



Central Bukantov Mineral Associations Of Gold Mining And Their Composition (On The Example Of Kaskirtov, Boztov, Jelsay Fields)

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ABSTRACT

This article investigates the mineral composition of endogenous gold ores in the regions northwest of Central Bukantov and the associations formed by them. According to the results, the endogenous ore consists mainly of pyrite, rare chalcopyrite, arsenopyrite, galenite, sphalerite and a small amount of sulfosols and silver. These minerals have formed mineralized mineralization in metamorphic rocks, mineral paragenic associations in the pyrite-arsenopyrite, polysulfide-silver-sulfosol gold series.

KEYWORDS

Central Bukantov, Kaskirtov, Boztov, Jelsay, gold, mineral associations, paragenic associations.

INTRODUCTION

An in-depth research of the mineralogical and paragenetic aspects of gold mining makes it possible to determine the formation and distribution of gold, as well as the physicochemical conditions of gold mining and the processes of ore formation[1,3].

The studied area is geologically related to the South-Bukantov structural-formation zone, which is part of the Oloy-Kokshal structural-facies zone of the Southern Tien-Shan, from the Okjetpes Mountains in the south to the Kaskirtov Mountains in the northwest [2].

RESEARCH STYLE

To determine the possibility of using mineralogical data in predicting gold ores, the main minerals were studied using microprobe analysis (Superprobe JXA-8800R (Jeol, Japan)). The reason for the application of this method is the microminerality of the minerals studied in the main part of the research area according to the forms of location.

RESULTS

The primary mineralized ores in these areas consist mainly of pyrite, rare chalcopyrite, arsenopyrite, galena, sphalerite and a small

amount of sulfosols, as well as silver and other minerals.

The rocks that make up the rock are quartz, albite, sericite, chlorite, kaolinite and carbonates.

Endogenous mineralization in the field formed mineral paragenic associations in the following sequence:

- Mineralization of minerals in metamorphic rocks;
- Pyrite-arsenopyrite
- polysulfide-silver-sulfosol.

Mineral minerals of metamorphic rocks are pyrite (pyrite-1), which is found in fine-grained form in the surrounding rocks. In metaevolites and sandstones, pyrite, formed in the form of grains of almost equally sparse isometric shape, is bounded by uneven surfaces. In quartz-mica shales, pyrite sometimes forms flattened grains between layers of rock, the particle size of which varies from 0.001 mm to 1.5 mm. Sparse pyrite particles, their additives, and many aggregates cause irregularly shaped separations. The texture is hollow, the structure is hypidiomorphic.

The main mass of ore mineralization is associated with altered zones and quartzified rocks under the influence of hydrothermal processes. Such sulfide mineralization is often distributed in the zones of pre-mining change or in the periphery of the quartzation zones. They form cellular, lens-like clusters of different shapes in chlorinated rocks and in quartzation zones in different directions, sometimes between layers of rocks.

In some cases it can be observed that the pyrite, which accumulates in the form of cells and metazars, is located as a thin line in the cracks in the quartz veins, which is clearly visible in the fractured fragments along the crack. The location of the crystals in this state indicates that during the sulfidation process,

pyrite passes through the zone of quartz metamorphic rocks and is formed between their layers. Sulfides consist mainly of pyrite, partly of chalcopryrite and arsenopyrite.

The pyrite-arsenopyrite paragen mineral association consists of pyrite-2 and arsenopyrite-1. The intensity of this association determines the industrial value of the ores. Pyrite, which is greater than arsenopyrite in terms of its quantitative ratio, is the main carrier of dispersed gold. Gold, the main important component of gold-sulfide ores in the research areas, occurs as a mixture in the composition of sulfide minerals in the endogenous and oxidized ore zones, as well as in pure form [2]. In ore bodies, this association has been shown to interact with rapidly serrated, quartzized, and chlorinated zone rocks (birch-listvenite metasomatites).

Pyrite-2 often forms irregularly shaped metacrystals with a diameter of 0.15–0.5 mm. In the quartzated and altered zones of the rocks, their size ranged from 0.1 to 1.5 mm, forming strata, cells, lenses, and veins. It is more chain-like, spotted, cellular, clustered, and xenomorphic-grained, and is sometimes observed in the form of separate cubic, pentagondodecahedral-shaped crystalline fragments. They are differently distributed in the quartz composition. Pyrite crystals formed more dense clusters, and they often have a chain-like property. This cluster of crystals is located at the contact of quartz and layered rocks.

The pyrite-2 association showed long arsenopyrite and the rare chalcopryrite-1. In this case, pyrite formed large (1-2 mm) isometric crystalline grains, arsenopyrite - needle-shaped, prism-shaped, rhombic aggregates, chalcopryrite formed irregularly shaped separations near and in the composition of pyrite.

The polysulfide-silver-sulfosol association consists of quartz-carbonate cross-sections

containing pyrite-3-sphalerite-chalcopyrite finely oriented in different directions. They contain arsenopyrite-2, micro-marcasite extracts, chalcopyrite, chalcocite, bornite, sphalerite and rare galinate. This association includes sulfide silver-acanthite, bleklaya ore, and pure gold.

Pure gold has a plate-like morphology and measures up to 0.4 mm in length. It is brighter than pyrite and brighter than chalcopyrite found here. Gold has a clearly visible yellow color, with no sulfides grown in association with it. The sulfides in the rocks are not oxidized, so in these rocks the gold is primary and is associated with changes in the rocks under the influence of metasomatic processes. According to the interaction of paragenic minerals, it can be noted that paragenesis was formed after gold pyrite-1 (metamorphogenic) and with a more quartzization zone, which was simultaneously intersected with quartz-pyrite-3-chlorite.

CONCLUSION

This article investigates the mineral composition of endogenous gold ores in the regions northwest of Central Bukantov and the associations formed by them. According to the results, the endogenous ore consists mainly of pyrite, rare chalcopyrite, arsenopyrite, galenite, sphalerite and a small amount of sulfosols and silver. These minerals have formed mineralized mineralization in metamorphic rocks, mineral paragenic associations in the pyrite-arsenopyrite, polysulfide-silver-sulfosol gold series. Pyrite-arsenopyrite is the major carrier of pyrite dispersed gold in the paragenic mineral association.

REFERENCES

1. Kremenetsky A.A., Mintser E.F. The universality of gold ore systems is a key criterion for the regional forecast of

industrial mineralization // Domestic geology. 1995. № 1. - pp. 19-27.

2. Karabaev M.S. Typomorphic features of the main minerals of gold mineralization of the Karabugut area of the Auminzatau mountains (Central Kyzylkum) and their significance for forecasting // Mining and geological journal Republic of Kazakhstan. 2015, №3-4. -pp.55-59.
3. Ore formations and main features of gold metallogeny in Uzbekistan. Tashkent: Science, 1969. -p.395.