COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS

RECORDS:

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REPORT ON THE DIAMOND DRILLING OF A SELF POTENTIAL ANOMALY NEAR MANTON DAM, N.T.

by

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REPORT OF THE DIAMOND DRILLING OF A SELF-POTENTIAL ANOMALY NEAR MANTON DAM, N.T.

SUMMARY

A diamond drill hole was put down, beneath a strong negative self-potential anomaly occurring near Manton Dam, to determine whether or not a mineralised zone existed.

No strong mineralisation or significant radioactivity was encountered and the drill was stopped at 500 feet drill depth.

The self-potential anomaly may have been produced by disseminated pyrite and graphite in the shale of the Rum Jungle Beds.

INTRODUCTION

A self-potential survey completed by Mr. A. J. Barlow in 1954 showed the presence of a strong negative anomaly one and a half miles to the west of Manton Dam, (co-ordinates 117613 on the Marrakai military sheet, see locality plan Plate 1).

Access to the locality is by a bulldozed track from the Stuart Highway at 40.7 miles from Darwin.

A diamond drill hole was recommended to intersect the rocks at 250 feet to 300 feet drill depth beneath the anomaly. Three north-south trending costeans were bulldozed to elucidate the surface geology and these were reported on by Mr. W. A. Robertson in July, 1955.

Drilling commenced on July 11th, 1955, and ceased on October 12th at 500 feet drill depth.

GEOLOGY

The anomaly is situated in flat, low-lying country covered in soil.

The underlying rocks are carbonaceous sandstones, siltstones and shales belonging to the Rum Jungle Beds.

In the Manton Dam Region these beds are part of a Lower Proterozoic sequence which wraps around the Manton Stock, a small granite intrusive near the south-west corner of the Manton Reservoir. The beds in this sequence dip steeply away from the stock and are listed below in ascending order from top to bottom :-

(1) The Crater Footwall Beds: Quartzite, iron formation, limestone and shale.

(2) The Crater Formation: Conglomerates, grits and arkose.

(3) The Rum Jungle Beds: Carbonaceous shales and siltstones, quartzites, limestones, etc.

(4) The Quartzite Ridge Formation: Quartz sandstones (after C. W. Pegg and A. B. Clarke, 1954).

In the vicinity of the borehole the Rum Jungle beds strike consistently at 110 deg. and dip to the north at angles between 50 deg. and 70 deg.

DRILLING RESULTS

Drilling data :-

Co-ordinates	5500W, 750N (Geophysical Grid)
Bearing	190° Magnetic
Depression	70°
Drill depth	500 feet
Core recovered	76 feet
Core recovery	15%
Date commenced	11th July, 1955.
Date completed	12th October, 1955.
Average rate per week	38 feet

Sludge samples were taken over five feet intervals between 195 feet and 460 feet. These have been sent for chemical assay but the results are not yet available.

DESCRIPTION OF THE CORE

Over a drill depth of 200 feet the rocks recovered are oxidised and leached fine-grained sandstones, siltstones and shales. They are grey or mottled grey and red, the red colour being due to haematite-rich patches and veins.

Between 200 feet and 500 feet the rocks are black and grey carbonaceous siltstones and shales which are finely laminated in the lower part of the core.

MINERALISATION

Small veins of vughy quartz, barren except for encrusting haematite, are found throughout the oxidised zone but are rarely of greater thickness than ¼ of an inch.

Cubic boxworks after pyrite are found between 100 feet and 200 feet but the first occurrence of pyrite is at 250 feet where it occurs as finely disseminated crystals, and as such is present in most of the core to 500 feet.

Small patches, lenticles, and veins of quartz containing much pyrite are common between 370 feet and 400 feet but never comprise a large percentage of the rock. The veins, never more than ¼ inch thick, generally follow the bedding.

No chalcopyrite or other mineralisation was detected microscopically.

RADIOMETRIC LOGGING

The drill hole was logged by a BR V-1 Ratemeter fitted with a GM5 Special G. M. tube. No significant radioactivity was recorded (see Plate 1).

CONCLUSIONS

It is probable that the strong self-potential anomaly is caused by pyrites disseminated throughout the underlying rocks and not from an orebody. On the geological results no further work is recommended.

PLATE I

BUREAU OF MINERAL RESOURCES
Darwin Uranium Group

LOCALITY PLAN AND SECTION
of
DIAMOND DRILL HOLE
near

MANTON DAM N.T.

D.B. Dow — Nov. 1955