

Sample: S 442; TSC34436

Location:

LS 8 at 318.2 m

Hand Specimen:

A fine-grained, grey rock with indistinct, small paler-coloured aggregates which are elongated in a direction of weak foliation. This is at a moderate angle to the direction of the drill hole.

Staining with cobaltinitrite shows a trace of potash feldspar.

Thin Section:

A visual estimate of the minerals is as follows:

	%
Quartz	50-55
Sericite	40-45
Chlorite	2-3
Opaque oxide	1-2
Epidote	1-2
Calcite	1-2
Potash feldspar	trace
Sulphide	trace

This rock shows more evidence of shearing and extensive deformation than the previous sample but where textures are preserved they show that it originally contained at least 5 to 10% of quartz phenocrysts probably mainly between 0.5 and 2 mm in size but there are also a few larger masses of quartz up to 4 mm in size which have been extensively deformed, fractured and recrystallized and now show no evidence from which to determine their original textures. There were at least a few feldspar phenocrysts which have been replaced by sericite but which have retained some evidence of former crystal shape but other lenticular and elongate patches of sericite have been so extensively deformed that it is not possible to determine their origin.

The matrix is composed mainly of quartz and sericite but the proportions of these minerals vary greatly and there are also variations in grain size. There are a few places where some textures could be interpreted as having been derived from vesicular volcanic glass and very probably this rock originally contained a high proportion of fragments of volcanic glass. There may have been a few lithic fragments but, because of the extensive deformation this cannot be definitely confirmed.

The most abundant accessory mineral is very fine-grained opaque oxide occurring mainly as tiny crystals, many of which appear to be, or to have been, octahedra and probably much of this is magnetite. There are now several irregular aggregates and dark streaks which contain very turbid epidote and some of the larger streaks and aggregates also have calcite intergrown with the epidote. Some of the epidote is concentrated along very thin fractures and shearing planes.

Conclusion:

Acid volcanic rock which has been more extensively sheared and fractured than in sample S 441 at 229.8 m. It is more likely to have been a pyroclastic such as a crystal-vitric tuff than a lava flow but original textures are not sufficiently well preserved to be certain.