

SAMPLE NUMBER: 563788 HAT-1, 134.85m

SUMMARY:

This is a plagioclase+sparsely augite-phyric glassy andesite lava that has been finely fractured and brecciated during eruption.

THIN SECTION DESCRIPTION:

This is a mottled grey-green massive dacitic lava with diffuse segregations of quartz. It shows in thin section a beautiful microjig-saw fit texture produced by in situ fracturing of what was a dacitic to andesitic lava. The rock was largely glassy, consisting of about 5 modal % of quite euhedral and often elongate plagioclase phenocrysts mainly less than 0.6mm long, and much less abundant, but not uncommon small augite phenocrysts partially altered to epidote. Plagioclase phenocrysts have been albitized, and contain variable amounts of yellow epidote and some dirty sericite. Former FeTi oxide microphenocrysts are also not uncommon, and are altered to rims of hematite enclosing cores composed of leucoxenitic aggregates.

The distinctive texture of this lava is primary, not the result of hydroblasting or 'false brecciation'. Jig-saw fit small fragments are composed of almost opaque, brownish devitrified glass, and are separated one from the other by an anastomosing network of "fractures" that have been filled by the same magma, which in the fractures cooled rather more slowly, forming a more crystalline (albeit extremely fine-grained) material containing abundant aligned plagioclase microlites. Patches of secondary quartz more than 1cm long are present, and sometimes contain epidote inclusions, and narrow cross-cutting quartz-calcite veinlets sometimes contain tiny pyrite euhedra.

The not uncommon augite, common epidote in the alteration assemblage, and rather elongate plagioclases, all suggest to me that this is an andesitic lava rather than a dacite, although in hand specimen, the rock is rather pale compared with other Hellyer region andesites I have seen. It is quite reminiscent of the glassy silicic andesites recorded and described from MAC-10 (eg. 396710, 11 and 12).