Sample: S383; TSC33699

Hand Specimen:
A weakly foliated, grey rock containing small phenocrysts of quartz and pale-coloured feldspar in a very fine-grained matrix.

Staining with cobaltinitrite shows traces of potash feldspar in a few small patches or grains and one possible, altered feldspar phenocryst.

Thin Section:
A visual estimate of the minerals is as follows:

	%
Quartz phenocrysts	10-15
Altered plagioclase phenocrysts	10-15
Volcanic-lithic fragments	10-15?
Altered biotite flakes	trace-1
Leucoxene grains	trace-1
Matrix mainly of sericite and chlorite with lesser quartz	60-65
Zircon	minute trace

Quartz phenocrysts vary in size up to a maximum of about 3 mm and many of them appear embayed and corroded. Plagioclase phenocrysts were probably of similar size to the quartz phenocrysts but most of these have been extensively altered and replaced by sericite and chlorite. There were once a few dark phenocrysts probably flakes of biotite up to 1.5 mm long which have been replaced by chlorite and very fine-grained, secondary iron and titanium oxides and there are a few skeletal grains of leucoxene which have replaced former crystals of iron-titanium oxide up to 0.6 mm in size. One of these contains a few inclusions of apatite. There are a few small grains of zircon 0.05 to 0.1 mm in size and there are two zircon crystals associated with some opaque oxide and leucoxene. The rock also contains some recognizable lithic grains varying in size from 0.5 to 4 mm and some of these have moderately clearly defined boundaries. They are mainly of acid volcanic rock but vary in grain size and texture. It is possible that the rock contains a higher proportion of lithic grains than noted above but where boundaries are not clearly defined it is difficult to determine which are parts of the matrix and which are lithic fragments.

The matrix of the rock is very fine-grained and is composed mainly of sericite and chlorite, probably with some extremely fine-grained quartz. Much of the sericite shows a preferred orientation imparting a weak schistosity to the rock.

Conclusion:
Weakly foliated acid pyroclastic which may have been a crystal-lithic tuff or a crystal-lithic vitric tuff.