

000

DKSG

77 - 1212

312001

PROGRESS REPORT  
*PART OF E.L. 2/70*  
EXPLORATION LICENCE 5/74

MAYDAY CREEK

for six months ending May 30, 1977.

S.S. Webster

**OPEN FILE**

26 May, 1977

TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	1
INTRODUCTION	2
History	2
Ownership	2
Location	2
Previous Exploration	2
EXPLORATION	2
GEOLOGY	3
GEOPHYSICAL SURVEY	3
DISCUSSION ON RESULTS	3
CONCLUSION	4
FINANCE	4
REFERENCES	5

ATTACHMENTS

<u>Plate</u>	<u>Title</u>	<u>Scale</u>
MC 14	Mayday Creek: Summary plan	1:50,000
	"    "    IP and Resistivity Summary	
	Line 1	
	Line 2 - 5 Sheets	
	Line 3	
MC 15a,b, c,d,	Mayday Creek Schlumberger Electrical soundings	

SUMMARY

An electrical geophysical survey was carried out in portion of the Mayday Creek Exploration Licence 5/74 to assess the thickness of basalt cover and determine the use of this exploration technique to evaluate the potential of this area.

Four reconnaissance lines were cut and surveyed with electrical soundings to indicate basalt thickness generally in excess of 100 metres. Several Induced Polarisation traverses were surveyed to test the sub-basalt basement for sulphide mineralisation.

It is concluded that, due to the thickness and moderately low resistivity of the basalt cover, special survey techniques would have to be developed to test the potential of the basement. The cost of this work and follow-up drilling will have to be assessed before further work is undertaken on this property.

INTRODUCTIONHistory

The property history was described by Rabone, in Cominco Exploration's Progress Report on Exploration Licence 5/74, Mayday Creek, Tasmania for period ending May 30 1975. The geology of E.L. 5/74 is described by Boyle in CEPL's Progress Report for the period ending May 30, 1976.

Ownership

Exploration Licence 5/74, Mayday Creek, was granted in May, 1974 and is held by Cominco Exploration Pty.Ltd. on behalf of the Abex joint venture. Paringa Mining and Exploration Company Limited has a 10% interest. The E.L. expires on May 30, 1977 and is renewable at six monthly intervals.

Location

The approximate centre of the area investigated is at 41°30'S, 145°45'E. The licence is located in the central north west of Tasmania, approximately 10 km south east of Guildford. E.L. 5/74 covers an area of 105 sq km and lies between E.L.'s 15/73 and 10/74, held by Cominco Exploration Pty.Ltd. and Union Oil Development Corp. respectively.

Previous Exploration

Early 1970's: Paringa reconnaissance stream geochemistry in the Romulus Pup area.

1972: CEPL airborne EM survey over northern and western sections of the area when held as E.L. 2/70.

1975: Geological mapping and follow up stream geochemistry in the Romulus Pup area. Airborne EM survey over part of the southern portion of E.L. 5/74.

EXPLORATION

A programme of geological mapping of streams and roads in the area was carried out in March and April, 1976 followed by some regional interpretation based on published and unpublished data. CEPL 1:25,000 scale aerial photographs were used for locating outcrop geology. Field mapping was supplemented by thin sections of the fine grained, less readily identified rock types.

004

The geology of the Mayday Creek area (E.L. 5/74) is illustrated in Summary Plan, figure MC 14. The prospect is almost totally covered by Tertiary Basalt, except for several creek sections which show Cambrian volcanics and Ordovician grits and conglomerates beneath the basalt.

Reconnaissance mapping to the south of E.L. 5/74 indicates favourably mineralised stratigraphy trending north towards the basalt covered survey area. Three main lithologies are observed.

- 1) a west facing group of Ordovician sandstones and siltstones,
- 2) a major Cambrian andesite-dacite volcanic suite, which hosts the Que River mineralisation,
- 3) an upper black shale - reworked tuff-rhyolite dacitic volcanic group.

#### GEOPHYSICAL SURVEY

Four reconnaissance traverse lines, spaced 2.5 km apart, were sited to cross the licence normal to the inferred strike of the sub-basalt lithology. These lines are illustrated in Figure MC 14.

Four Schlumberger resistivity depth soundings were surveyed at selected locations to ascertain thickness and resistivity of the basalt cover. One traverse line (#2) was completely traversed by the Induced Polarisation method, using the dipole-dipole array, and selected setups were surveyed over creek sections which indicated sub-basalt basement.

#### DISCUSSION ON RESULTS

The Schlumberger resistivity soundings indicated that the basalt cover is more conductive than the average basement lithology. Resistivities of the basalt were always between 70 and 100 ohm metres, whereas at Que River non-mineralised rock type resistivities are always in excess of 200 ohms and range in excess of 1000 ohm (Table 1).

The basalt thickness increases from south to north, being only 10 m. thick on line #4, 100 thick on line #2 and of undetermined thickness on line #1.

The depth soundings indicated that standard dipole-dipole traversing was not practical on line #1 due to the low resistivity and thickness of the basalt. Line #2 could be traversed with 100m dipoles and large electrode spacings to detect lateral variations in basalt thickness and basement lithology. Lines #3 and #1 were traversed in creek sections of the Leven River which exposed sub-basalt basement.

The resistivity and induced polarisation traverse in the Leven River on this line showed basement resistivity variations compatible with resistivities recorded at Que River. However, the frequency effect results showed no variation that could be attributed to mineralisation.

#### Line #1

This line was also traversed over basement exposure in the Leven River, and showed the resistivity pattern associated with a rock type contact at 5100E. A similar contrast is observed in the frequency effect data and is indicative of a weakly mineralised rock type to the east of 5100E, correlating with the higher resistivity rock unit.

#### Line #2

This line was traversed almost continuously from 3800W to 1250E with 100m dipoles and indicated minimal response from sub-basalt basement. Resistivity variation from 130 $\mu$ m to 60 $\mu$ m would be indicative of the thick basalt, and is supported by low order frequency effect values.

Some resistivity values indicative of basement were recorded between 650E and 1250E but were not supported by significant frequency effect anomalies. These resistivity variations may be due to topographic effects.

#### CONCLUSION

An orientation electrical geophysical survey of the Mayday Creek area indicated an increasing thickness of basalt cover from south to north. The low resistivity of the basalt precludes the use of standard techniques to search for mineralisation within the sub-basalt basement.

Special survey techniques could possibly be developed to survey the basement but the cost of this work, combined with follow-up drilling costs, would be prohibitive.

#### FINANCE

During the twelve months ended May 30, 1977, the following amounts were expended on exploration of Exploration Licence 5/74:

Geology	4,018
Survey	6,594



SUMMARY OF ELECTRICAL SOUNDINGS.

Line 2 2500W

950 $\Omega$ m	
190 $\Omega$ m	1.1m
75 $\Omega$ m	1.9
500 $\Omega$ m	97m
	>1000m?

Line 1 1100E

3100 $\Omega$ m	
930 $\Omega$ m	1m
118 $\Omega$ m	3m
	>670m

Line 4 500E

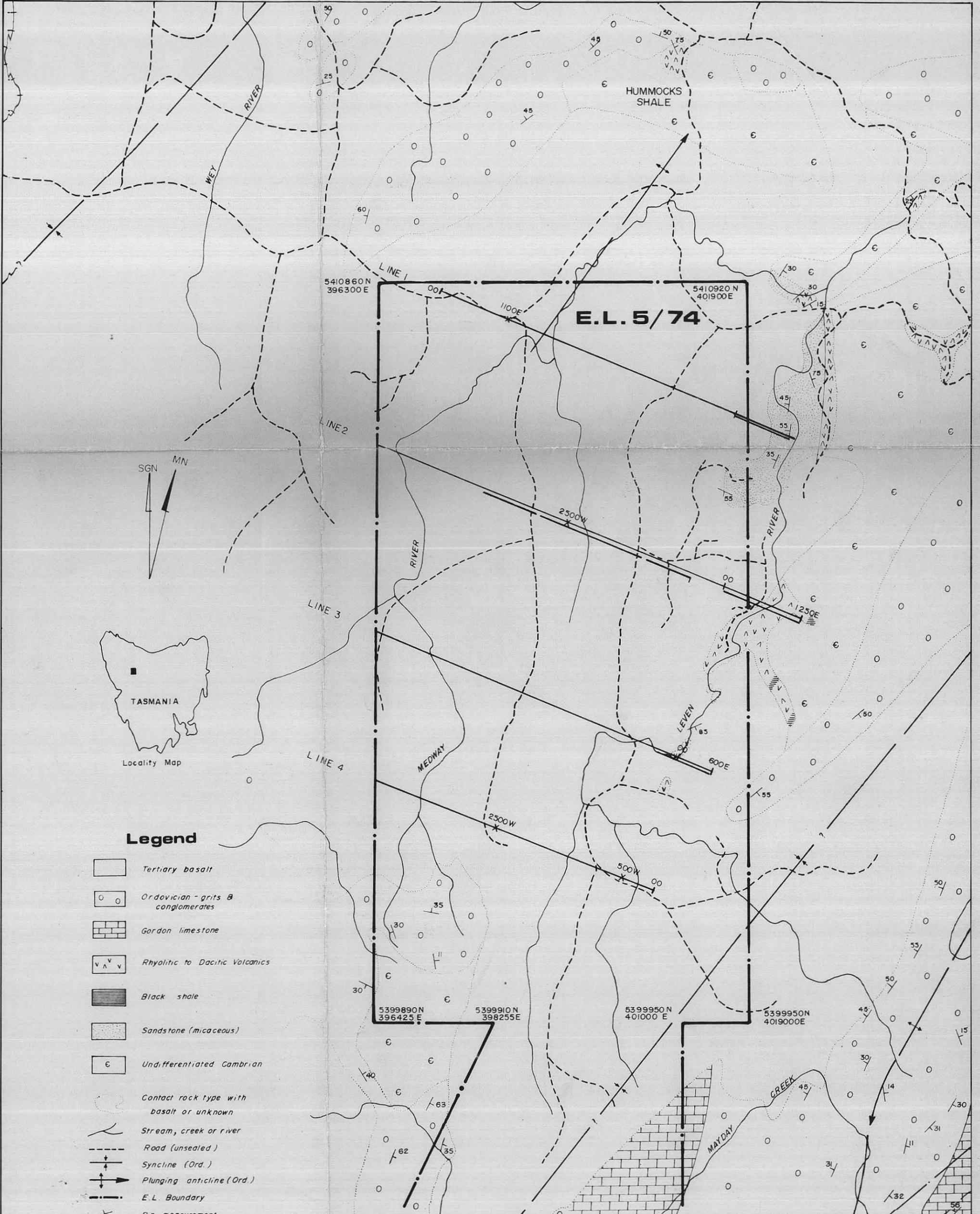
1400 $\Omega$ m	
210 $\Omega$ m	0.7m
84 $\Omega$ m	1.6m
113 $\Omega$ m	11m
	>360m

Line 4 2500E

575 $\Omega$ m	
11500 $\Omega$ m	0.77m
600 $\Omega$ m	1.4m
63 $\Omega$ m	2.4m
260 $\Omega$ m	15m
	>640m

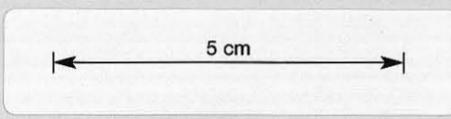
*skin effect?* →

*Very much doubt this interp. &c.*



**Legend**

- Tertiary basalt
- Ordovician - grits & conglomerates
- Gordon limestone
- Rhyolitic to Dacitic Volcanics
- Black shale
- Sandstone (micaceous)
- Undifferentiated Cambrian
- Contact rock type with basalt or unknown
- Stream, creek or river
- Road (unsealed)
- Syncline (Ord.)
- Plunging anticline (Ord.)
- E.L. Boundary
- Dip measurement
- Schlumberger soundings
- Grid lines



**FIGURE 1**

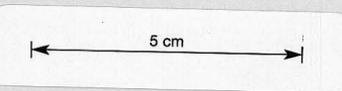
<b>312009</b>		<b>Abminco Exploration</b>		77-1212
Drawn by:	NORTH WEST TASMANIA MAYDAY CREEK		Location code:	
Traced by: AER	SUMMARY PLAN		Scale: 1: 50,000	
Checked by:			Date: March 1977	
Revised:      Date			Plate no: MC 14	

**SOLO** GEOPHYSICS AND CO.

# INDUCED POLARIZATION & RESISTIVITY SURVEY

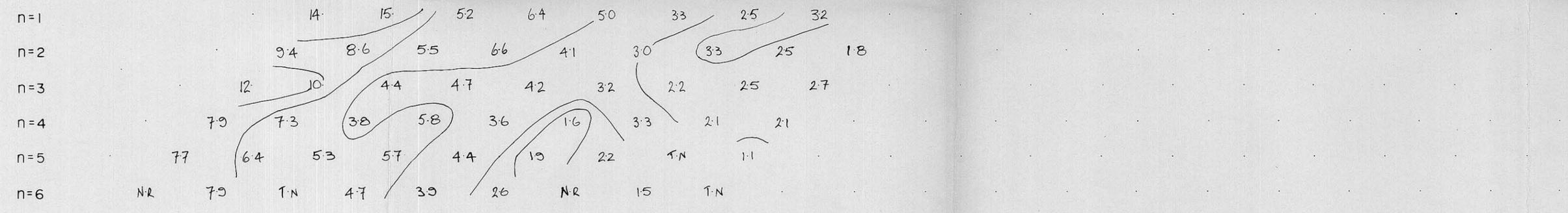
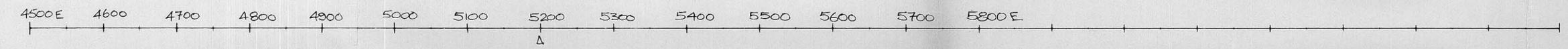
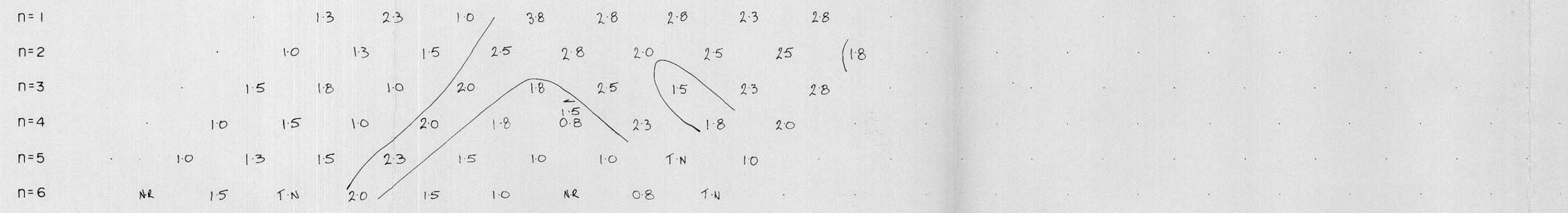
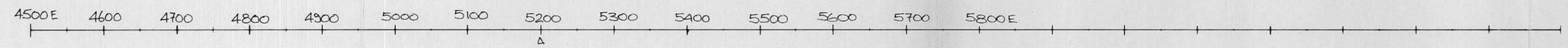
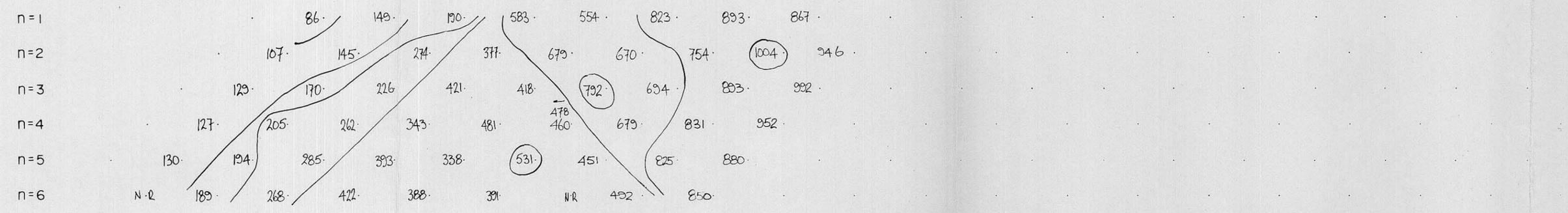
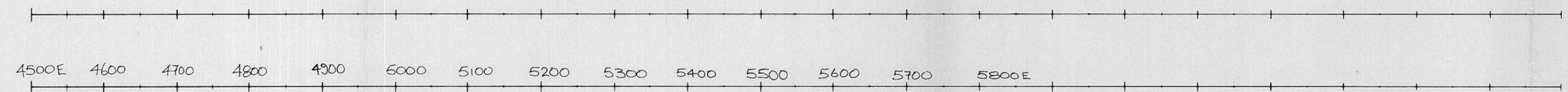
CLIENT ABMINCO N.L.  
 AREA MAYDAY CREEK  
 GRID LINE 1  
 ARRAY DIPOLE - DIPOLE  
 DIPOLE SPREAD 100 METRES  
 FREQUENCIES 0.3 + 2.5 HZ  
 TRANSMITTER TYPE M<sup>c</sup>PHAR P660  
 RECEIVER TYPE M<sup>c</sup>PHAR P660  
 ELECTRODE TYPE SINGLE FOIL

SURVEYOR STEVE BRONSKILL  
 DATE OF SURVEY 7.2.77  
 PLOTTED BY NIC LIMB.



COMMENTS

Culture Plan  
 Apparent Resistivity (ohm-m)  
 Percentage Frequency Effect  
 Metal Factor



**SOLO** GEOPHYSICS AND CO.

# INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT *ABMINCO N.L.*  
AREA *MAYDAY CREEK*

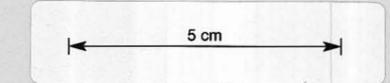
GRID  
LINE *2*

ARRAY *DIPOLE - DIPOLE*  
DIPOLE SPREAD *50m*

FREQUENCIES *0.3/2.5 Hz*  
TRANSMITTER TYPE *M'Phar P660*

RECEIVER TYPE *M'Phar P660*  
ELECTRODE TYPE *ALFOIL*

SURVEYOR *S. BRONSKILL*  
DATE OF SURVEY *26/1/77*  
PLOTTED BY *S. BRONSKILL*



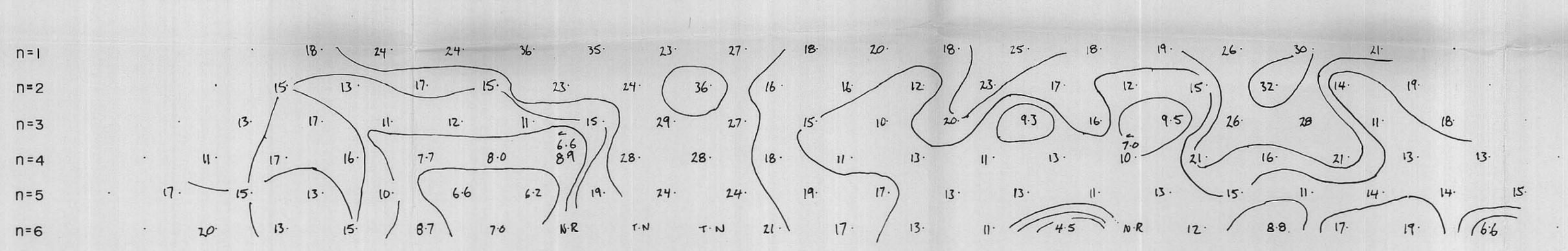
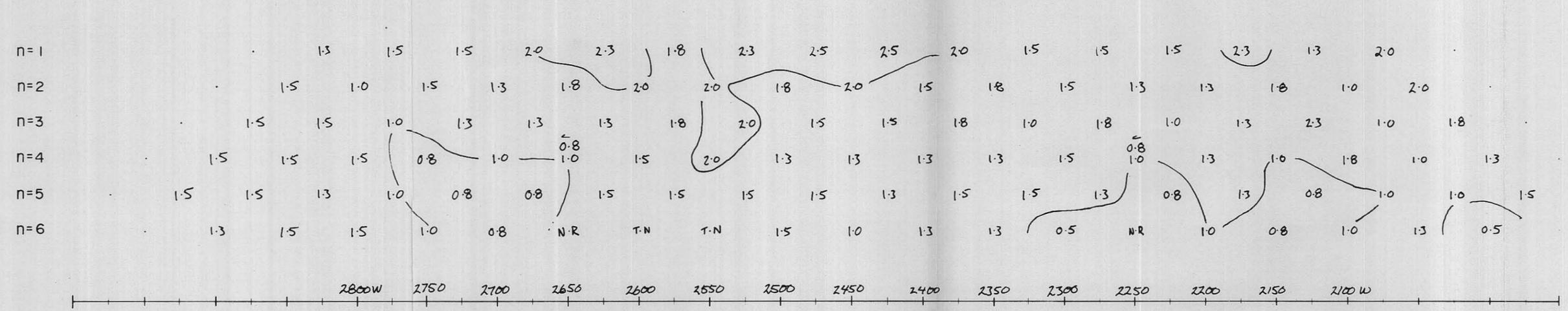
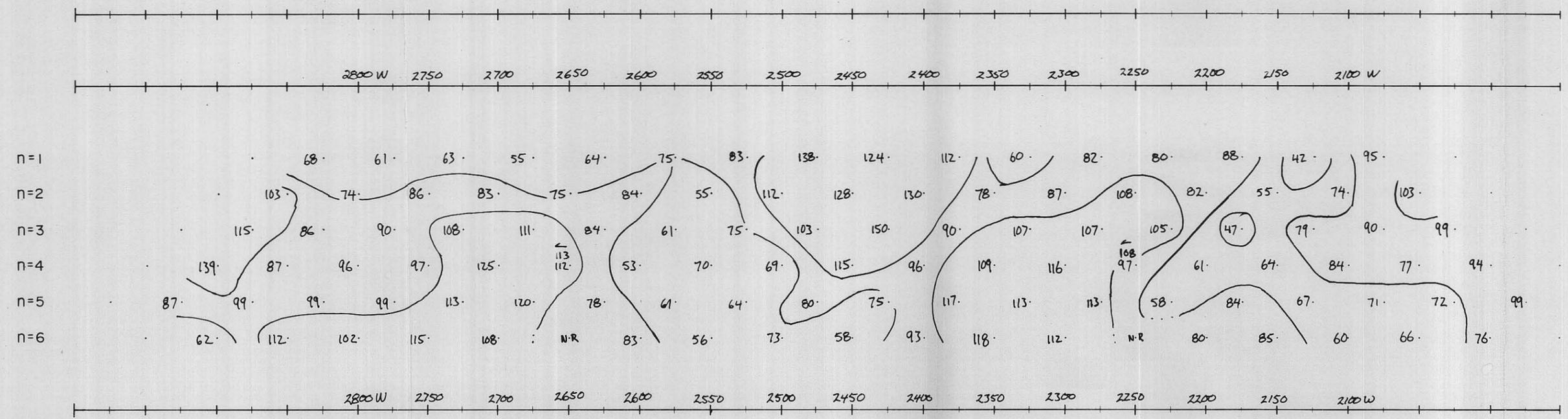
COMMENTS

Culture Plan

Apparent Resistivity (ohm-m)

Percentage Frequency Effect

Metal Factor

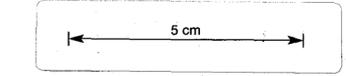


**SOLO** GEOPHYSICS AND CO.

**INDUCED POLARIZATION & RESISTIVITY SURVEY**

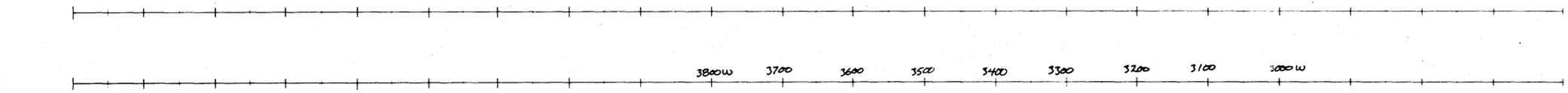
CLIENT *ARMINCO N.L.*  
 AREA *MAYDAY CREEK*  
 GRID

LINE *2*  
 ARRAY *DIPOLE - DIPOLE*  
 DIPOLE SPREAD *100 m*  
 FREQUENCIES *0.3/2.5 Hz*  
 TRANSMITTER TYPE *McPhar P660*  
 RECEIVER TYPE *McPhar P660*  
 ELECTRODE TYPE *ALFOIL*

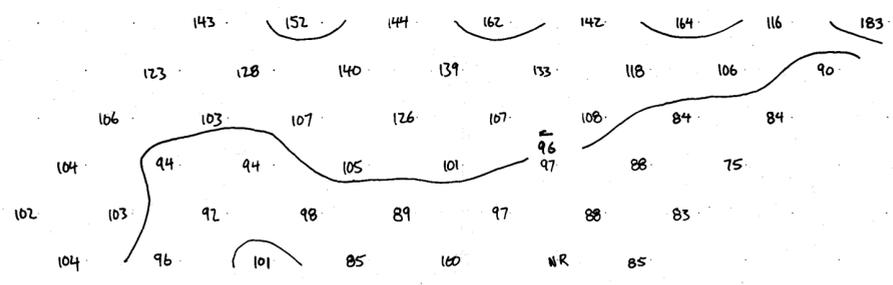


SURVEYOR *S. BRONSKILL*  
 DATE OF SURVEY *28/1/77*  
 PLOTTED BY *S.B.*

COMMENTS

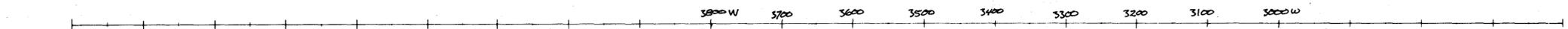


n=1  
n=2  
n=3  
n=4  
n=5  
n=6

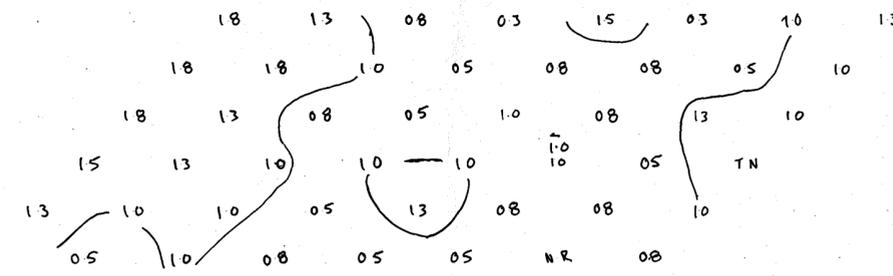


Culture Plan

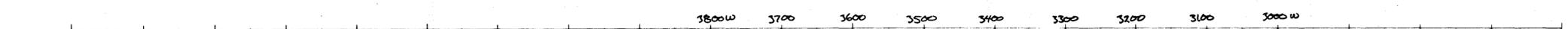
Apparent Resistivity (ohm-m)



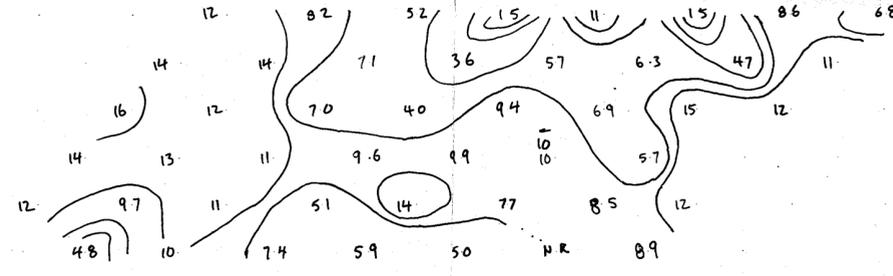
n=1  
n=2  
n=3  
n=4  
n=5  
n=6



Percentage Frequency Effect



n=1  
n=2  
n=3  
n=4  
n=5  
n=6



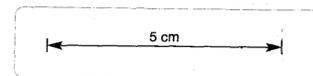
Metal Factor

**SOLO** GEOPHYSICS AND CO.

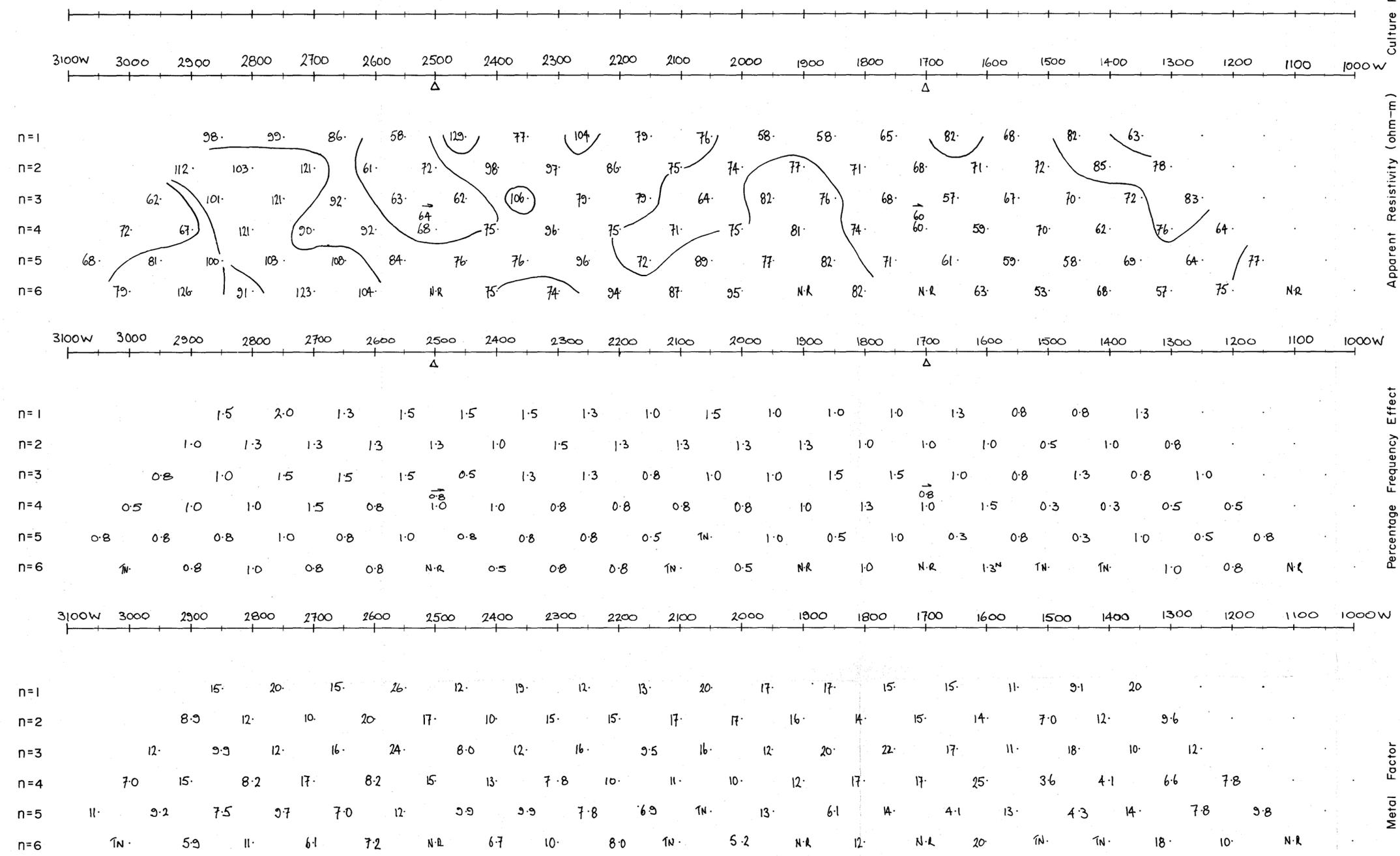
# INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT ARMINCO N.L.  
 AREA MAYDAY CREEK  
 GRID .....  
 LINE 2  
 ARRAY DIPOLE - DIPOLE  
 DIPOLE SPREAD 100 METRES  
 FREQUENCIES 0.3 + 2.5 Hz  
 TRANSMITTER TYPE Mc PHAR P660  
 RECEIVER TYPE Mc PHAR P660  
 ELECTRODE TYPE SINGLE FOIL

SURVEYOR STEVE BRONSKILL  
 DATE OF SURVEY 27.1.77  
 PLOTTED BY NIC LIMB



COMMENTS



Culture Plan

Apparent Resistivity (ohm-m)

Percentage Frequency Effect

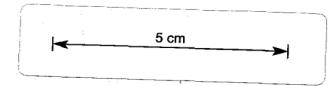
Metal Factor

**SOLO** GEOPHYSICS AND CO.

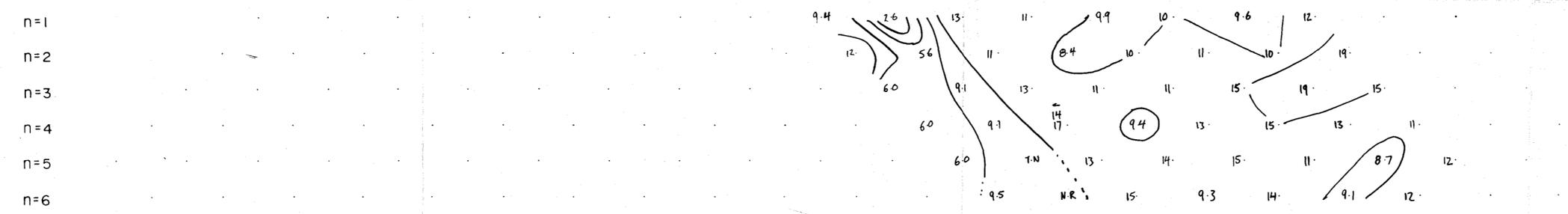
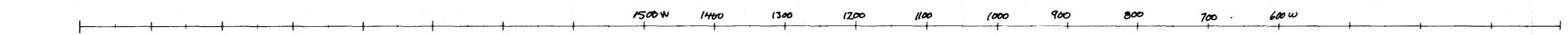
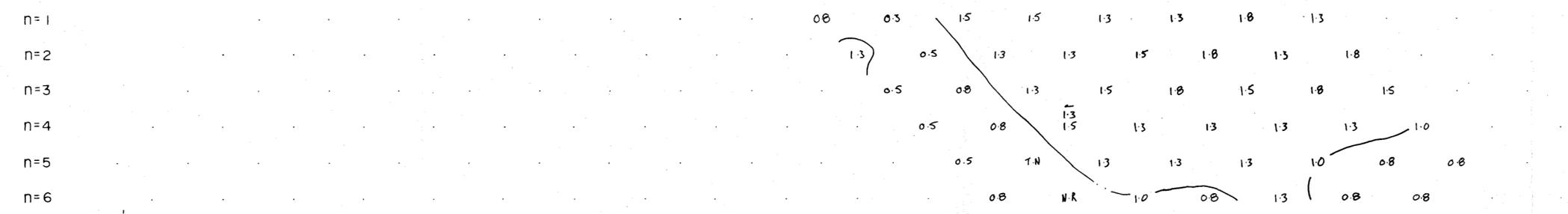
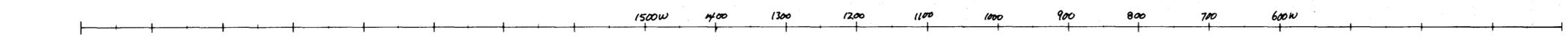
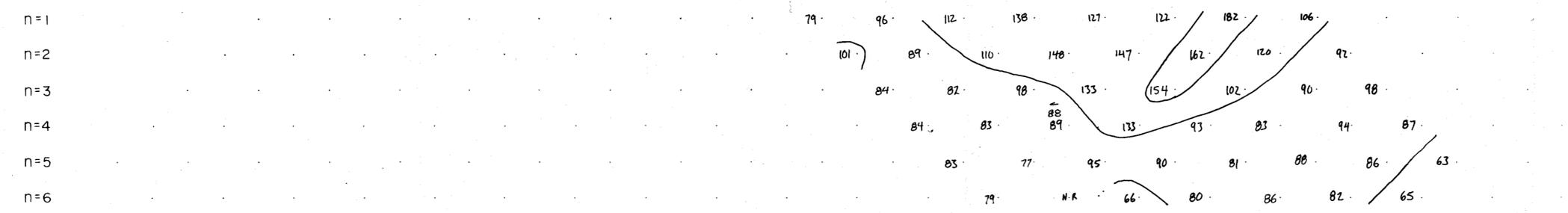
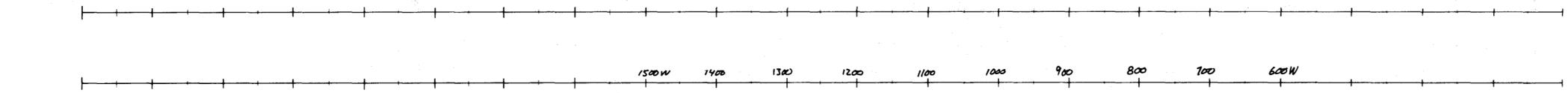
# INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT *ABINGO N.L.*  
 AREA *MAYDAY CREEK*  
 GRID  
 LINE *2*  
 ARRAY *DIPOLE-DIPOLE*  
 DIPOLE SPREAD *100m*  
 FREQUENCIES *0.3/2.5 Hz*  
 TRANSMITTER TYPE *McPhar P660*  
 RECEIVER TYPE *McPhar P660*  
 ELECTRODE TYPE *ALFOIL*

SURVEYOR *S. BRONSKILL*  
 DATE OF SURVEY *28/1/77*  
 PLOTTED BY *S.B.*



COMMENTS



Culture Plan

Apparent Resistivity (ohm-m)

Percentage Frequency Effect

Metal Factor

**SOLO** GEOPHYSICS AND CO.

**INDUCED POLARIZATION & RESISTIVITY SURVEY**

Culture Plan

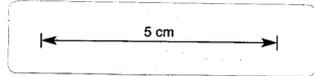
Apparent Resistivity (ohm-m)

Percentage Frequency Effect

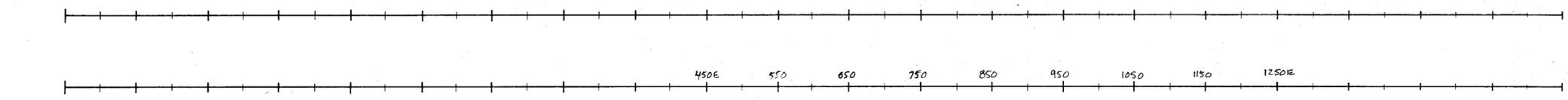
Metal Factor

CLIENT *ABMINCO N.L.*  
 AREA *MAYDAY CK.*  
 GRID  
 LINE *2*  
 ARRAY *DIPOLE-DIPOLE*  
 DIPOLE SPREAD *100.m*  
 FREQUENCIES *0.3/2.5 Hz*  
 TRANSMITTER TYPE *MPhar 66D*  
 RECEIVER TYPE *MPhar P660*  
 ELECTRODE TYPE *Alfoil*

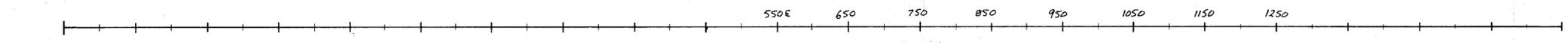
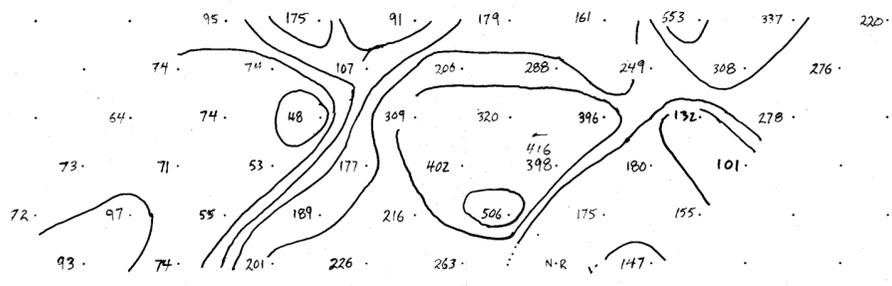
SURVEYOR *S. BRONSKILL*  
 DATE OF SURVEY *5/2/77*  
 PLOTTED BY *S. B.*



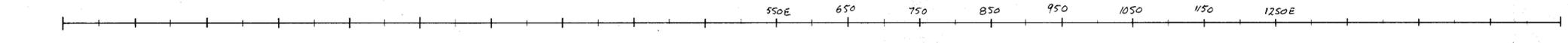
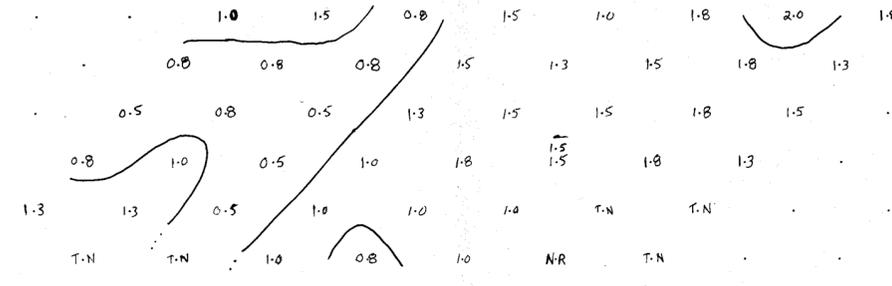
COMMENTS



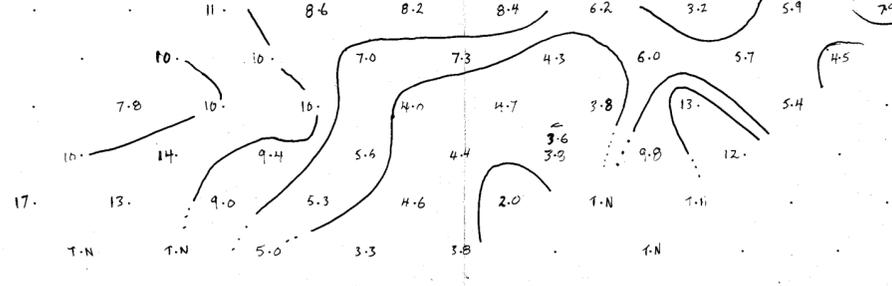
n=1  
n=2  
n=3  
n=4  
n=5  
n=6



n=1  
n=2  
n=3  
n=4  
n=5  
n=6



n=1  
n=2  
n=3  
n=4  
n=5  
n=6

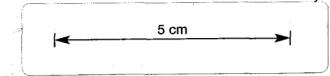


**SOLO** GEOPHYSICS AND CO.

# INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT *ABMINCO N.L.*  
 AREA *MAYDAY CK.*  
 GRID  
 LINE 3  
 ARRAY *DIPOLE-DIPOLE*  
 DIPOLE SPREAD *100m*  
 FREQUENCIES *0.3/2.5 Hz*  
 TRANSMITTER TYPE *M'Phar P660*  
 RECEIVER TYPE *M'Phar P660*  
 ELECTRODE TYPE *Al foil*

SURVEYOR *S. BRONSKILL*  
 DATE OF SURVEY *8/2/77*  
 PLOTTED BY *S.B.*



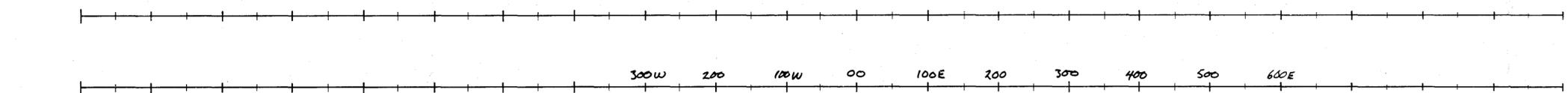
COMMENTS

Culture Plan

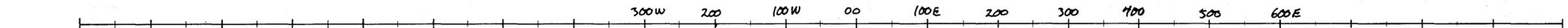
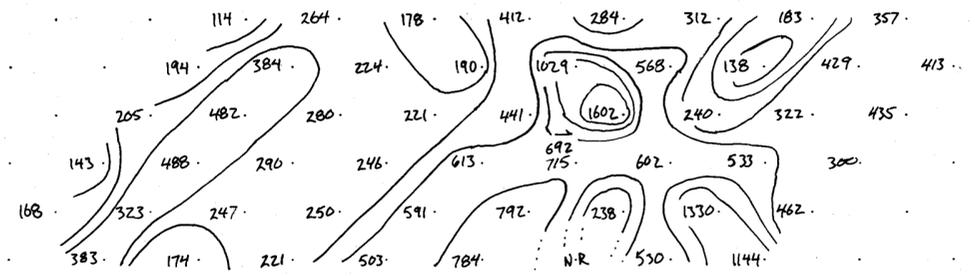
Apparent Resistivity (ohm-m)

Percentage Frequency Effect

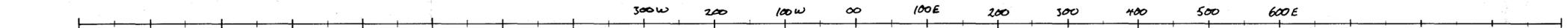
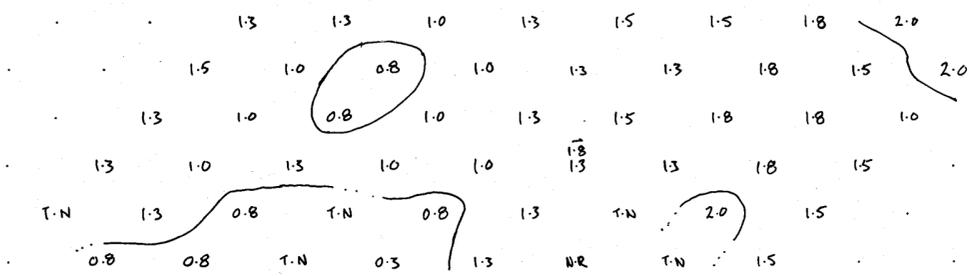
Metal Factor



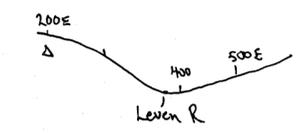
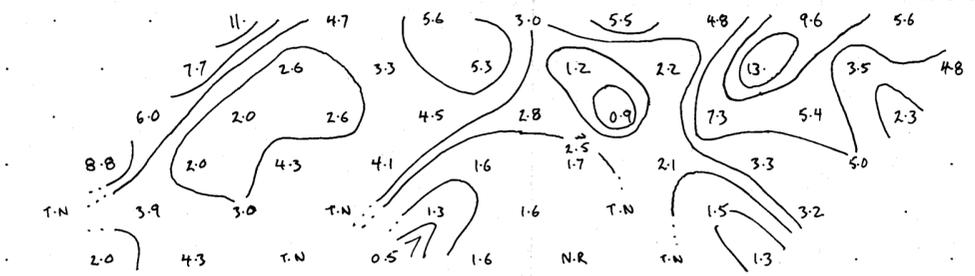
n=1  
n=2  
n=3  
n=4  
n=5  
n=6



n=1  
n=2  
n=3  
n=4  
n=5  
n=6



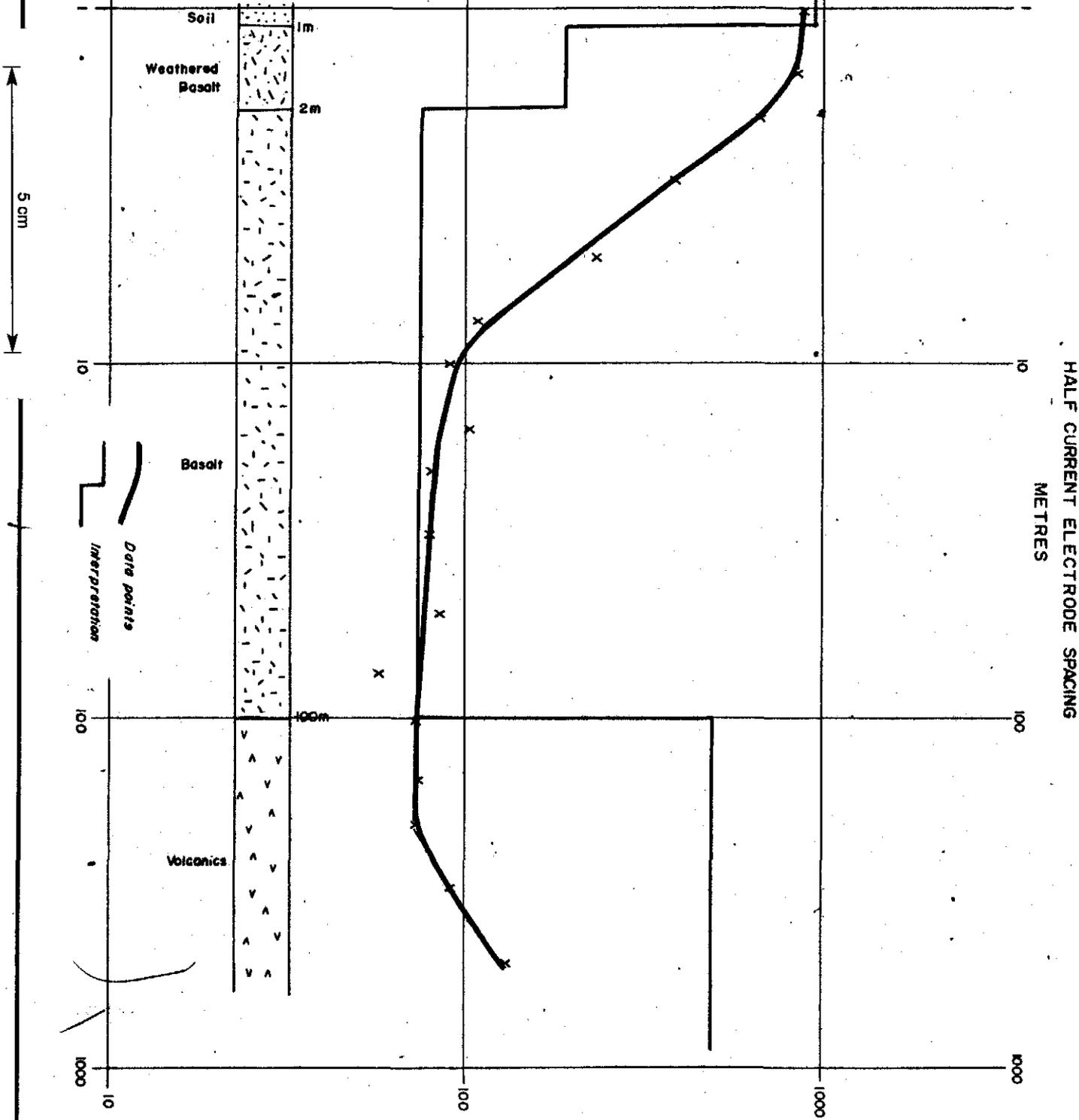
n=1  
n=2  
n=3  
n=4  
n=5  
n=6



808

OHM - METRE

312017



**Abminco Exploration**

77-1212

Drawn: RMSW  
 Traced: AER  
 Checked:  
 Revised:      Date:

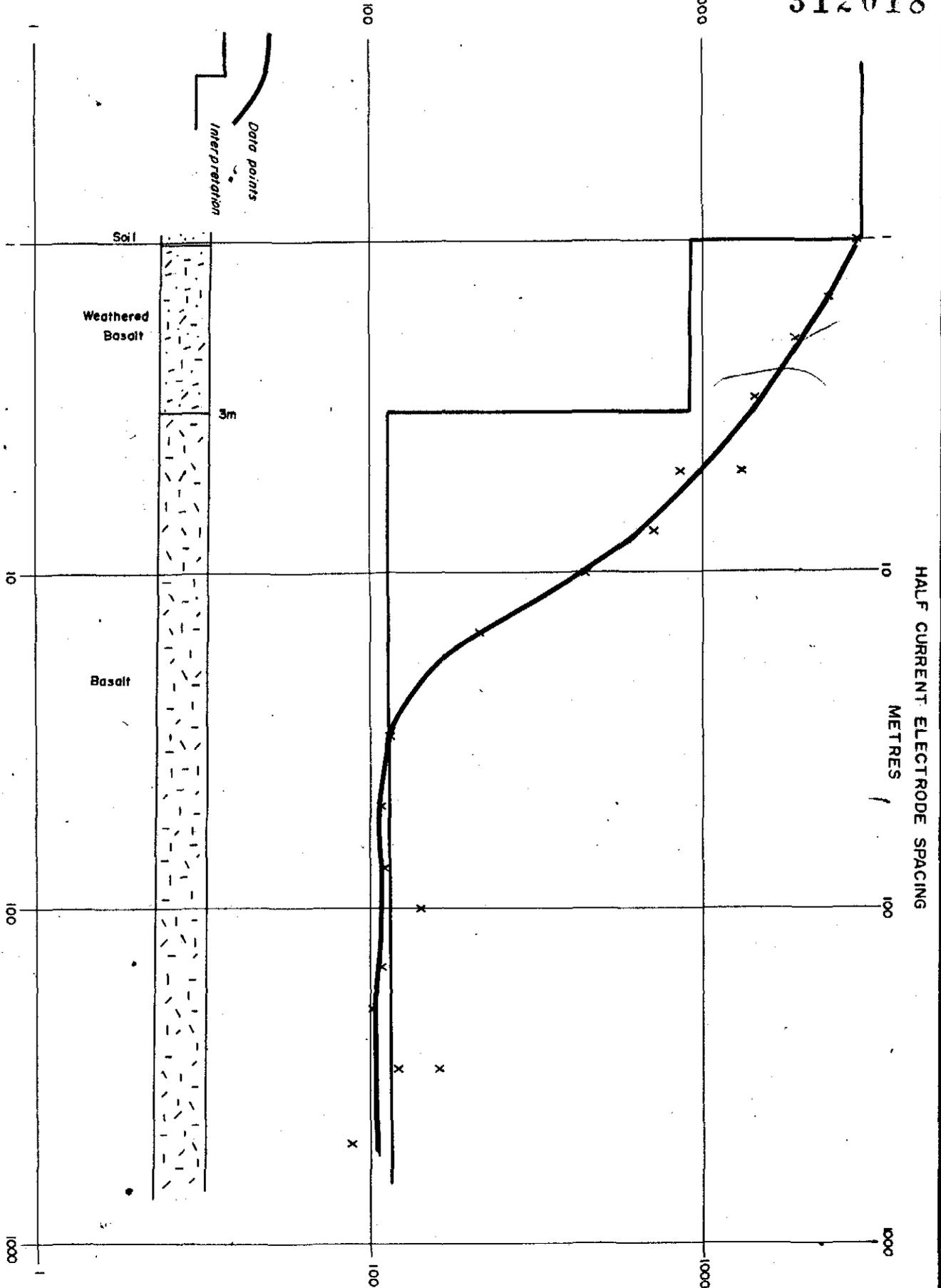
NORTH WEST TASMANIA  
 MAYDAY CREEK  
**Schlumberger Electrical Soundings**  
 LINE 2 2500W

Location code:  
 Scale:  
 Date: March 1977  
 Plate N<sup>o</sup> MC 15a

009

OHM — METRE .

312018



**Abminco Exploration**

77-1212

Drawn: RMSW

Traced: AER

Checked:

Revised:      Date:

NORTH WEST TASMANIA

MAYDAY CREEK

**Schlumberger Electrical Soundings**

LINE I 1100E

Location code:

Scale:

Date: March 1977

Plate No MC 15b

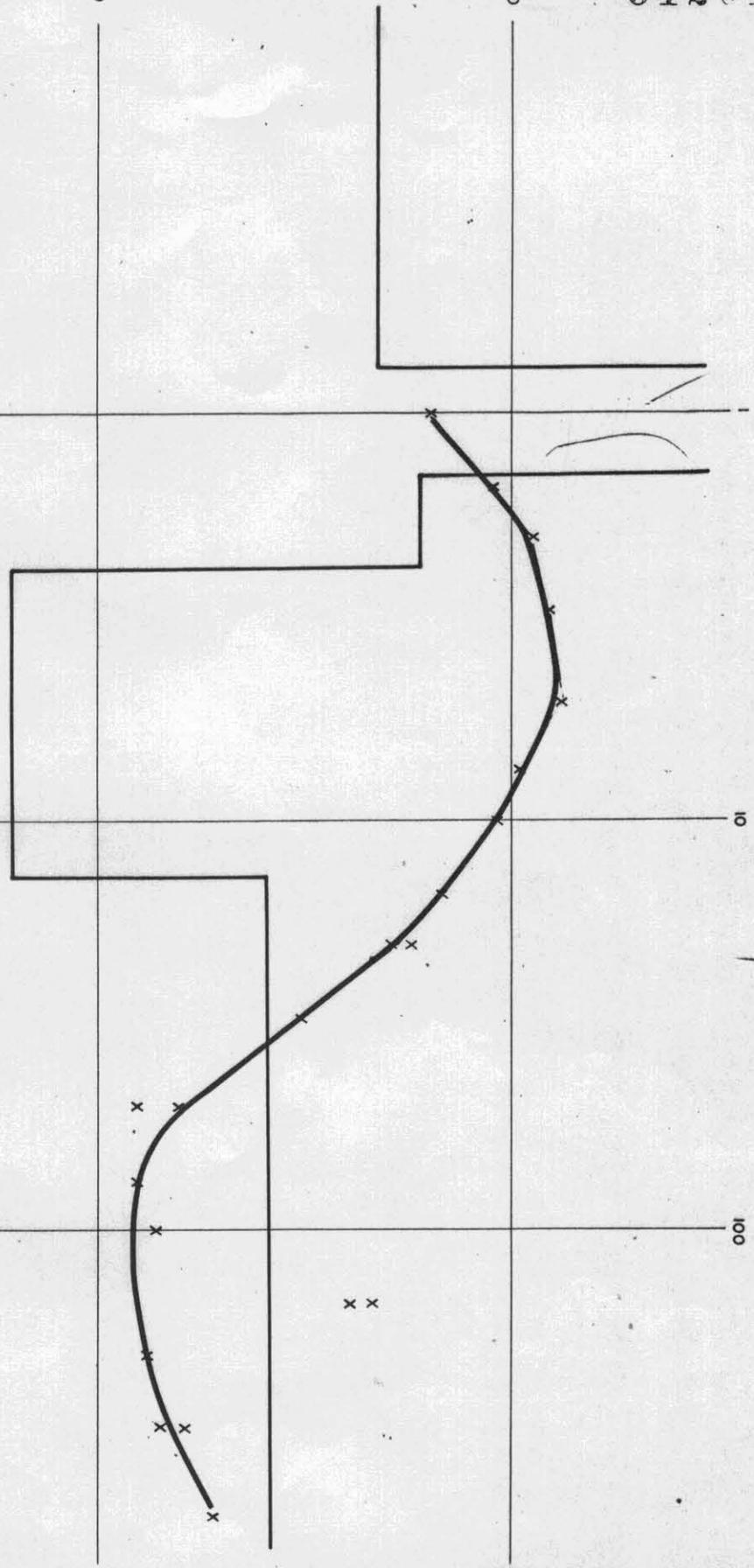
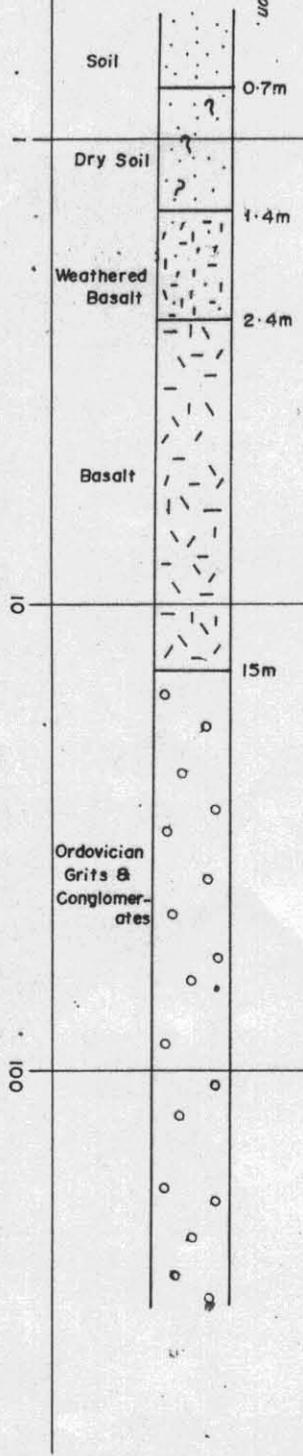
010

100 OHM - METRE 1000

312019

5 cm

Interpretation  
Data points



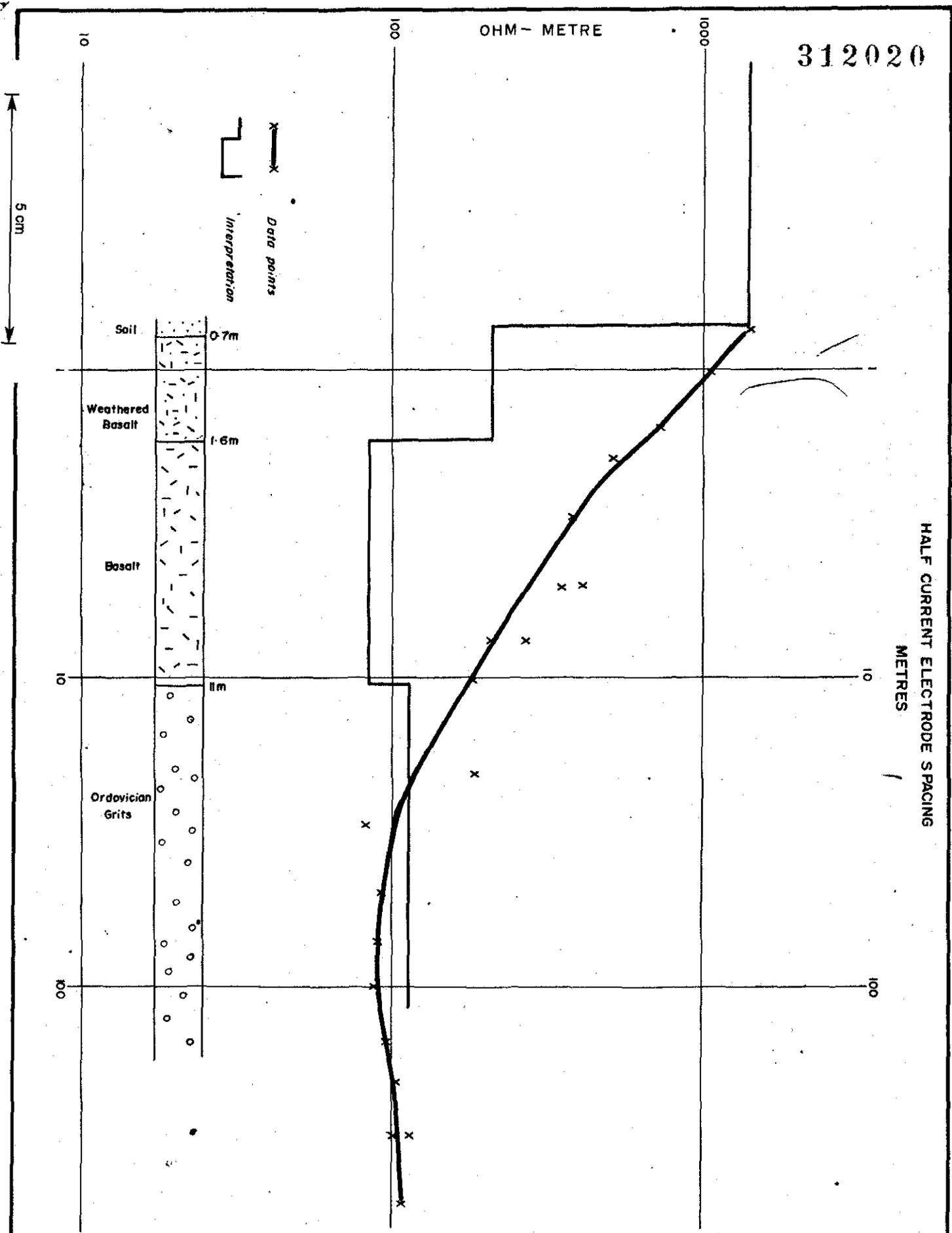
**Abminco Exploration**

77-1212

Drawn: RMSW
Traced: AER
Checked:
Revised: Date:

NORTH WEST TASMANIA  
 MAYDAY CREEK  
**Schlumberger Electrical Soundings**  
 LINE 4 2500W

Location code:
Scale:
Date: March 1977
Plate No MC 15c



**Abminco Exploration**

47-1212

Drawn:	RMSW
Traced:	AER
Checked:	
Revised:	Date:

NORTH WEST TASMANIA  
 MAYDAY CREEK  
**Schlumberger Electrical Soundings**  
 LINE 4 500W

Location code:
Scale:
Date: March 1977
Plate No MC 15d