

SAMPLE: 562696

SUMMARY: This sample is an andesitic to dacitic lithic tuff dominated by fragments of strongly plagioclase-phyric lava. It has suffered variable but generally quite strong calcite-sericite alteration.

HAND SPECIMEN:

This is a dark green volcanoclastic sandstone with diverse clasts ranging up to around 1cm long.

THIN SECTION DESCRIPTION:

This sample in thin section is seen to be probably more akin to a lithic tuff than a sandstone. It is composed dominantly of abundantly (15-18 modal%) plagioclase-phyric andesitic to dacitic lava clasts with fine-grained but not highly glassy groundmasses charged with tiny albite microlites. These fragments/clasts are probably derived from a single flow/eruption, with textural differences in the groundmass simply reflecting cooling or quenching history differences. Rather more fine-grained or formerly glassy lava fragments are also present, and are not as common, or as phenocryst-rich as the main lava fragments. One quite large sparsely plagioclase-phyric dacitic lava fragment with a sericitized glassy groundmass is distinctive. Many albitized plagioclase phenocrysts are broken and are probably sitting in formerly glassy ash that has variably devitrified and been overprinted by the extensive calcite-sericite alteration that typifies this sample.

This rock was probably a lithic tuff of andesitic to dacitic affinities. I think it has not suffered any reworking, and is therefore unlikely to be a volcanoclastic sediment. However, when a lapilli sandstone dominated by glassy lava fragments and a juvenile, glassy matrix devitrifies, it becomes exceedingly difficult to judge whether the primary texture implies reworking or not. The geological implications of choosing one or the other alternative are not terribly significant, I suppose.