

in which chloritic rock forms a network pattern around less altered, rounded blocks, to rock which is largely chlorite-green, and finally to brecciated green rock.

Note that certain geological boundaries have been changed (compare earlier company maps). The western boundary of the pink rhyolites extends northward with little if any displacement by faults. Displacement corresponding to the faults affecting the Owen Conglomerate might be found in more detailed mapping, but may be insignificant because of the steeper dip of the volcanics. To the south, the same boundary is imprecisely known. Note the disagreement between the boundary as projected upwards (70° dip) from DDH RH10 and as mapped nearby on the surface. The faults which deflect the black slate should also affect the boundary of the pink rhyolite. The eastern boundary of the pink rhyolites is not known with certainty. It is further east than shown on the earlier geological map. To the east, the rhyolites change in character, becoming browner and less massive. The change is probably a function of alteration rather than original lithology. The western boundary against quartz-sericitic alteration, and the boundaries in the hangingwall of the host horizon may similarly be of secondary origin.

6. Petrographic Descriptions

N.B. In descriptions of chlorite: P refers to pleochroism, AIC to anomalous interference colour.

Footwall

S728 Outcrop: Grey, massive volcanic rock (bearing a pyrite + magnetite + chlorite vein nearby), from the area just south of the base of the chloritic pipe.

Primary Features: Feldspar phenocrysts (probably plagioclase, but they are largely replaced) are abundant in an originally-glassy groundmass bearing accessory zircon and apatite.

Secondary Features: The feldspar phenocrysts are heavily sericitised, and bear also a little chlorite, allanite, rutile and opaque mineral. The groundmass is quartz-rich and of a well-developed snowflake texture. The snowflakes have no nuclei and all feldspar microlites appear sericitised. In addition, the groundmass contains fine-grained sericite marking the cleavage, and disseminated pyrite-magnetite grains (both fine and coarse), chlorite patchily distributed, and scattered rutile and allanite, the latter associated with chlorite. The chlorite has P: green to colourless, AIC: dark bluish grey, and occurs also in veins with sericite and quartz. A chlorite-like, brown to green mineral with low second-order birefringence also occurs in the groundmass. The specimen is cut by veins of quartz + albite and allanite.

Identification: A feldspar-phyric volcanic rock of unknown origin. Note that this part of the hydrothermal system has received a concentration of rare-earth elements.

S727 Outcrop: Breccia of pink clasts in a dark green matrix.

Primary Features: The pink clasts preserve phenocrysts (originally feldspar), a few quartz grains which may be phenocrysts, and accessory zircon.