CLARIFICATION METHOD AND APPARATUS FOR MATERIAL CONTAMINATED WITH HEAVY METALS

ABSTRACT

A clarification method and apparatus, which can reliably remove heavy metals, including their sparingly soluble fractions, from a contaminated solid material containing the heavy metals, such as soil, sludge, sediments, wastes, or incineration ash, are provided. A reaction vessel 2 is divided into an anode zone 10 containing an anode A, and a cathode zone 20 containing a cathode C, by a diaphragm M provided between the anode A and the cathode C. The cathode zone 20 is supplied with a contaminated solid material containing heavy metals via a contaminated solid material supply means 22, an acidic substance or an alkaline substance via an acidic substance or alkaline substance supply means 24, and in some cases, water via a water supply means 26. A slurry of their mixture is maintained in the condition of a reducing atmosphere and a strongly acidic or strongly alkaline atmosphere to dissolve the heavy metals and electrolytically deposit the heavy metals on the surface of the cathode, thereby separating the heavy metals from the contaminated solid material and interstitial water.

FIGURE 1