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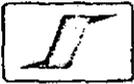
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SOME BRIEF COMMENTS ON A
ELECTRICAL INDUCED POLARIZATION TEST SURVEY AT
MT. PELION, NEAR DEVONPORT, TASMANIA
ON BEHALF OF
SEREM (AUSTRALIA) PTY. LTD.

OPEN FILE

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**SCINTREX PTY. LTD.**

GEOPHYSICAL CONSULTANTS AND CONTRACTORS

SUMMARY

A one day test survey over the Mt. Pelion Wolframite lode recorded anomalous chargeabilities which infer a significantly increased concentration at depth. The one day test survey did not permit truly definite conclusions to be made, however, this data is of great interest, and it is strongly recommended that further work IN DETAIL be carried out on prepared lines. The cost of such a survey is estimated at about \$1,200.00

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SCINTREX PTY. LTD.

GEOPHYSICAL CONSULTANTS AND CONTRACTORS

Sydney, 24th July, 1977

SOME BRIEF COMMENTS ON A
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MT. PELION, NEAR DEVONPORT, TASMANIA
ON BEHALF OF
SEREM (AUSTRALIA) PTY. LTD.

INTRODUCTION

At the request of Mr. M. Lawrence, Exploration Manager for B.R.G.M./Serem and Mr. I. Shulman, Chairman of Amdex Mining Limited, a Scintrex Pty. Ltd. geophysical field party under the direction of Mr. G. Street, BSc., executed a two and a half line test survey of the Wolframite bearing quartz vein at Mt. Pelion.

The objective of the exercise was to ascertain the geophysical signature thereof with a view to assessing whether....

- 1) The target could be detected by the gradient electrical induced polarization technique, or perhaps by magnetic induced polarization.
- 2) Whether the method could be employed as a geophysical mapping tool to establish the underlying *detailed* geological structure.

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The unedited comments of G. Street with respect to the geology and access are appended to this report.

DISCUSSION OF THE DATA

The undrafted data is presented on the scales as follows...

↕ Vertical scale 1:100

↔ Horizontal scale

1 centimetre = 2 millivolts/volt for chargeability
and 10 centimetres = 1 log cycle for resistivity

The current dipole employed was 300 metres, while to achieve excellent resolution, a 10 metres potential dipole was used.

It should be noted that the CURRENT dipole is responsible for the DEPTH PENETRATION while the POTENTIAL DIPOLE is concerned with RESOLUTION, i.e. the small potential DOES NOT mean the "depth of vision" is limited.

LINE 00 is centred over the projected position of the lode. The zone is contained within a broad zone of high (36 to 56 millivolts/volt) which decreases rapidly to less than 20 millivolts/volt some 120 metres to the east. The vein itself appears to be reflected as a maximum *within* this zone. A more substantial response was noted at 40E.

While the resistivities in the vicinity of the lode are 600 to 800 ohm-metres, they rise rapidly to the east as the current

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electrode at 150E is approached. This *infers* that the surface zone is more resistive than the material at depth under the vein. Now, it should be noted that the penetration is maximal under the centre of the gradient array and lessens as the electrode is approached.

The high chargeabilities recorded within, and either side of the known position of the vein are not accounted for by the pyrite (etc.) content of the material within the vein, thus the source must lie *under* and around the vein. It is therefore possible that the vein represents only one facet of mineralisation within the chargeable zone from 030W to 080E. It is strongly recommended that further consideration be given to this possibility.

On *LINE 100S* a broadly similar picture presents itself. The broad chargeable zone is situated between about 030W and 040E, with two distinct peaks at 020E and 020W. These *may* correlate with the peaks seen at 005E and 040E on line 00.

LINE 100N The data was insufficient to make a meaningful comparison with line 00.

CONCLUSIONS

- 1 - The Wolframite lode is seen as a 4 millivolts/volt response within a broad chargeability high.

- 2 - The high (40 to 56 millivolts/volt) chargeabilities seen within this zone are not explained by the observed mineralisation either within the lode or in fact in the surrounding wall rocks. It is therefore inferred that *more chargeable material* must be present at depth.

- 3 - If line 00 is considered as an electrical sounding, then the form suggests that the surface material is both very much *less* chargeable and very much *more* resistive than the rocks *at depth*, say of the order of 50 to 75 metres.

- 4 - Contrary to initial impressions prior to the actual receipt of the data, these results are considered of great interest, and it is now strongly recommended that a regular grid be set out over the lode at line intervals of not greater than 50 metres and preferably closer (say 25 metres) for a minimal distance either side of the lode line of 200 metres, and that a *detailed* gradient survey be employed over the area of interest, as it is considered that this method will, at the very least, be able to map the underlying geological units in detail, and stands an excellent chance of being able to materially assist in the detection of similar bodies across and along strike.

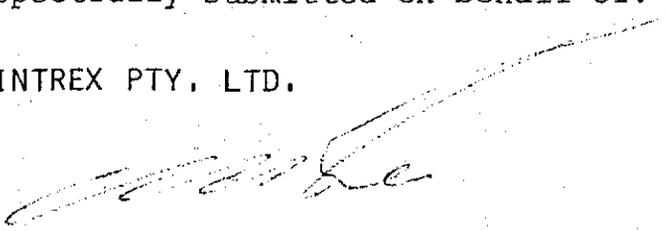
- 5 - The author has experience of greisen type tin deposits being present *under* indications broadly similar to that at Mt. Pelion. It is recommended that some thought be given to this possibility.

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The author looks forward to discussing these results further in the near future.

Respectfully submitted on behalf of:

SCINTREX PTY, LTD.



A.W. HOWLAND-ROSE, MSC, DIC, AMAusIMM, FGS.

GEOPHYSICIST

COMMENTS BY MR. G. STREET, B.Sc.

Area is 48 kilometres south of Gowrie Park in the upper Forth Valley on the north-eastern boundary of the Cradle Mountain-Lake St. Clair National Park.

Target is exposed in a mine adit driven south into hill. An old open cut up to 5 metres deep follows the surface expression of the lode.

A quartz vein 40 to 60 centimetres wide is enclosed in Cambrian quartzites. Accessory minerals include various amounts of muscovite, tourmaline, fluorite, wolframite, pyrite, cassiterite and possibly lesser amounts of chalcopyrite and galena.

Vein splits in some places and widens and pinches frequently along the adit.

Ore mineralisation is patchy. Wolframite, the main ore mineral, occurs in blebs, blades or massive habit. Blades are common close to the edge of the vein. All minerals exhibit free growth crystals in places. Pyrite and other sulphides occur in some places as single scattered crystals and in others, massive sulphides taking up to 1 metre of vein. Some pyrite occurs in country rock close to vein, but none was observed further than about 30 centimetres out.

Mineralisation appears similar to that of a wolframite mine in the roof pendant(?) of the Mole Granite at Emmaville northern

New South Wales.

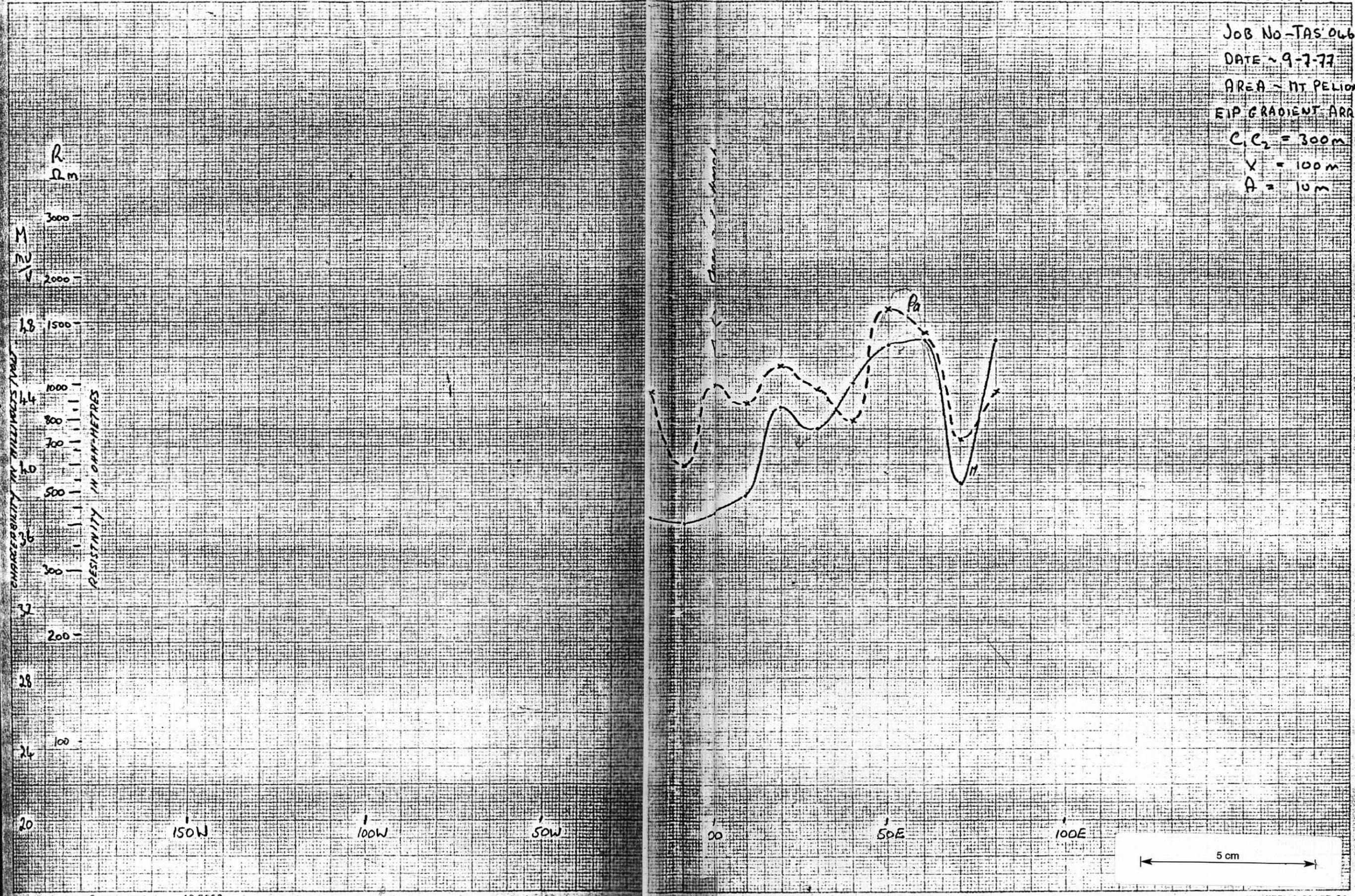
Vein strikes at approximately 180° . Known length is some 150 metres, although it is believed to continue to both north and south. Vein dips east at $\approx 80^{\circ}$.

Line 00 is centred at what should be the surface expression of the vein in an old costean 30 metres south of the end of the open cut. Line 100N is centred above the adit on the open cut. Line 100S is an exploratory line to the south of the known mineralisation.

Other veins are believed to occur in the area and often pieces of float with quartz veining are seen.

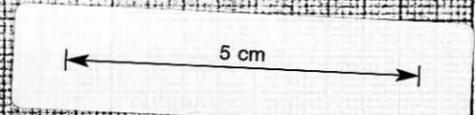
Access is poor, taking over 2 hours from Gowrie Park and so the length of the survey was not long enough for detailed work. Lines were not cut and thick undergrowth and fallen logs hampered operations. Some five hours plus, were spent laying and retrieving wire for electrodes.

JOB No-TAS 066
DATE - 9-7-77
AREA - MT PELION
EIP GRADIENT ARRAY
C₁ C₂ = 300 m
X = 100 m
A = 10 m

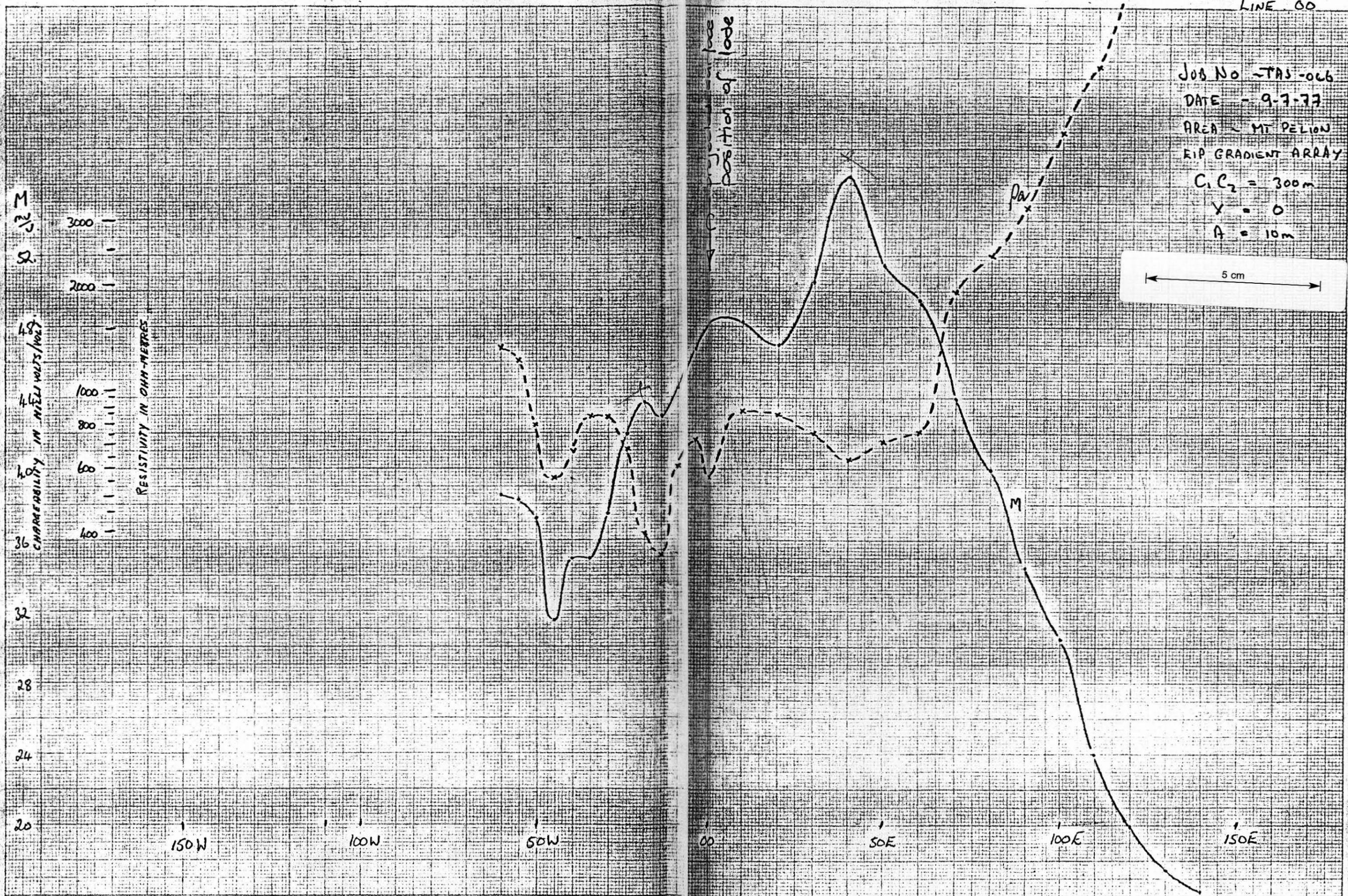


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JOB No -TAS-066
 DATE - 9-7-77
 AREA - MT PELION
 RIP GRADIENT ARRAY
 $C_1 C_2 = 300m$
 $X = 0$
 $A = 10m$



position of code



RESISTIVITY IN OHM-METRES

CHARGEABILITY IN MILLIVOLTS/VOLT

20

24

28

32

36

40

44

48

52

56

60

64

150W

100W

50W

00

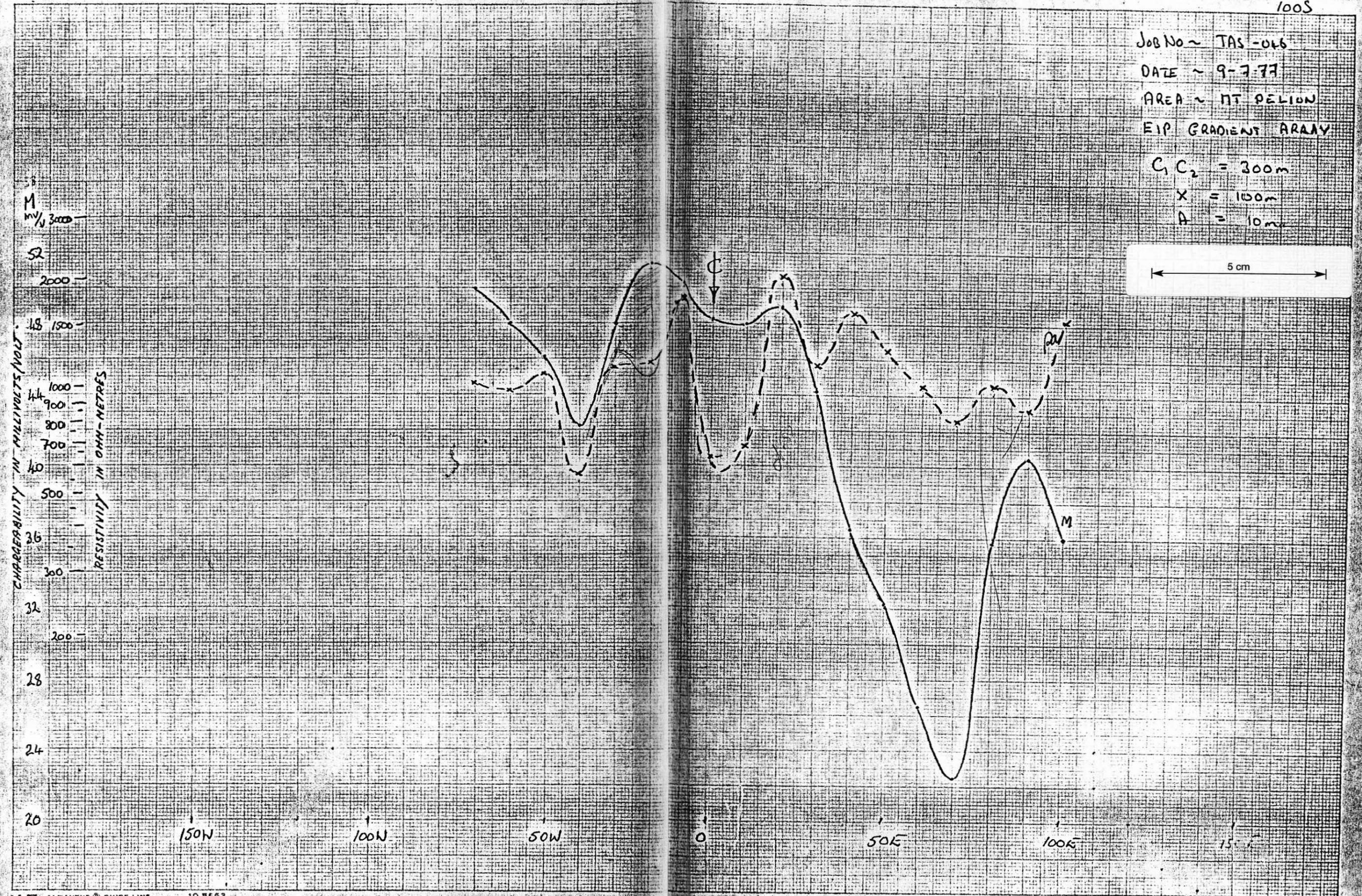
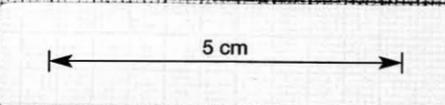
50E

100E

150E

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JOB NO ~ TAS-046
 DATE ~ 9-7-77
 AREA ~ MT PELION
 EIP GRADIENT ARRAY
 $C_1 C_2 = 300m$
 $X = 100m$
 $A = 10m$



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