

Geological Setting and Nature of Mineralization at Meyon Gold Deposit, Southern Myanmar

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The Meyon gold deposit lies within the Mogok metamorphic belt that developed during late Oligocene to early Miocene. The deposit is hosted by a thick Carboniferous sequence of slate, argillite, phyllite, schist, and minor massive turbiditic graywacke of Mergui Group which were intruded by granitic to mafic intrusions. Gold mineralization is widespread in the deposit area. Hard-rock workings in the form of small hand-dug shafts are in operation at the Meyon gold deposit. There are two mineralized zones named as Guku prospect in the north and Kyaukpon prospect in the south. The Guku prospect is hosted within an altered rhyolite that intrudes along a NNW striking dextral strike-slip fault. The Kyaukpon prospect is a stratabound shear hosted mesothermal quartz-pyrite-gold vein. The quartz-gold vein strikes NNE and has a steep easterly dip hosted within a sheared zone. Structurally, the Meyon gold deposit is located between the Papun fault (Mae Ping fault) in the north and Three Pagoda fault in the south and occur in proximity to the major NNW-trending structure possibly formed with the activity of these two faults. A distinct hydrothermal alteration mineral assemblage is recorded adjacent to mineralized veins within the Meyon deposit including silicification, argillic alteration, and propylitic alteration.

Gold and sulfides were found both in quartz vein and altered wall rock. Gold also occurs as free grains in the oxidized zone, in inclusions and fracture fillings within pyrite, and is intimately associated with arsenopyrite within strongly altered wall rock. Rare pyrrhotite and chalcopyrite are also found. Pyrite occurs as two generations as large idiomorphic crystals as well as disseminated grains. Sulfur isotope analyses of pyrite indicate that the gold-ore forming fluids vary in sulfur isotopic values from -2.80 to 4.43‰, suggesting a magmatic source of sulfur. The preliminary analysis of fluid inclusion study indicates presence of carbonic fluid inclusions and yielded homogenization temperatures of 240° to 370°C and salinities of <10 wt % NaCl equiv and the carbonic gas phases (CO₂ and CH₄) were detected by Laser Raman Spectroscopy analyses. The geological setting, mineralization and fluid characteristics of the Meyon deposit are consistent with an orogenic style of gold mineralization.