



Secondary ores deposits - protection of natural supplies of mineral resources by the economic reassessment of mining sterile and tailings

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The dynamic evolution of global economy pointed out by the growing demand for mineral raw materials in the context of supplies diminution beside the poor quality of the exploited ore deposits ask for new alternative solutions viable from the economic viewpoint in order to cover it.

The protection of natural supplies of mineral resources and the ecological reconstruction of mining areas can be accomplished by the efficient exploitation of the minerals and rocks originated from dumps and tailings.

The present paper aims to show a technological alternative for the exploitation of mining sterile in order to obtain the mineral concentrates and construction aggregates (concrete, pavements, asphalt bituminous, etc.).

Through the economic reassessment of mining sterile and tailings one can obtain depending on the nature of sterile mineral aggregates for constructions, manmade soils, raw materials for the glass and ceramic industry, mineral fillers, asphalt mixtures and a large number of useful minerals (mineral concentrates of Cu, Pb, Zn, Au, Ag, Fe, Mn, BaSO₄, etc.).

Under the framework of a R&D national program the technical-economic potential of mining tailings from Romania was assessed. Therefore 76 tailing ponds were identified having a volume of about 233 millions m³, the mining sterile resulted from the ferrous, non-ferrous and non-metalliferous ores processing. The chemical-mineralogical and technological study emphasizes the alternative to exploit the raw materials as concentrates of iron, bauxite, gold-silver, manganese, copper, zinc and mineral aggregates.

The integral exploitation of mining sterile represents a viable alternative to equilibrate the economic balance between the offer and demand of mineral concentrates need under the context when the geological supplies and mineralization quality decreases. In the same time the ecological reconstruction of the mining perimeters affected by pollution with solid wastes takes place.