

## Experimental study of the geochemical behavior of mine tailings

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The extraction of sulphides and their processing generate waste stored as tailings which can reach several millions tons. These residues, composed of sulphides and heavy metals, are associated with a carbonate, sulphated, siliceous or clayey gangue and give rise to a phenomenon known as acid mine drainage.

Our study focus on the characterization and geochemistry of mining waste from three deposits of different types and regions: residues of El Abed (Tlemcen), Boucaid (Tissemsilt) and Sidi Kamber (Skikda). Because of the free storage for several years, these sulphides are partially oxidized. They present a certain physical and chemical instability which is at the base of the degradation of the nearest surrounding environments (watercourse, underlying soils, groundwater, etc.) following the migration and dispersal of elements metal traces such as arsenic, cadmium, cobalt, copper, lead, zinc, etc.

To study the geochemical mechanisms that govern the migration of heavy metals and to assess the risk of contamination by these metals, batch-leaching tests were carried out.

**Keywords:** Mining, environment, leaching, geochemistry, heavy metals, tailings

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