

Review Article

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Discontinuities, Distribution Scales and Formation Conditions of Gujarati-Tskarostavi (Khachkovi) Ore Field

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ABSTRACT

Discontinuities, distribution scales and formation conditions of Adjara-Trialeti Gujarati-Tskarostavi ore field are reviewed in the work. As known, studying ore field structures has got big significance for increasing efficiency of investigation works. Gujarati-Tskarostavi ore field is highly complicated by tectonic viewpoint. Various type dysjunctives and fractures are observed. Part of fold structures, Arjevani-Bakuriani fault and other geological elements in distribution of ore field is represented in the article. Characterization of ore column structures has got big part, which is connected to magmatic creatures, fold forms and discontinuities. Basic and specialized methods of studying structures are used in the work.

Besides, Gujarati-Tskarostavi ore field was studied by us with distant probing method, resulted of which basic fault and stress structures were revealed, where the best conditions are made for establishment of ore field. In particular, adjacent territory of Arjevani-Bakuriani fault represents convenient conditions for oreing-down.

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Introduction

The geological structure of the Gujarat-Khachkov ore field is mainly composed of Cretaceous, Paleogene volcanogenic-carbonate and flysch-terigenous sediments, as well as subintrusive and Daikite formations. Of particular interest in terms of runoff are the Middle Eocene sediments, which make up 85% of the district. The Middle Eocene of the Dviri range consists mainly of effusions of effusive rocks with dolerite or andesitic microstructure, with porphyriclastic and porphyry inserts, while the cement is lithoclastic tuffs. The degree of rock replacement varies, with more intensively modified cement. The nature of the change corresponds to the medium and low-temperature propylite change (albite, chlorite, carbonate, epidote-zoite, pyrite). In the zones of hydrothermally altered rocks, fine-grained quartz is added to these minerals. Magmatic formations are represented in the form of various genetic types of blood vessels, hypabasis, and small subintrusions. The latter are mainly located along the regional fracture of the subgeneric direction, within the hydrothermally altered gold-bearing mineralized zone, and are represented by gabbro diabases. These bodies are also fixed outside the hydrothermally altered zone at a distance of 0.7-2.5 km. They have a stock-like shape, and in the plan, they are bodies with an

isometric oval shape of 250 * 500 m square. Gabrodiorite bodies intersect volcanic formations in the Middle Eocene. Small intrusive bodies are characterized by variable compositions corresponding to diorites, diorite-porphyrates, and quartz diorites. The gabbro varieties of these rocks are also known. The rocks are composed of oligoclase-Labrador order plagioclase, often of zonal structure, monoclinic pyroxene, hornbeam, and small-scale chlorinated biotite. In some cases, quartz discharges are observed. Some researchers have noted an excessive amount of silica in these rocks.

The Role of Tectonics in the Formation of the Gujarat-Khachkov Orefield

Tectonic faults are an important element of the ore structure. The origin of hydrothermal deposits is mainly determined by areas of intensely pollinated rocks. The presence of intermittent disturbances leading to hydrothermal solutions is essential for the formation of ore bodies. Subsequent movements of the ore are also associated with tectonic faults. The Gujarat-Khachkov orefield is tectonically more complicated. (Figure 1) The conception of development must have led to the emergence of various types of disjunctive dislocations. Tectonic faults of different orientations and genetic types are observed within the orefield, the frequency of which (Figure 2) creates a favorable physical environment for the extraction.

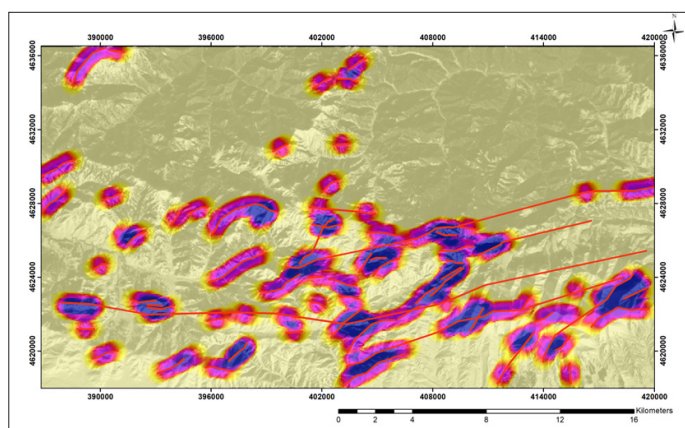


Figure 1: Map depicting stress zones

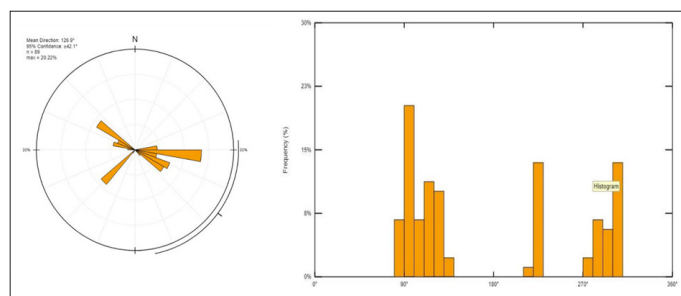


Figure 2: Diagram showing the frequency of JOINTS

Indentations and Equations

Determining the nature of disjunctive dislocations, it can be said that within the Gujarat-Khachkov ore field, the ore-bearing system is a sloping-type, steep-oriented fault structure, while the Arjevan-Bakuriani regional faulting creates numerous obstacles for it.

Conclusion

In the study area, a series of eight technical cracks were isolated in the mineralized zones, based on the geometric classification of which three systems were identified. Their interpretation identified the genetic type of tectonic faults along the wrinkle axis and the rupture pole, of which the rupture system is important. Their presence significantly determines the factors of localization of drainage.

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