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INDUCED POLARIZATION SURVEY

AT

JUBILEE AREA

MATHINNA

TASMANIA

by

AUSTRAL EXPLORATION SERVICES PTY. LTD.

703002

INDUCED POLARIZATION SURVEY

AT

JUBILEE AREA

MATHINNA

TASMANIA

For

Geophoto Resources Consultants

by

John Webb

January, 1973.

AUSTRAL EXPLORATION SERVICES PTY. LTD.

INTRODUCTION

An induced polarization survey was carried out in the Jubilee Area near St. Helens in Tasmania.

Austral supplied a party leader and transmitter operator while Geophoto supplied other staff and the equipment.

Nine lines were covered using 30 metre dipoles. The equipment comprised a Geoscience T 2800 variable frequency transmitter and a R 401 "Geomite" receiver.

The results are discussed firstly line by line, followed by a general discussion and recommendations.

LINE BY LINE DISCUSSION

Line 00N (30 metre dipoles)

Two anomalies have been marked on this line. The first from 75E to 135E is present in all three parameters. It would appear that the source is outcropping or approaching very near to the surface. There is a high centre in Metal Factor and Frequency Effect in the third separation suggesting a continuation to depth.

The second anomaly marked from 15W to 30E is less definite with its centre in Metal Factor in the 3rd and 4th separations. It is not defined in either Resistivity or Frequency Effect.

Line 75N (30 metre dipoles)

Two anomalies have been marked on this line. The first from 165E to 225E is present in all parameters. It is not well defined in

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Frequency Effect. There are possibly two sources. One near surface at 180E and the other at depth under 195E. This anomaly could correspond with one on the previous line, but this is doubtful.

The second anomaly is between 45W and 45E and could correspond to an anomaly in the same position on line OON. Here it is better defined and is present in all three parameters. The source is at depth as the best expressions are in the 3rd and 4th separations.

Line 150N (30 metre dipoles)

Three anomalies have been marked. The first from 135E to 195E is present in all three parameters but is not well defined in any. It would correspond to the eastern anomaly on line 75N. It is possible that the real anomaly is further east.

The second anomaly is centred around 15W and would appear to be the last weak expression of the corresponding anomaly on line 75N.

The third anomaly is between 225W and 105W and is present in all parameters. The source is near surface.

Line 225N (30 metre dipoles)

Three amonalies have been marked. The first is at the eastern end of the line from 225E eastwards. This is most likely associated with the anomaly suggested as being off the eastern end of line 150N. It is present in all parameters but an extension of this line would be necessary to define it properly.

The second anomaly is between 75E and 135E and could correspond with the anomaly between 135E and 195E on line 150N. It is not well defined and could be the last expression of this anomaly.

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The third anomaly is between 165W and 75W. This suggests a near surface source near 105W. It could be a weak expression of the anomaly at the western end of line 150N.

Line 300N (30 metre dipoles)

There are two anomalies on this line. The first is again at the eastern end from 195E eastwards. The centre is certainly beyond the end of the traverse.

The second anomaly is a small near surface expression between 135W and 75W. It is most likely the off end expression of the same anomaly on line 225N.

Line 375N (30 metre dipoles)

Two anomalies have been marked. The eastern one is between 165E and 225E and is at depth. The Frequency Effects suggest that the main centre could still be further east.

The second anomaly is between 105W and 75W and is from a small shallow source.

Line 450N (30 metre dipoles)

Two anomalies have been marked. The eastern anomaly from 195E is still present and again the Frequency Effects suggest the need for an extension of the line.

The second anomaly is not well defined and lies between 45E and 135E. It could be due to two shallow sources near 45E and 135E.

There are two minor near surface centres between 195W and 165W and 135W and 105W. These are not significent.

Line 525N (30 metre dipoles)

Three anomalies have been marked. The first is again at the eastern end, and could extend beyond the end of the line.

The second is between 75E and 135E. It is shallow and corresponds with an anomaly on line 450N. It is not present in the Frequency Effect although it lies within a wide Frequency Effect zone of higher readings.

The third anomaly is between 225W and 105W. It is not significant.

Line 600N (30 metre dipoles)

Three anomalies are marked. The eastern anomaly is present again and an extension would be necessary to define it.

A weak rather indefinite anomaly has been marked from 75E to 135E.

The third anomaly is from 165W to 105W and is a shallow Resistivity anomaly.

GENERAL DISCUSSION

A strong anomaly in all three parameters exists on all lines either at the extreme eastern end or beyond the limits of the lines. Several lines should be extended to define the centre of this anomaly. Every second line is suggested for an initial examination. If this anomaly represents sulphides, which is highly possible as the Frequency Effects are strong, it is the only anomaly of the survey of any great significance.

The only other anomaly of significance is on line 75N centred below 15E. It has smaller indications on lines 00N and 150N.

It could be a small sulphide body at medium depth.

The other anomalies marked and discussed are all small and it is very doubtful that they indicate anything but a mineralised zone with the possible exception of the anomaly at 165W on line 150N. This is indicative of a small near surface source which has doubtful value as a possible orebody.

Recommendations

The anomaly at the eastern end of all lines should be investigated. It is not possible to recommend drilling targets until the survey has been extended.

The anomaly at 15E on line 75N could be worth drilling. A hole 50E depressed 50 degrees to the west would be an initial test.

No further work is recommended on the numerous small anomalies marked and discussed.

John Webb

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AUSTRAL EXPLORATION
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INDUCED POLARIZATION
SURVEY

CLIENT: GEOPHOTO RESOURCES

LOCALITY: JUBILEE

DATE: 13th, FEBRUARY 1973

LINE: 00 N BASES 105 W, 105 E

ELECTRODE INTERVAL: 30 metres

FREQUENCY: 3·0 - 0·3 Hz

SCALE: 1 inch reps. 30 metres

DRAWN BY: T.M.

5 cm

008

703009

AUSTRAL EXPLORATION
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008

INDUCED POLARIZATION
SURVEY

CLIENT: GEOPHOTO RESOURCES

LOCALITY: JUBILEE

DATE: 12th, 14th, FEBRUARY 1973

LINE: 75 N BASES 105 W, 105 E

ELECTRODE INTERVAL: 30 metres

FREQUENCY: 3.0 - 0.3 Hz

SCALE: 1 inch reps 30 metres

DRAWN BY: T. M.

5 cm

$P_a / 2\pi$

285 W 255 W 225 W 195 W 165 W 135 W 105 W 75 W 45 W 15 W 15 E 45 E 75 E 105 E 135 E 165 E 195 E 225 E 255 E 285 E 315 E

M.F.

F.E.

9451 73-98 926

009

703010

AUSTRAL EXPLORATION
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INDUCED POLARIZATION
SURVEY

CLIENT: GEOPHOTO RESOURCES

LOCALITY: JUBILEE

DATE: 12th, 14th, FEBRUARY 1973

LINE: 150 N BASES: 105 W, 105 E

ELECTRODE INTERVAL: 30 metres

FREQUENCY: 3.0 - 0.3 Hz

SCALE: 1 inch reps. 30 metres

DRAWN BY: T.M

5 cm

$\rho_a / 2\pi$

M.F.

P.E.

285 W 255 W 225 W 195 W 165 W 135 W 105 W 75 W 45 W 15 W 15 E 45 E 75 E 105 E 135 E 165 E 195 E 225 E 255 E 285 E 315 E

n = 2 3 4 5

010

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INDUCED POLARIZATION
SURVEY

CLIENT: GEOPHOTO RESOURCES

LOCALITY: JUBILEE

DATE: 8th, 11th, FEBRUARY 1973

LINE: 225 N BASES: 105 W, 105 E

ELECTRODE INTERVAL: 30 metres

FREQUENCY: 3·0 - 0·3 Hz

SCALE: 1 inch reps: 30 metres

DRAWN BY: T. M.

5 cm

011

703012

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INDUCED POLARIZATION
SURVEY

CLIENT: GEOPHOTO RESOURCES

LOCALITY: JUBILEE

DATE: 5th, 8th, 11th, FEBRUARY 1973

LINE 300 N BASES 105 W, 105 E

ELECTRODE INTERVAL 30 metres

FREQUENCY: 3·0 - 0·3 Hz

SCALE: 1 inch reps 30 metres

DRAWN BY: T. M.

5 cm

011

$\rho_a / 2\pi$

012 703013

AUSTRAL EXPLORATION
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INDUCED POLARIZATION
SURVEY

CLIENT GEOPHOTO RESOURCES

LOCALITY JUBILEE

DATE 4th, 10th, FEBRUARY 1973

LINE 375N BASES 105W, 105E

ELECTRODE INTERVAL 30 metres

FREQUENCY 3·0 - 0·3 Hz

SCALE 1 inch reps. 30 metres

DRAWN BY T.M

5 cm

013 703014

013

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INDUCED POLARIZATION
SURVEY

CLIENT: GEOPHOTO RESOURCES

LOCALITY: JUBILEE

DATE: 3rd, 4th, 10th, FEBRUARY 1973

LINE: 450 N BASES 105 W, 105 E

ELECTRODE INTERVAL: 30 metres

FREQUENCY: 3·0 - 0·3 Hz

SCALE: 1 inch reps. 30 metres

DRAWN BY: T.M.

5 cm

014

703015

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INDUCED POLARIZATION
SURVEY

CLIENT GEOPHOTO RESOURCES

LOCALITY JUBILEE

DATE 2nd, 9th, FEBRUARY 1973

LINE 525N BASES 105 W, 105 E

ELECTRODE INTERVAL 30 metres

FREQUENCY 3·0 - 0·3 Hz

SCALE 1 inch reps. 30 metres

DRAWN BY T.M

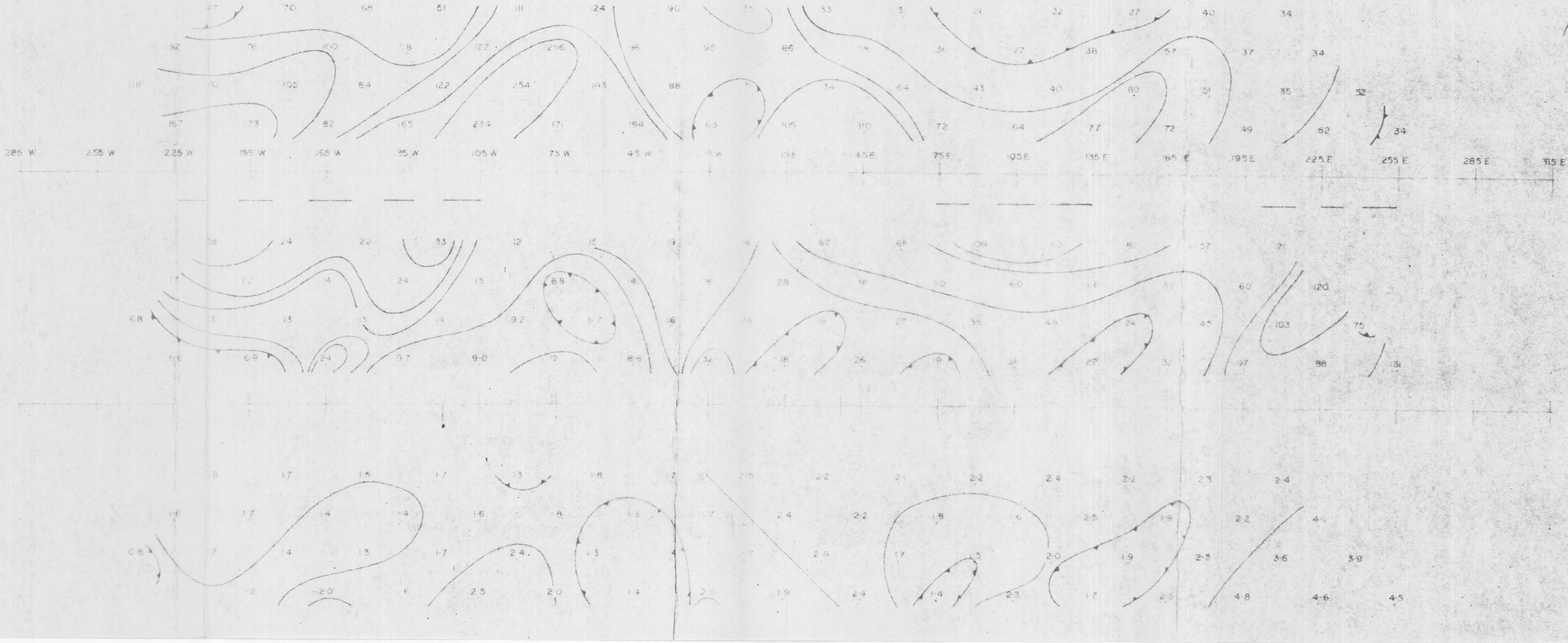
5 cm

014

Pa/2π

M.F.

F.E.



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AUSTRAL EXPLORATION
SERVICES PTY. LTD

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INDUCED POLARIZATION
SURVEY

CLIENT: GEOPHOTO RESOURCES

LOCALITY: JUBILEE

DATE: 3rd, 9th, FEBRUARY 1973

LINE 600N BASES 105 W, 105 E

ELECTRODE INTERVAL: 30 metres

FREQUENCY: 3·0 - 0·3 Hz

SCALE: 1 inch reps. 30 metres

DRAWN BY: T.M.

5 cm