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The Geological Characteristics And Exploration Symbols Of Hongliugou Copper Ore Deposits In Altyn Tagh

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1 Survey of Deposit

Hongliugou copper deposit is located in the east of Xinjiang Ruoqiang county about 157 kilometers, an area of 2.50 square kilometers, including 4 mining area of mineralized alteration zone, reaching industrial grade copper ore body in 3 at present, the average grade of ore deposit Cu:1.67%, S:9.50%, copper ore resources of 495,300 tons.

2 Ore-Forming Geological Feature

Hongliugou copper deposit is located in the northern Alt yn Tagh tectonic belt, the stratum from the Archean to the Cenozoic deposits were developed, and produced in a grey green metamorphic clastic rocks in Matekebulake group of Jixian System. The ore body footwall rocks of meta-siltstone, meta-ferruginous felsic sandstone layer are overlain by andesite-basalt, under the foot wall rock is basic-ultrabasic rock body.

The relationship between mineralization and andesitic basalts closely, ore bodies are controlled by strata, and by late tectonic activity, the mineralization is unstable, showing intermittent stratoid, lenticular output. The extension of the East and West is about 100~180 meters, 10-80 meters wide north-south, the overall trend NW-SE, surface inclination angle 80~85 ° dip south- west . The grade of Cu is 0.20 ~ 5.50%, S is 0.12 ~ 23.92%. The ore rock and surrounding rock with strong jarosite, pyrophyllite petrochemical and beresitization. Pyrite, pyrrhotite, chalcopyrite, chalcocite , bornite and natural copper are the main ore minerals, quartz, calcite, pyrophyllite, mirrorstone and sericite etc are the main gangue minerals. Massive, banded, brecciated and veinlet disseminated structure are often seen in ore rocks, structure by metasomatic textures, colloidal structure and contains structure. Li Yue-chen (2007)studied the sulfur isotope features and the genetic types of copper-gold deposits in this area, the conclusions indicate this area has favorable prospects for copper and copper-gold polymetallic deposits.

3 Origin and Exploration Symbols of Deposit

Comprehensive analysis showed the basic volcano eruption formed ore source bed ， and then tectonic and hydrothermal reformed the source bed ， So the beneficial element further enrichment. Apparently, Hongliugou copper deposit is a sedimentary-structural-hydrothermal-reconstrcuction type copper deposit.

Jixian System Matekebulake group limonitization, jarosite, pyrophyllite petrochemical marine clastic sedimentary metamorphic rock, basic volcano rocks and normal terrigenous clastic sedimentary rocks contact site, low resistance and high polarizability anomalies and surface blue copper mineralization all can be utilized as exploration marks.

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References

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