

GEOLOGY OF THE GAMELEIRA CU-AU DEPOSIT, CARAJÁS, BRAZIL

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The Gameleira Cu-Au deposit consists of an undeformed vein system developed at the top of a Proterozoic anorogenic quartz-syenitic intrusion associated to the Pojuca Granite. The host rocks are a highly altered Archean volcano sedimentary sequence from the Salobo-Pojuca Group, composed by basalts, iron formations, pelites and a gabbroic sill. Intensive potassic alteration synchronous to the deformation and predating the mineralization and the intrusion, transformed the mineral assemblages from most of the host rocks into biotite, albite, quartz (garnet) associations, although the original rock textures are still preserved. Biotite is the only stable mafic mineral in the volcano sedimentary sequence, except for the gabbroic sill, where Ca-amphibole is still important. The ore is associated to a lower temperature hydrothermal alteration characterized in the veins by chalcopyrite, bornite and molybdenite, with minor pyrite, chalcosite, covelite and gold; plus quartz, albite, tourmaline, biotite, fluorite, uraninite, epidote and calcite. Chalcopyrite, molybdenite, gold, tourmaline, fluorite and uraninite are also found in the quartz-syenite. This common mineral association, together with the undeformed character from both, the intrusion and the veins, indicates a genetic relationship between the epigenetic ore and the quartz-syenite.