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REPORT CMS 84/7/16

Nine drill core and "reject" (chip) samples from Grand Prize drill hole GP 8 were received for urgent petrological examination, pending the Annual Report on Grand Prize. Representative thin-sections were prepared, examined in transmitted light and, together with the respective offcuts, in oblique incident light. Attached tabulated descriptions summarise the microscopic data and include sizing and distribution data on the observed tin mineralisation.

Summary

Five samples (2970-71 and 2973-75) represent metasomatically altered coarse clastic sediments. The remaining four samples (2976-79 inclusive) represent altered igneous rocks.

The first group includes two drill core and three reject chip samples (2973-75 inclusive). The latter are poorly diagnostic in terms of primary macrofabrics. All three samples, however, consist of a rather heterogeneous collection of altered lithologies and, on this basis, are reasonably interpreted as representative of coarse (conglomeratic) polymict sediments. Tectonic breccias, as a potential alternate interpretation, appear negated on microtextural grounds.

These rocks exhibit metasomatic assemblages of tremolite-actinolite and green schorl, supplemented to varying degrees by quartz, fine-grained hematite, sideritic carbonate, talc, and locally phlogopite. Accessory sulphides comprise a (extensively pyritised) pyrrhotite/minor chalcopyrite-sphalerite assemblage. Secondary "retrograde" assemblages with chloritisation of tremolite (and locally phlogopite) are semi-pervasive, with pyritisation of pyrrhotite an associated phenomenon.

Cassiterite was detected in all five samples in amounts broadly consistent with the Sn assay data. The bulk appears as disseminations in metasomatic silicate aggregates (notably tremolite-schorl-quartz assemblages). Variations include micro-inclusions in quartz, relatively coarse-grained disseminations in locally developed talc-quartz assemblages, and disseminations in chlorite (i.e. chloritised tremolite and/or phlogopite) aggregates. Observed cassiterite sizings are variable, but in broad terms amenable to flotation/gravity composite methods of concentration. Significantly, there is no real tendency to intergrowths between cassiterite and sulphides.

Altered igneous rocks comprise two groups, mafics and ultramafics. The mafics (2976, 2978) are uralitised microgabbros reflecting a weakly but variably developed late (post-uralite) phlogopitic assemblage not inconsistent with incipient tin mineralisation and partly fracture-controlled.

Ultramafics (2977, 2979) are serpentinised pyroxenites with variably developed tremolitic and late magnesitic carbonate alteration assemblages. These rocks appear relatively unreactive in comparison with the interspersed basic types.

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