

THE PRESENCE OF MINOR ELEMENTS INTO THE MAIN SULFIDES FROM THE BAIJA MARE METALLOGENIC DISTRICT, ROMANIA

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The sulfides represent a mineral class characterized by high retention capacity as “minor element” of great number of elements at very large variety of content value.

It is interesting to study the behavior of minor elements for the main sulfides – pyrite, chalcopyrite, sphalerite and galena. These minerals participate in a large rate at the internalization content of the main ore deposits of the Baia-Mare Metallogenic District (Ilba, Nistru, Baia Sprie, Herja, Cavnic, Baiut, Cizma, Coasta Ursului).

Many minor elements are typical for Alpine metallogenesis. For the most of them, there were determined the highest contents of sulfide in Romania. More ores within the Alpine internalization, those of Neogene age are the richest in minor elements of the mentioned sulfides. The values are near richest but with some variation from a zone to another. Within mineralized sulfides from Baia-Mare, the richest contents of As, Se, Mn, Ga and others were determined.

So, the pyrite from Baia Sprie, Chiuzasa and Ilba contain up to 1% Mn, the pyrite and chalcopyrite from Cavnic up to 2% Mn and the sphalerite from Cavnic up to 4% Mn.

The highest contents of As for the pyrite are remarked at Cavnic, up to 3% and Baia Sprie (New vein), up to 4%. It is to be pointed out that at Cavnic ore deposit, the As richest pyrite is reached into the veins where the mispickel (FeAsS) is not reported into the paragenesis.

It is interesting to point out the presence of Se into galena, and the highest contents are remarked for galena in some veins from Speranta (Ilba zone).

Within the framework of analyzed mineralization it is not possible to make any appreciation concerning the behavior of minor elements, with indication of a general tendency of enrichment or impoverishment within the frame of the metallogenic district, but partial observations are still interesting:

- an enrichment of Cd in sphalerite from W to E. Thus the sphalerite from Herja and Baia Sprie, (the Main Vein, and Diagonal Vein) consist of less than 4,000 ppm in comparison with the other, which contains more than 4,000 ppm or usual content of 1-1,3% at Cavnic, Baia Sprie (New Vein). The weight center of enrichment is Cavnic, toward Baiut content is decreasing but not less than 5,000ppm;

- an impoverishment of Ag in the galena from W to E, the richest content being up to 40,000 ppm into the galena from Fata Mare (Ilba) internalization. The lowest content was at Herja – 3,150 ppm, Cavnic – less than 4,000 ppm, Cisma – less than 2,000 ppm.

Analyzing the minor elements on minerals – pyrite, chalcopyrite, sphalerite and galena, they are common and they have the greatest values from the Romanian ore deposits. They present a series of qualitative and quantitative variations, depending of the metallogenic district character, which they are belonging to.