

**SAMPLE: 562695**

**SUMMARY:** This sample is either a lithic tuff, or a felsic lapilli volcanoclastic derived from mass flow that involved minimum reworking.

**HAND SPECIMEN:**

This is a dark green polymict andesitic volcanoclastic or lithic tuff, with fragments up to around 1cm long; it is interbedded with a finer-grained tuff or shale in which lava fragments also occur.

**THIN SECTION DESCRIPTION:**

This rock is clearly polymict, with fragments varying widely in their texture and abundance of phenocrysts. Most fragments were probably fairly glassy quite strongly plagioclase-phyric andesite to dacite, dominated by blocky to tabular albite phenocrysts rarely longer than 1.5mm. Few, if any, former mafic phenocrysts were originally present in the lava fragments that make up this sample. The main petrographic difference between fragments is the original degree of crystallinity of the groundmass, and the degree to which the devitrified groundmasses have been altered. A few fragments are devitrified rhyolitic glass, variably vesicular (vesicles are quartz-filled), but not attaining enough vesicularity to be termed pumice.

The matrix of this rock is very difficult to discern from the fragments, and was probably very largely composed of glassy ash, tiny angular fragments of largely glassy felsic lava and angular albite crystal fragments. The degree of devitrification and superimposed alteration precludes preservation of glass shards. Devitrification produced variably-textured quartz-albite± minor chlorite mosaics from glassy groundmasses, and quite strong sericite-carbonate alteration has overprinted devitrification textures. The sericite alteration defines a very weak fabric that crosscuts the entire rock, but is better developed in some fragments than others, probably reflecting original 'glassiness'. Some degree of silicification has also affected this sample, and is best evidenced by irregular seams and patches of groundmass that are much 'clearer' and 'cleaner' than the remainder of the rock. Broadly, these parallel the weak foliation and may have developed at the same time.

This sample was probably a lithic tuff deposited from some hot mass flow without significant reworking. It cannot be precluded, however, that it is a slump-type mass flow derived from the side of a felsic volcanic edifice, and in this case would best be classified as a felsic lapilli volcanoclastic.