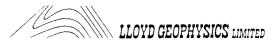
The field data collected is transferred to diskette for processing on a Compaq 286 Portable computer which has 640 K Ram, 1.2 MB Disk Drive, 1-360K Disk Drive, 20 MB Hard Disk and a 802087 math co-processor.

The software used to contour the data is based on the mathematical solution known as Krigging. Finally the sections of chargeability and resistivity are plotted out using an FX-185 Epson Printer. These sections are then transferred to either vellum or mylar, from which standard blackline prints can be reproduced.

DATA PRESENTATION

The data obtained from the survey described in this report are presented on 17 pseudo-section plots as follows:

Line No.	Dwg. No.
2+00N	L86259-1
1+00N	L86259-2
0+00	L86259-3
2+00S	L86259-4
4+00S	L86259-5
6+00S	L86259-6



18+00S	L86259-7
19+00S	L86259-8
20+00S	L86259-9
21+00S	L86259-10
26+00S	L86259-11
27+00S	L86259-12
28+00S	L86259-13
E line	L86259-14
F line	L86259-15
G line	L86259-16
H line	L86259-17

The location of these grid lines are shown on Dwg. No. L86259-18 folded into the map pocket at the end of this report.

DISCUSSION OF RESULTS

An IP response depends largely on the following factors:

- 1. The number of pore paths that are blocked by sulphide grains.
- The number of sulphide faces that are available for polarization.
- 3. The absolute size and shape of the sulphide grains and the relationship of their size and shape to the size and shape of the available pore paths.
- 4. The volume content of sulphide minerals.
- 5. The electrode array employed.
- 6. The width, depth, thickness and strike length of the mineralized body and its location relative to the array.
- 7. The resistivity contrast between the mineralized body and the unmineralized host rock.

The sulphide content of the underlying rocks or, since rocks containing magnetite, graphite or clay minerals, frequently give rise to an IP response, an equivalent

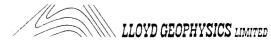


sulphide content is one of the critical factors that we would like to determine from field measurements. However, experience has shown that this is both difficult and unreliable, mainly because of the large number of factors, described above, which contribute to an IP response. These factors very considerably from one geological environment to another. Despite this, some interpreters have developed empirical rules for making rough estimates of the percent sulphides by volume contained within rocks giving anomalous IP responses.

A detailed study has been made of the pseudo-sections which accompany this report. These pseudo-sections are not sections of the electrical properties of the subsurface strata and cannot be treated as such when determining the depth, width and thickness of a zone which produces an anomalous pattern.

From this study the anomalies selected are shown on the individual pseudo-sections and are classified into 4 groups. These are definite, probable and possible anomalies and anomalies which may have a deeper source. This classification is based partly on the relative amplitudes of the chargeability and to a lesser degree on the resistivity response. Of equal importance in this classification is the overall anomaly pattern and the degree to which this pattern may be correlated from line to line, provided of course that the correlation is not so extensive along strike so as to most probably represent only the subcrop of a geological formation.

The anomalies that have been identified are described below:



11.

Line 2+00N

Dwg. No. L86259-1

Two definite anomalies have been identified. These are centred at 0 and 150W respectively. A deeper source centred at 150E is also present. A much weaker anomaly occurs at 375W.

Line 1+00N

Dwg. No. L86259-2

The two definite anomalies detected on the previous line continue here on strike. The anomaly to the east now appears much broader, having incorporated the deeper source which appeared on Line 2+00N. The weak response at the west end of the line is still present.

Line 0+00

Dwg. No. L86259-3

The anomaly centred at 225W is now weaker than on the previous line. The anomaly centred at 50E has developed a very strong response and on this line and an excellent overall pattern. The anomaly at 450W appears stronger here than on Line 1+00N.

Line 2+00S

Dwg. No. L86259-4

The anomaly centred at 225W has decreased in intensity on this line. The anomaly centred at 50E has decreased rapidly in both intensity and overall pattern. The anomaly centred at 450W has decreased in intensity but still exhibits a fair overall anomaly pattern. An additional anomaly appears at 250E.

Line 4+00S

Dwg. No. L86259-5

The four major anomalies identified on Line 2+00S are again present on this line.



12.

Line 6+00S

Dwg. No. L86259-6

A strong anomaly, with a very favourable pattern, was identified on this line at 460W. This anomaly was not closed off, and additional surveying on lines to the south is required to trace its strike extent. Furthermore this line was not surveyed from 325W to 350E and therefore two anomalies which appear on Line 4+00S remain open to the south.

Line 18+00S

Dwg. No. L86259-7

A probable anomaly of reasonable amplitude was identified at 975W.

Line 19+00S

Dwg. No. L86259-8

The definite anomaly identified at 975W on this line correlates along strike with the probable anomaly on Line 18+00S. An additional anomaly was also detected at 585W.

Line 20+00S

Dwg. No. L86259-9

The anomaly at 975W appears wider on this line with an additional deeper source centred at about 925W. The anomaly at 600W is poorly defined.

Line 21+00S

Dwg. No. L86259-10

The anomaly at 975W appears to originate from a very shallow source on this line, with a deeper source at 875/900W. The anomaly at 625W is much stronger than on Line 20+00S.

These two anomalies remain open along strike to the south.



Dwg. No. L86259-12

Dwg. No. L86259-13

No significant anomalies were detected on this line.

Line 27+00S

Two weak anomalies at 50E and 450E were identified on this line.

Line 28+00S

A strong anomaly at 325/350W may correlate along strike with the weaker anomaly at 450E on Line 27+00S.

E Line

Two weak anomalies were detected at 500N and 750N respectively with a stronger anomaly at 200/225S.

F Line

Two strong anomalies were detected at 100N and 950N respectively with a much weaker anomaly at 475N.

Dwg. No. L86259-16 G Line

No significant anomalies were detected on this line.

H Line

Dwg. No. L86259-17

Strong anomalies were detected at 250S and 125/150S.

CONCLUSIONS AND RECOMMENDATIONS

From a study of the data obtained on the survey described in this report it has been concluded that the survey identified a number of strong anomalies, several of which



Line 26+00S

Dwg. No. L86259-15

Dwg. No. L86259-14

are worthy of further investigation.

It is recommended that all of the anomalous zones be plotted and overlain on both the geochemical and geological maps. Where positive correlation exists the anomaly in question should be either trenched or drilled. Finally it should be remembered that the strongest best developed geophysical anomalies may not always correlate with the best geology and geochemistry, frequently the lower order geophysical anomalies which show good correlation with favourable geology and geochemistry are good exploration targets.

> Respectively submitted, LLOYD GEOPHYSICS LIMITED

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John Lloyd M.Sc., P. Eng. Geophysicist

Vancouver, B.C. December, 1986





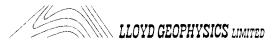
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APPENDIX

A. Personnel Employed on Survey

Name	Occupation	Address	Dates			
J. Lloyd	Geophysicist	Lloyd Geophysics Limited 1110-625 Howe Street Vancouver, B.C. V6C 2T6	Dec. 16- 18, 1986			
D. Hall	Geophysicist	11	July 9- 19, 1986			
T. Jellett	Geophysicist (Data Processing)	n .	Dec. 8- 12, 1986			
D. Amirault	Geophysical Operator	"	July 9- 19, 1986			
D. Klit	Geophysical Helper	H	July 9- 19, 1986			
S. Lavery	Geophysical Helper	"	July 9- 19, 1986			
P. Cruickshank	Geophysical Operator	"	July 9- 19, 1986			
J. Zondag	Typist	11	Dec. 19, 1986			



(ii)

APPENDIX

B. Cost of Survey

Lloyd Geophysics Limited undertook the data acquisition of this survey on a per diem charge basis. Data processing by computer, reproduction of maps, interpretation and report writing were extra.

B.E. Spencer Engineering Ltd. provided room and board for the IP crew at Chase, British Columbia.

The breakdown of these costs are shown below:

Lloyd Geophysics Limited

Field Data Acquisition	\$ 18,171.13
Data Processing: 26 hrs @ \$40/hr	1,040.00
Interpretation & Report Writing: J. Lloyd 2.5 days @ \$450/day	1,125.00
Reproduction of Maps & Sections	258.32

B.E. Spencer Engineering Ltd.

Room Charges - Overlander Motel 3 units for 11 days @ \$31/unit/day	1,023.00
Board Charges - Chase Cafe 5 men for 11 days @ \$30/man/day	1,650.00
	\$ 23,267.45

This survey was carried out in conjunction with work on the adjoining mineral claims (JAN Group). A total of 88% of the above charges are attributable to the work on the FORD and WOOF mineral claims.

1/ \$ 20,475.36



(iii)

APPENDIX

C. Certification

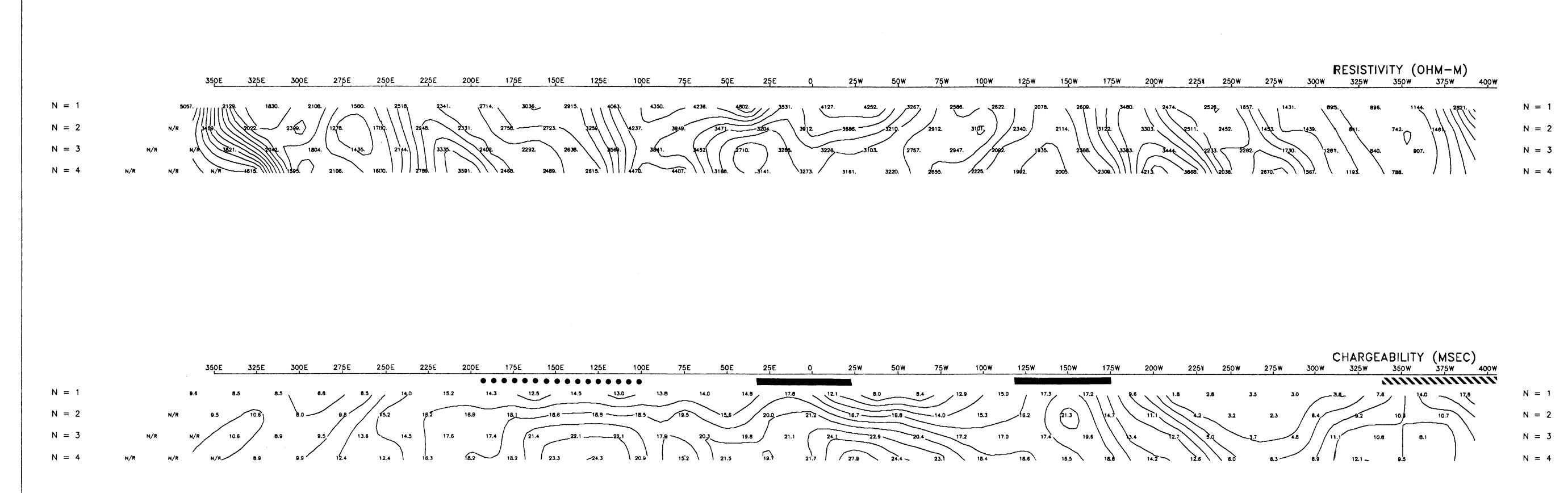
I, John Lloyd, of 1110-625 Howe Street, in the City of Vancouver, in the Province of British Columbia, do hereby certify that:

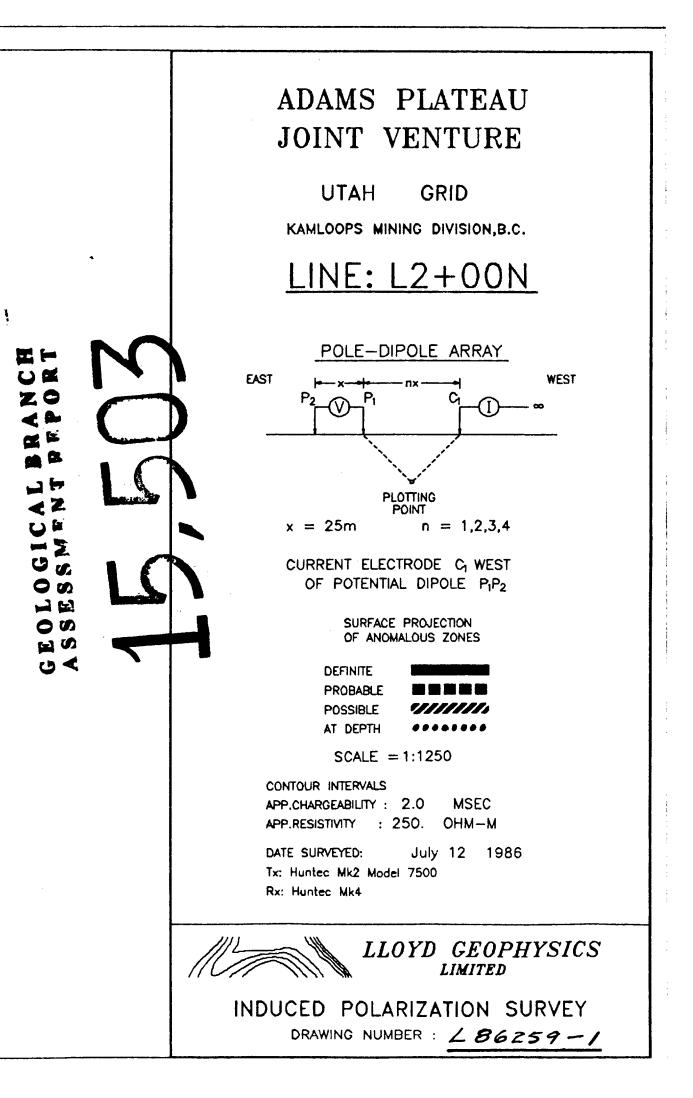
- I graduated from the University of Liverpool, England in 1960 with a B. Sc. in Physics and Geology, Geophysics Option.
- I obtained the diploma of the Imperial College of Science and Technology (D.I.C.), in Applied Geophysics from the Royal School of Mines, London University in 1961.
- 3. I obtained the degree of M. Sc. in Geophysics from the Royal School of Mines, London University in 1962.
- 4. I am a member in good standing of the Association of Professional Engineers in the Province of British Columbia, the Society of Exploration Geophysicists of America, the European Association of Exploration Geophysicists and the Canadian Institute of Mining and Metallurgy.
- 5. I have been practising my profession for over twenty years.

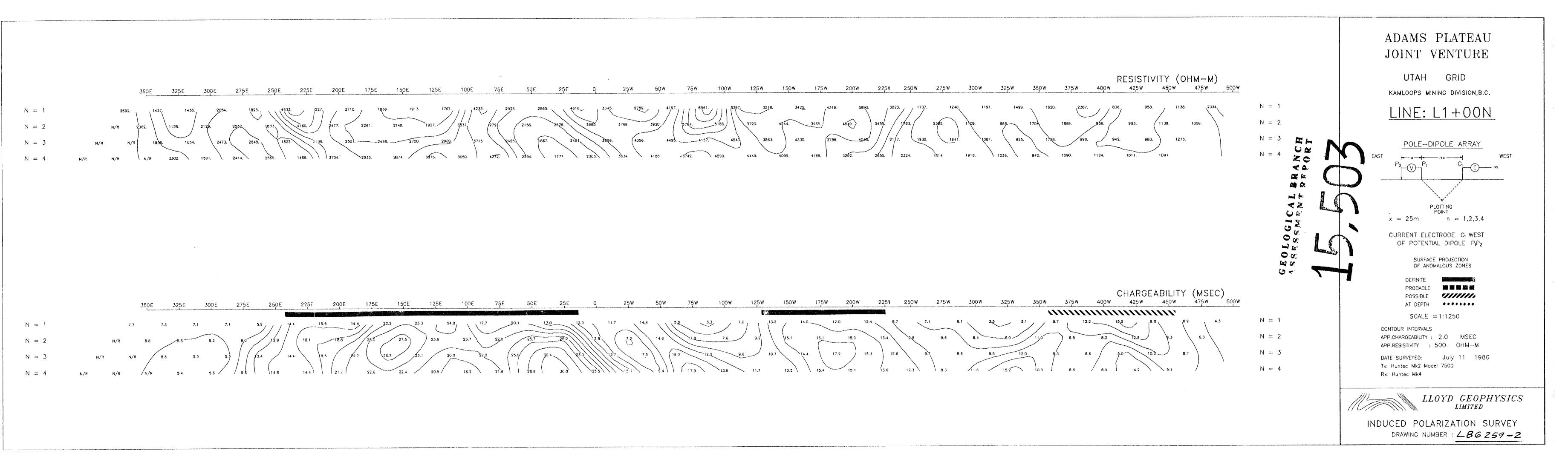
John hloyd

Vancouver, B.C. December, 1986



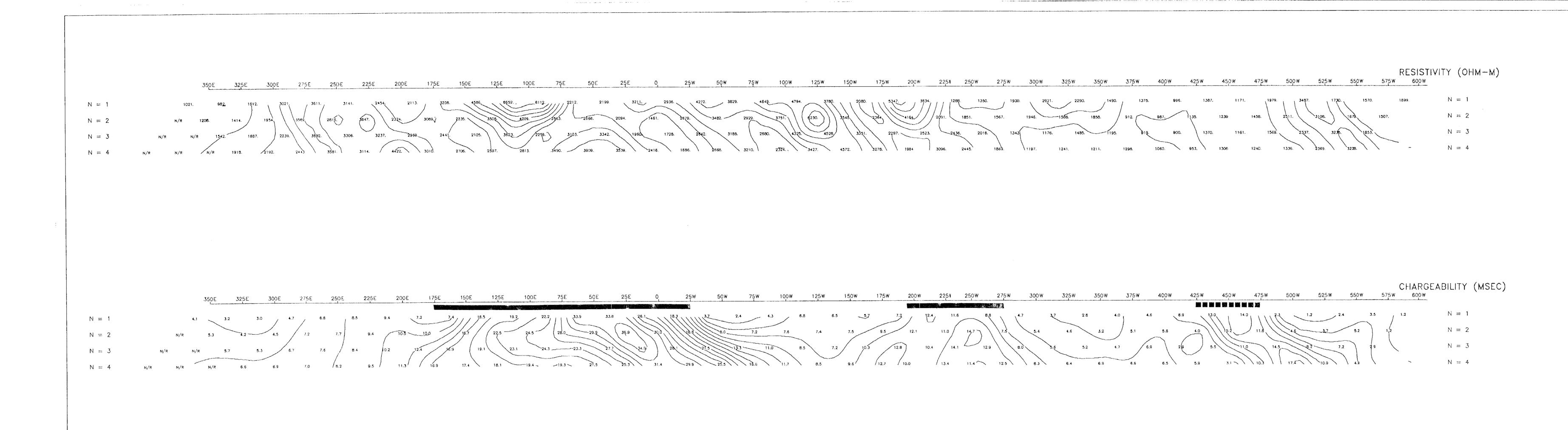




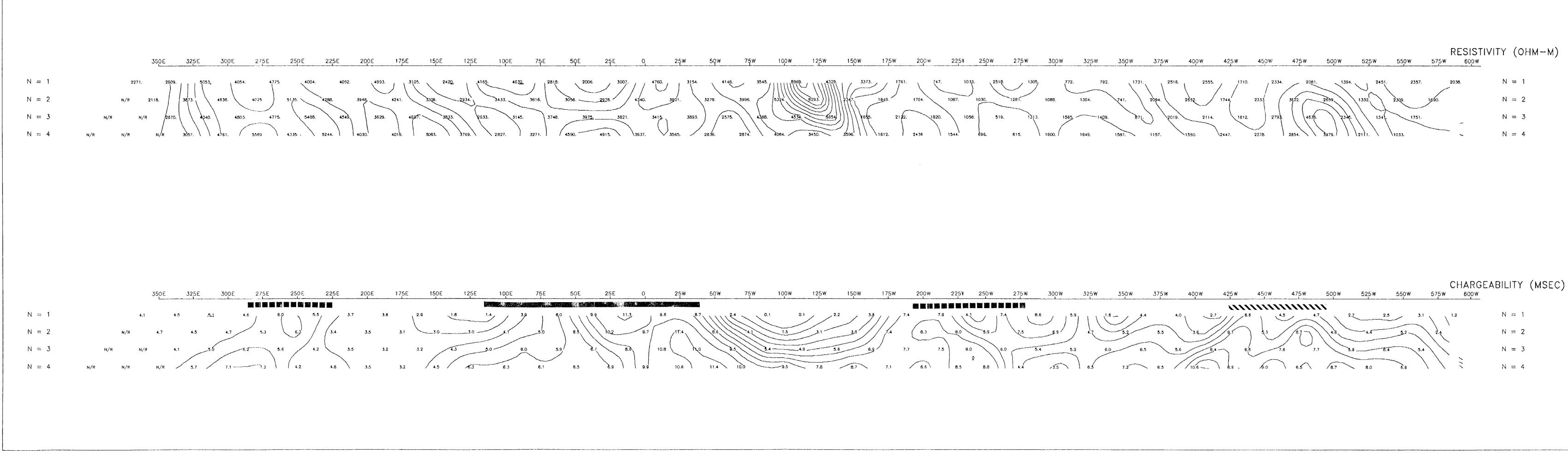


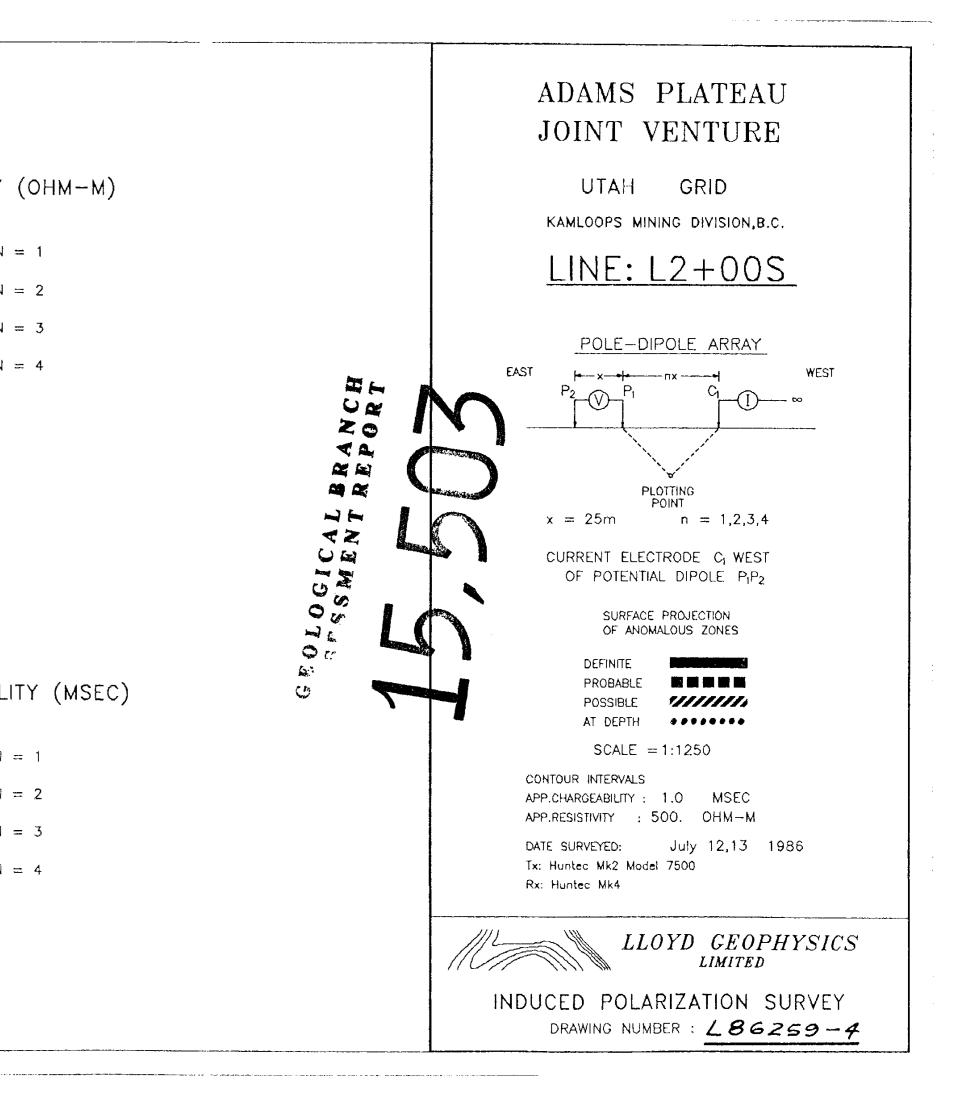
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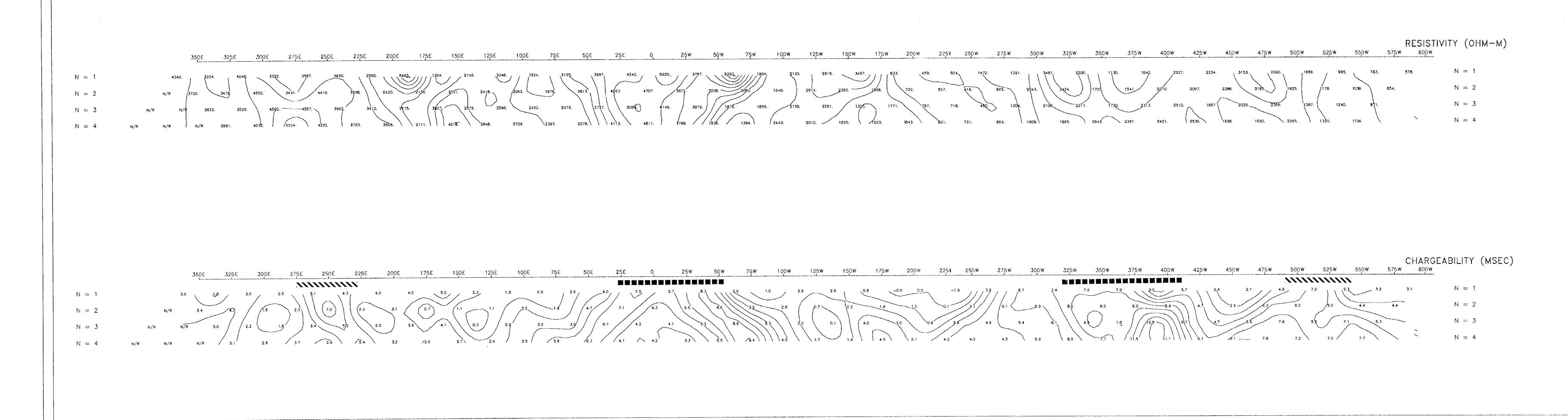
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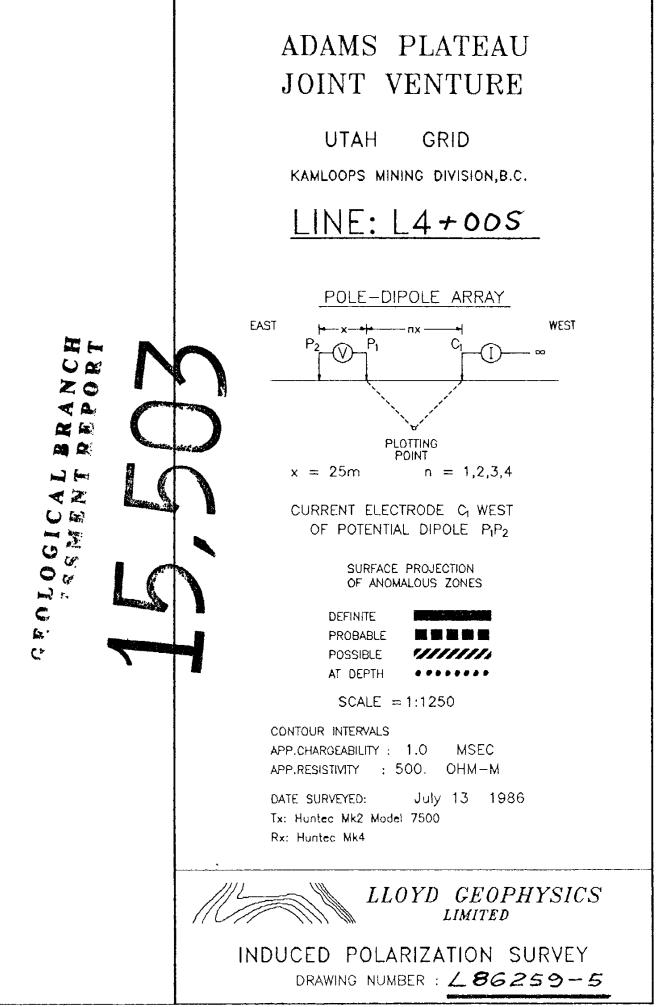


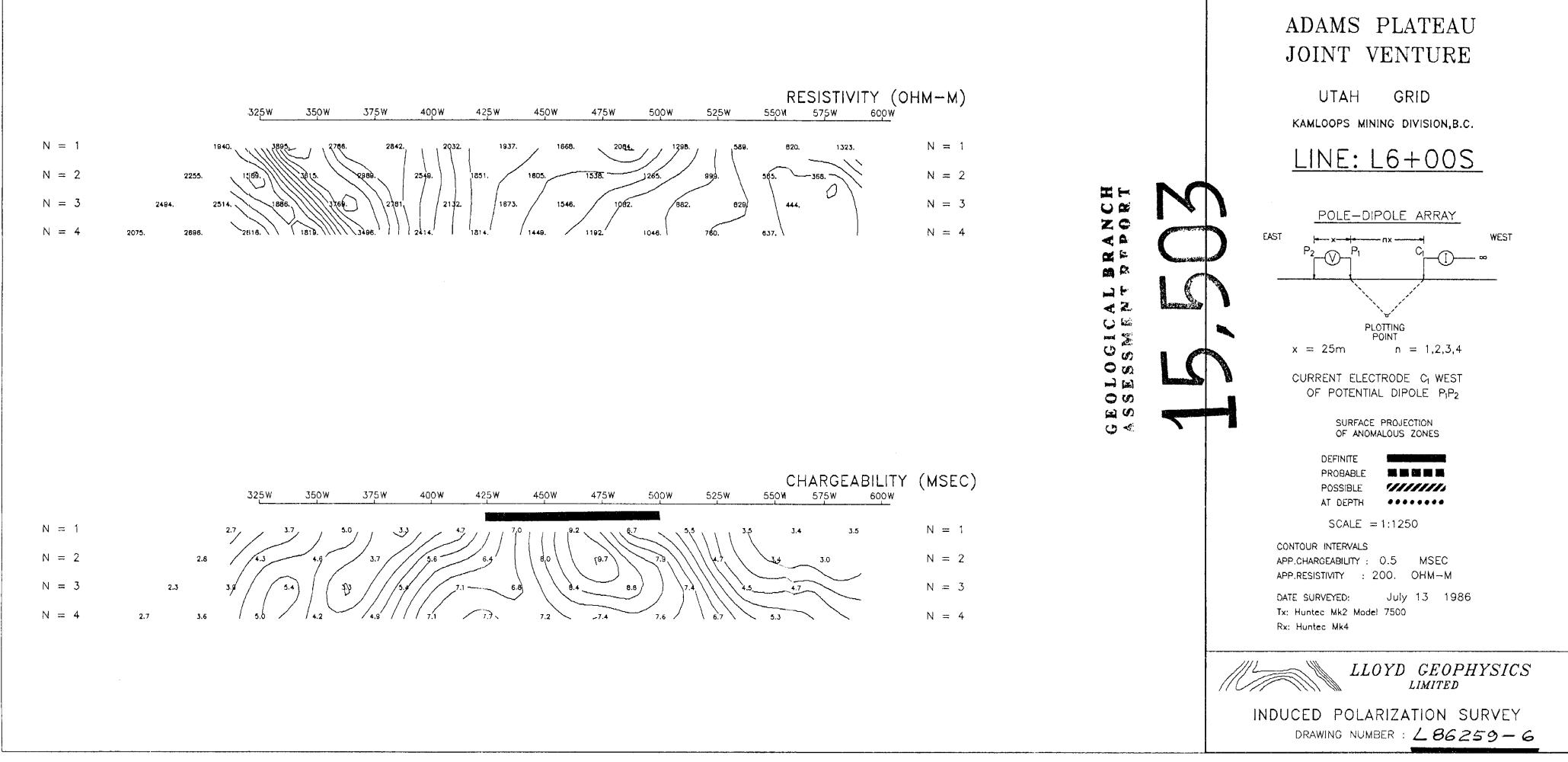
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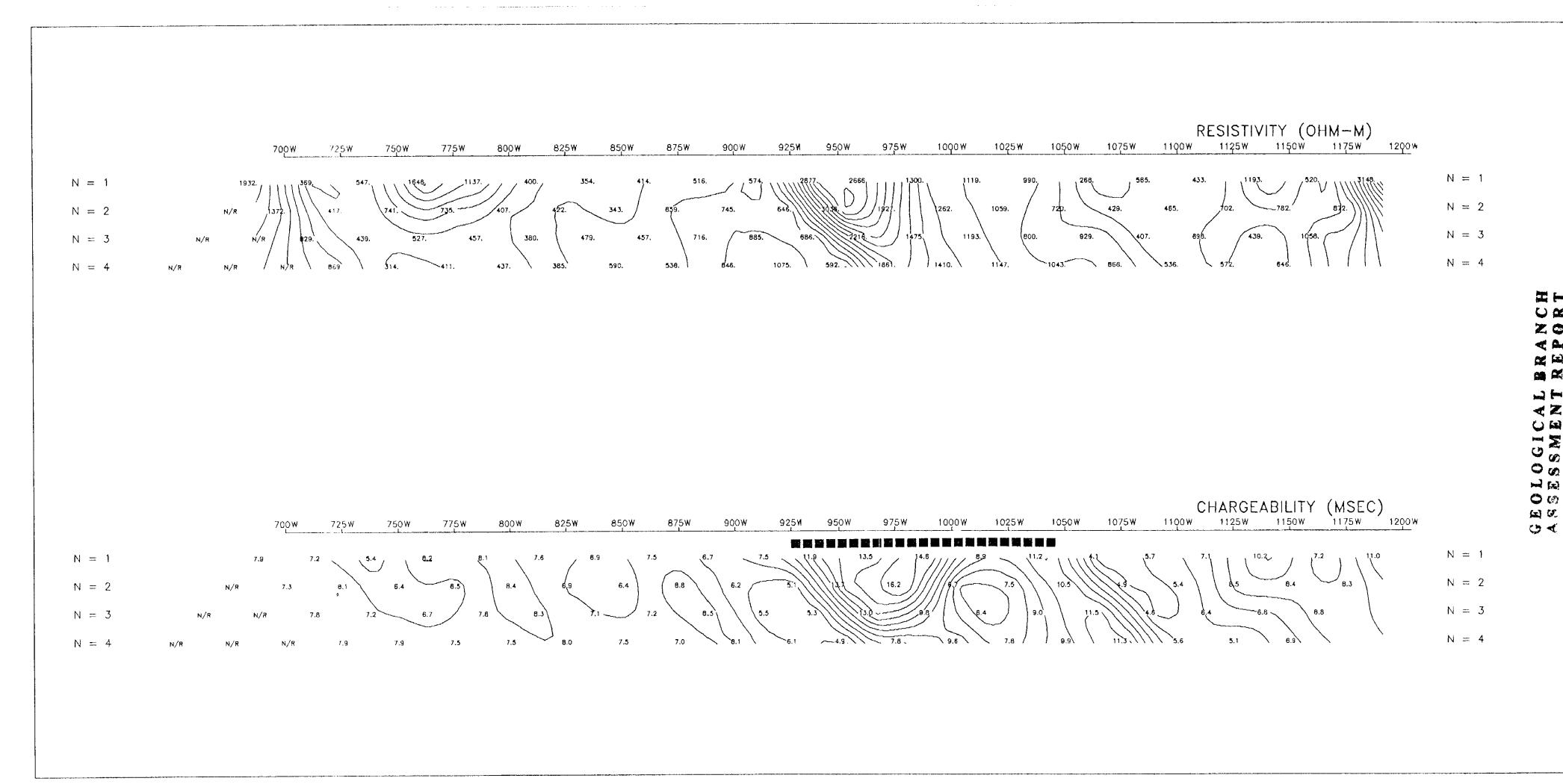


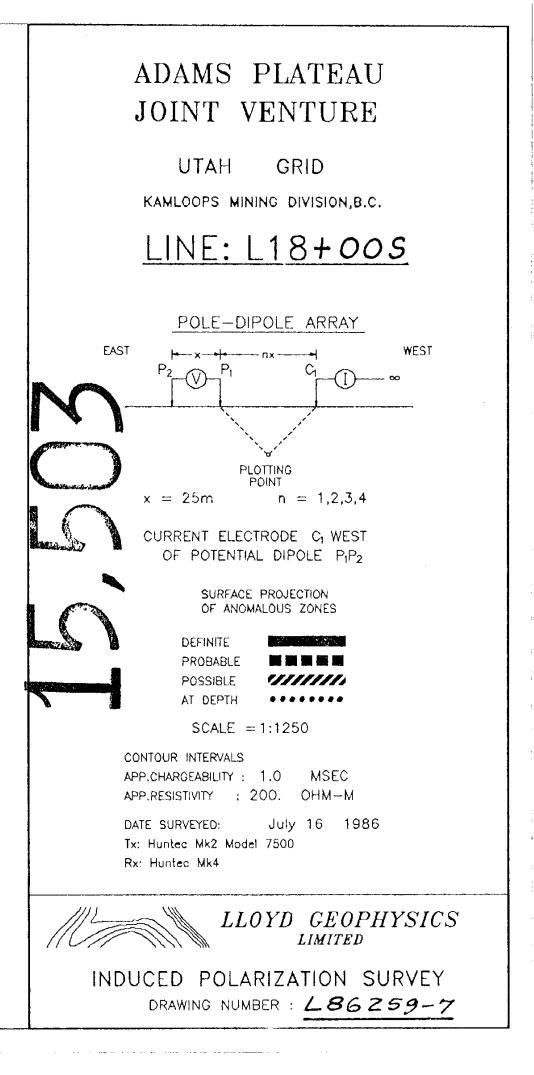


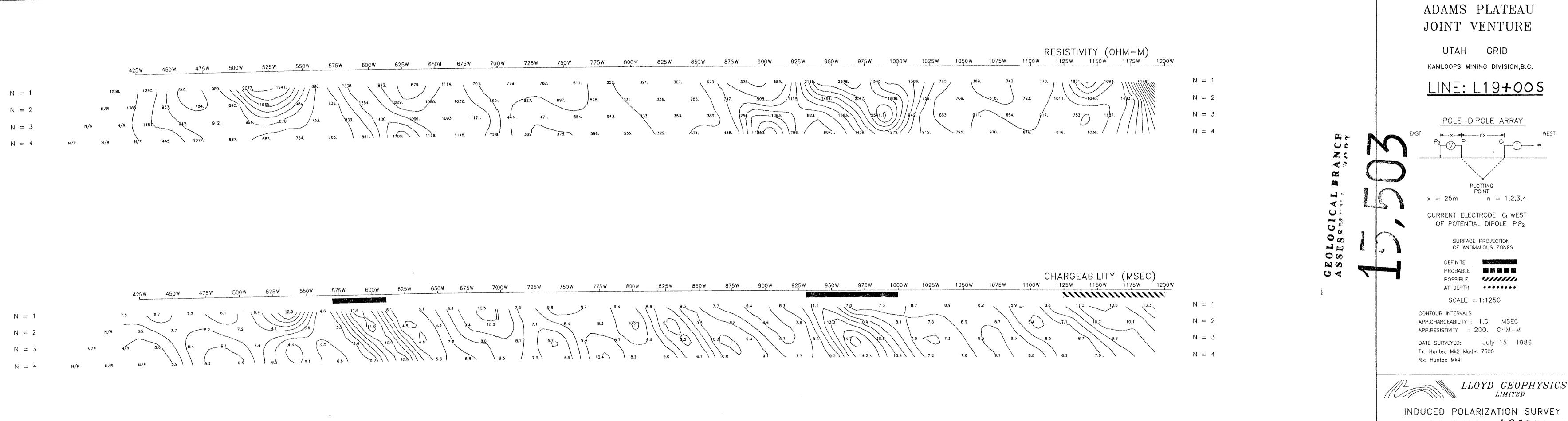




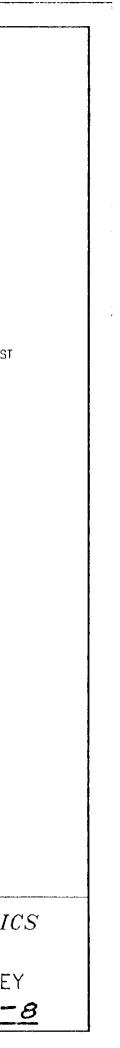


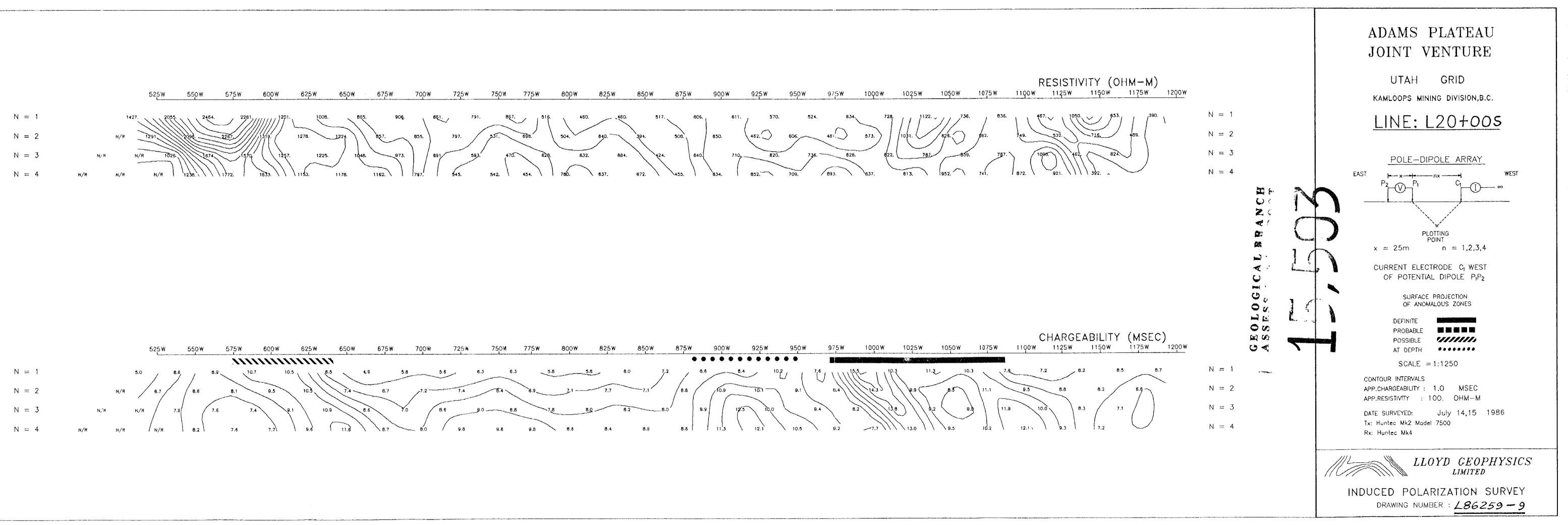


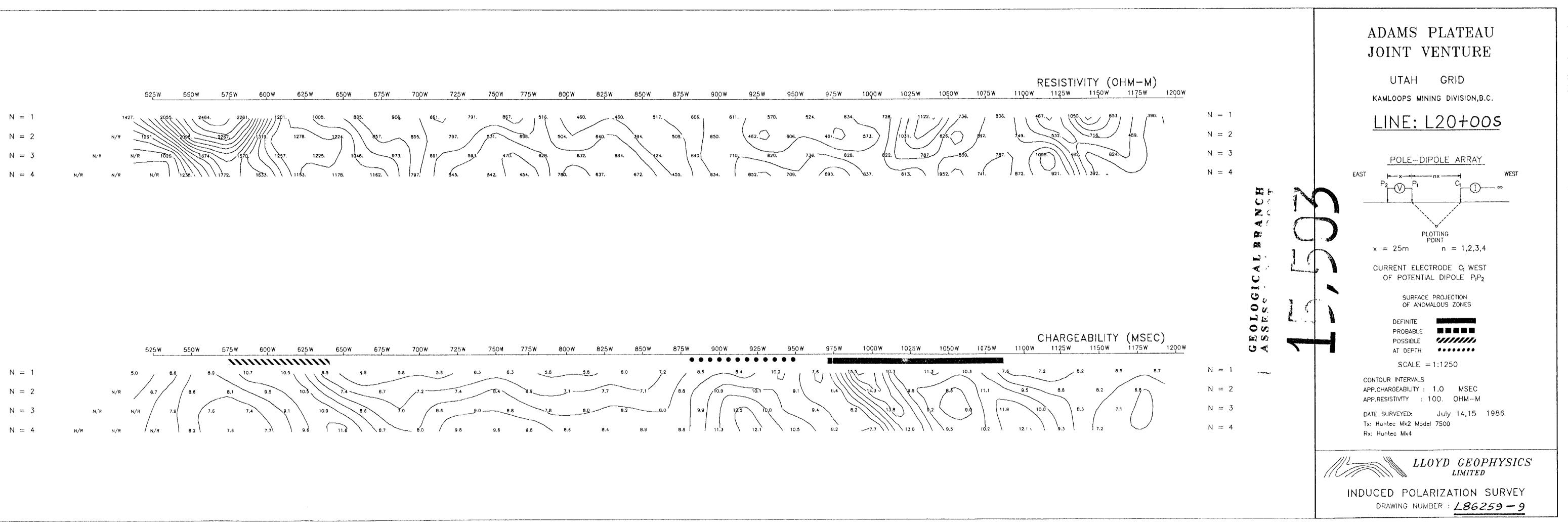


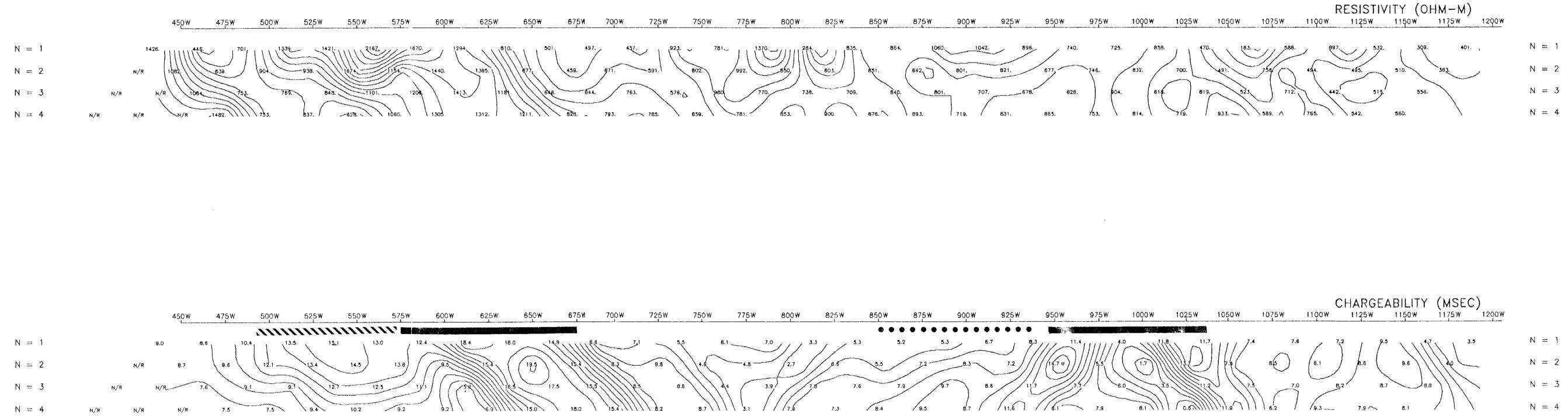


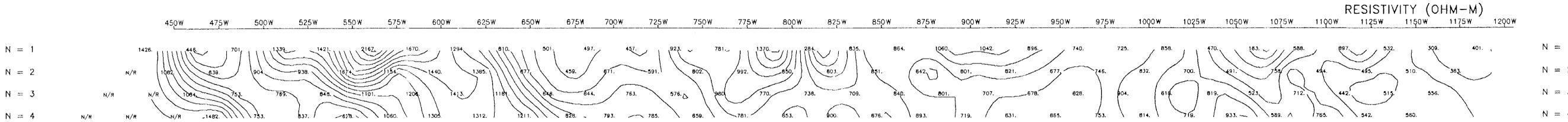
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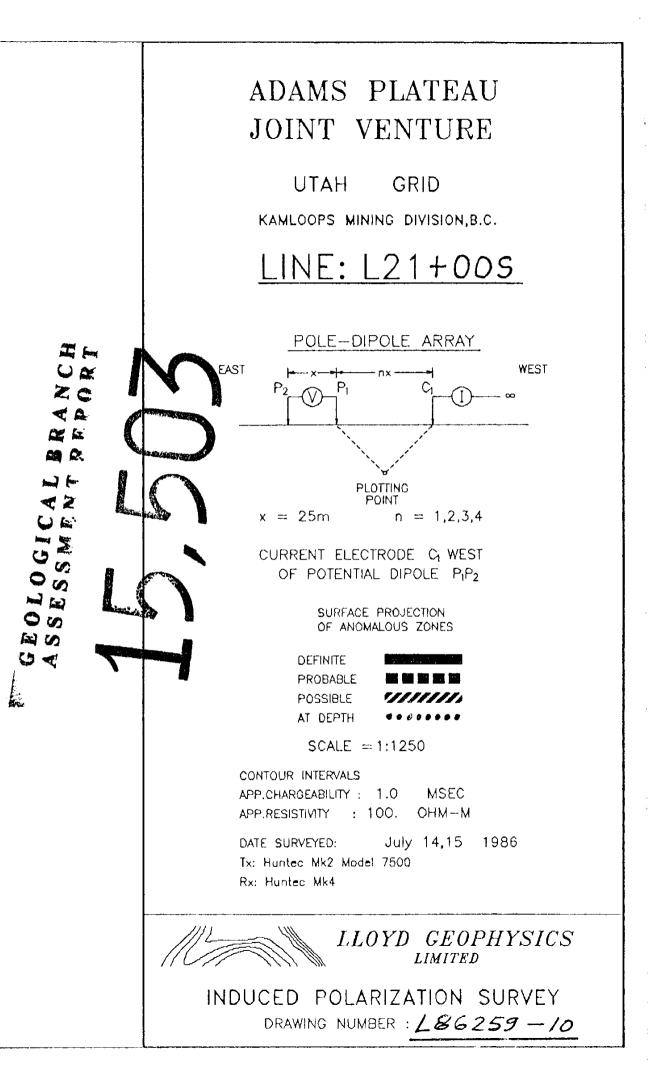


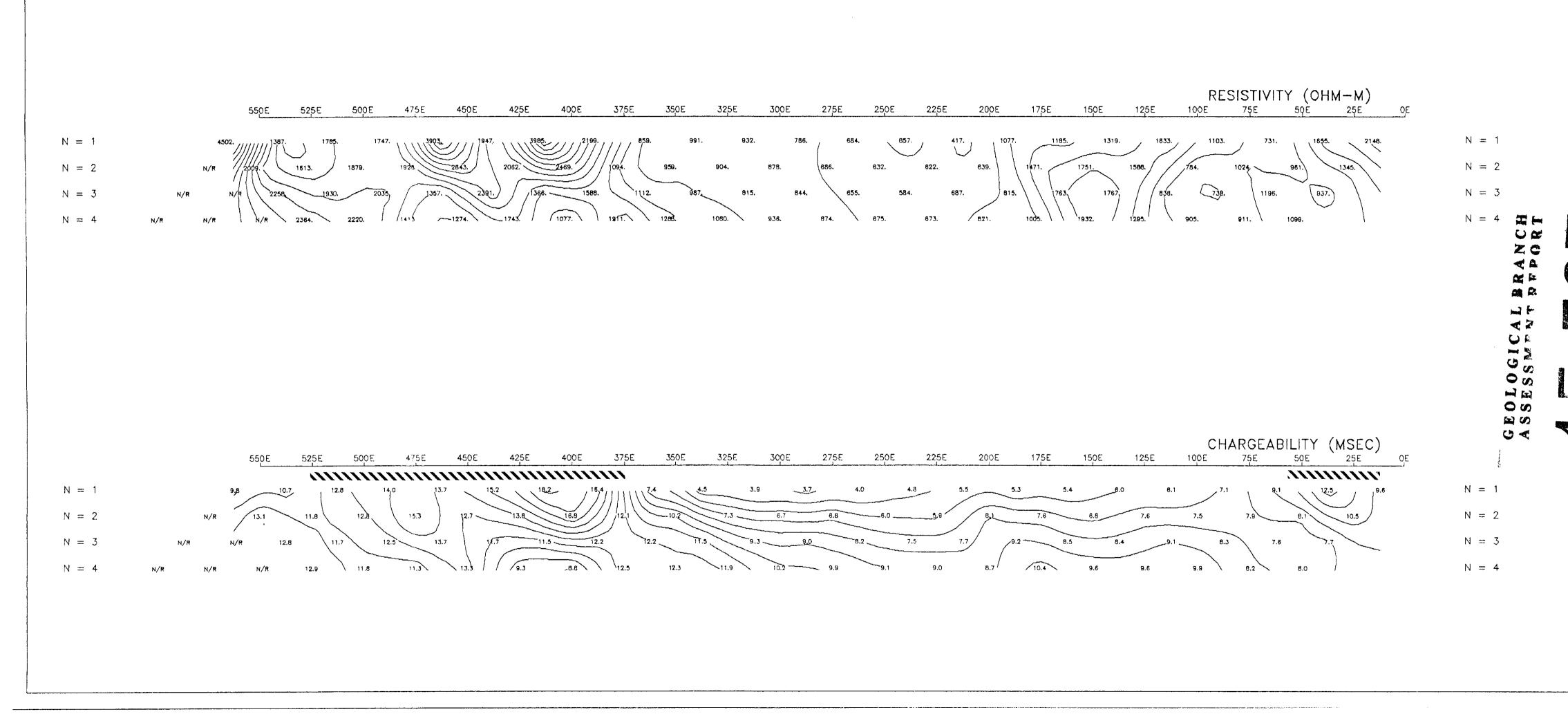


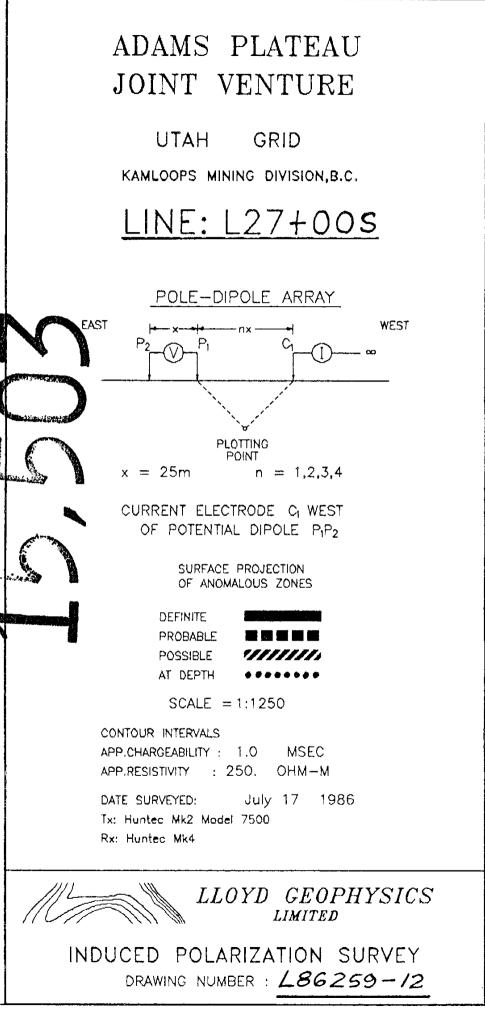


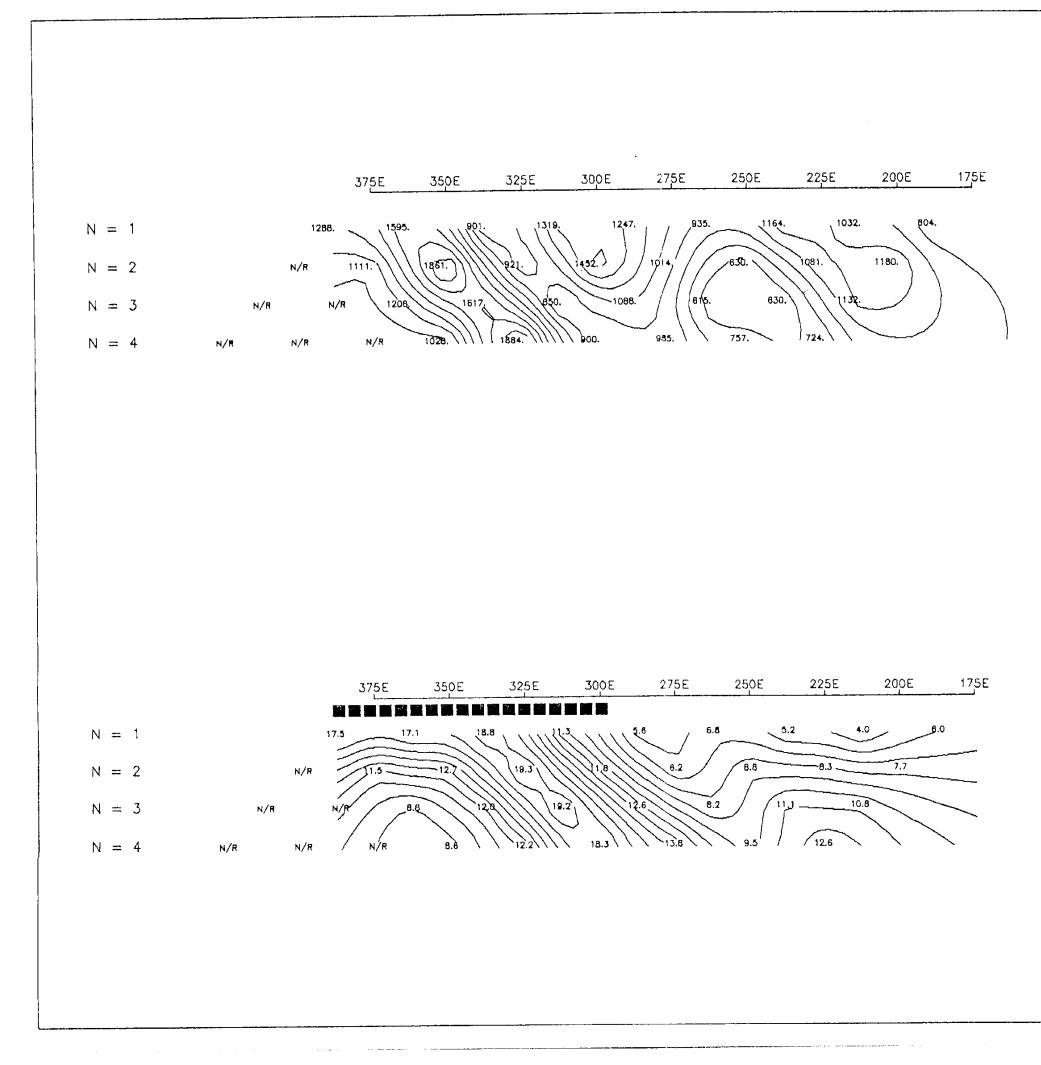


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- N = 4



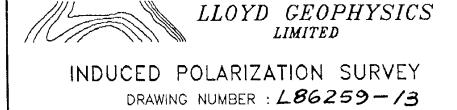






ADAMS PLATEAU JOINT VENTURE UTAH GRID RESISTIVITY (OHM-M) KAMLOOPS MINING DIVISION, B.C. N = 1LINE: L28+005 N = 2 N = 3POLE-DIPOLE ARRAY N = 4EAST WEST ς. 2.5 < C **e** 4 AR · PLOTTING POINT **1** GICA SET x = 25m n = 1, 2, 3, 4CURRENT ELECTRODE G WEST OF POTENTIAL DIPOLE P1P2 OTO SES SURFACE PROJECTION Pres. OF ANOMALOUS ZONES 6 0 DEFINITE 5∢ PROBABLE CHARGEABILITY (MSEC) 1/////// POSSIBLE ******* AT DEPTH SCALE = 1:1250 $\mathbb{N} = 1$ CONTOUR INTERVALS

- N = 2
- N = 3
- N = 4



APP'.CHARGEABILITY : 1.0 MSEC

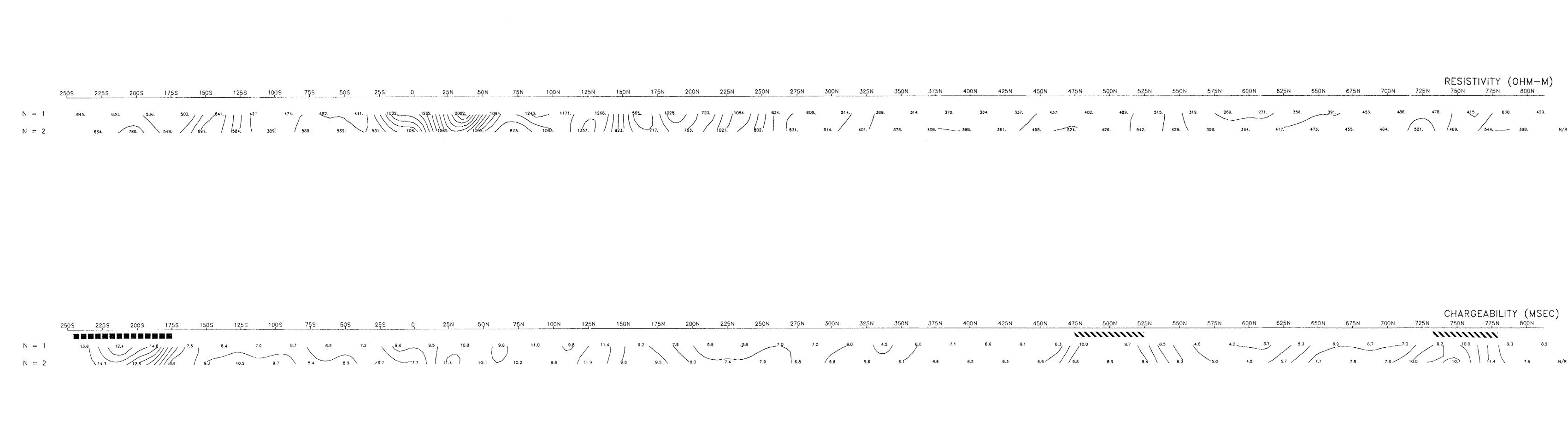
APP'.RESISTIVITY : 100. OHM-M

DATE SURVEYED:

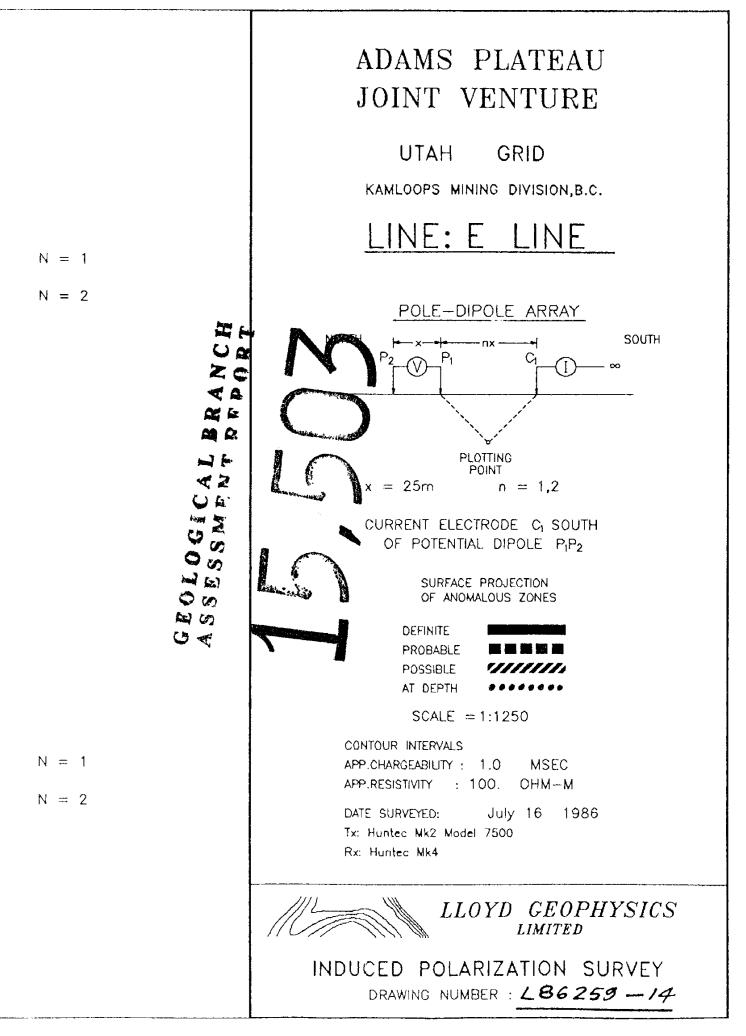
Rx: Hunted Mk4

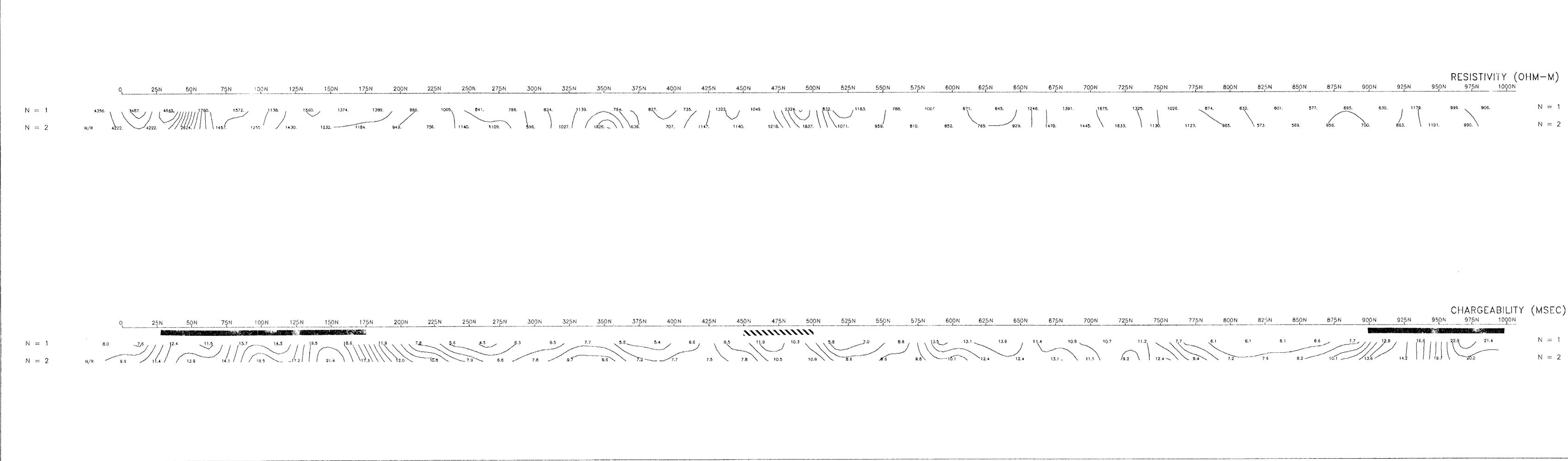
Tx: Huntec Mk2 Model 7500

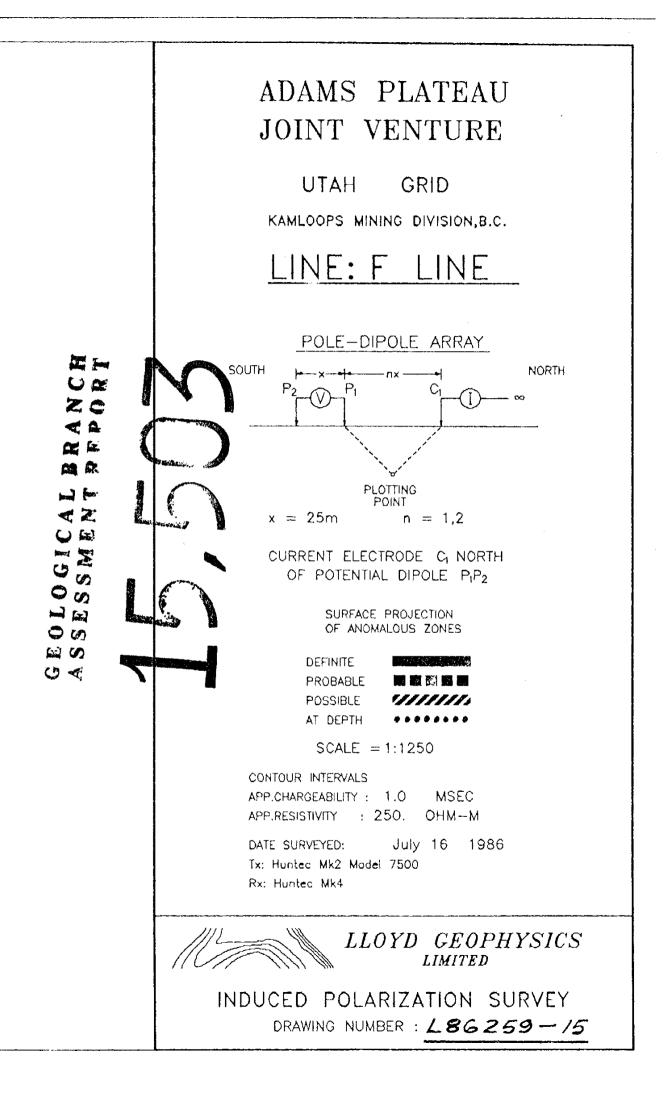
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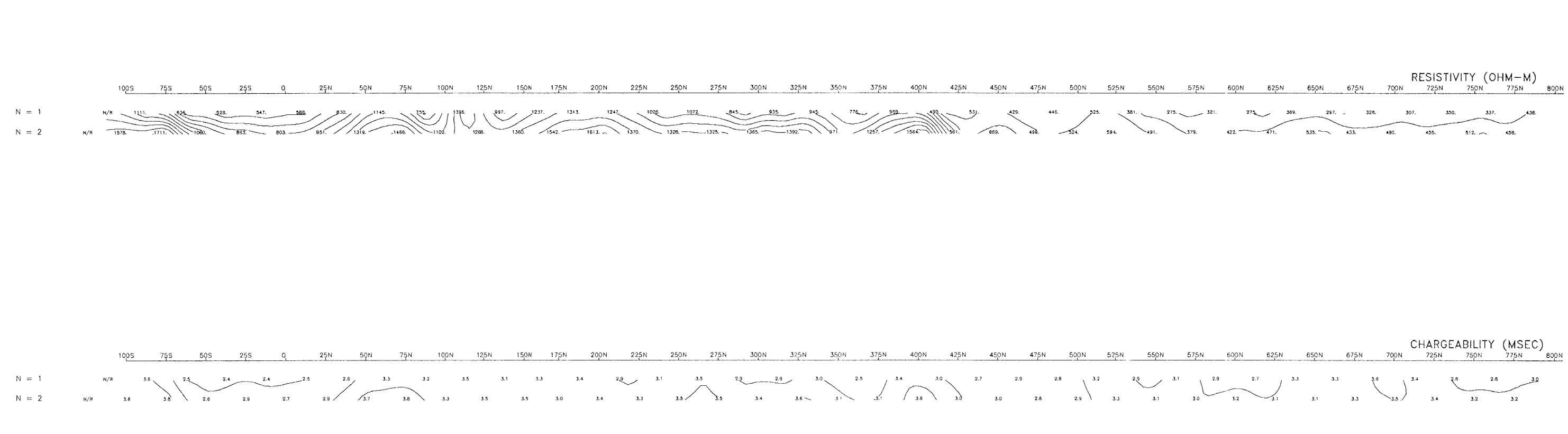


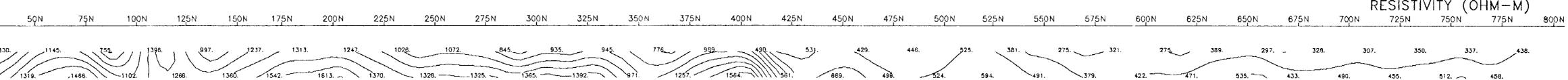
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3	10.1	9.8	11.0	9.8 9.9	119	11.4	9.2	7. 9 5.	9 5	7.8	6.8	7.0 6.0	5.8	6.1 E.	6.6	7.1 6.5	6 .6 6.3	6.1



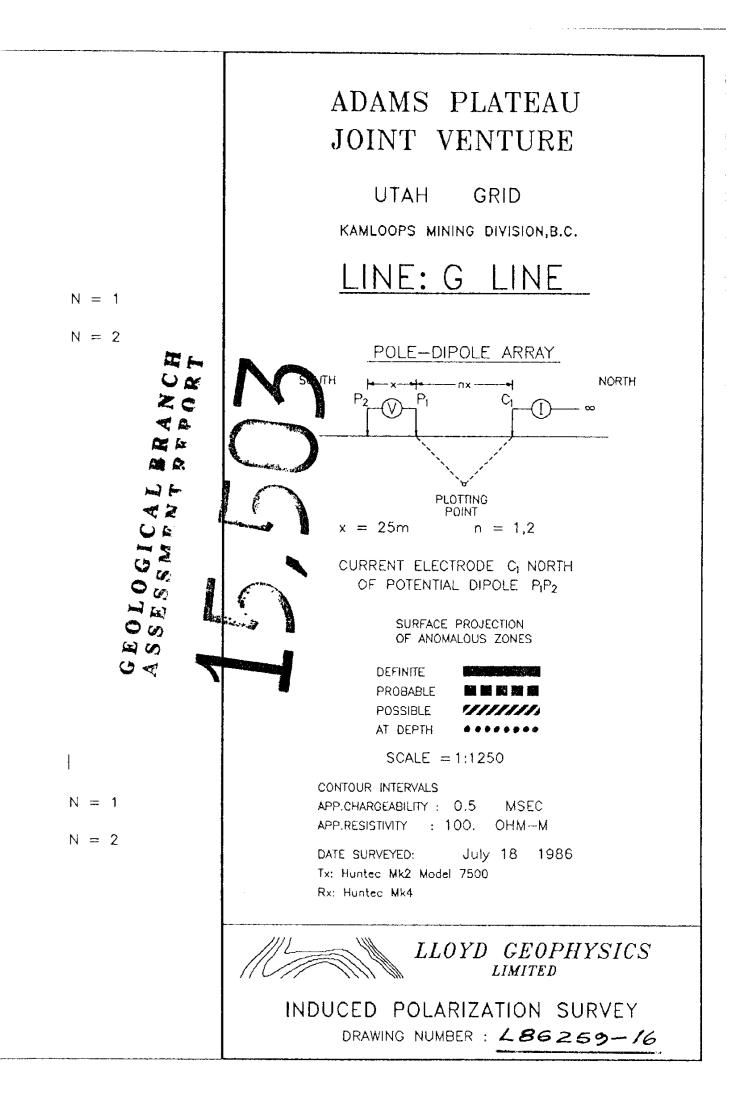


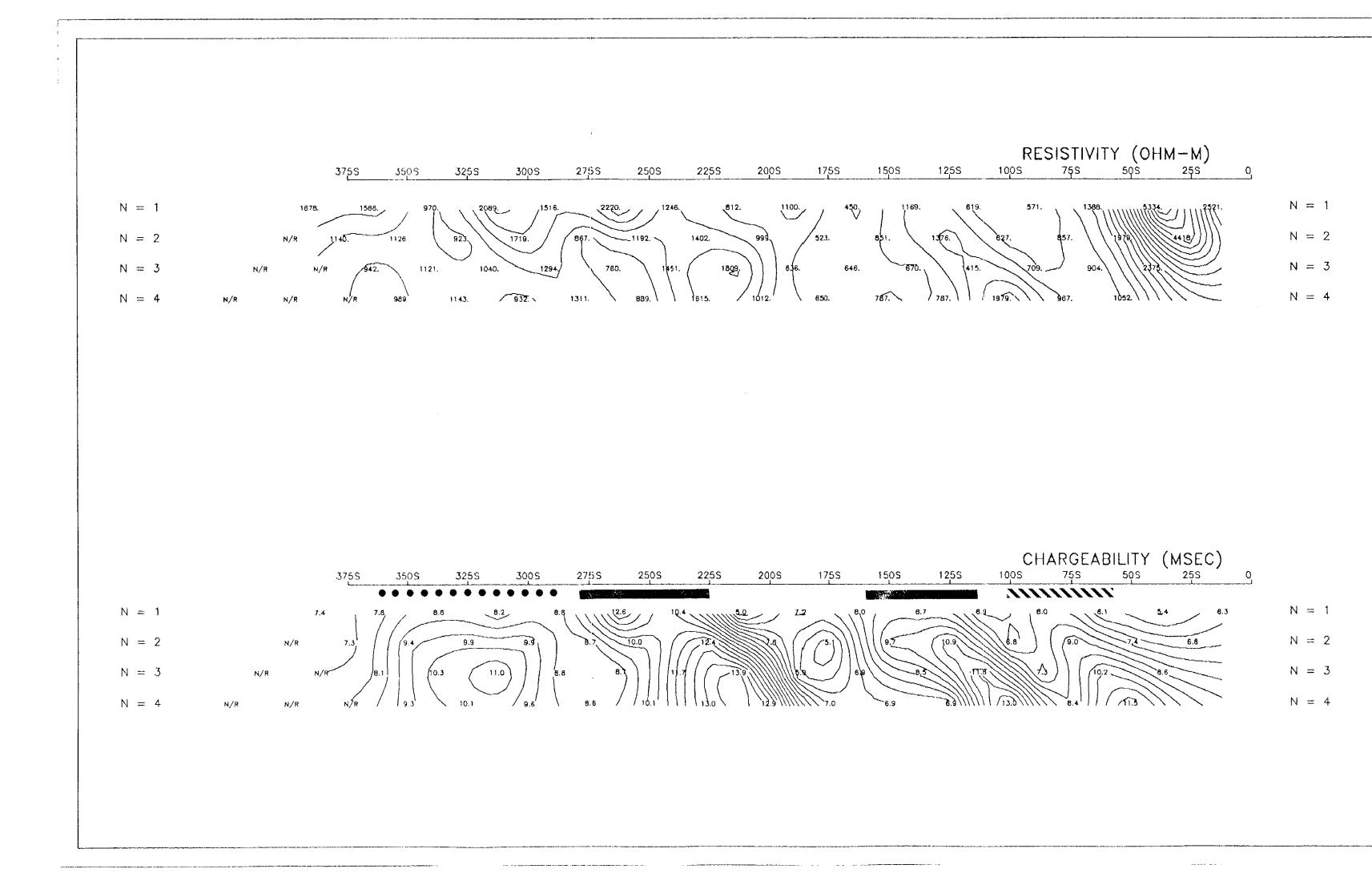






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GEOLOGICAL BRANCH ASSESSMENT PFPORT

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