

Sample Number : 3016

Identification : Andesitic lithic tuff or fine cong-omerate with extensive hydrothermal alteration and weak mineralization

Description :

The hand specimen is an essentially fresh sample of apparently fine-grained rock, but examination of sawn surfaces reveals ovoid olive grey clasts, about 1 to 10mm in size, in a greenish black matrix. There are a few inconspicuous stringers of brassy sulphide.

A staining test revealed no K-feldspar.

In thin section the clasts are seen to be moderately round fragments of porphyry, with sparse phenocrysts of heavily sericitized plagioclase, about 1mm in size, set in an allotriomorphic mosaic of moderately sericitized and carbonated plagioclase, about 0.2mm in size.

The matrix between the clasts consists of allotriomorphic quartz, colourless carbonate (apparently calcite), green chlorite, sericite and anhedral sulphide (pyrite and/or chalcopryrite). Grainsizes are commonly finer than 0.3mm in the matrix, but vary up to 2mm for the carbonate. All of the matrix minerals form vein-like structures in places.

An approximate mode is :

- 75-80% clasts of sericitized andesite porphyry
- 8-10% matrix quartz
- 10-15% matrix calcite
- 2-3% matrix chlorite
- 1-2% matrix sericite
- 0.1-0.2% matrix pyrite and/or chalcopryrite

Comments and Interpretation :

The primary textures of the sample are difficult to interpret with confidence. The main framework of the rock does consist of clasts of altered, sparsely porphyritic, leucocratic andesite, but whether the original rock was a lithic tuff or a fine volcanoclastic conglomerate is unclear.

Hydrothermal alteration has moderately sericitized and lightly carbonated the clasts and then continued hydrothermal activity has produced a matrix dominated by calcite and quartz, with subordinate chlorite, sericite and sulphides.