

Base Metal Ore Deposits in the Ribeira District, Brazil

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The proterozoic Ribeira district, in the Paraná and São Paulo states, has a strong potential for base metals ore deposits. Two types are known: Pb-Zn-Ag ore deposits associated to the lateproterozoic meta-carbonate-sedimentary complex of the Votuverava Formation in the Açungui Group and (Cu)-Pb-Zn-Ag-(Au)-Ba ore deposits associated to the mesoproterozoic meta-volcanic-sedimentary complex of the Perau Formation in the Setuva Group.

First type deposits are controlled by faciologic horizons at host dark grey calcite-marbles and partly by faults. The ore bodies occur as layers, lenses and veins. The main primary ore minerals are galena, sphalerite and Ag-galena. These ore deposits, Rocha, Panelas and Furnas, are Mississippi Valley type (MVT).

Second type ore deposits are hosted by carbonate-quartz-muscovite-schists, they are (Cu)-Pb-Zn-Ag-(Au)-Ba stratiform mineralizations formed by galena, sphalerite, Ag-galena, (chalcopyrite), Au-pyrite and barite. The deposits of this group show different characteristics in mineralizations: at Perau there are Cu-ore in the stringer zone, galena-rich layers and lenses at the middle of sequence and layers of barite at the top; Canoas comprises galena, sphalerite and barite mixed in all layers and lenses; Água Clara exhibits a barite-magnetite layer as main body associated to banded iron formation (BIF), galena, sphalerite and chalcopyrite mineralizations are restricted. This second type is formed by sedimentary exhalative ore deposits (SEDEX).

Therefore, it is possible to build two exploration models for the Ribeira district, based on the types of base metal ore deposits that occur in their proterozoic complexes. An exploration model for the Pb-Zn Mississippi Valley ore deposits at Açungui Group and an exploration model for the (Cu)-Pb-Zn-Ag-(Au)-Ba SEDEX ore deposits at Setuva Group.