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PRELIMINARY HEAVY MINERALS INVESTIGATIONS IN SECONDARY ENVIRONMENT OF PEDDAVURA SCHIST BELT, NALGONDA DISTRICT, TELANGANA STATE

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Abstract

Peddavura Schist Belt is a part of EDC exposed in Nalgonda district of Telangana State. The lithology has Banded Gneiss forming the basement, overlain by metabasalt and BIF, while the younger group has granitoids, mafic dykes and quartz veins. The banded gneiss is spatially separated from the greenstone belt by younger intrusive granodiorite. The supracrustal sequence is dominantly made up of metabasalt and BIF.The basement is traversed by numerous dolerite dykes with calcite working as heat engines for the mobilization of gold from metabasalts and being mineralized in quartz veins. Dolerites are associated with calcretes. Pegmatite intrusions with mica mineralization also occur. Apart from dolerite dykes main source of heat for the mobilization of gold is younger granite. Shear zones traversed by quartz reefs, dolerite dykes, structurally by vertical joints and some alterations such as brecciation, shear zones, chloritisation, epidotisation and silicification are observed.

Geochemical investigation for mineral potentiality of Peddavura Schist Belt was undertaken covering an area of 135 km^2, involving collection of 20-stream sediment samples in -120 mesh size fraction for geochemical analysis along with +120 mesh size fractions that were used for heavy mineral panning concentrates. The stream sediment samples were subjected to panning, magnetic, non-magnetic and bromoform separation, binocular microscopic studies, and SEM analysis. The heavy mineral panning concentrates contain gold, garnet, zircon, rutile, monazite,magnetite, hematite, tourmaline, ilmenite, epidote, thorite and cassiterite. In the present investigations gold specs have been found in one of the heavy mineral concentrates collected from Peddavura Schist Belt. The upstream follow up geochemical exploration program is yet to be taken up.

Keywords: Peddavura schist belt, Heavy mineral, geochemical exploration.