

Concentration Conditions of Industrially Valuable Accumulations of Gold Ore Mineralization of the Tulallar Ore-Bearing Structure

Authors : Narmina Ismayilova, Shamil Zabitov, Fuad Askerzadeh, Raqif Seyfullayev

Abstract : Tulallar volcano-tectonic structure is located in the conjugation zone of the Gekgel horst-uplift, Dashkesan, and Agzhakend synclorium. Regionally, these geological structures are an integral part of the Lok-Karabakh island arc system. Tulallar field is represented by three areas (Central, East, West). The area of the ore field is located within a partially eroded oblong volcano-tectonic depression. In the central part, the core is divided by the deep Tulallar-Chiragdara-Toganalinsky fault with arcuate fragments of the ring structure into three blocks -East, Central, and West, within which the same areas of the Tulallar field are located. In general, for the deposit, the position of both ore-bearing vein zones and ore-bearing blocks is controlled by fractures of two systems - sub-latitudinal and near-meridional orientations. Mineralization of gold-sulfide ores is confined to these zones of disturbances. The zones have a northwestern and northeastern (near-meridian) strike with a steep dip (70-85°) to the southwest and southeast. The average thickness of the zones is 35 m; they are traced for 2.5 km along the strike and 500 m along with the dip. In general, for the indicated thickness, the zones contain an average of 1.56 ppm Au; however, areas enriched in noble metal are distinguished within them. The zones are complicated by postore fault tectonics. Gold mineralization is localized in the Kimmeridgian volcanics of andesi-basalt-porphyrific composition and their vitrolithoclastic, agglomerate tuffs, and tuff breccias. For the central part of the Tulallar ore field, a map of geochemical anomalies was built on the basis of analysis data carried out in an international laboratory. The total gold content ranges from 0.1-5 g/t, and in some places, even more than 5 g/t. The highest gold content is observed in the monoquartz facies among the secondary quartzites with quartz veins. The smallest amount of gold content appeared in the quartz-kaolin facies. And also, anomalous values of gold content are located in the upper part of the quartz vein. As a result, an en-echelon arrangement of anomalous values of gold along the strike and dip was revealed.

Keywords : geochemical anomaly, gold deposit, mineralization, Tulallar

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