

# Cikidang hydrothermal gold deposit in Western Java, Indonesia

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## Abstract

The Cikidang gold 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 and Cikotok mines). Typical low-sulfidation adularia-sericite (-calcite)-quartz vein deposits represent the gold deposit in the district.

The Cikidang vein system comprises four sub-parallel quartz-adularia (-calcite) vein that are rich in manganese oxide and limonite with very poor amount of sulfides. These vary from 0.5 to 2.7 m thick and extend for up to 1,000 m long. The vein trends roughly N-S and dip 60 ° to 86 ° toward west. The ore grades vary from trace to 74.9 g/t Au and 1.2 to 225.0 g/t Ag. A K/Ar age determination on adularia yielded 2.4 Ma for the Cikidang vein.

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

The fluid inclusion study of the Cikidang vein shows homogenization temperatures ranging from 170 ° to 260 °. Salinities are low, generally below 3 wt% NaCl equivalent. Oxygen isotope results suggest meteoric water in origin for ore fluids responsible for the Cikidang deposit.