

ORE FLUIDS ASSOCIATED WITH THE GOLD MINERALISATION IN MANGALUR, KARNATAKA

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Abstract

The Mangalur deposit has two parallel gold bearing zones hosted in the metavolcanic sequence in the south-central part of the Mangalur greenstone belt of Dharwar craton. In these zones, gold mineralization is structurally controlled, hydrothermal epigenetic vein type and is invariably associated with wall rock alterations characterized by ubiquitous presence of pyrrhotite, pyrite, arsenopyrite, chalcopyrite and sphalerite. The gangue minerals are quartz, chlorite, biotite, tremolite and ankerite. Three types of fluid inclusions, namely CO₂ inclusions, H₂O inclusions and H₂O-CO₂ inclusions are recorded in the gold bearing vein quartz of Mangalur gold deposit. H₂O-CO₂ the dominant fluids with low salinity (1.65-7.81 wt% eqv. of NaCl) and low density (0.734 - 0.878 g/cc) seem to be responsible for gold deposition over a homogenization temperature range of 210 to 240°C.

Keywords: Ore fluids, Gold, Mineralization, Mangalur, Karnataka