

Sample: S 444; PSD6780

Location:

LS 8 at 325.9 m

Hand Specimen:

A dark grey and paler grey, predominantly fine-grained rock with slightly larger, pale-coloured quartz grains in some zones. Much of it has a streaky appearance but on a freshly cut surface there is evidence of thin banding or layering. There are concentrations of very fine-grained, yellow sulphide along some thin streaks or bands parallel to the foliation which is at a low angle to the direction of the drill hole.

Polished Section:

The general matrix of the rock contains at least 15 to 20% of fine-grained magnetite with higher concentrations in some areas; there is a trace of pyrite and a minute trace of chalcopyrite. The thin, sulphide-bearing bands noted in the hand specimen contain pyrite and lesser chalcopyrite.

The bands or veins are about 0.5 mm thick varying up to 1 mm and they contain elongate aggregates and also isolated crystals of pyrite which varies greatly in grain size from less than 0.05 mm to over 0.2 mm. Some of the crystals and aggregates of pyrite contain small inclusions of magnetite similar to those in the matrix of the rock and a few aggregates of pyrite have been fractured and drawn out in the direction of foliation. Quartz is also present along some of these bands which may form discontinuous veins and some of this shows pressure shadow texture. Fine-grained chalcopyrite is intergrown with some of the pyrite and it also occurs as separate elongate aggregates and streaks and as small crystals intergrown with the quartz. Some of the chalcopyrite contains very small inclusions of magnetite and also very small inclusions of pyrite.

The most abundant opaque mineral in this section is magnetite which occurs as clouds of tiny crystals scattered throughout most of the matrix. Many of these magnetite crystals are only a few microns in size and a large proportion are less than 20 microns. Most of it shows no evidence of oxidation to hematite but in a few crystals there are traces of hematite.

In one area there are a few minute grains of galena mainly in, or intergrown with, a little pressure shadow quartz which is against a quartz phenocryst or grain and this pressure shadow quartz also contains a trace of chalcopyrite. It is adjacent to a sulphide-bearing band or vein.

Conclusion:

Magnetite-bearing acid volcanic rock or pyroclastic which contains pyrite and traces of chalcopyrite along a few thin bands.