

Sample: S416; TSC33713

**Hand Specimen:**

A pale orange-grey rock with a moderately strong foliation. It contains some visible quartz grains or phenocrysts 1 to 2 mm in size and also numerous pale orange-coloured grains of similar size which are probably altered feldspar. However, staining with cobaltinitrite shows that only a few of these contain potash feldspar.

**Thin Section:**

A visual estimate of the minerals is as follows:

	<u>%</u>
Quartz	40-45
Sericite	40-45
Chlorite	10-15
Potash feldspar	1-2
Leucoxene	1-2
Epidote	1-2

This rock contains at least 10 to 15% of larger quartz grains most of which have been extensively fractured, deformed, granulated and drawn out in the direction of foliation and these show very little evidence of their original shape but there is at least one which resembles a quartz phenocryst. The paler-coloured grains or aggregates visible in the hand specimen are now composed mainly or entirely of sericite but many have retained evidence of former rectangular or sub-rectangular shapes and in a few there are corroded remnants of feldspar. The rock probably once contained at least 25% of scattered feldspar crystals but there is no definite evidence to show whether these were mainly plagioclase or potash feldspar. As indicated by staining of the hand specimen at least a few of the remnants are of potash feldspar. There are a few dark grains of leucoxene up to 0.8 mm long which have also been deformed and some have been partly dispersed but very probably at least a few of these were once crystals of iron-titanium oxide. Other patches of leucoxene associated with chlorite probably replaced other minerals. There are a few, elongate patches of chlorite but these do not show any recognizable relict textures.

The matrix contains moderately fine-grained quartz with a common grain size of 0.05 to 0.15 mm intergrown with varying concentrations of sericite and small patches of chlorite. This matrix has recrystallized and there is no evidence of original textures. The rock has been extensively deformed, fractured and sheared and there are now irregular and intersecting veins containing chlorite, very fine-grained epidote and some other dark material which is probably leucoxene. Some very fine-grained epidote or zoisite has partly replaced some of the more extensively deformed zones in the rock.

Along one edge of the section there is an area about 2 mm in size which contains a little translucent reddish-brown goethite and it is possible that this could have replaced sulphide.

**Conclusion:**

Sheared and deformed acid volcanic rock which was either rhyolite or rhyodacite. Original textures have not been sufficiently well preserved to show whether it was a pyroclastic or a lava but the former is more likely.