

UR 1957/74-75

GE/1

7th May, 1957

MEMORANDUM:RETROGRAPHY

The following petrographic descriptions apply to rock specimens collected by Senior Geologist T.D. Hughes at the site of the proposed bridge across the Tamar.

1. Medium grained greenish-grey rock, with visible crystals of felspar and pyroxene.

In thin section the fabric appears as single crystals of brownish augite in a colourless matrix containing prismatic felspar crystals. There are occasional masses of ilmeno-magnetite. There is a strong tendency to an ophitic relationship between felspar and pyroxene, which is prevented from becoming strongly marked by the somewhat lathlike character of the pyroxene itself. The pyroxene crystals have a selvedge of opaque iron ore minerals. There is a small amount of micro and cryptocrystalline interstitial material.

The rock is a typical dolerite.

2. Fine grained greenish-black rock with a few scattered visible crystals of pyroxene which may have a metallic lustre.

In thin section the rock shows an intergranular texture with reticulate polysynthetically twinned felspar crystals with interstitial grains of brownish pyroxene. Irregular, somewhat rounded, masses appear to be vesicles filled with microcrystalline zeolites with low birefringence or carbonates with high birefringence. There are also irregular masses of brownish material with aggregate polarisation, which may represent original phenocrysts of pyroxene which has been altered and partly resorbed by the magma. Small grains and rods of iron ore minerals are thickly disseminated.

The rock is a basalt.

3 & 4.

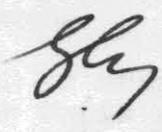
are almost identical rocks. In hand specimen they are fine to medium grained, greenish grey rocks, with a brownish tinge due to partial oxidation.

In thin section they show an intergranular texture, with minute grains of pyroxene, felspar and iron ore minerals interstitial to polysynthetically twinned laths of felspar. Rods and grains of iron ore minerals are plentiful and the rods may be equal in length to the felspar crystals. Large peripherally altered and rounded crystals of olivine are plentiful.

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The rock is a basalt and differs from the dolerite (1) by finer grain, more magnetite, the presence of olivine and absence of ophitic structure.



(G. Everard)
MINERALOGIST AND PETROLOGIST.

The Director of Mines,
Department of Mines,
HOBART.