

GENESIS OF NEOGENE LS-TYPE EPITHERMAL ORE INDICATIONS AT MÁTRAKERESZTES, W-MÁTRA MTS., NE-HUNGARY, CARPATHIAN BASIN, EUROPE

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The indications are situated at the western border of the LS-type GyöngyöSOROSZI-Mátraszentimre ore field, representing a characteristic part of the polymetallic-epithermal zone of the Inner Carpathian volcanic belt. The mineralization is placed in a caldera structure, which was formed in andesitic type stratovolcanic series (14-17 Ma). The host rocks exhibit here slight acidic features (trachytes). The host rock shows intensive silicification and K-metasomatic alteration. The argillization (montmorillonite, sericite) and hydrohematitization are of secondary importance. The poor, original sulphide mineralization (marcasite and As-bearing - 2 wt% - pyrite) is accompanied by silicification, in form of stockworks and little veins with banded structure. In these objects the adularia is frequent. Later these minerals were transformed into goethite and jarosite (gossan formation), indicating the high K content (13% K₂O) of the host rock. In the area there is an As-Sb-(Hg-Ba) anomaly (8500ppm As, 1000ppm Sb), which belongs to the secondary minerals. The mineralization proceeded at 190-200 C. The total salinity of solutions was low (0,2-5 NaCl eqv. wt%). The composition of fluids was mainly Ca-Na-chloride type (the vein forming stage), but subordinately alkaline-bicarbonate/sulphate fluids also occur (in open cavities at the host rock, so-called apophysis stage). The dilution of solutions was very characteristic, since the mixed fluids could be diluted-cooled by the meteoric water. Consequently the upper region of the vein system of a LS-type mineralization can be identified, which is located in shallower depth than the vein system of the GyöngyöSOROSZI-Mátraszentimre mineralization. Later these rocks got the surface, and were transformed under oxidizing conditions