Sample Number : 10966 J.P.3 212·6m

Identification : Sericitic, sandy and pebbly metapelite with traces of oxidized pyrite

Description :

The hand specimen is a drill core sample of finely foliated, light olive grey rock with disseminated silt and sand-sized mineral grains and some lenticular lithic clasts which are about 1 to 10mm in size. The foliation is inclined at about 25° to the core axis. Iron and manganese staining is developed near a joint.

A cobaltinitrite staining test produced mainly a diffuse stain, more suggestive of sericite than K-feldspar, but there are several lithic clasts which are seen to contain fine K-feldspar.

In thin section the sample is seen to consist of numerous rounded mineral and lithic clasts dispersed through a somewhat webbed matrix of aligned fine sericite. The mineral clasts are mainly rounded, unstrained to weakly strained quartz, about 0.02t to 0.7mm in size. There are a very few grains of untwinned, lightly sericitized plagioclase. The lithic clasts are rounded to ovoid, 1 to 10mm in size and commonly consist of sericite and fine quartz; a few are composed largely of "cherty" microcrystalline quartz and a very few consist of fine quartz, K-feldspar and sericite. Weathering has rendered many lithic clasts porous.

There are sparse goethite pseudomorphs after subhedral pyrite, 0.1 to 0.4mm in size, scattered through the lightly iron-stained sericite matrix and there are also many much finer specks of hematitic to limonitic oxides of uncertain derivation.

An approximate mode is :

20-25%	quartz sand and silt
tr	feldspar sand
3-4%	lithic clasts of mainly quartz-sericite rock
70-75%	matrix sericite
0.1-0.2%	goethite after pyrite, along with ferruginous oxide specks of uncertain derivation

Comments and Interpretation :

This sample is confidently interpreted to have originated as a sandy and pebbly pelitic sediment. Some or all of the detritus may have been derived from volcanic sources, but there are no overtly volcanic textures displayed by the sand grains or lithic clasts. Very minor disseminated pyrite was present prior to weathering of the rock. Sericite in the matrix could be of hydrothermal origin, but it has been foliated by regional metamorphism.