

Sample Number : 10975

L.S. 10 123-1

Identification : Foliated, sericitized, magnetite-impregnated, porphyritic rhyolite with late hematitic pigmentation

Description :

The hand specimen is a drill core sample of brownish grey, fine grained rock of fairly massive appearance but with subtle foliation inclined at 30-40° to the core axis and with irregular red veinlets across the core.

A staining test revealed that the rock is rich in fine K-feldspar.

In thin section the sample is seen to display moderately abundant phenocrysts, up to 1mm in size, set in a foliated, sericitic, quartzofeldspathic groundmass with maximum grainsizes of about 0.4mm.

The most abundant phenocrysts are smoothly corroded and meibayed quartz. Less obvious, inferred phenocrysts consist of deformed aggregates of sericite after possible plagioclase grains about 1mm in size.

Quartz is prominent in the groundmass as strained, anhedral, relatively large grains. K-feldspar is abundant, anhedral and sericitic. Sericite forms an abundant, interstitial, foliated mesh.

Subhedral to euhedral grains of magnetite, 0.02 to 0.1mm in size, are irregularly distributed as disseminations and weak stringers which do not parallel the foliation. Extremely fine hematite pigmentation occurs throughout the rock and there are earthy zones of hematite developed in and near fractures and several thin quartz veins which cross the core and have been crenulated by the metamorphic foliation.

An approximate mode is :

4-5%	quartz phenocrysts
0.5%	sericite after possible plagioclase phenocrysts
20-25%	groundmass quartz
40-50%	groundmass K-feldspar
20-30%	groundmass sericite
0.2-0.3%	magnetite, as veins and irregular disseminations
0.2-0.3%	hematite
tr	vein quartz

Comments and Interpretation :

This sample is thought to represent porphyritic rhyolite which has experienced heavy sericitization, patchy impregnation by magnetite and slight quartz veining prior to regional metamorphism. It would be unusual for low grade metamorphism alone to be able to convert all plagioclase to sericite in a crystalline rock which has been only mildly sheared.

The coarseness of the groundmass quartz and K-feldspar raises the possibility that this rock represents a subvolcanic intrusion rather than a lava, but the degree to which diagenesis and metamorphism may have coarsened the texture is open to speculation.