IRANIAN SOCIETY of CRYSTALLOGRAPHY and MINERALOGY

Vol. 23, No. 3, Fall 1394/2015

IRANIAN JOURNAL of CRYSTALLOGRAPHY and MINERALOGY

Mineralogical study of intrusive rocks and alteration zones and compliance with geochemical data in Gazu Cu deposit, southwest Deyhouk

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(Received: 23/5/2014 , in revised form: 1/9/2014)

Abstract: Gazu copper deposit is located in the boundary of Tabas and Lut block, 65km southeast of Tabas and 15km southwest of Deyhouk. The dominant lithology in the area consists of Shotori dolomite and limestone and Shemshak shale and sandstone. Intrusive rocks with intermediate composition are widespread and numerous in the area. They consist of diorite, monzonite, and quartz monzonite to granite. Mineralogy of this intrusive are quartz, plagioclase, K spar, hornblende and slightly biotite and pyroxene. Accessory minerals consist of apatite and zircon. Main alterations in the area consist of: QSP, silicified carbonate, propylitic and skarnification. Main secondary minerals consist of sericite, quartz, carbonate, chlorite, epidote and calcsilicate minerals such as garnet, wollastonite, idocrase ets. In a 70 km^2 area, mineralized and alteration zones exists in at least four locations: GA.I-GA.II-GA.III-GA.IV. Mineralization is frequently in the form of disseminated, stockwork, and less in hydrothermal breccias. Primary minerals consist of pyrite, chalcopyrite, sphalerite and barite, and secondary minerals are chalcocite, covellite, cuprite, malachite, chrysocolla, atacamite and turquoise. Considering the, presence of various intermediate to acidic intrusive rocks, type and extension of alteration, type and form of mineralization and geochemical data, Gazu deposit is introduced as a first porphyry copper mineralization and related skarn in Tabas block.

Keywords*: Gazu deposit, Tabas block, porphyry Cu, disseminated mineralization, stockwork mineralization*

متن فارسی اصل مقاله از صفحه ۴۲۹ تا ۴۴۲ در این شماره به چاپ رسیده است.

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