

Sample: S387; TSC33701

**Hand Specimen:**

A slightly greenish-grey, fine-grained rock containing disseminated pyrite and also small, darker-coloured grains and/or aggregates. The rock now has a weak foliation.

Staining with cobaltinitrite showed no potash feldspar.

**Thin Section:**

A visual estimate of the minerals is as follows:

	<u>%</u>
Quartz	35-40
Sericite	30-35
Chlorite	25-30
Leucoxene	1-2
Pyrite	2-3
Apatite	trace
Zircon	minute trace

The rock has been recrystallized and deformed but still retains evidence of a porphyritic texture. It once had numerous, rectangular or sub-rectangular phenocrysts of feldspar generally 1 to 2 mm in size but with a few up to 3 mm and although these have been completely replaced by sericite, the rectangular external shape of many has been well preserved but some have been at least slightly elongated in a common direction which is parallel to the schistosity visible in the hand specimen. There are only a few quartz grains and aggregates about 0.5 mm in size which may represent deformed quartz phenocrysts but if so, these are present only in trace to minor amounts. The rock also contains irregular and elongate patches or aggregates of chlorite 1 to 3 mm in size and a few of these have retained some evidence of former crystal shape suggesting that there were at least a few phenocrysts of a mafic mineral. Many of these aggregates or patches of chlorite contain skeletal grains of leucoxene representing altered crystals of an iron-titanium oxide generally between 0.1 and 0.3 mm in size but with a few larger ones up to 0.5 mm and a few of the chloritic aggregates contain trace inclusions of apatite.

The groundmass or matrix of the rock now contains an abundance of quartz with a grain size of 0.03 to 0.06 mm intergrown with very fine-grained chlorite and sericite. Chlorite tends to occur along the quartz grain boundaries and both chlorite and sericite show some evidence of preferred orientation imparting the weak schistosity to the rock. The groundmass also contains traces of very fine-grained leucoxene.

Pyrite occurs mainly as groups of crystals and crystalline aggregates which are concentrated mainly in some relatively large patches of chlorite. Some of these larger patches of chlorite are lined with a few projecting quartz crystals and there are also small patches of migratory and/or recrystallized quartz which shows pressure-shadow textures where it is in contact with larger pyrite crystals and aggregates. Some pyrite is scattered along poorly defined fractures or small shearing planes.

**Conclusion:**

Sericitized rhyodacite or dacite which originally contained phenocrysts of feldspar probably plagioclase and also phenocrysts of a mafic mineral now replaced by chlorite. There are local concentrations of pyrite mainly