

Geochemical study of clays used as barriers in landfills

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Abstract :

This is a hydraulic and geochemical study on 2 materials: natural clay (AN) and a regenerated material made up of a sand-bentonite (SB) mixture. The hydraulic part allowed us to conclude that a 10% industrial bentonite content mixed with sand offers hydraulic properties that are similar to those of AN material and are lower than the required standards. The geochemical properties of both AN and SB matrixes are comparable with those of some of the synthetic leachates studied. Furthermore, the Langmuir model helped us to identify the adsorption capacities of both matrixes with the following selectivities: $Pb > Cu > Cd > Zn$.

Keywords : Heavy metals; Sorption; Selectivity; Hydraulic barrier; Geochemical barrier.

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