



Cobalt Mineralization Associated With Copper from Kalyadi Area, Western Dharwar Craton, South India

Mahantesha P.^{1*}, K.N. Prakash Narasimha², M. Shareef³, G. Gopala Krishna⁴ and T.K.A. Rahim⁵

¹Geological Survey of India, SU: K and G, Bengaluru - 560111(KN), India

²DOS in Earth Science, University of Mysore, Manasagangotri, Mysore - 570006(KN), India

³Geological Survey of India, FTC, Chitradurga -577502(KN), India

⁴Geological Survey of India, NCEGR, Bengaluru -560111(KN), India

⁵Hutti Gold Mines Ltd., Raichur -584115 (KN), India

(*Corresponding author, E-mail: mantugeo11@gmail.com)

Abstract

Kalyadi Schist Belt (KSB) of the Western Dharwar Craton (WDC) is well known for Kalyadi polymetallic copper deposit of Meso Archean (3.0Ga) age. The Kalyadi Supracrustal dominantly made-up of quartzite, ultramafic to mafic schist inter-bedded with chemogenic cherts. The copper mineralization in Kalyadi schist belt occurs as 1) disseminations and patches in quartzite, 2) stringers and veinlets in meta-volcanics and 3) rich concentrations along fractures. The mineralisation is lithologically and structurally controlled by narrow brittle-ductile shear zone as evidenced by the development of numerous fractures, joints, faults, veins, stringers and foliations in KSB. Magnetite, chalcopyrite, pyrite pyrrhotite and arsenopyrite are some of the common sulphide minerals observed in the area. Apart from Cu, Cobalt (Co) association is also known from Kalyadi schist belt. There is no separate Co mineral phases present in the area and the Co is ubiquitously associated with pyrite. Petrographic studies reveal that the chalcopyrite replaced the early pyrite and pyrrhotite. Chemical analyses of the samples from the mineralized zones by AAS have yielded Co values up to 1200 ppm and Cu up to 2.3 %. Negative correlation between Co and Cu is noticed.

Keywords: Copper- Cobalt Mineralisation, Kalyadi Schist Belt, Western Dharwar Craton



www.gondwanags.org.in

JGSR
Journal of Geosciences Research
Vol. 6, No.2, July, 2021
pp. 136-145
