SEG-MJD 2016 Conference

The Geology and Mineralogy of Akarca Gold-Silver Deposit, Bursa, Turkey

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The Akarca gold deposit is located in the Izmir-Ankara suture zone west of Bursa, Turkey. It consists of typical low sulfidation-style epithermal veins hosted by clastics of the Permo-Triassic Karakaya complex. The majority of the gold and silver is confined to silica veins. Silicified rocks form a halo to the veins, and lateral spreading of hydrothermal fluid within well-sorted conglomerates around Fula Hill with some elevated grades (up to 171 g/t Au and 1,501 g/t Ag) typically occurs when cryptocrystalline quartz is seen in vein breccias. Many of the veins consist of fine- to medium-grained interlocking anhedral quartz with cavities and late veinlets filled by elongated and comb quartz. Distinct crustiform banding is seen in some elevated gold sections. The depositional environment of the Akarca region is an alluvial fan and was developed from south to north.

At the end of 2015, the estimated inferred resources were 700,000 oz gold grading 1.1 g/t. The average Ag/Au ratio is 10.1 around Huğla and Fula hills. Electrum is found in many of the veins, either associated with quartz or, more commonly, with hematite and/or Fe oxyhydroxides. Electrum in quartz appears to be hypogene. By contrast, the electrum with hematite is most likely supergene.