

REDBED RELATED GOLD DEPOSIT, KUPFERSCHIEFER, LUBIN AREA, SW POLAND

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Underground prospecting within Lubin area which took place during last 5 years, led to a discovery of a new type of gold mineralization located 0-0.5 meters below the copper-silver orebody. The gold-bearing zone lies mainly in the Weissliegende sandstone, but locally transgresses the stratigraphic sequence into the overlying Kupferschiefer and Werra Dolomite. Gold deposit lies in a secondary red-coloured variety of the above mentioned sedimentary strata. Between redbeds (gold-bearing zone) and black, reduced sediments (Kupferschiefer) a transition zone has been recognized. This transition zone is characterized by the low grade of copper mineralization, and a grey tint of the black shale. Thickness of the gold deposit varies from few centimeters to 1.5 meters with an average of about 0.25 meters. The highest thickness of Au-deposit is observed in places where oxide front transgresses the copper-silver deposit. Gold content ranges from 0.5 up to 106 ppm with an average grade of 0.717 - 3.491 ppm depending on the counting block. Gold bearing horizon is peneconcordant and is characterized by the presence of high fineness native gold, electrum, hematite, and minor pyrite, chalcopyrite, digenite, chalcocite, covellite, rammelsbergite, clausthalite, and auricupride. Minerals fill intergranular spaces in clastic sedimentary host rocks. Described gold-bearing zone can be classified as a Redbed related Au-deposit. Genetic model is similar to volcanogenic Redbed copper type and uranium roll-front, with the contact of the redox boundary being mainly horizontal. Most of the native gold was concentrated in the main fluid flow channel, such that one or two thin orebody formed in favourable, permeable lithological units. The Lower Permian molasse was probably the source of oxidizing fluids containing gold. Rapid oxidation of local iron was a factor of gold reduction and simultaneous crystallization of hematite.