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Sample Number : T032

Identification : Deformed, intensely sericitized, mildly chloritized lava or subvolcanic intrusion of possible quartzose andesitic to dacitic composition

Description :

The sample is a hand specimen of moderately weathered, crudely foliated rock which displays many yellowish grey grains which resemble plagioclase about 0.3 to 3mm in size, set in a dark greenish grey groundmass.

A staining test revealed no K-feldspar, but weathered plagioclase did absorb some pigment.

In thin section the sample is seen to be heavily altered and moderately deformed, but it seems to have remnant textures consistent with abundant subhedral phenocrysts set in a finely crystalline groundmass. Coarse sericite pseudomorphs of feldspar phenocrysts are plainly recognisable. Mafic silicate phenocrysts, up to 1mm in size, have been replaced by chlorite; they have forms vaguely suggestive of pyroxene or amphibole. There are numerous equidimensional, brown, translucent, leucoxenized grains, up to 0.5mm in size, suggestive of altered primary opaque oxides. The groundmass has textures suggestive of a mosaic with 0.03mm grain size, composed of quartz, sericite aggregates (probably after feldspar), chlorite (especially mobilized by shearing) and leucoxene aggregates.

An approximate mode is :

30-40%	sericite pseudomorphs of feldspar phenocrysts
3-4%	chlorite pseudomorphs of mafic phenocrysts
1-2%	leucoxenized, former opaque phenocrysts
15-18%	groundmass quartz
5-7%	groundmass chlorite
30-40%	groundmass sericite
0.5-0.8%	groundmass leucoxene

Comments and Interpretations :

The sample is interpreted with fair confidence to have been an abundantly porphyritic lava or subvolcanic rock, not a pyroclastic unit. Textural details have been blurred by intense sericitization (probably of hydrothermal origin) and by metamorphic shearing and recrystallization.

The original composition was probably transitional between intermediate and acid, with quartz confined to the groundmass. It may well have been dominated by plagioclase and transitional between andesite and dacite, but this is speculative in view of the extent of alteration.