

Description of rock samples from DDH6, Fingal

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The following are descriptions of rock types selected from hole DDH 6, Fingal, by geologist V. Threader.

68-175A

The hand specimen is a fine, even-grained grey bedded rock with small black lenses parallel to the bedding and spotted with innumerable white opaque grains of altered feldspar averaging about 0.15 mm across.

In thin section the rock is a mosaic of angular grains averaging 0.125 mm across, with black carbonaceous interstitial material which also tends to obscure the grains. This constitutes approximately 12% of the whole.

If all the grains make 100% then quartz = 65%, feldspar 30% and lithics 5%.

The rock is a carbonaceous arkose.

68-175C

The hand specimen is a very fine grained pale grey rock with very fine grained irregular dark inclusions. The rock effervesces very readily with acid, the dark portions somewhat less so.

In thin section the rock consists of massive carbonate, so fine grained as to be semi-opaque. Small angular grains of quartz and feldspar up to 0.02 mm across are sparsely disseminated, together with minute flakes of clay minerals. These impurities are more common in the darker portions which also contain brown translucent carbonaceous matter.

The rock is a calcilutite.

68-173D

The hand specimen is a pale grey rock with barely visible grains of quartz and feldspar and minute black specks in a pale matrix.

In thin section the rock consists of angular to sub-rounded quartz, feldspar and rock fragments in the proportions of 40% quartz, 10% feldspar and 50% rock fragments where 100% = total grains.

The matrix and cement have been totally replaced by very fine grained brownish crystalline carbonate.

The rock is a carbonated lithic sandstone.

68-173E

The hand specimen is a pale grey, fine grained granular rock. It consists of grains, about 0.25 mm across, of clear glassy quartz, opaque white altered feldspar and dark lithic fragments embedded in grey calcite.

In thin section the rock is largely allotromorphic crystalline calcite showing characteristic cleavage. Angular quartz grains are common but are exceeded in numbers by dark lithic fragments. The most common grains are feldspars altered to white opaque clay minerals or replaced by carbonate with remains of lamellar twinning.

The rock is a carbonated arkose.

68-175F

The hand specimen is a fine grained greyish rock, effervescing freely with acid. Dark carbonaceous flakes up to 5 mm long are common and indicate the bedding by their orientation.

In thin section the rock is a fairly well sorted aggregate of sub-angular to sub-rounded fragments from 0.05 mm to 0.02 mm across of quartz, feldspar and lithic fragments with interstitial crystalline calcite filling all voids.

Calcite comprises about 40% of the rock. Clear feldspar showing multiple twinning is not abundant, but opaque white grains of kaolinised feldspar are. Quartz makes up about 30% of total grains and lithics about 15%.

The rock is a carbonated arkose.

68-173G

The hand specimen is a fine grained greyish granular rock with visible fragments of quartz, feldspar, dark lithics and black carbonaceous material. The rock effervesces with acid.

In thin section the rock is a well sorted granular aggregate with grains of lithics, quartz, partly altered feldspars showing simple and lamellar twinning, black carbonaceous masses and micas with about 25–30% of interstitial calcite.

The grains average 0.15 mm across and consist of about 60% lithics, 25% feldspar and 15% quartz of total grains.

The rock is a lithic sandstone.

68-173H

The hand specimen is a very fine grained, tough, pale grey rock, effervescing with acid.

In thin section it consists mainly of massive crystalline calcite showing characteristic cleavage in places and undulose extinction.

Particles of quartz and carbonaceous material averaging about 0.01 mm across are very sparsely disseminated but the rock contains a fine network of opaque white material, possibly of very fine grained clay minerals.

The rock is a recrystallised calcilutite.

[16 December 1968]