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The Research Significance of Trace Element of Quartz in Gacun Deposit

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Previous scholars had done lots of research about Cu-Pb-Zn polymetallic deposit of Gacun. They all did research from the point of ores, fluid inclusion in quartz, however, no one did research from mineral quartz. In our research, we do go at mineral quartz. This time we gathered 9 pieces of sample, smashed them and picked out pure quartz. Then we used ICP-MS to analyze these quartz. Our conclusions are presented as follows: The former researchers found that Ti is rich in quartz of high temperature deposit. The microelement testing result of quartz from Gacun deposit shows the concent of Ti is very low. This result can demonstrate that Gacun deposit belongs to low temperature deposit or medium-low temperature deposit. What's more, Hou zengqians' researches showed that as to nervation deposit, the homogenization temperature of fluid is 250~350°C during main mineralization period, so it belongs to medium-low temperature deposit. Therefore, combing the former researches we draw a conclusion that Gacun deposit is medium- low temperature deposit; Our microelement testing results show that $Sr/Ba < 1$, this result have the characteristic of fresh water deposit. This conclusion

demonstrates that meteoric waters may sneak into Gacun deposit during the late period of deposit formation. Because of the meteoric waters, the composition and physicochemical property of the fluid was changed; The REE distribution patterns of quartz from the Gacun deposit show that every sample's REE distribution patterns is different and their variation trend do not have any similarity. We all know that the composition of quartz's trace element represent the composition of the fluid, which existed during the process of quartz formation. Therefore, we can conclude that these quartz's hydrothermal fluid have obvious difference. The final conclusion is that the process of Gacun deposit's formation has multi-phase. The effect off hydrothermal solution during late period is very important to Gacun deposit; The testing result of Cu、Pb、Zn of quartz shows that two kinds of quartz vein have great relevance with hydrothermal fluid, that can form different kinds of ore body.

Key words : quartz microelement REE hydrothermal process

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