

Application of Geo-electrochemical Exploration Method for Searching Concealed Antimony Ore

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Geo-electrochemical Exploration Method

Geo-electrochemical exploration method, as one of the deep penetration geochemistry method, has achieved remarkable results for searching concealed ore. The principle is that different minerals exist natural potential difference in the deep orebody, orebody can produce electrochemical dissolution and formate ion halo in the surrounding of orebody. Under the role of natural forcings, ion migrate to the near surface and formate shallow ion halo. These ions are extracted by the geoelectric extraction device and using the ICP-MS analysis related ion content in the carrier collection to achieve prospecting purpose.

Results and Conclusion

This study selected two typical concealed antimony deposits, including Muli deposit in Yunnan province and Banpo deposit in Guizhou province. According to 25 meters of the distance to collect sample in the engineering control section and the unknown area of mining field. The technical parameters are 1000 ml (15% extracting solution), 1 meter (two-pole distance), 9V battery (power supply), 48 hours (power supply time). The results show that: 1) the geo-electrochemical anomaly feature of Pb、Zn、As、Sb is prominent appeared where the anomaly value $As > Sb > Zn > Pb$ and the vertical appearance display on the concealed antimony ore. 2) According to the anomaly signs, combined with the geological conditions confirm three prospecting potential anomalies in the unknown area. In summary, it is feasible and worthy to be applied to searching for concealed antimony ore by the geo-electrochemical exploration method.