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Loban Geophysical Survey

3rd Progress Rept.

by

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BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

COBAR GEOPHYSICAL SURVEY

3RD PROGRESS REPORT

REPORT NO. 1948/51.

The second drill hole on the area of the Dapville No. 1 anomaly has been completed and some details of the results are given below.

Co-ordinates of drill site 1250N/2780W

Inclination " " " 66°

Azimuth " " " 275° true

In this hole a magnetic body was intersected at 546'-574' which on assay was found to contain 5.6% of copper and 0.4 dwts of gold per ton. The true width is about 14 feet and the vertical depth of the intersection is about 500 feet.

The magnetisation of the lode material in the drill core samples is strong. The average density of the lode material is about 4.1.

The company holding the area considered this occurrence to be sufficiently promising to justify the immediate drilling of two more test holes and these are in progress.

From the geophysical point of view the proving in D.D. Holes Nos. 1 and 2 of a strongly magnetised body of appreciable width and containing useful amounts of copper, as being responsible for the Dapville No. 1 anomaly (of low intensity) is of considerable importance. As indicated in the 2nd Progress Report other magnetic anomalies of low intensity which have been discovered during the surveys may now be classed as suitable targets for drilling.

There will be need for the determination of priority on the part of the operating company, in the testing of these anomalies. The principal purpose of this report is to draw further attention to the Peak magnetic anomaly and to discuss various factors which the company may desire to take into consideration in the determination of the priority question mentioned above.

Firstly it is desired to emphasize the outstanding difference between the apparent dimensions of the bodies responsible for the Dapville No. 1 anomaly and the Peak anomaly. The apparent length of the body responsible for the Dapville anomaly may be a few hundreds of feet while that responsible for the Peak anomaly may be 1500 feet or more. If material with magnetisation similar to that of the Dapville anomaly body is responsible for the Peak anomaly, the width of the Peak anomaly body will be substantially greater. than that of the Dapville body. These apparent differences in length and width would mean a very considerable difference in the total mass of the two magnetic bodies under discussion.

The 2nd Progress Report describes some features of the Peak magnetic anomaly and gives the proposed site for the first drill hole, viz. at 180N/1510E, depressed 65° westerly in the direction of traverse 180N, to intersect the magnetic anomaly centre at a depth of 500 feet. The decision to drill from the east side was made because the Blue Lode Shear has a steep easterly dip and the hole was designed to intersect this feature as well as the magnetic body which appears to have a westerly dip.

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Further consideration has been given to our results on this area and the writer now favours drilling from the west side in the first instance. The considerations leading to this decision are described below.

If we regard the Peak magnetic anomaly as being due to a tabular bed of material similar in magnetisation and density to that of the Dapville anomaly body, we can make an interpretation of our magnetic and gravity survey results along the following lines.

A magnetic body dipping westerly at 70° with its top at a depth of 450' will give a reasonably good fit for the magnetic anomaly. We are not in a position to specify a likely width but can assume that it would be much wider than the Dapville body, for the same material.

An analysis of the gravity survey results along the same lines is handicapped by the fact that there is not a good correspondence between the position of the area of maximum gravity anomaly and that of the maximum magnetic anomaly. Furthermore there are features in the gravity profiles suggestive of the existence of geological complexity which tend to make an analysis of the results far from straightforward. However, by minimising these complexities, an analysis of that part of the gravity anomaly adjacent to the magnetic anomaly suggests that the gravity anomaly may also be due to a westerly dipping tabular body at a depth of about 400' and located near to the calculated position of the magnetic anomaly body.

There are many hazards attached to the methods of analysis due to complexities which exist but in spite of this it is believed that the geophysical evidence is reasonably strong in favour of the existence of a westerly dipping tabular body, or bodies, of high magnetisation and density occurring at a depth of about 400' within the limits 900E and 1300E on Traverse 150N.

The accompanying diagram shows the generalised results of this analysis together with the results of magnetic logging made in January, 1948, of the drill core in D.D. Holes 2 and 3 which were drilled on the Peaks area a few years ago. This examination revealed that the last 45' of Drill Hole No. 3 and the last 270' of Drill Hole No. 2 penetrated magnetic slate. Some specimens were submitted to Dr. Stillwell who found that pyrrhotite occurs in the cleavage of slates and is therefore no doubt responsible for the magnetisation.

In Drill Hole No. 2 this pyrrhotite bearing slate contains small amounts of Zn, Pb, Cu and Ag over a length of 248'. The density of the slate penetrated in these holes is 2.8 for both unmineralised and mineralised parts.

As will be seen on the accompanying diagram a drill hole placed as shown thereon will test in satisfactory fashion the zone made interesting by the geophysical anomalies and will also test the upper unoxidised part of the ground ahead of the end of the No. 2 drill hole, assuming that the magnetic bed found in the two drill holes dips westerly as shown on the diagram. The evidence for the dip is very slight because the upper limit of magnetic material found in No. 3 Drill Hole may be related to oxidation.

It is believed therefore that early testing of the Peak magnetic and gravity anomalies is called for since these anomalies may indicate the existence of a major zone of mineralisation. It is recommended that the drill hole be collared at 150N/600E and depressed 55° easterly in the direction of traverse 150N.

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Melbourne
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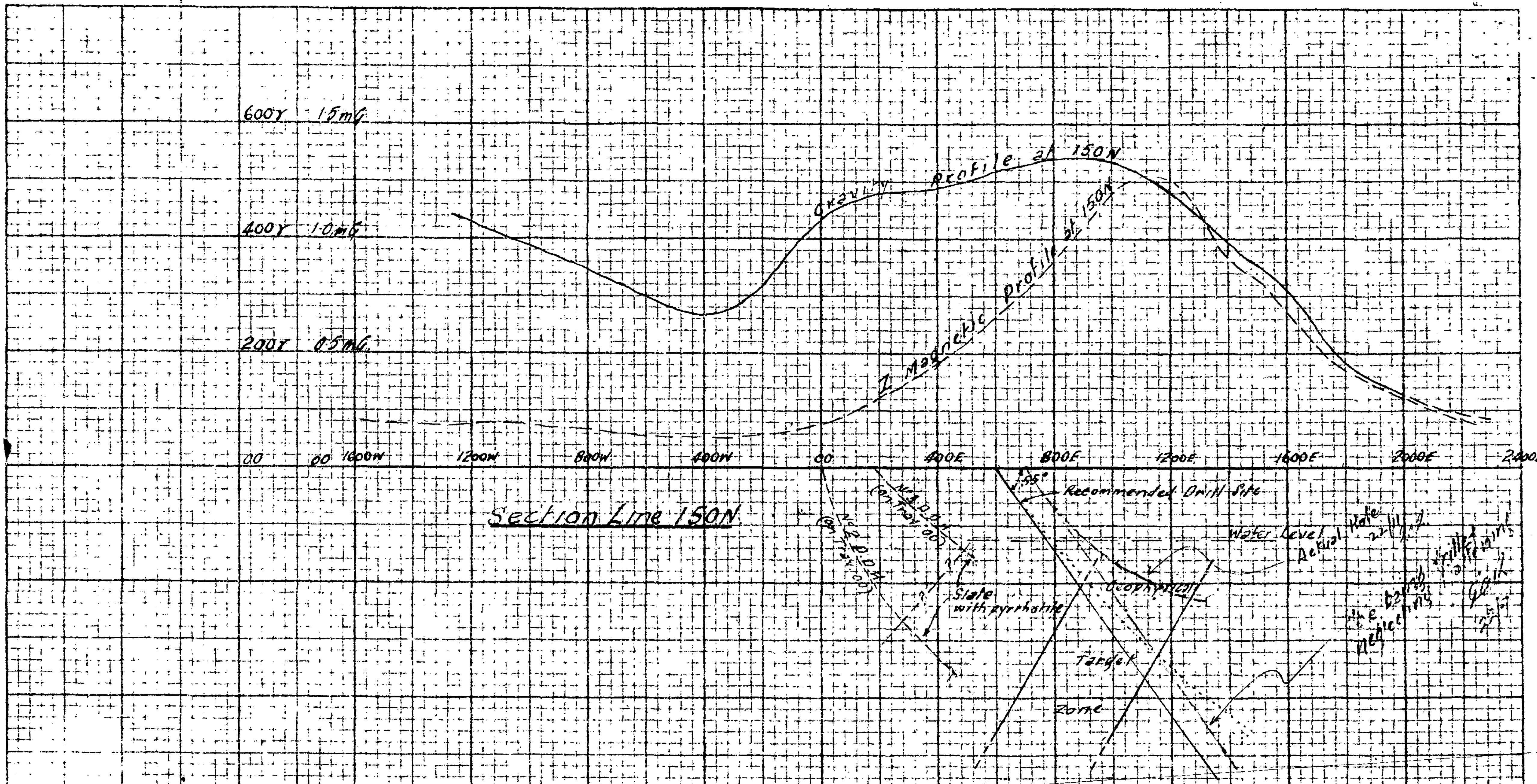

Bureau of Mineral Resources Geology & Geophysics

COBAR GEOPHYSICAL SURVEY

PEAK AREA

Diagram to accompany 3rd Progress Report dated 30/8/48

Scale:- 400 feet to an inch

G28-6.