

Sample: S386; TSC33700

Hand Specimen:

A pale grey, fine-grained rock containing disseminated pyrite and also a concentration of pyrite along an irregular vein.

Thin Section:

A visual estimate of the minerals is as follows:

	<u>Z</u>
Quartz	45-50
Sericite	30-35
Pyrite	10-15
Chlorite	3-5
Potash feldspar	trace
Apatite	trace
Zircon	minute trace

This is a completely recrystallized rock which is now composed mainly of quartz and sericite but the proportions of these minerals vary in a patchy and irregular manner. In some areas the quartz is relatively fine-grained with an average grain size of about 0.05 mm and in other areas it is coarser-grained varying up to about 1 mm in a few places. The variations in grain size and relative proportions of quartz to sericite do not form any regular or recognizable pattern but probably many of the areas of clear, relatively coarse-grained quartz represent migratory or secondary quartz and there are numerous irregular and intersecting veins of quartz. Sericite is intergrown with much of the quartz and there are a few aggregates or masses of sericite generally between 0.5 and 2 mm long but these do not show any definite textures or shapes from which their origin can be definitely established. Much of the sericite shows a preferred orientation particularly where it occurs in irregular and discontinuous bands and this gives the rock a very weak or incipient foliation. There are a few grains or former crystals now composed of leucoxene scattered through parts of the rock and the largest of these is about 0.4 mm in size. There are also a few small crystals and irregular grains of apatite.

Crystals and aggregates of pyrite are scattered throughout the rock and vary in grain size from less than 0.1 mm to about 1 mm. Some of this occurs as separate crystals but most of it forms crystalline aggregates which do not form any particular pattern and are not associated preferentially with any mineral or structure. There is, however, a higher concentration of pyrite along an apparently sheared and recrystallized zone which also contains a concentration of clear, migratory or recrystallized quartz. Some of this quartz shows pressure-shadow textures where it is in contact with relatively large crystals and aggregates of pyrite indicating that the pyrite was present when at least some of the quartz migrated and recrystallized. In this sheared and recrystallized zone there is also a slightly higher concentration of apatite grains which vary in size up to about 0.2 mm and some of these show brownish internal staining.

Conclusion:

Deformed quartz-sericite schist which was very probably derived from acid volcanic rock but there is no definite evidence of original textures. There is a concentration of migratory and/or recrystallized pyrite and much of the quartz has also migrated and recrystallized.