

Preliminary Findings on Formation of the Gökçedogan Region Cu-Zn-Pb Base Metal Mineralization, Kargi-Çorum, Turkey

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The Kargi (Corum) area is located in the eastern part of Pontide (northern Turkey). The evolution of the Paleo-Tethys and Neo-Tethys oceans outlined the tectonostratigraphy of this area and was responsible for its mineralization. Relatively autochthonous rocks that are considered to be basement rocks were overlain by allochthonous formations in the study area. The autochthonous sequence is represented by Bekirli metamorphic rocks, while the allochthonous sequences are represented by Kargi ophiolitic melange. Base metal mineralization (e.g., Cu-Zn-Pb) is observed in both stratigraphic sequences (Bekirli metamorphics and Kargi ophiolites).

The Göçükdibi and Küre Cu-Zn mineralization was formed parallel to the schistosity planes in quartz-chlorite schists as well as disseminated in the wall rock in the autochthonous Bekirli metamorphic rocks. The ore paragenesis includes chalcopyrite, sphalerite, and pyrite with minor amounts of galena as primary sulfides, and azurite and malachite minerals that developed as secondary minerals into fractures and faults cut the Göçükdibi mineralization. The initial data indicated that this mineralization that was compatible with the schistosity is syngenetic. Also, they showed the presence of the clastic facies. These data are similar to the volcanogenic massive sulfide (VMS) mineralization developed in clastic-dominated geological environments.

The Cu-Pb ± Zn mineralizations in allochthonous sequences are represented by the Dedeninyurdu, Yergen, and Ahmetaganinyeri mineralizations. These mineralizations occurred in metaalkaline rocks of the Upper Cretaceous Kargi ophiolitic mélangé as vein type within NE-SW-trending fracture lines. The vein-type base mineralization includes pyrite, chalcopyrite, sphalerite, pyrrhotite, and goethite minerals in the paragenesis. Pyritization, silicification, sericitization, and carbonatization alteration types developed around this vein-type Cu-Pb ± Zn mineralization in the mélangé.