

has a downthrow to the east of at least 700m. Many small normal faults trending north-south and east-west dissect the sequence.

The faulting appears to predate the mineralisation, and the faults are generally mineralised with fracture fillings and vein networks of quartz-pyrrhotite-arsenopyrite-cassiterite. The mineralisation within the Bassett-Federal Fault forms an extensive orebody with an average grade of 1.0% Sn. It is this orebody which crops out on the surface and gives rise to stanniferous gossans. It has a strike length of 500m, a width of 5m and a depth extension of 1 000m.

Post mineralisation movement in the fault fractured the cassiterite crystals and broke them down to fragments with an average grain size of 5 microns. The sulphide minerals were also broken down so the ore has a fine grained massive appearance. The tin from the Bassett-Federal orebody is sometimes contaminated with native bismuth and arsenic, and is so fine that it tends to be lost with the slimes.

### 3.9. Igneous Intrusions

Devonian granitic greisenized rocks crop out at Pine Hill. Relatively fresh granites have been intersected in drill holes along the axis of the Renison Bell anticline.

The sedimentary rocks in the mine area have been contact metamorphosed. Alteration zones of biotite, tourmaline (or axinite) and tremolite may be traced outwards from the granite (see Figure 3). There is a development of talc, tremolite and quartz in the dolomites, phlogopite and axinite in the basic volcanics, and clinozoisite and muscovite in the shales.

### 3.10. Mineralisation

The various orebodies have been described above in relation to their host rocks. Mineralisation at Renison Bell is of three main types:

- a) Metasomatic replacement of carbonate beds.
- b) Vein and fissure fillings in fault zones.
- c) Veinlet and disseminated mineralisation in recrystallised quartzite.