

SONG Xuebing, SHI Zeming, LIU Meimei, ZHANG Junji and ZHU Feilin, 2014. Trace Elements Characteristics of Rocks in Chengba, Tibet. *Acta Geologica Sinica* (English Edition), 88(supp. 2): 1005-1006.

Trace Elements Characteristics of Rocks in Chengba, Tibet

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1 The Regional Geological Background

Chengba mine is located in the east of Zedang country about 13km of the Shannan, adjacent to the Brahmaputra Valley, tectonic location

belongs to the most southern of Gangdese volcano-magmatic belt of Lhasa block in the south. The metallogenic element combinations in the Chengba deposits is Mo-Cu (Wang Liqiang, 2014). Aitchison based on the development of the area of Cretaceous tholeiitic and basalt andesite, which think the intra oceanic arc of new Tethys ocean subduction, accompanying by subduction of the Tethys ocean and collision between the Indian continental plate and the Asian plate collage in the southern margin of Lhasa block (Zhou Limin, 2011).

2 The Characteristics of the Deposits

A variety of intrusion outcrop such as moyite, biotite monzogranite, granodiorite, porphyaceous

adamellite and granite porphyry. The moyite and granite porphyry are the ore-forming related intrusion which are completely mineralized. Wall rocks suffered a little extensive alteration, mainly as potassic, silicification, chloritization kaolinization and skarn alteration. Various types of alteration have the characteristics of vertical variations, and skarn formed where the intrusions interact with carbonate wall rocks, Potassic and silicification alteration occurred at deeper levels. Mineralization also shows vertical variation, Cu and W mineralization in skarn formed in the relatively shallow subsurface, and Mo (Cu) mineralization in porphyry occurred at larger depths (Fan Xin, 2011).

3 Characteristics of Trace Elements

We used the ME-MS61r method to analysis the trace elements of rocks that widely distributed within Chengba

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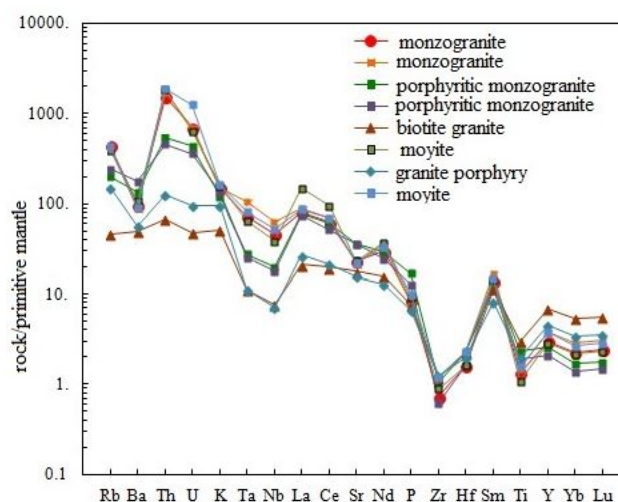


Fig.1. Trace elements spider diagram of intrusive rocks.

Mine.

The spider diagram (fig.1) of trace elements show intrusive rocks of Chengba mine deplete in high field strength elements, such as Nb, Zr, Hf and Ti, enrich large ion dear stone elements, such as Th, U and K And these kinds of acidic intrusive rocks loss of Ba, Sr and Yb, enrichment of Sm and Y. In addition, acidic intrusive rocks have the relatively low Y content ($8 \times 10^{-6} \sim 31.5 \times 10^{-6}$ ug/g) and higher Sr/Y ratio (12~64) .

In general, acidic intrusive rocks of Chengba is characterized by higher K_2O content, low MgO content and compatible elements (Ni, Cr, Co, V), it is a distinct difference with overlying mantle wedge of the subducted oceanic slab dehydration release metasomatism, and induced partial melting mantle of the asthenosphere and the formation of the calc alkaline magmas, such as early Cretaceous subduction type magmatite of the southern margin of the Lhasa block. The intrusive age of intrusive rocks of Chengba is about 30 Ma, so the formation environment of the intrusive rock is continental collision instead of oceanic subduction.

Acknowledgements

This work was supported by the China Geological Survey(Grant NO.12120113095700).

We thank Professor Li Juchu of Chengdu University of Technology for their detailed discuss and pertinent suggestion for manuscript.

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