251163

Sample Number : T 239

Identification : Mildly deformed, intensely chloritized, unwelded vitric to finely pumiceous tuff with replacement veins of pyrite and quartz

Description :

The sample is a lightly weathered hand specimen of foliated greenish grey rock with numerous dark greenish grey specks and rather indeterminate textures, possibly formerly vitric tuffaceous. There are irregular, ferruginous porous patches or veins.

A staining test revealed no K-feldspar.

In thin section the sample plainly displays textures consistent with an unwelded vitric to pumiceous tuff, dominated by irregular, thick vitric shards, commonly about 0.4mm in size and ranging imperceptibly into comparable pumice clasts about 1 to 2mm in size. There is only local, minor shearing. The glass has all been pseudomorphed by bright green chlorite, accompanied by local clusters of fine rutile. Poorly twinned albite, probably of secondary origin, fills interstices. Disseminated tabular aggregates of sericite appear to be pseudomorphous after sparse feldspar phenoclasts up to 0.5mm in size.

Cubes of goethite after pyrite pores and some remnants of pyrite (about 0.05 to 0.3mm) form irregular, thin short replacement veins. Other thicker, irregular, deformed replacement veins consist mainly of quartz, accompanied by a few grains of pyrite.

An approximate mode is :

70-80%	chlorite after vitric shards and pumice
20-25%	interstitial albite
0.3-0.4%	finely granular rutile
0.3-0.4%	sericite after feldspar phenoclasts
1-2%	pyrite and goethite and pores after pyrite
1-3%	replacement quartz

Comments and Interpretations :

The sample is interpreted with confidence to have originated as an unwelded vitric to finely pumiceous tuff with only a few phenoclasts of feldspar. Its composition was either quartz-free intermediate or basic. Probable intense hydrothermal alteration has completely chloritized the glass component and completely sericitized the very minor component of feldspar clasts. Primary textures are well preserved. Pyrite and quartz have been introduced as replacement veins. Subsequent mild deformation has affected the rock, but its effects are local.