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**WESTMIN RESOURCES LTD.**

**A GEOPHYSICAL ASSESSMENT REPORT ON  
AN INDUCED POLARIZATION SURVEY  
ON THE GM MINERAL CLAIM GROUP  
GIBRALTER MINE AREA  
MCLEESE LAKE, BRITISH COLUMBIA**

**CARIBOO MINING DIVISION**

**LONGITUDE 122°16'W**

**LATITUDE 52°30'N**

**NTS 93B/9E, 9W & 8E**

**BY**

**S. John A. Cornock, B.Sc.**

**LLOYD GEOPHYSICS INC.**

**DECEMBER, 1997**

25 333



**Lloyd Geophysics**

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## **1.0 INTRODUCTION**

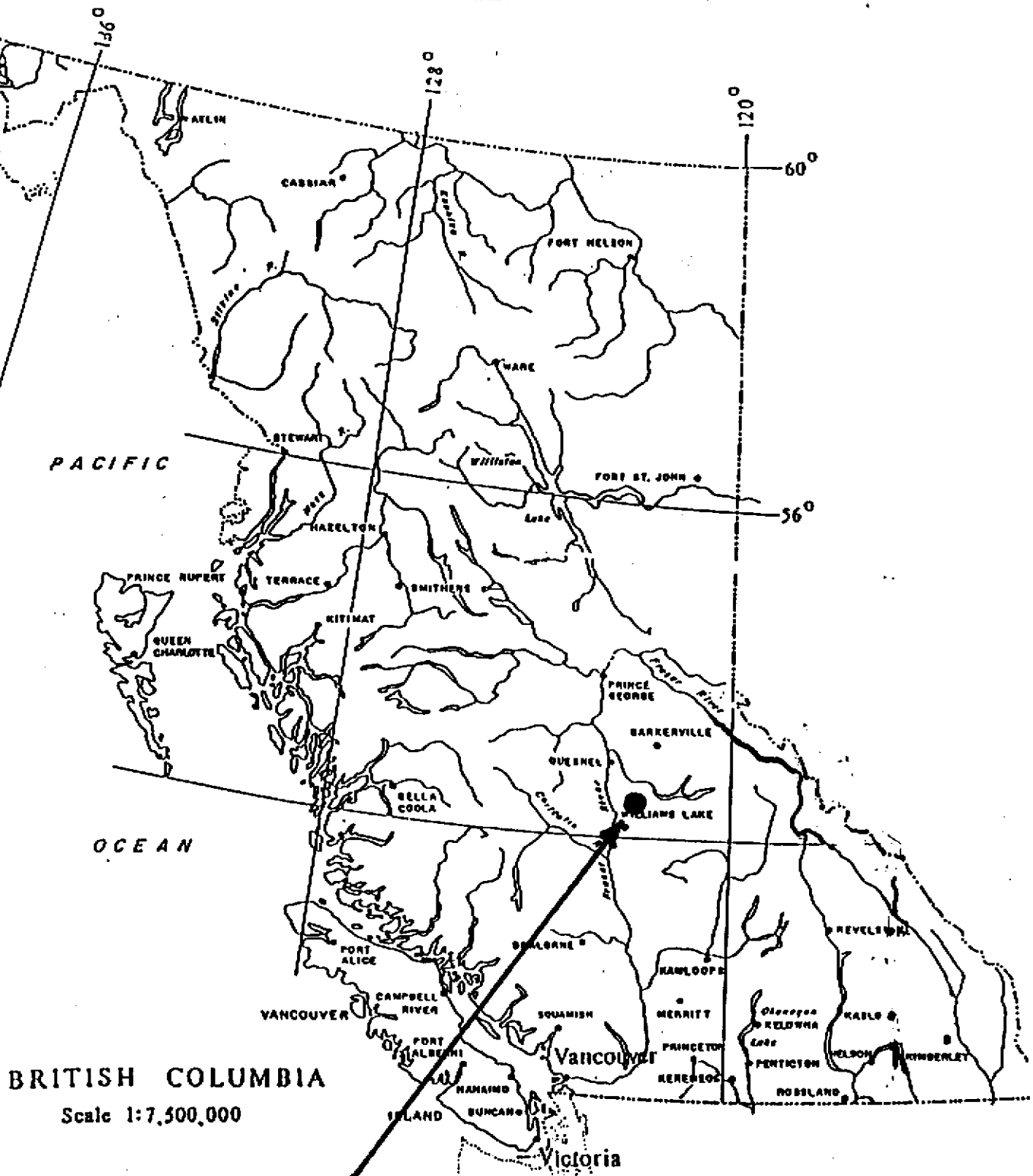
From November 29<sup>th</sup> to December 6<sup>th</sup>, 1997, Lloyd Geophysics Inc. carried out an Induced Polarization (IP) survey on the GM mineral claim group for Westmin Resources Ltd.

The purpose of the survey was to locate areas of sulphide mineralization within the Granite Mountain batholith.

## **2.0 PROPERTY LOCATION AND ACCESS**

The GM mineral claim group is located adjacent to the Gibraltar Mine approximately 12 kilometres northeast of McLeese Lake, British Columbia. at 52°30'N latitude, 122°16'W longitude in the Cariboo Mining Division, NTS 93B/9E,9W & 8E (Figure 1).

Access to the property is by truck along the Gibraltar Mine road for about 18 kilometres from the Highway 97 turnoff near McLeese Lake, British Columbia.



BRITISH COLUMBIA  
Scale 1:7,500,000

GM Mineral Claims

<b>WESTMIN RESOURCES LTD.</b>	
GM Mineral Claims Cariboo Mining Division	
<b>PROPERTY LOCATION</b>	
FIGURE 1	NTS 93B/
<b>LLOYD GEOPHYSICS INC.</b>	

### 3.0 PROPERTY STATUS AND CLAIM HOLDINGS

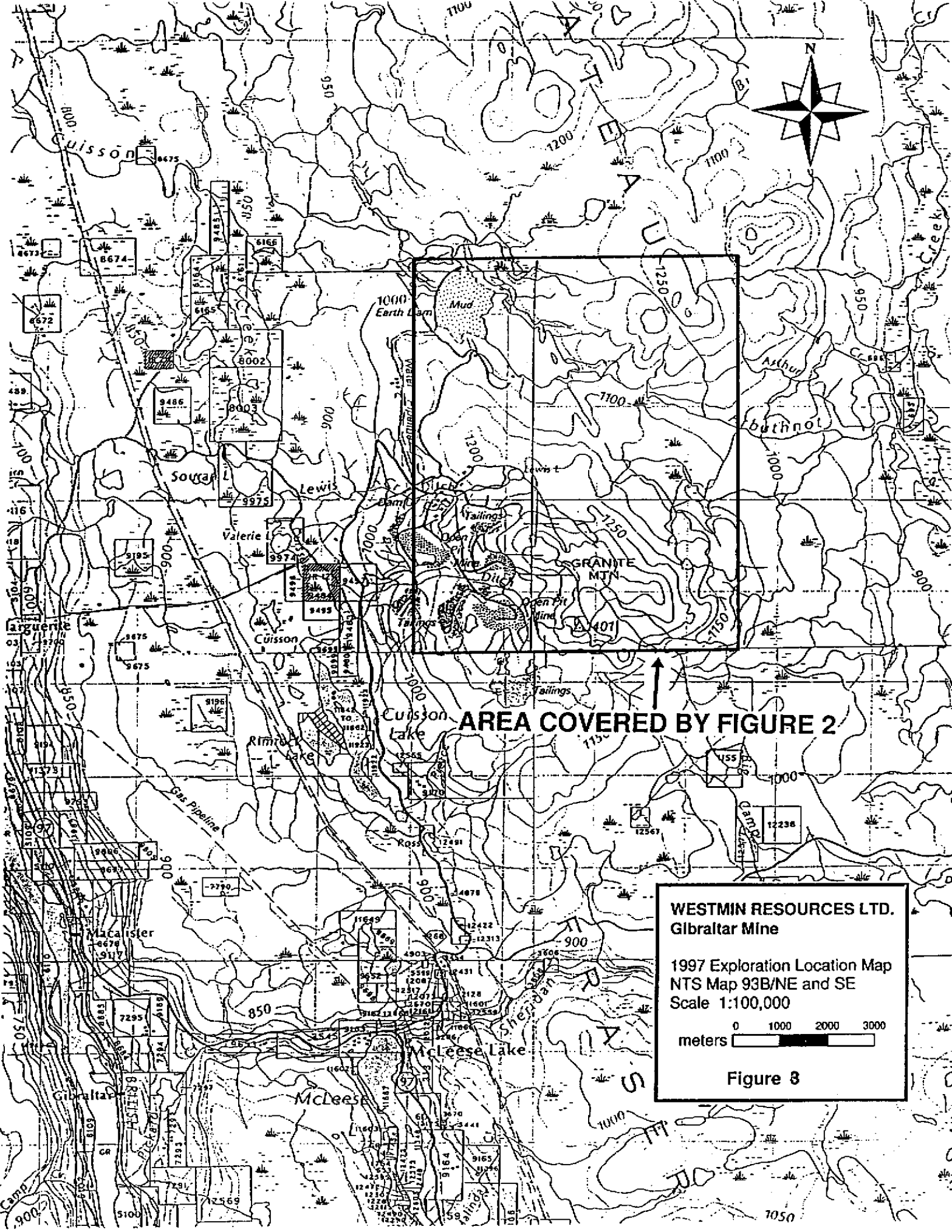
The mineral claims and mining lease included in the GM mineral claim group are shown in Figure 2. All of the claims and mining lease belong to Westmin Resources Ltd., except for GUY 1 which is under the Cuisson Lake Mines agreement. (Figures 2 and 3).

The GM mineral claim group consists of a total of 40 claims totalling 79 units. The pertinent claim information is listed below.

<u>Claim/Lease Name</u>	<u>Tenure Number</u>	<u>Units</u>	<u>Recorded mm/dd/yr</u>	<u>Optioned From</u>	<u>Due Date mm/dd/yr</u>	<u>Location</u>	<u>Group</u>
GM 29	207610	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 30	207611	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 31	207612	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 32	207613	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 33	207614	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 34	207615	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 35	207616	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 36	207617	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 37	207618	1	03/02/1964		03/02/2005	93B/9W/C	GM
GM 38	207619	1	03/02/1964		03/02/2005	93B/9W/C	GM
GM 39	207620	1	03/02/1964		03/02/2005	93B/9W/C	GM
GM 40	207621	1	03/02/1964		03/02/2005	93B/9W/C	GM
GM 48	207748	1	07/07/1967		07/07/2005	93B/9E/B	GM
GM 49	207622	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 50	207623	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 51	207624	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 52	207625	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 59	207626	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 60	207627	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 61	207628	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 62	207629	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 63	207630	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 65	207632	1	03/02/1964		03/02/2005	93B/9E/B	GM

<u>Claim/Lease Name</u>	<u>Tenure Number</u>	<u>Units</u>	<u>Recorded</u>	<u>Optioned From</u>	<u>Due Date</u>	<u>Location</u>	<u>Group</u>
GM 66	207633	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 67	207634	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 68	207635	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 69	207636	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 70	207637	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 71	207638	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 72	207639	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 73	207640	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 83	207642	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 85	207643	1	03/02/1964		03/02/2005	93B/9E/B	GM
GM 103	207660	1	08/21/1964		08/21/2004	93B/9E/B	GM
GM 104	207661	1	08/21/1964		08/21/2004	93B/9E/B	GM
GM 105	207662	1	08/21/1964		08/21/2004	93B/9E/B	GM
GUY 1	205678	18	02/08/1988	CLM	02/08/2007	93B/9E/B	GM
GUY 2	320893	20	09/15/1993		09/15/2004	93B/9E/B	GM
GUY 3	358114	4	07/29/1997		07/29/1998	93B/9E	GM
LOT 12991	352646	1	06/25/1997		06/25/1998	93B/9E	GM





**AREA COVERED BY FIGURE 2**

**WESTMIN RESOURCES LTD.**  
**Gibraltar Mine**

1997 Exploration Location Map  
 NTS Map 93B/NE and SE  
 Scale 1:100,000

0 1000 2000 3000  
 meters

**Figure 3**



## **4.0 GEOLOGY**

The claim group is underlain mainly by the Upper Triassic Granite Mountain Batholith. The Granite Mountain Batholith is a zoned, peraluminous, subalkaline body and can be subdivided into at least four phases. These phases are:

### **1. *Border Phase Diorite***

This phase consists of a broad zone of assimilated and recrystallized rock formed between the mafic rich Cache Creek Group and the intrusive batholith. This hybrid zone incorporates a baffling array of intermediate rock types and rapid textural variations which closely reflect the country rock composition at its outer edge and that of the parent magma at its inner edge. Typical Border Phase Diorite consists of saussuritized plagioclase (45-50%), chloritized hornblende (35%) and fine grained quartz ( $\leq 15\%$ ). Textures are variable, with grain sizes of 1 to 5 mm. Mafic rich quartz diorites are also present and these are most prevalent near contacts with the Mine Phase Tonalite.

### **2. *Mine Phase Tonalite***

Mine Phase Tonalite is the major host rock for the Gibraltar ore deposits. It has a relatively uniform mineralogical composition of saussuritized andesine plagioclase (50%), chlorite (20%) and quartz (30%). The chlorite appears to be derived from biotite and minor hornblende. Accessory minerals may include magnetite and rutile. Plagioclase is variously altered to albite-epidote-zoisite and muscovite. The rock is generally equigranular with a grain size of 2 to 4 mm. Rock fabrics range from isotropic to intensely schistose. In most cases the unmineralized rock is only weakly foliated and the degree of penetrative deformation increases proportionally with alteration.

### **3. *Granite Mountain Phase Trondhjemite***

The trondhjemite consists of saussuritized plagioclase (45%), chloritized biotite (10%) and quartz ( $\geq 45\%$ ). Grain size is about 2 to 4 mm near contacts with the Mine Phase Tonalite but reaches 8 to 10 mm away from the contacts. The quartz commonly occurs as large grains or grain aggregates set in a finer grained, inequigranular matrix of quartz, plagioclase and minor chlorite. Foliation throughout the trondhjemite body tends to be weak or absent except along contacts with the Mine Phase or Leucocratic Phase.

#### 4. *Leucocratic Phase*

Associated with all ore grade mineralization are minor zones of fine grained rock classified as Leucocratic Phase due to a prevailing quartz-plagioclase composition and general lack of mafic minerals. The term is used to describe leucocratic, porphyritic diorite as well as quartz porphyry and quartz plagioclase porphyry. In thin section, the quartz plagioclase porphyry has a fresh appearance with coarse quartz phenocrysts up to 8 mm in diameter and oligoclase phenocrysts up to 5 mm in diameter. The phenocrysts, which make up 50 to 60% of the rock are set in a fine grained quartz-plagioclase-sericite groundmass with a felsophyric texture that shows little sign of recrystallization.

The primary rock type in the area of the 1997 IP survey is trondhjemite. Small zones of a rock type representing a transition between trondhjemite and tonalite have been noted occasionally.

The rock is cut by shear zones and vein systems variously mineralized with quartz, chlorite, sericite, iron carbonate and epidote. Sulphide mineralization, mainly pyrite and chalcopyrite, is generally confined within these alteration assemblages.

#### **5.0 INSTRUMENT SPECIFICATIONS**

The equipment used to carry out this survey was a time domain measuring system consisting of a Honda 6500 motor generator and a VIP 4000 transmitter manufactured by Iris Instruments Ltd, Orleans, France and a six channel IP-6 receiver manufactured by BRGM Instruments, Orleans, France.

The transmitter was operated with a cycle time of 8 seconds and the duty cycle ratio: [(time on)/(time on + time off)] was 0.5 seconds. This means the cycling sequence of the transmitter was 2 seconds current "on" and 2 seconds current "off" with consecutive pulses reversed in polarity.

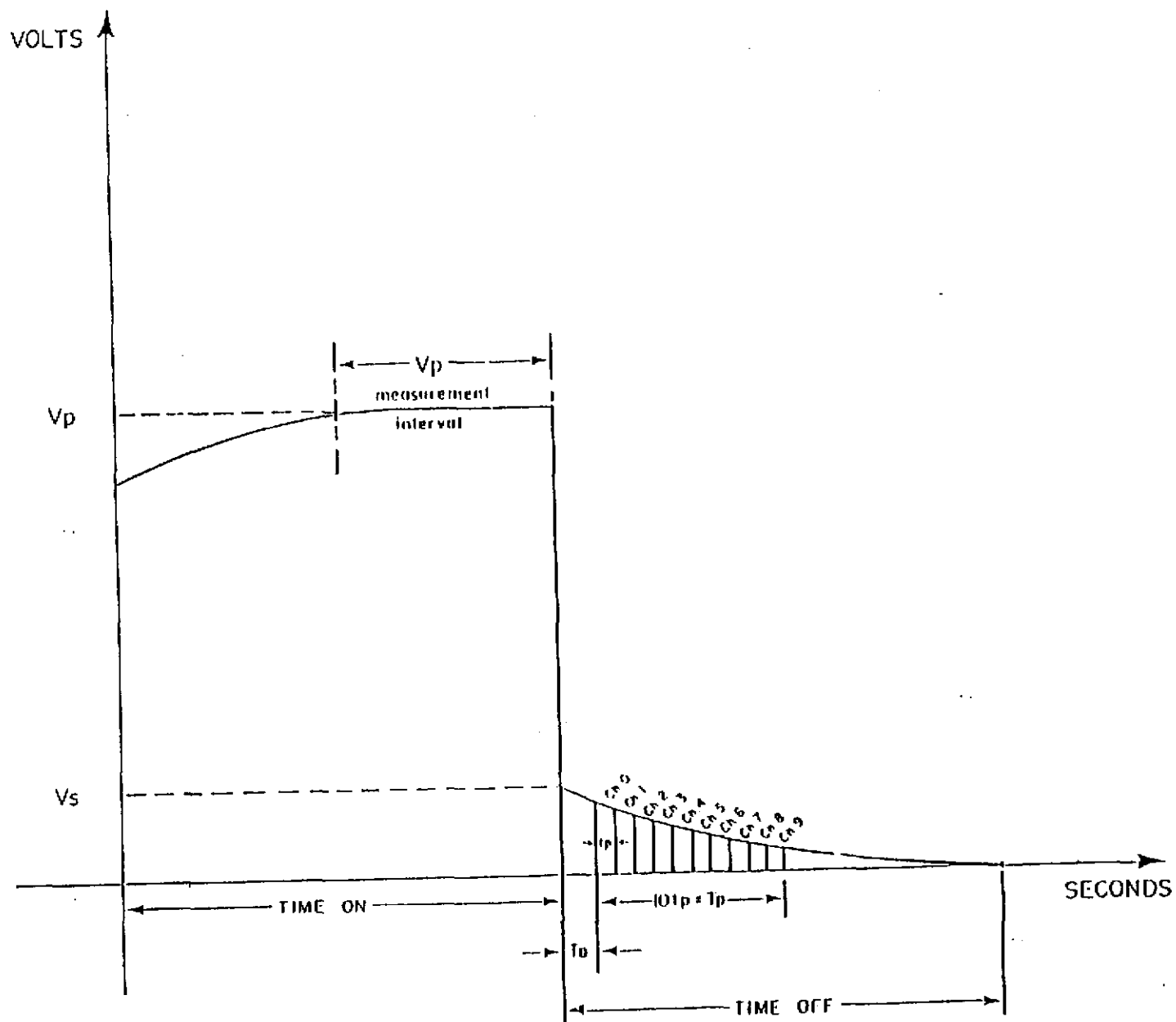
The IP-6 receiver can measure up to 6 dipoles simultaneously. It is microprocessor controlled, featuring automatic calibration, gain setting, SP cancellation and fault diagnosis. To accommodate a wide range of geological conditions, the delay time, the window widths and hence

the total integration time is programmable via the keypad. Measurements are calculated automatically every 2 to 4 seconds from the averaged waveform which is accumulated in memory.

The window widths of the IP-6 receiver can be programmed arithmetically or logarithmically. For this particular survey the instrument was programmed arithmetically into 10 equal window widths or channels, Ch<sub>0</sub>, Ch<sub>1</sub>, Ch<sub>2</sub>, Ch<sub>3</sub>, Ch<sub>4</sub>, Ch<sub>5</sub>, Ch<sub>6</sub>, Ch<sub>7</sub>, Ch<sub>8</sub>, Ch<sub>9</sub> (see Figure 4). These may be recorded individually and summed up automatically to obtain the total chargeability. Similarly, the resistivity ( $\rho_a$ ) in ohm-metres is also calculated automatically.

The instrument parameters chosen for this survey were as follows:

Cycle Time ( $T_c$ )	= 8 seconds
Ratio $\frac{\text{(Time On)}}{\text{(Time Off)}}$	= 1:1
Duty Cycle Ratio $\frac{\text{(Time On)}}{\text{(Time On) + (Time Off)}}$	= 0.5
Delay Time ( $T_D$ )	= 120 milliseconds
Window Width ( $t_p$ )	= 90 milliseconds
Total Integration Time	= 900 milliseconds

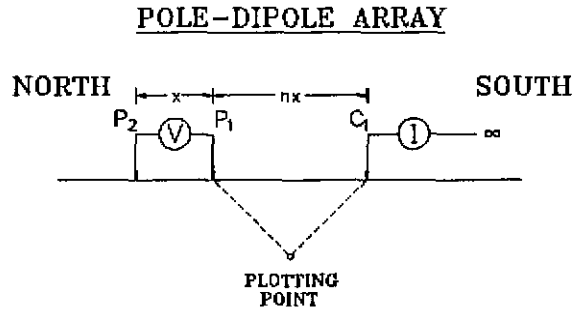


**BRGM IP-6 RECEIVER PARAMETERS**

**Figure 4**

## 6.0 SURVEY SPECIFICATIONS

The configuration of the pole-dipole array used for the survey is shown below:



$$x = 200 \text{ feet} \quad n = 1, 2, 3, 4, 5 \text{ and } 6$$

The dipole length ( $x$ ) is the distance between  $P_1$  and  $P_2$  and mainly determines the sensitivity of the array. The electrode separation ( $nx$ ) is the distance between  $C_1$  and  $P_1$  and mainly determines the depth of penetration of the array.

The Induced Polarization survey was carried out with the current electrode,  $C_1$ , south of the potential measuring dipole  $P_1P_2$ . Here the survey lines were 100 metres apart and measurements were taken for  $x = 200$  feet and  $n = 1, 2, 3, 4, 5$  and  $6$ .

## 7.0 DATA PROCESSING

The data collected was processed in the field at the end of each survey day using a portable 486 computer and a Fujitsu printer.

The IP pseudo-sections were plotted out in the field and contoured using in-house software based on the mathematical solution known as kriging.

In the office, the data was transferred to mylar using a PENTIUM P90 computer coupled to an HP DesignJet plotter for the preparation of the final maps and pseudo-sections.

## **8.0 DATA PRESENTATION**

The data acquired on this project is presented on 10 pseudosections and 3 contour plan maps as outlined below:

### **Pseudo-Sections (1:2400)**

<u>Line No.</u>	<u>Dwg. No.</u>	<u>Line No.</u>	<u>Dwg. No.</u>
1600W	97420-01	2100W	97420-06
1700W	97420-02	2200W	97420-07
1800W	97420-03	2300W	97420-08
1900W	97420-04	2400W	97420-09
2000W	97420-05	2500W	97420-10

### **Contour Plan Maps (1:2500)**

Chargeability 21 Point Triangular Filter	97420-11
Resistivity 21 Point Triangular Filter	97420-12
Metal Factor	97420-13

## **9.0 DISCUSSION OF RESULTS**

An IP response depends largely on the following factors:

1. The volume content of sulphide minerals
2. The number of pore paths that are blocked by sulphide grains
3. The number of sulphide faces that are available for polarization
4. 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.
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 is one of the critical factors that we would like to determine from field measurements. Experience has shown that this is both difficult and unreliable because of the large number of variables, described above, which contribute to an IP response. The problem is further complicated by the fact that rocks containing magnetite, graphite, clay minerals and variably altered rocks produce IP response of varying amplitudes.

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 sub-surface strata and cannot be treated as such when determining the depths, width and thickness of a zone which produces an anomalous pattern. The anomalies are classified into 4 groups; definite, probable, and possible anomalies and anomalies which have a much deeper source. These latter anomalies are mostly related to deeper overburden cover.

This classification is based partly on the relative amplitudes of the chargeability and to a lesser degree on the resistivity response. In addition the overall anomaly pattern and the degree to which this pattern may be correlated from line to line is of equal importance.

The IP survey over the GM mineral claim group has outlined a large chargeability anomaly which extends across the entire grid (see Dwg. No. 97420-11). Chargeabilities within this anomaly average around 14 milliseconds but increase in two localized zones to more than 21 milliseconds above a background of around 7 milliseconds.

The resistivity survey has defined two linear resistivity lows (Dwg. No. 97420-12). The stronger, more prominent of the two, trends north-south from 1600W/1600N to 2500W/3600N and is interpreted to be a fault or shear zone. The two localized chargeability zones mentioned previously straddle this fault/shear zone to about 400 feet to the east and west with the data from the west side indicating a deeper source. The second linear feature is also interpreted as a fault/shear which trends east from 2500W/800N and is truncated by the north-south fault/shear at around 2050W/2400N. A small "pod" of increased chargeability lies along this east-west trend near the junction of these two faults/shears. The areas of high resistivity are believed to represent the rocks of the Granite Mountain batholith which have not been altered.

The strong correlation, within the fault/shear zones, between low resistivity and high chargeability allows these areas of interest to be effectively represented by the metal factor (Dwg. No. 97420-13). While the high chargeability zones indicate the areas where the sulphide minerals are present, the zones of low resistivity are believed to mark the areas which have undergone intense alteration.

Finally, even though the chargeability responses are lower between the two strong, chargeability highs, this area remains a good target for further testing. It is the writer's opinion that this is an area of less intense alteration.

## 10.0 CONCLUSIONS AND RECOMMENDATIONS

From the data discussed in this report, it has been concluded that the IP survey was successful in locating areas of sulphide mineralization. The sulfides are found along fault/shear zones in areas where there has been intense alteration.. The high values on the metal factor map (Dwg. No. 97420-13) show the three areas where this relationship occurs.

An initial drill program consisting of 11 drill holes totalling 1706 metres has been recommended to test these targets. The location of these holes is listed below :

<u>Hole No.</u>	<u>Line</u>	<u>Station</u>	<u>Angle*</u>	<u>Depth (m)</u>
1	1600W	1600N	-90	150
2	1600W	2200N	-90	150
3	1700W	1800N	-90	150
4	1900W	2000N	-90	150
5	2200W	1400N	-90	200
6	2200W	1800N	-90	150
7	2300W	1400N	-90	150
8	2300W	3200N	-90	150
9	2400W	2600N	-90	150
10	2500W	3200N	-90	150
11	2500W	3600N	-90	150

\* No geology was known by the writer with respect to the angle of dip of structures.

Finally, additional IP surveying is recommended to the east and west in order to define more of this target.

Respectfully submitted,

LLOYD GEOPHYSICS INC.



John Cornock, B.Sc.,  
Geophysicist



**APPENDIX A****PERSONNEL EMPLOYED ON SURVEY**

<u>Name</u>	<u>Occupation</u>	<u>Address</u>	<u>Dates Worked</u>
J. Lloyd	Geophysicist	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Dec 15/97
J. Cornock	Geophysicist	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 29-Dec 6/97 Dec 10-12/97
G. Hoornenborg	Geophysical Technician	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 29-Dec 6/97
B. DeWitt	Helper	#445-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 29-Dec 6/97
D. Blunt	Helper	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 29-Dec 6/97
D. Macrae	Helper	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 29-Dec 6/97

**APPENDIX B****COST OF SURVEY AND REPORTING**

Lloyd Geophysics Inc. contracted the mobilization/demobilization and acquisition of the IP data on a per day basis. Truck rental, living and travelling expenses, data processing, computer plotting, map reproduction and interpretation and report writing were additional costs. The breakdown of these costs is as follows:

Mobilization/Demobilization and Data Acquisition	\$11,325.00
Truck Charges	1,052.12
Living and Travelling Expenses	2,603.04
Data Processing and Computer Plotting	552.50
Consumables and Reprographics	429.04
Interpretation and Report Writing	<u>1,350.00</u>
Subtotal	\$17,311.70
G.S.T.	<u>1,211.82</u>
Total Cost:	<u>\$18,523.52</u>

I, John A. Cornock, of #455 - 409 Granville Street, in the City of Vancouver, in the Province of British Columbia, do hereby certify that:

1. I graduated from the University of British Columbia in 1986 with a B.Sc. in Geology and a minor in Geophysics.
2. I am a member in good standing of the Society of Exploration Geophysicists of America, British Columbia Geophysical Society, British Columbia and Yukon Chamber of Mines and the Northwest Mining Association.
3. I have practised my profession continuously since 1987.

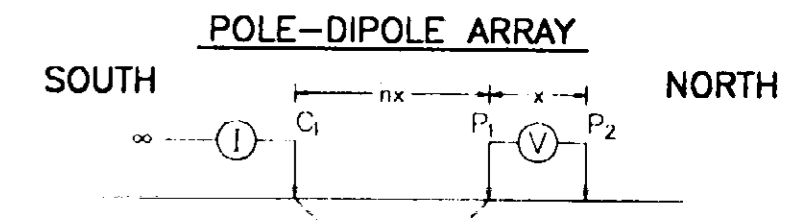
Vancouver, B.C.

WESTMIN RESOURCES LTD.

GM Mineral Claim Group

Gibraltar Mine Site

LINE: 1600W



$x = 200f$   $n = 1 - 6$

CURRENT ELECTRODE  $C_1$  SOUTH  
OF POTENTIAL DIPOLE  $P_1P_2$

SURFACE PROJECTION  
OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE
- AT DEPTH

SCALE 1 : 2400

CONTOUR INTERVALS

APP.CHARGEABILITY : 2.0 (msec)

APP.RESISTIVITY : 50 (ohm-m)

DATE SURVEYED: December 5, 1997

Tx: Huntac Mk2 Model 7500

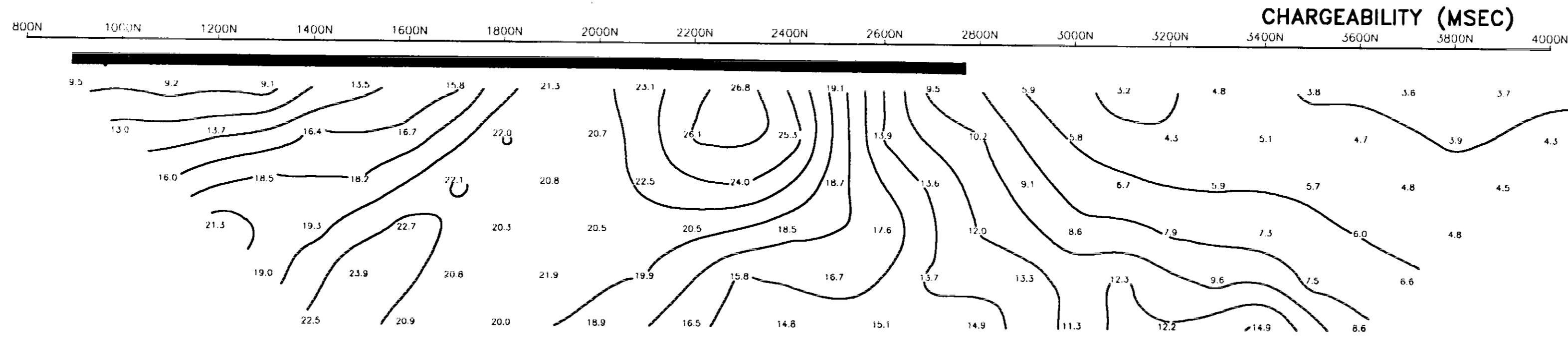
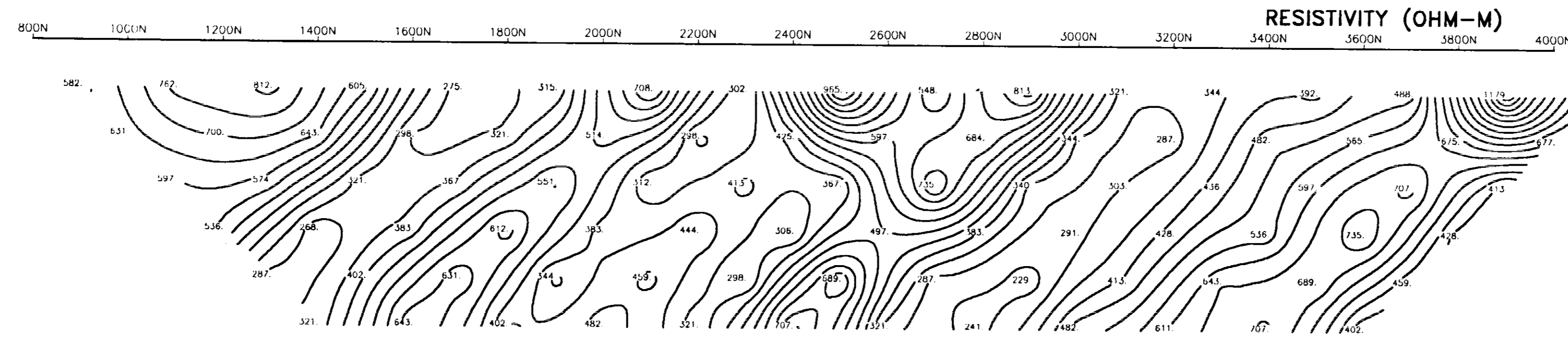
Rx: EDA IP-6

25333

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY ①

DRAWING NUMBER :



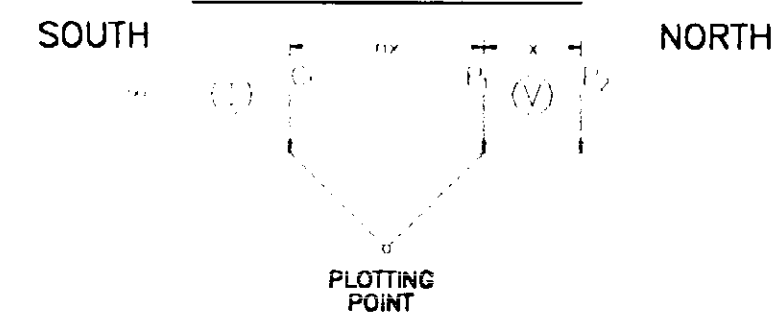
WESTMIN RESOURCES LTD.

GM Mineral Claim Group

Gibraltar Mine Site

LINE: 1700W

POLE-DIPOLE ARRAY



CURRENT ELECTRODE C<sub>1</sub> SOUTH OF POTENTIAL DIPOLE P<sub>1</sub>P<sub>2</sub>

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE
- AT DEPTH

SCALE 1 : 2400

CONTOUR INTERVALS  
 APP.CHARGEABILITY : 2.0 (msec)  
 APP.RESISTIVITY : 50 (ohm-m)

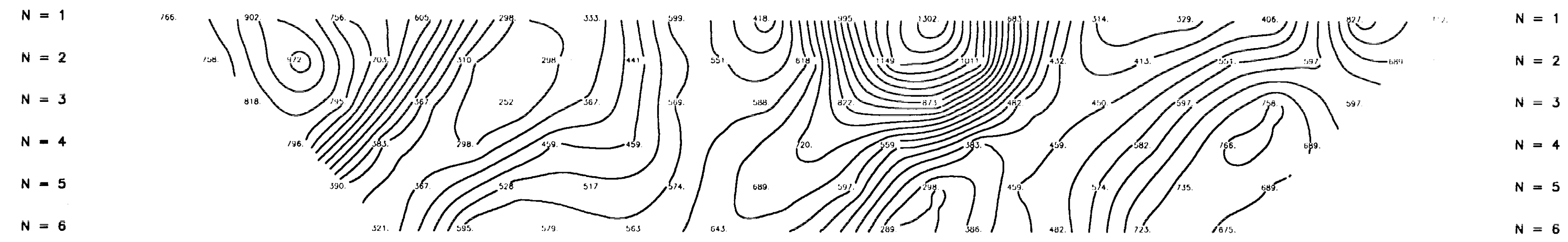
DATE SURVEYED: December 4, 1997  
 Tx: Huntec Mk2 Model 7500  
 Rx: EDA IP-6

25333

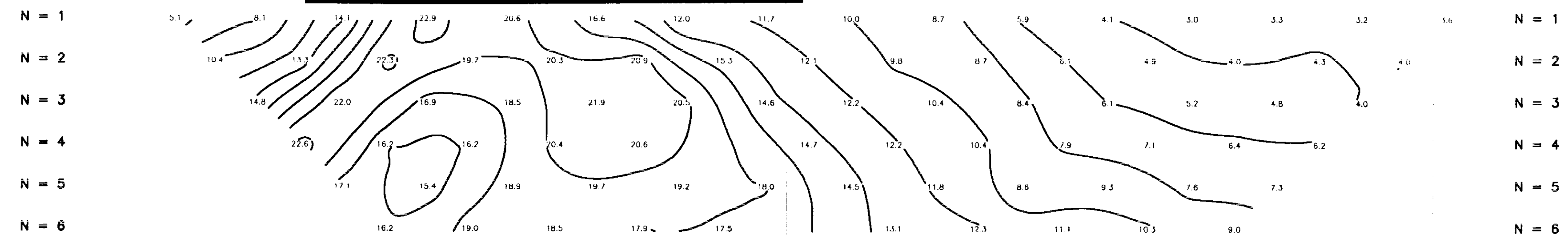
LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY  
 DRAWING NUMBER : 97420-02

RESISTIVITY (OHM-M)



CHARGEABILITY (MSEC)

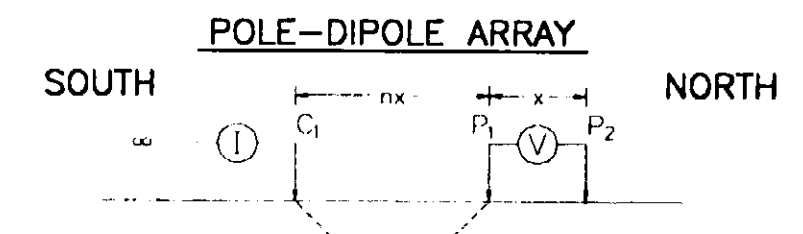


**WESTMIN RESOURCES LTD.**

**GM Mineral Claim Group**

Gibraltar Mine Site

**LINE: 1800W**



$x = 200 f$   $n = 1 - 6$

CURRENT ELECTRODE  $C_1$  SOUTH OF POTENTIAL DIPOLE  $P_1P_2$

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE
- AT DEPTH

SCALE 1 : 2400

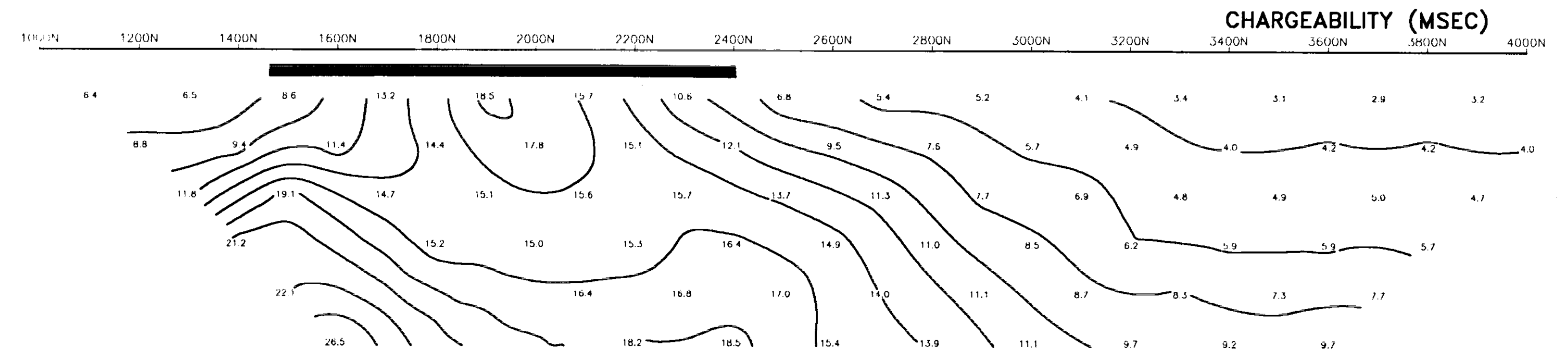
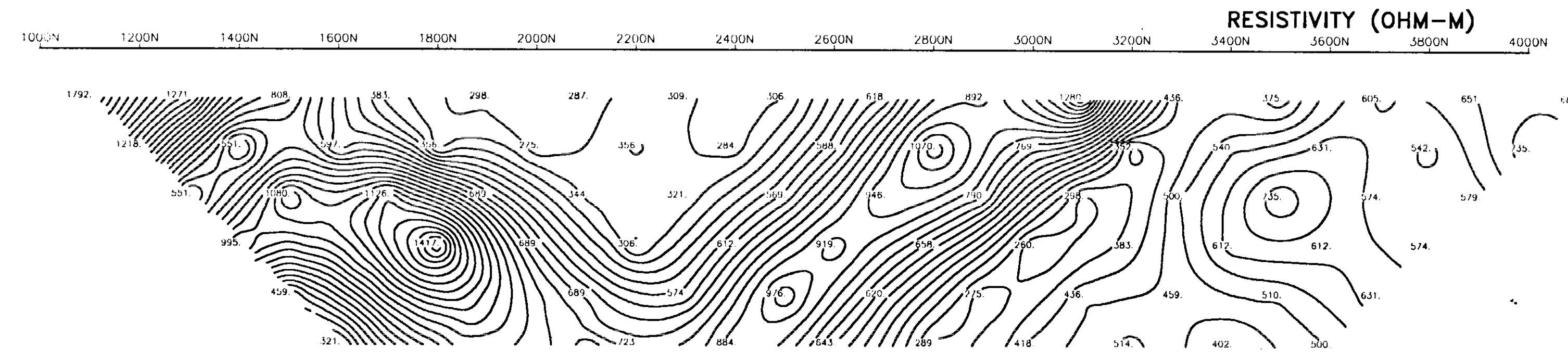
CONTOUR INTERVALS  
 APP.CHARGEABILITY : 2.0 (msec)  
 APP.RESISTIVITY : 50 (ohm-m)

DATE SURVEYED: December 4, 1997  
 Tx: Huntec Mk2 Model 7500  
 Rx: EDA IP-6

25333

**LLOYD GEOPHYSICS INC.**

**INDUCED POLARIZATION SURVEY**  
 DRAWING NUMBER : 97420-03

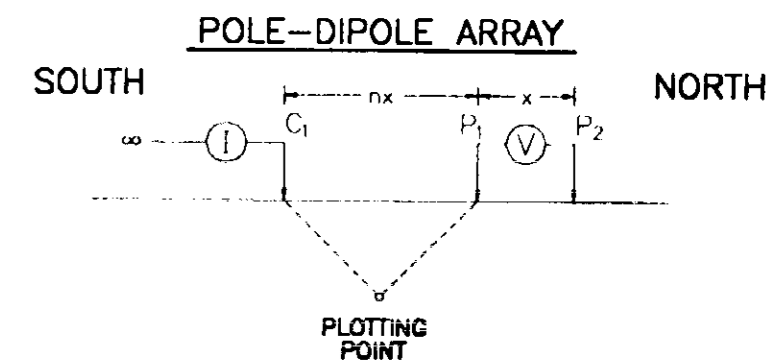


WESTMIN RESOURCES LTD.

GM Mineral Claim Group

Gibraltar Mine Site

LINE: 1900W



$x = 200 f$   $n = 1 - 6$

CURRENT ELECTRODE  $C_1$  SOUTH  
OF POTENTIAL DIPOLE  $P_1P_2$

SURFACE PROJECTION  
OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE
- AT DEPTH

SCALE 1 : 2400

CONTOUR INTERVALS

APP.CHARGEABILITY : 2.0 (msec)

APP.RESISTIVITY : 50 (ohm-m)

DATE SURVEYED: December 3, 1997

Tx: Huntac Mk2 Model 7500

Rx: EDA IP-6

25 333

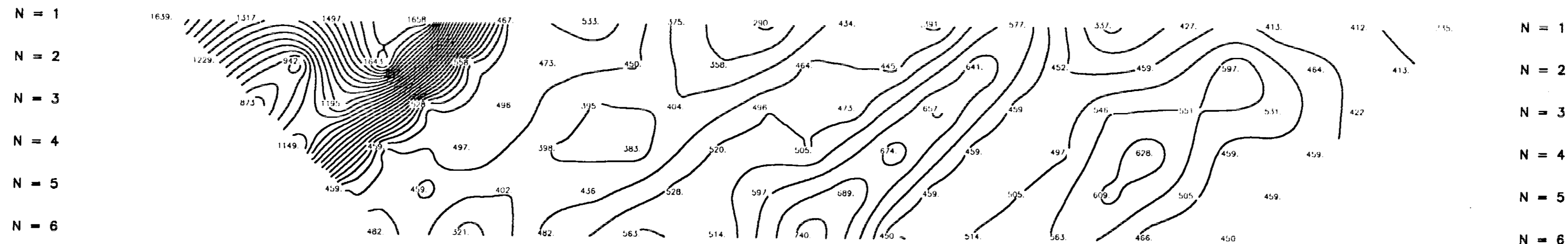
LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

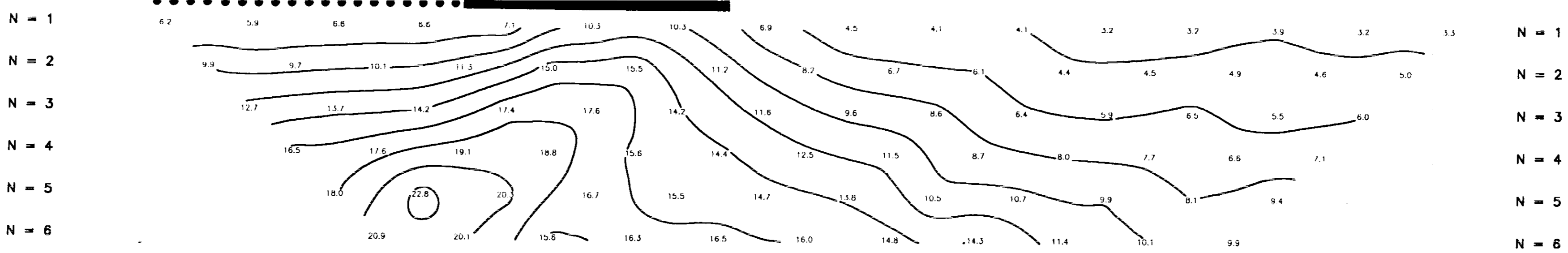
DRAWING NUMBER : 97420-04

4

RESISTIVITY (OHM-M)



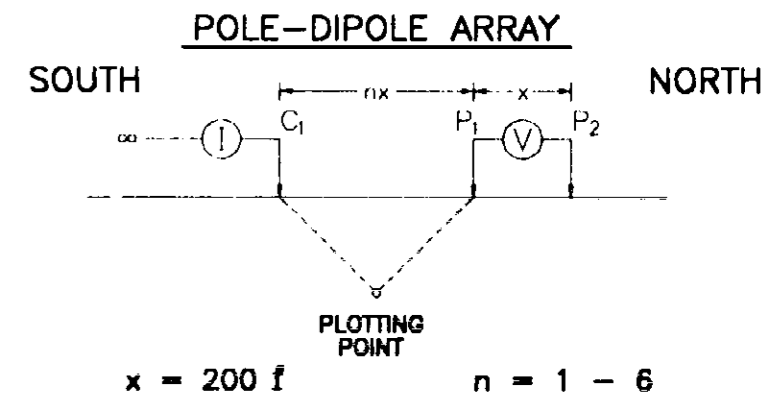
CHARGEABILITY (MSEC)



GM Mineral Claim Group

Gibraltar Mine Site

**LINE: 2000W**



CURRENT ELECTRODE  $C_1$  SOUTH OF POTENTIAL DIPOLE  $P_1P_2$

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE
- AT DEPTH

SCALE 1 : 2400

CONTOUR INTERVALS  
 APP.CHARGEABILITY : 2.0 (msec)  
 APP.RESISTIVITY : 50 (ohm-m)

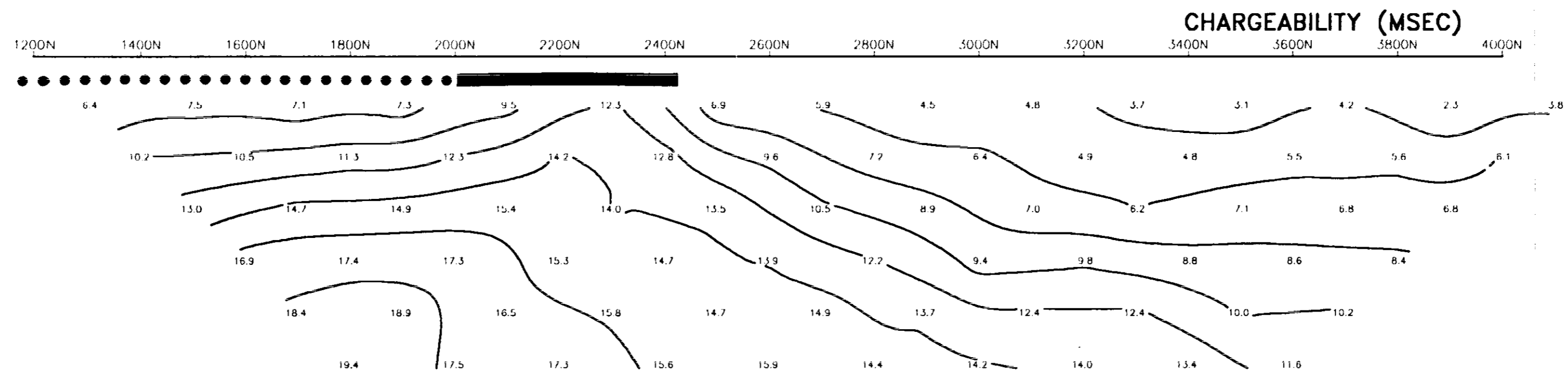
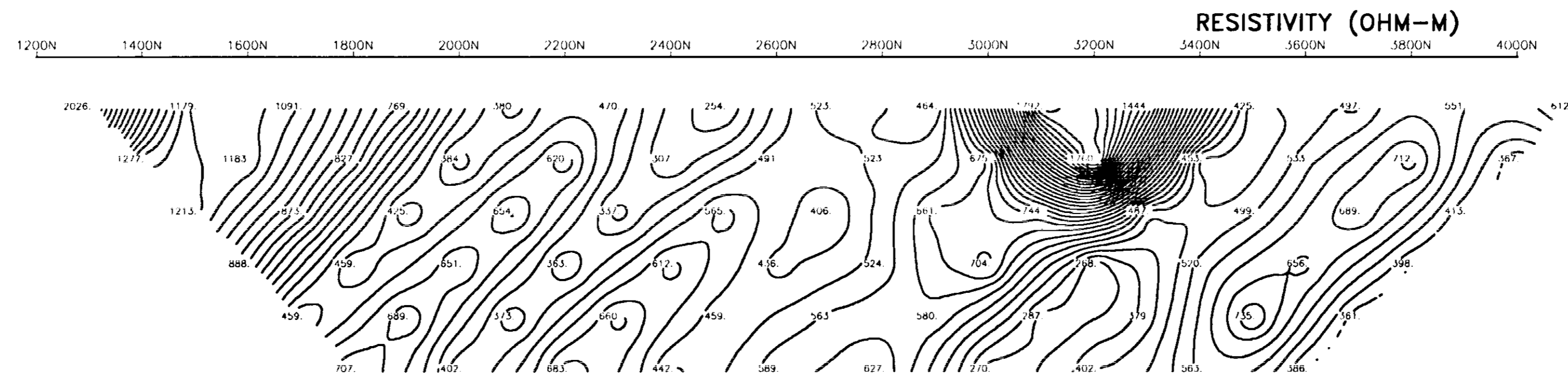
DATE SURVEYED: December 3, 1997  
 Tx: Huntac Mk2 Model 7500  
 Rx: EDA IP-8

25 333

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 97420-05

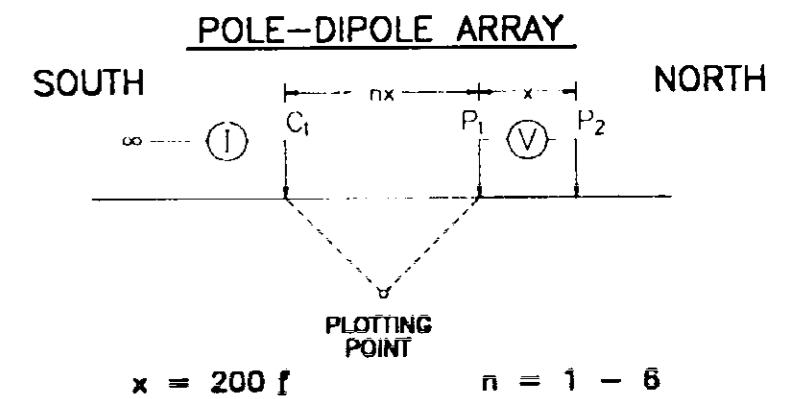




GM Mineral Claim Group

Gibraltar Mine Site

**LINE: 2100W**



CURRENT ELECTRODE  $C_1$  SOUTH OF POTENTIAL DIPOLE  $P_1P_2$

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE
- AT DEPTH

SCALE 1 : 2400

CONTOUR INTERVALS  
 APP.CHARGEABILITY : 2.0 (msec)  
 APP.RESISTIVITY : 50 (ohm-m)

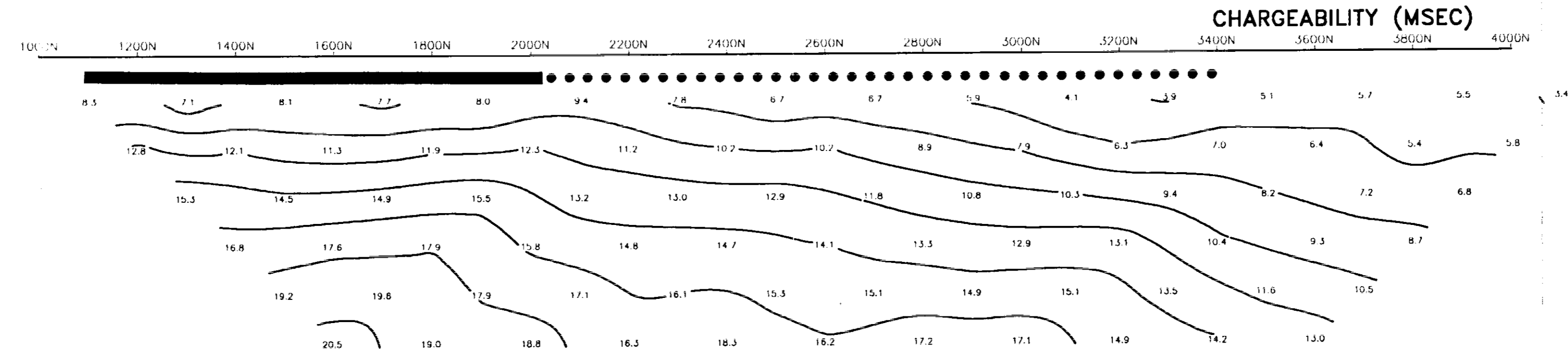
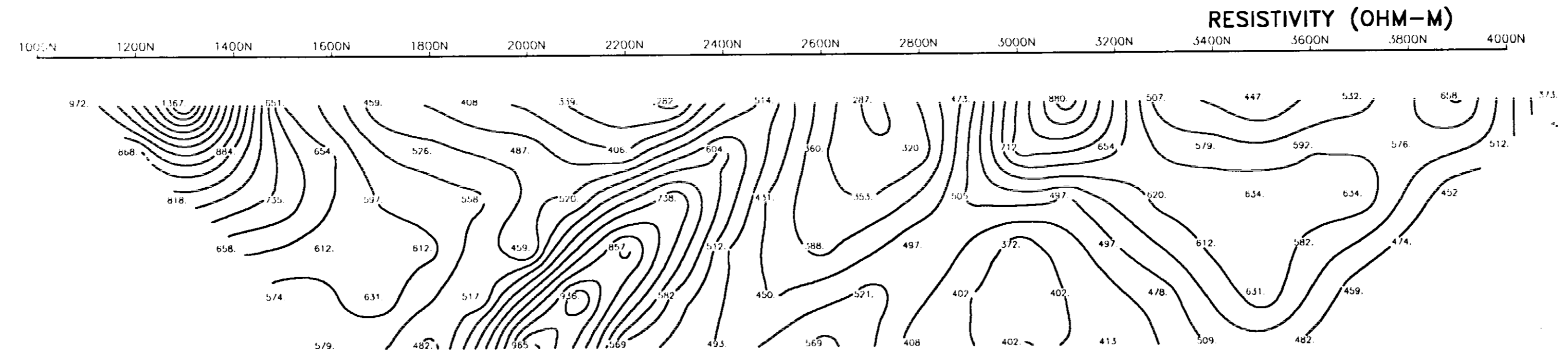
DATE SURVEYED: December 2, 1997  
 Tx: Huntec Mk2 Model 7500  
 Rx: EDA IP-6

25 333

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

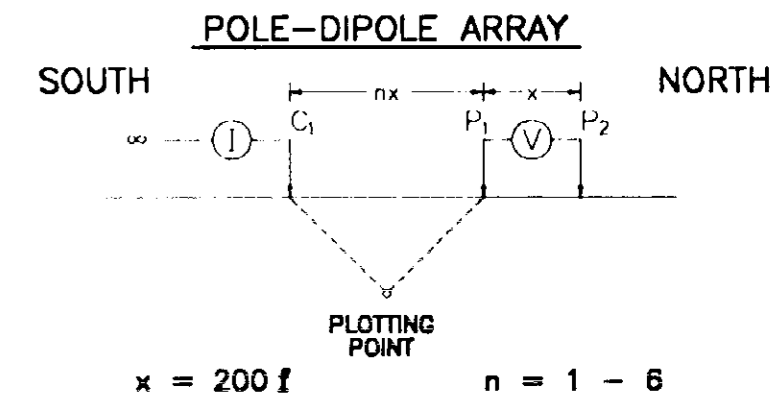
DRAWING NUMBER : 97420-06



GM Mineral Claim Group

Gibraltar Mine Site

**LINE: 2200W**



CURRENT ELECTRODE  $C_1$  SOUTH OF POTENTIAL DIPOLE  $P_1P_2$

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE
- AT DEPTH

SCALE 1 : 2400

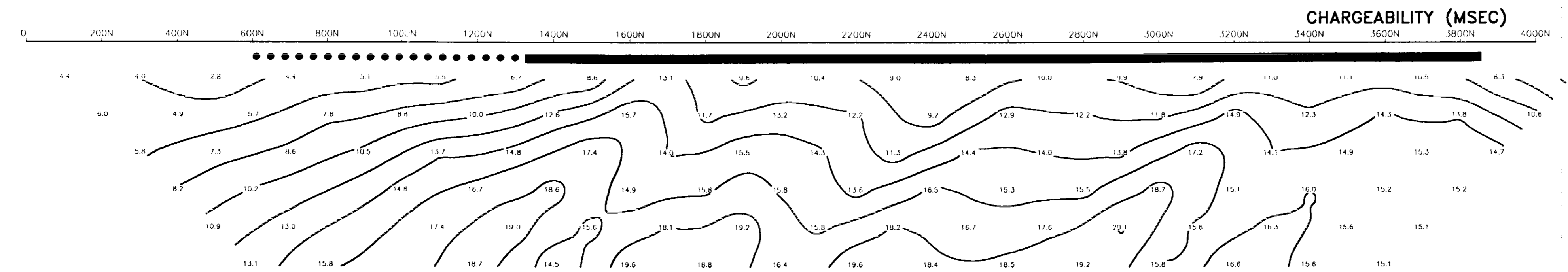
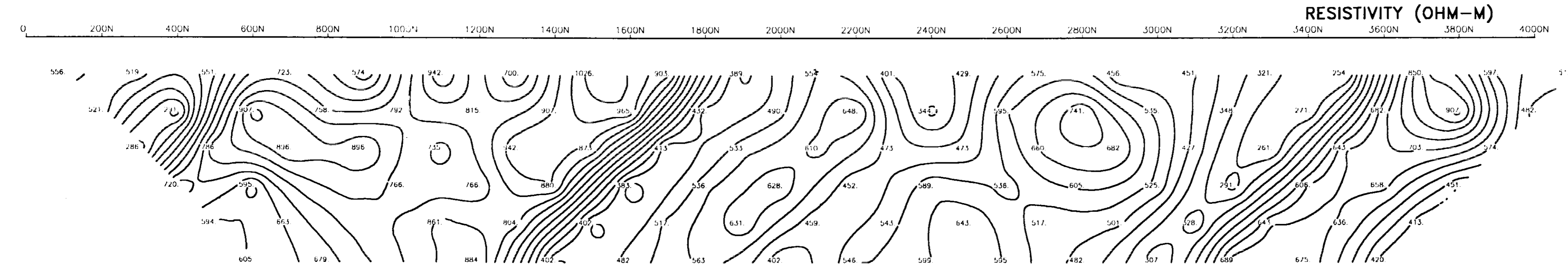
CONTOUR INTERVALS  
 APP.CHARGEABILITY : 2.0 (msec)  
 APP.RESISTIVITY : 50 (ohm-m)

DATE SURVEYED: December 2, 1997  
 Tx: Huntec MK2 Model 7500  
 Rx: EDA IP-6

25 333

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY  
 DRAWING NUMBER : 97420-07

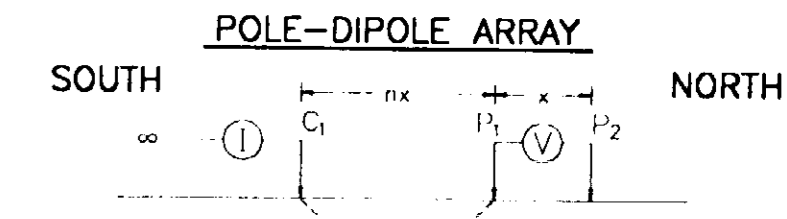


WESTMIN RESOURCES LTD.

GM Mineral Claim Group

Gibraltar Mine Site

LINE: 2300W



x = 200 f n = 1 - 6

CURRENT ELECTRODE C<sub>1</sub> SOUTH OF POTENTIAL DIPOLE P<sub>1</sub>P<sub>2</sub>

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE
- AT DEPTH

SCALE 1 : 2400

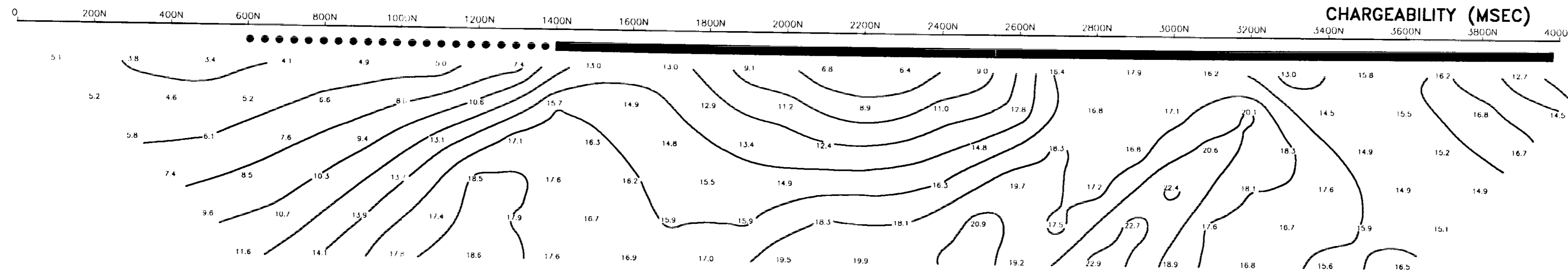
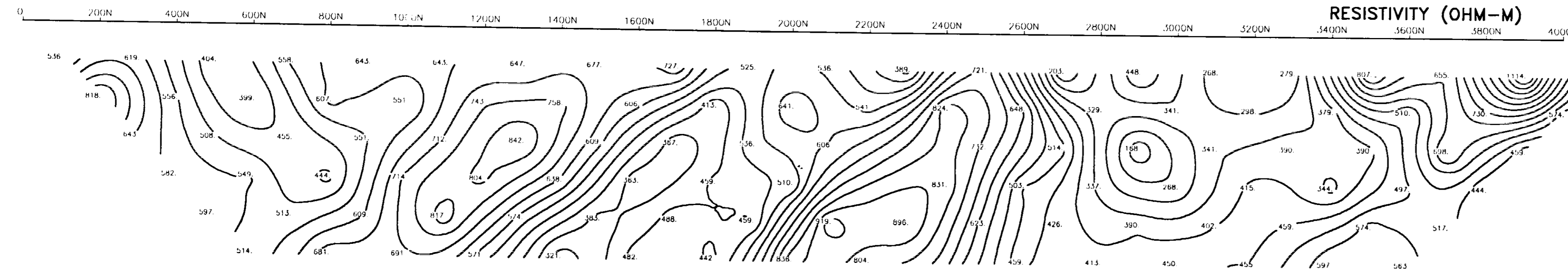
CONTOUR INTERVALS  
 APP.CHARGEABILITY : 2.0 (msec)  
 APP.RESISTIVITY : 50 (ohm-m)  
 DATE SURVEYED: December 1, 1997  
 Tx: Huntac Mk2 Model 7500  
 Rx: EDA IP-8

25333

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 97420-08



N = 1  
N = 2  
N = 3  
N = 4  
N = 5  
N = 6

N = 1  
N = 2  
N = 3  
N = 4  
N = 5  
N = 6

N = 1  
N = 2  
N = 3  
N = 4  
N = 5  
N = 6

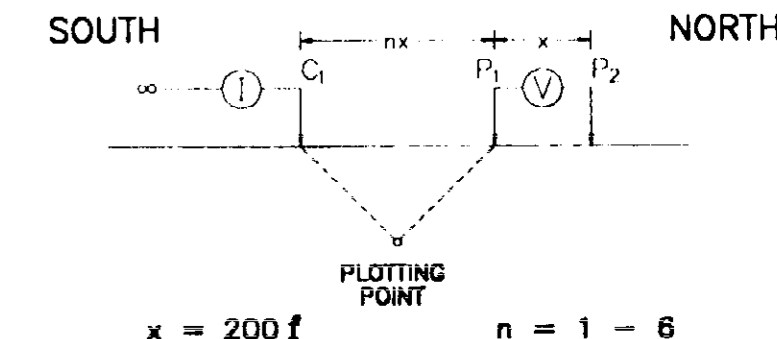
N = 1  
N = 2  
N = 3  
N = 4  
N = 5  
N = 6

GM Mineral Claim Group

Gibraltar Mine Site

LINE: 2400W

POLE-DIPOLE ARRAY



CURRENT ELECTRODE C<sub>1</sub> SOUTH OF POTENTIAL DIPOLE P<sub>1</sub>P<sub>2</sub>

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE
- AT DEPTH

SCALE 1 : 2400

CONTOUR INTERVALS  
 APP.CHARGEABILITY : 2.0 (msec)  
 APP.RESISTIVITY : 50 (ohm-m)

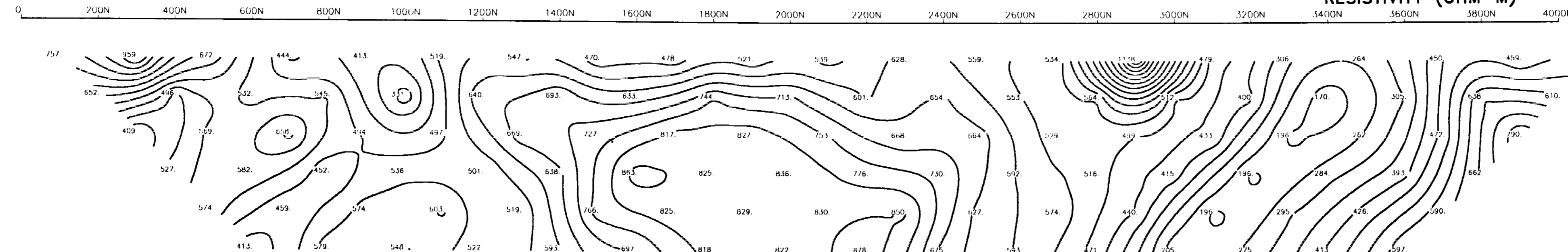
DATE SURVEYED: November 30, 1997  
 Tx: Huntec Mk2 Model 7500  
 Rx: EDA IP-8

25 333

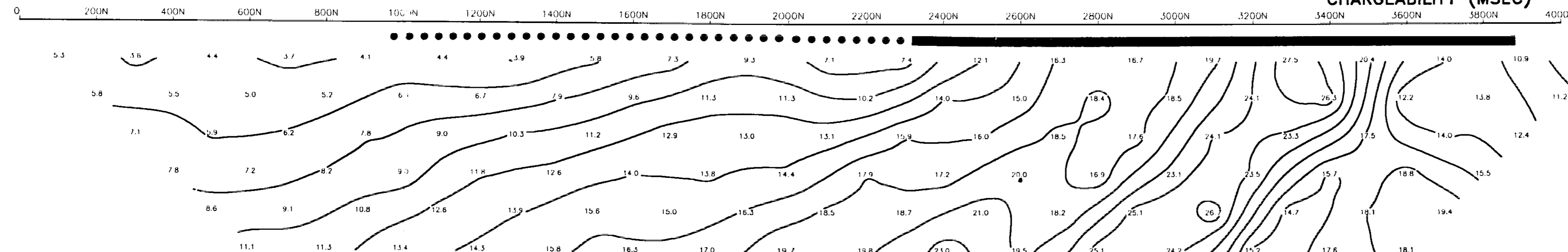
LLOYD GEOPHYSICS INC

INDUCED POLARIZATION SURVEY  
 DRAWING NUMBER : 97420-09

RESISTIVITY (OHM-M)



CHARGEABILITY (MSEC)

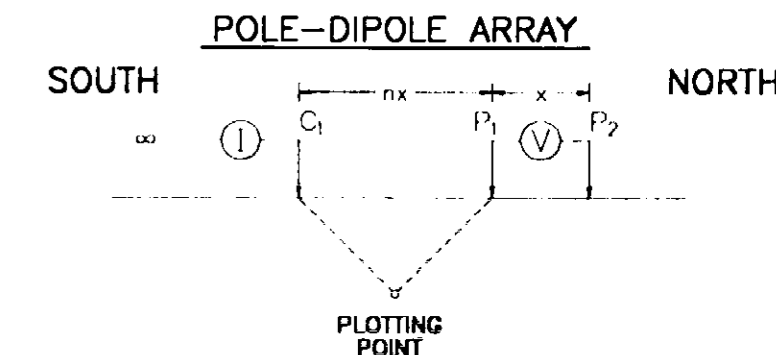


**WESTMIN RESOURCES LTD.**

**GM Mineral Claim Group**

Gibraltar Mine Site

**LINE: 2500W**



CURRENT ELECTRODE G<sub>1</sub> SOUTH OF POTENTIAL DIPOLE P<sub>1</sub>P<sub>2</sub>

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE
- AT DEPTH

SCALE 1 : 2400

CONTOUR INTERVALS  
 APP.CHARGEABILITY : 2.0 (msec)  
 APP.RESISTIVITY : 50 (ohm-m)

DATE SURVEYED: November 30, 1997  
 Tx: Huntac Mk2 Model 7500  
 Rx: EDA IP-6

25333

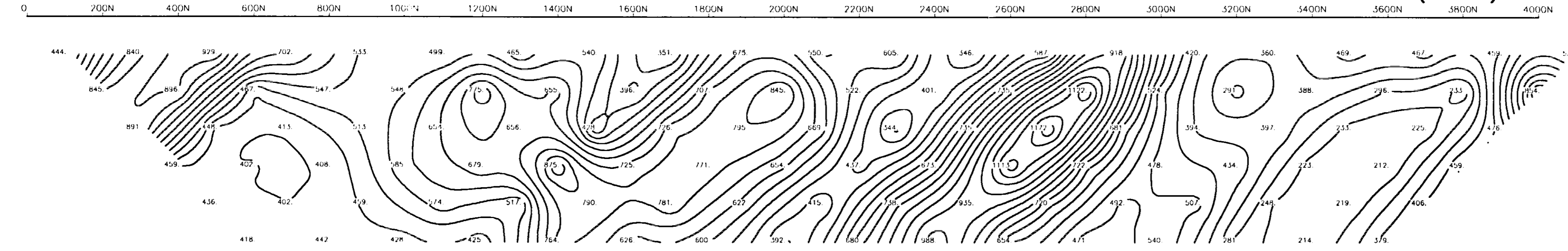
**LLOYD GEOPHYSICS INC.**

**INDUCED POLARIZATION SURVEY**

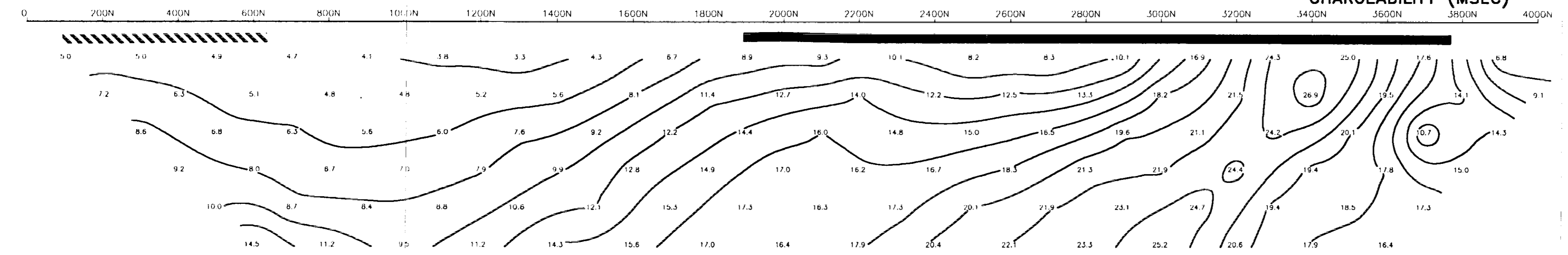
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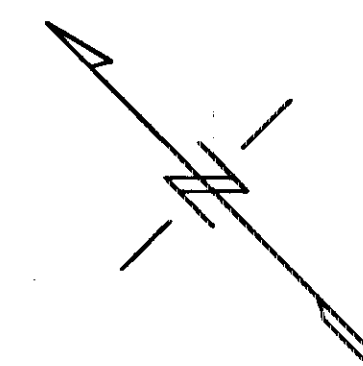
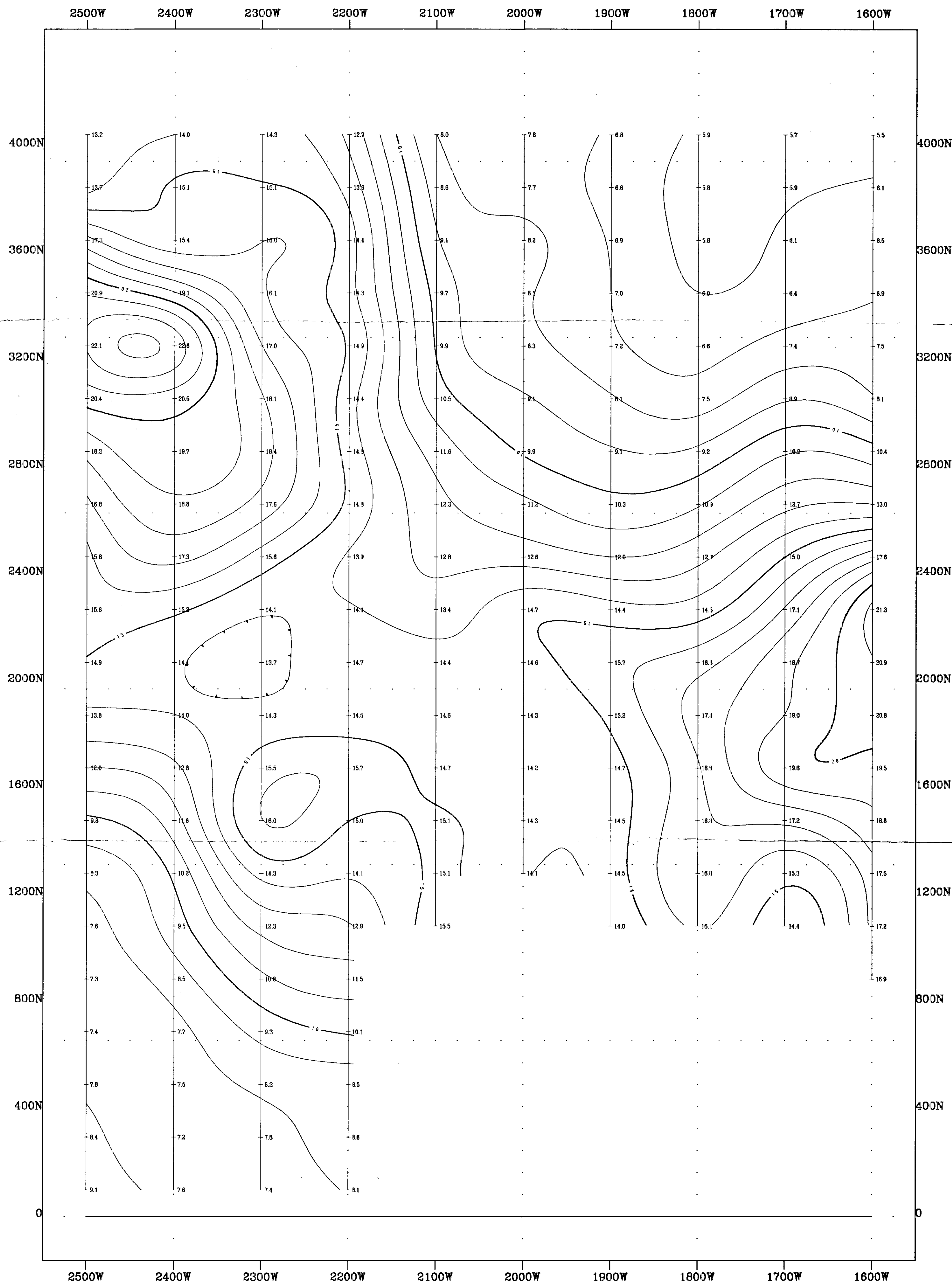
(10)

**RESISTIVITY (OHM-M)**



**CHARGEABILITY (MSEC)**





**LEGEND**

CONTOUR INTERVALS

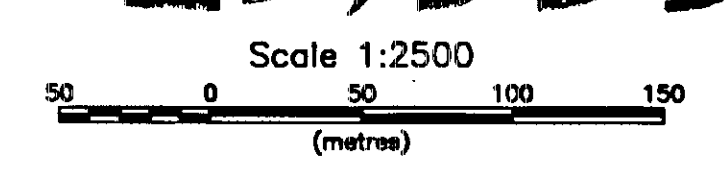
- 1 msec
- 5 msec
- 20 msec

Station Interval: 200 Feet  
Current Electrode SOUTH of Potential Dipole

INSTRUMENTS

BRGM ELREC-6 IP RECEIVER  
IRIS VIP 4000 TRANSMITTER

25,333



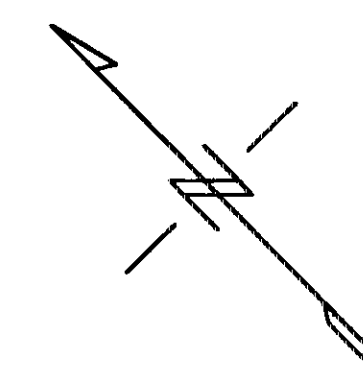
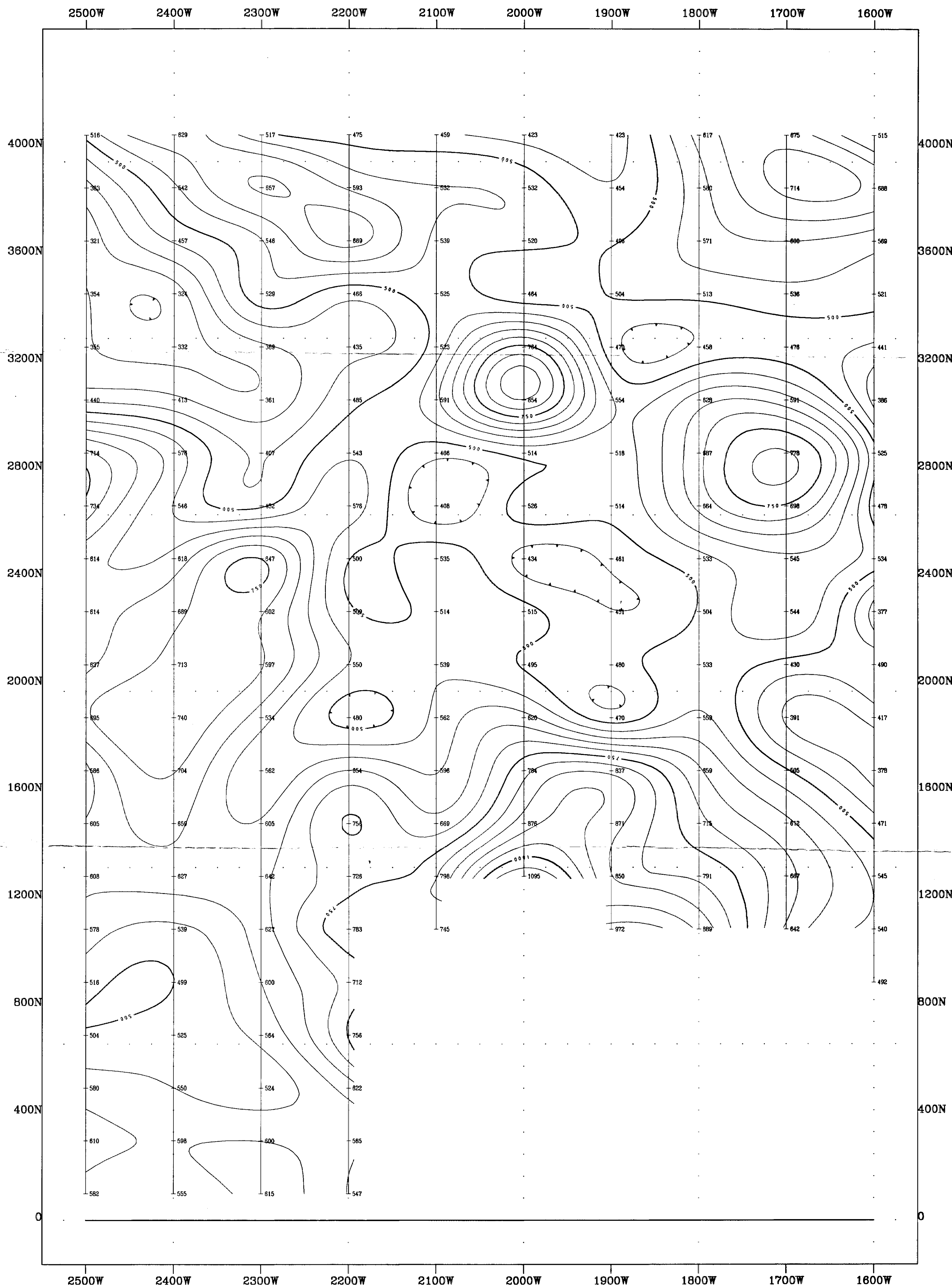
**WESTMIN RESOURCES LTD.**

GM Mineral Claim Group  
Cariboo Mining Division

**CHARGEABILITY** (A)  
**21 POINT TRIANGULAR FILTER**

Scale 1:2500 NTS 93B/9E,9W,8E Drawing No:97420-11

**LLOYD GEOPHYSICS INC.**



**LEGEND**

**CONTOUR INTERVALS**

- 50 ohm-m
- 250 ohm-m
- 1000 ohm-m

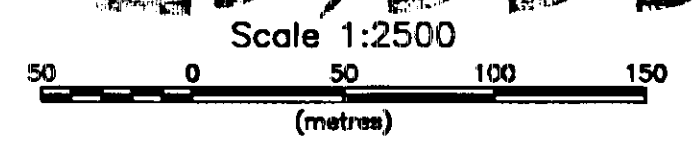
Station Interval: 200 Feet  
 Current Electrode SOUTH of Potential Dipole

**INSTRUMENTS**

BRGM ELREC-6 IP RECEIVER  
 IRIS VIP 4000 TRANSMITTER

GEOLOGICAL SURVEY BRANCH  
 ASSESSMENT REPORT

**25,333**

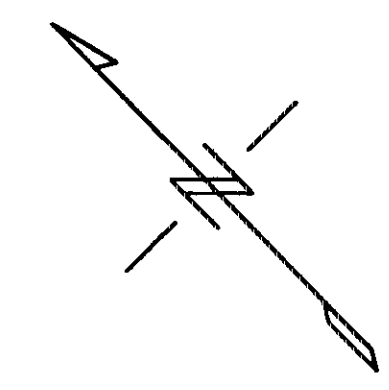
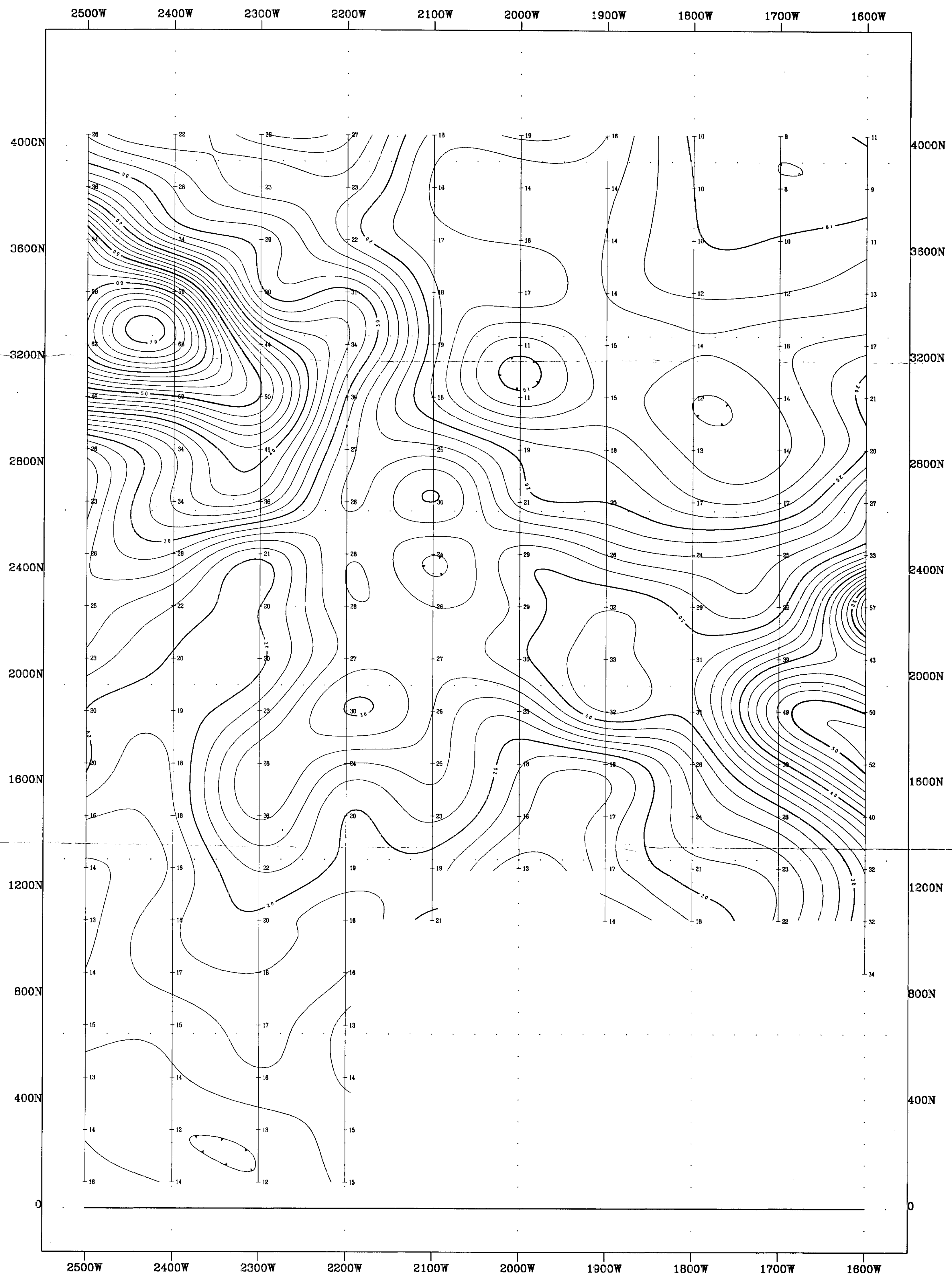


**WESTMIN RESOURCES LTD.**

GM Mineral Claim Group  
 Cariboo Mining Division

**RESISTIVITY** (12)  
**21 POINT TRIANGULAR FILTER**  
 Scale 1:2500 NTS 93B/9E,9W,8E Drawing No:97420-12

**LLOYD GEOPHYSICS INC.**



**LEGEND**

**CONTOUR INTERVALS**

- 2 farads/m
- 10 farads/m
- 50 farads/m

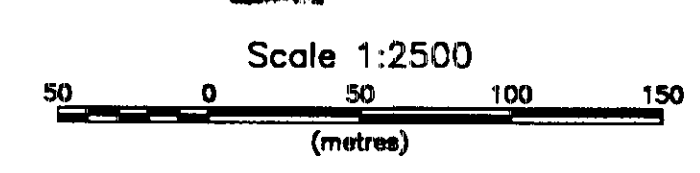
Station Interval: 200 Feet  
 Current Electrode SOUTH of Potential Dipole

**INSTRUMENTS**

BRGM ELREC-6 IP RECEIVER  
 IRIS VIP 4000 TRANSMITTER

GEOLOGICAL SURVEY BRANCH  
 ASSESSMENT REPORT

**25,333**



**WESTMIN RESOURCES LTD.**

GM Mineral Claim Group  
 Cariboo Mining Division

**METAL FACTOR** (B)

Scale 1:2500 NTS 93B/9E,9W,8E Drawing No:97420-13

**LLOYD GEOPHYSICS INC.**