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Effects of Mine Tailings on River Systems

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Mine tailings are mixtures of crushed rock and processing fluids remaining after economic metals, minerals, mineral fuels, oil or coal are extracted from the mined resource. They often contain high to very high concentrations of potentially toxic metals and metalloids (e.g., arsenic, antimony, cadmium, lead, zinc). They are released to river systems via direct discharge from mills and washeries, remobilisation of historic alluvium and tailings dam spills. This presentation will describe the characteristics of tailings, ways in which they are emitted to river systems, geochemical, ecosystem and human health effects of their discharge, mechanisms and products of their weathering and examples of remediation and restoration of affected river systems.