Cikidang Au-Ag deposit in West Java, Indonesia: An overview

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Abstract

The Cikidang Au-Ag deposit, discovered in 1991, is located within the Bayah dome, a Tertiary-Quaternary volcanic zone at west end of Java, which is well known as a gold district (e.g. Pongkor & Cikotok mines). These deposits are represented by typical low-sulfidation adularia-sericite-calcite-quartz vein deposits.

The Cikidang vein system comprises four sub-parallel quartz-adularia (-calcite) vein that are rich in manganese oxides and limonite with very poor amount of sulfides. These vary from 0.5 to 2.7 m in thickness and extend for up to 1,000 m in length. The vein trends roughly N-S and dip 600 to 860 toward the west. The ore grades vary from trace to 74.87 ppm Au and 1.16 to 224.98 ppm Ag. The base metal (Cu, Zn and Pb) contents vary from trace to 0.02 ppm, individually.

Resource estimation are obtained as an indicated resource 0.4 million tones at 10.2 g/t Au and 43 g/t Ag. The highest grade of Au and Ag ore are distributed from level 200 m to 600 m. The distribution of Au and Ag grade are suddenly depleted toward the depth below level 600 m. A couple of major freeder zones of accending hydrothermal water were detected in the vein based on the distribution map of ore grade.

The ore minerals are represented by electrum, argentite-aguilarite solid solutions, and pyrite. Electrum shows the compositional ranges of Au (35-50 atomic %) and Ag (50-65 atomic %), respectively. The gangue minerals are dominated by quartz with variable amounts of calcite, sericite, adularia, clay minerals, manganese oxides and limonite. The vein textures are so variable as in banded, colloform, comb, brecciated and massive. Host rock, composed of Miocene lapilli tuff and breccia, has suffered pervasive hydrothermal alterations. Wall rock adjacent to the vein is characterized by argillic and propylitic ones.

The fluid inclusion study of the Cikidang vein shows homogenization temperatures ranging from 160℃ to 220℃. Salinities are low, generally below 3 wt % eq. NaCl.