

Modeling and Estimating Reserve of the Ali Javad Porphyry Copper-Gold Deposit, East Azerbaijan, Iran

Authors : Behzad Hajalilou, Nasim Hajalilou, Saeid Ansari

Abstract : The study area is located in East Azerbaijan province, north of Ahar city, and 1/100000 geological map of Varzgan. This region is located in the middle of Iran zone. Ali Javad Porphyry copper-gold ore deposit has been created in a magmatic complex containing intrusive masses, combining Granodiorite and quartz Monzonite that penetrates into the Eocene volcanic aggregate. The most important mineralization includes primary oxides minerals (magnetite), sulfide (pyrite, chalcopyrite, Molybdenite, Bornite, Chalcocite, Covellite), secondary oxide or hydroxide minerals (hematite, goethite, limonite), and carbonate (malachite and Azurite). The mineralization forms into the vein-veinlets and scattered system. The alterations observed in the region include intermediate Argillic, advanced Argillic, Phyllic, silica, Propylitic, chlorite and Potassic. The 3D model of mineralization of the Alijavad is provided by Data DATAMINE software and based on the study of 700 polished sections of 32 drilled boreholes in the region. This model is completely compatible with the model provided by Lowell and Gilbert for the mineralization of porphyry copper deposits of quartz Monzonite type. The estimated cumulative residual value of copper for Ali Javad deposit is 81.5 million tons with 0.75 percent of copper, and for gold is 8.37 million tons with 1.8 ppm.

Keywords : porphyry copper, mineralization, Ali Javad, modeling, reserve estimation

Conference Title : ICGG 2018 : International Conference on Geology and Geochemistry

Conference Location : Paris, France

Conference Dates : March 15-16, 2018