

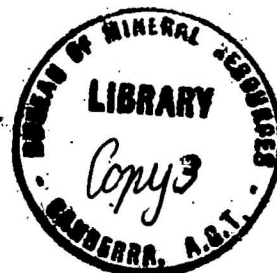
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COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES,
GEOLOGY AND GEOPHYSICS.

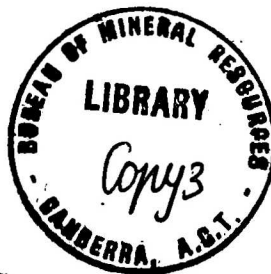
RECORDS
1956, No.28



RADIOMETRIC LOGGING OF DIAMOND DRILL HOLE No. BG80
AT THE ROYAL GEORGE MINE, NEAR AVOCA, TASMANIA.

by

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PLATE 1. Radiometric log and assays of cores
and sludges.

1. INTRODUCTION.

The Royal George mine is situated about 10 miles east of Avoca, and 49 miles south-east of Launceston. The mine was worked for tin, but mining operations ceased in 1922. The lease is held at present by Mr. E. Ringwood.

Recently, samples showing secondary uranium minerals have been discovered in the workings, and the lessee arranged for a diamond drill hole to be drilled, to intersect the tin deposit below the deepest workings. At the request of the Director of Mines, Tasmania, arrangements were made by the Bureau of Mineral Resources, Geology and Geophysics, to log the hole radiometrically. The measurements were made in August 1955.

2. GEOLOGY.

The country rock around the mine consists of granite and granite porphyry of Devonian age. Mineralisation occurs in a dyke zone of granite differentiates veined with pegmatites and greisen, the zone having a general strike of 320° and dipping steeply to the south-west.

Cassiterite together with the accessory sulphides pyrite and chalcopyrite, form the ore minerals, with quartz, muscovite and tourmaline comprising the gangue material. As stated above, some secondary uranium minerals (including torbernite) were found in the workings in the greisen.

3. TECHNICAL DETAILS.

The drill hole is an EX hole, 370 feet deep, at a depression of 45° .

Logging was performed with a bore-hole ratemeter type EA 191, manufactured by Electronic Associated Ltd., Toronto, and a bore-log ratemeter type BRV 1, manufactured by Austronic Engineering Laboratories Pty. Ltd. of Melbourne. The hole was logged to a depth of 305 feet, logging to 370 feet being prevented by the hole caving in at 310 feet.

The core from 150 feet to 370 feet was split, and core and sludge samples were radiometrically assayed in the Bureau's geophysical laboratory at Footscray, Melbourne.

4. RESULTS.

The radiometric log and the results of the radiometric assays of core and sludge samples are presented graphically on Plate 1, together with a generalised geological section and core log. The core log was supplied by Mr. Ringwood.

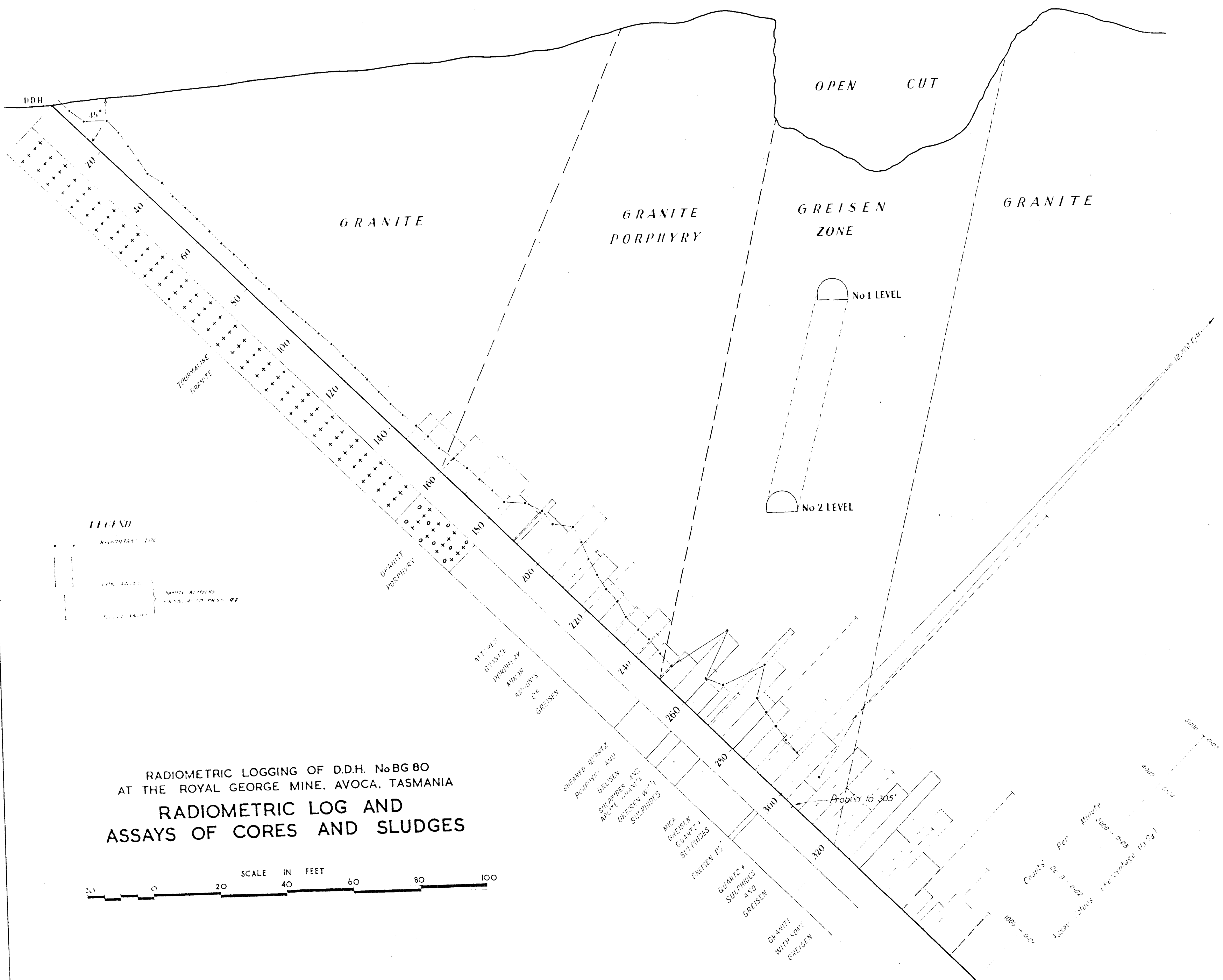
5. DISCUSSION OF RESULTS.

In general, the log shows weak radioactivity. The amount of radioactivity appears to be related to the various rock zones traversed. The level of activity in the granite from surface to a depth of 160 feet is uniformly low and there is a small increase over the granite porphyry section. A further

increase in activity was measured over the greisen zone, a maximum reading of 12,700 counts per minute being recorded over a narrow band at 300 feet. As stated above, logging was carried out to only 305 feet, and did not therefore include the granite below about 320 feet.

The assay results on core and sludge samples follow the radiometric log in close detail, with the exception of the core sample from 300 feet. In this area the sludge sample shows a comparatively high assay value, which is not shown by the corresponding core sample. No precautions were taken by the lessee for safe storage of the cores at the drill site, and there is reason to suspect that the core sample from this depth may not have been representative.

The results, which include a maximum core assay of 0.02 per cent U_3O_8 and maximum sludge assay of 0.058 per cent U_3O_8 , clearly show that no uranium mineralisation of commercial grade was intersected in the drill hole.



LEGEND

RADIOMETRIC LOG

COUNTS PER MINUTE

PERCENTAGE OF MINERALS

RADIOMETRIC LOGGING OF D.D.H. No BG 80
AT THE ROYAL GEORGE MINE, AVOCA, TASMANIA

**RADIOMETRIC LOG AND
ASSAYS OF CORES AND SLUDGES**

SCALE IN FEET

0 20 40 60 80 100