THE PETROGRAPHY OF IGNEOUS ROCKS AND CUTTINGS OF MIXED ORIGIN FROM DUROON-1

c.f. Cape Portland

Sample: 5060-5400' A : TS C8581

Location:
Duroon-1

Rock Name:
Altered vesicular olivine basalt

Hand Specimen:
A black very friable igneous rock. Dark green rounded amygdales are present in a fine-grained black matrix.

Thin Section:
?Hornblende

This is a highly altered amygdaloidal volcanic rock. Phenocrysts of a now completely replaced ferromagnesian mineral and rare xenoliths are enclosed in an intergranular to intersertal groundmass. The groundmass contains replaced laths of feldspar up to 0.3 mm long with altered granular olivine, ?pyroxene, and an interstitial mesostasis now composed of chlorite/clay with disseminated very fine-grained opaques.

Large round amygdales are present. These are filled with fine-grained pale green chlorite and clay. There are small variations in colour and grain size across the infilled vesicles.

The original ferromagnesian phenocrysts were olivine and they constitute about 5% of the rock. The grains are mostly euhedral although many have been corroded. They are rimmed by brown "iddingsite" and the cores have been replaced by a mixture of clay and chlorite.

Traces of feldspar, possibly albite, occur in the feldspar laths but the greater part of this mineral has also been replaced by a mixture of chlorite and clay.

Intergranular olivine and ?pyroxene have now been wholly replaced by orange-brown "iddingsite" or brown iron oxide-rich material.

The xenolithic areas contain more abundant secondary opaques but are otherwise very similar to the host rock (though they are not amygdaloidal). The xenoliths have diffuse margins and grade into the host rock.

This rock is a highly altered amygdaloidal basalt. The chloritisation is believed to be of deuteric origin.