

Sample: S371; TSC33696

Hand Specimen:

A fine-grained, grey rock with a weak but definite schistosity. It contains a few pale-coloured grains and when it is examined under low magnification a few small quartz grains or phenocrysts can be seen.

Thin Section:

A visual estimate of the minerals is as follows:

	$\%$
Quartz phenocrysts	10-15
Plagioclase phenocrysts	5-10
Lithic fragments	5-10?
Matrix mainly of sericite with lesser chlorite and probably minor quartz and feldspar	70-75
Opaque oxide	trace
Recrystallized leucoxene	trace-1
Calcite	2-3
Zircon and apatite	minute trace

This is a volcanic rock containing quartz phenocrysts 0.5 to 2 mm in size, some partly altered plagioclase phenocrysts up to 1 mm in size and also scattered smaller grains and fragments of quartz and plagioclase 0.1 to 0.5 mm in size. There are some areas which were almost certainly lithic fragments of acid volcanic rock up to about 2 mm long but, because of deformation and/or shearing in this rock the boundaries of these may have been modified. There are a few small aggregates of leucoxene and iron oxide and a few small zircon and apatite grains generally less than 0.1 mm in size.

The phenocrysts and lithic fragments are scattered through a very fine-grained matrix which could now be described as predominantly sericitic schist but this shows variations in composition and texture and in places it contains some fine-grained chlorite and probably also some cryptocrystalline to microcrystalline quartz and feldspar but these are too fine-grained to be positively identified. Some areas of this sericitic matrix have a streaky appearance and it is possible that this matrix once contained small vitric shards but this cannot be definitely confirmed.

The larger quartz phenocrysts all show evidence of strain, a few have been fractured and the fragments displaced and plagioclase phenocrysts have been partly replaced by sericite and also locally deformed and fractured. There are some streaks of sericitic material which may be shearing planes in the rock and there are also subparallel zones which have been partly replaced by calcite but this does not form continuous veins.

Conclusion:

Deformed rhyodacite (or rhyolite) which is more likely to have been a pyroclastic than a lava flow.