

LI Hualiang, CHEN Chao and HU Weiyun, 2013. Discovery and prospecting significance of ULuqiong Magnetite-rich in Ritu County, Tibet *Acta Geologica Sinica* (English Edition), 87(supp.): 713.

Discovery and prospecting significance of ULuqiong Magnetite-rich in Ritu County, Tibet

LI Hualiang^{1,2}, CHEN Chao^{1,2} and HU Weiyun^{1,2}

¹ Faculty of Earth Sciences, China University of Geosciences, Wuhan, 430074, China

² Institute of Geological Survey, China University of Geosciences, Wuhan, 430074, China

The Bangong - Nujiang suture zone and volcanic magmatic arc belt on its both sides is an important multi-metal tectonic-magmatic metallogenic belt, in the western end of which is Ritu County. Ritu County is located in the northern Tibetan Plateau, there is bad weather and difficult to work, and has overall low degree of mineral research. Institute of Geological Survey of China University of Geosciences (Wuhan) found ULuqiong magnetite-rich during the "Tibet 1:50000 Ritu County Kayicuo region 4 sheets regional survey" in 2012. This paper summarizes the mine geological features, and provides information for further prospecting in the Bangong -Nujiang suture zone and its both sides.

ULuqiong magnetite-rich is located in the northeast Ritu County, Tibet about 40km away, the mine location: east longitude 80°04' to 80°06', and north latitude 33°27' to 33°31'. The tectonic position of mine is in north side of the Bangong - Nujiang suture zone, the western margin of Reladuoixin - Duolong magmatic arc belt(1). The outcropping bedrock strata within the mine are mainly the Formation 1 of the Late Triassic Shiriganpeicuo Group and the Niubao Formation of Eocene, Formation 1 of the Shiriganpeicuo Group is the hosting ledge, the lithology is limestone, and close to the rock site, the hornfelsic and marbleization are obvious; the unconformity is covered with continental facies purple conglomerate of the Eocene Niubao Formation. The orebody occurs in the outer contact zone of the rock mass. Magmatic rocks in the mining area are mainly medium fine grained biotite hornblende quartz diorite, medium fine grained hornblende-biotite granodiorite, medium fine grained hornblende-biotite monzogranite and coarse medium grained biotite granite, the age of the rock is in the Late Jurassic (159~165MA) , orebody develop NNW-trending pegmatite which is consistent with the fault strike. The main structure of mining area is NNW-trending normal fault, and orebody is controlled by this fault.

Through field geological survey, we can see 4 orebodies. The ore bodies are mainly produced in the faultage fracture zone and rock and wall rock contact the outer contact zone (skarn belt, marble). The orebody mainly occurred in faultage fracture zone, the direction of

extension of the orebody is basically the same as the direction of the fault. There are many outcrops of orebody, as veins or lenticular, the orebody width of several meters to tens of meters, and extend intermittently length of a few meters to several hundred meters, the boundary of the orebody is clear, ore mineralization is uniform, use the method of pick out sampling, ore grade for TFe is 48.4% to 64.7%, Cu is 0.27% to 2.82%.

Ore is banded and has compact structure, partial mineralization is uneven, the main mineralization type is magnetite mineralization, with minor copper mineralization, ore minerals of magnetite are mainly magnetite, hematite and a small amount of pyrite and chalcopyrite. The majority ores of magnetite show idiomorphic or hypidiomorphic granular structure, particle size is generally from 0.02 to 3.0 mm, with strong magnetic. Section is leaden and has strong metallic luster.

Widely distributed carbonate of the mine stratigraphic which provide good condition for hydrothermal metasomatism (2). Fracture and magma conduit of mine area are the ore conducting structure. The mineralization is usually produced in the granite outer contact zone and the surrounding rock, the contact zone is usually with strong alteration, with many phases of the magmatic activity, the orebody output as vein and lenticular, these show that mineralization age is similar with magma emplacement age but a little later. There can see garnet and other skarn mineral rock outside the contact zone, the preliminary view that the deposit should be hydrothermal filling - skarn-type deposits (3).

Magnetite-rich of ULuqiong and adjacent areas' CaiMatie polymetallic ore, MeiHuashan rich iron ore, NiXiong rich iron ore, FuYe rich iron ore all together support the existence of iron-rich belt on both sides of the north-south Bangong - Nujiang suture zone (4/5/6). The discovery of the deposit proves that rich iron ore does not only relate to the Cretaceous acid intrusive rocks but also to the Mid-Late Jurassic acid intrusive rocks. Therefore, in addition to the Cretaceous, Mid- Late Jurassic may be also the mineralization period of Tibet's rich iron ore.

Key words: ULuqiong magnetite-rich, geological characteristics, prospecting significance, Ritu County, Tibet

* Corresponding author. E-mail: 469026120@qq.com