

Title:

Leaching Experiments to Evaluate Environmental Impacts of Retorted Oil Shale on Underground Water

Abstract: (Your abstract must use 10pt Arial font and must not be longer than this box)

Physical and chemical characterization of spent oil shale from El-Lajjun area was carried out and compared with the original oil shale. The spent shale was subjected to leaching tests to detect possibilities of heavy metals release from the spent shale to the environment. Standard column leaching experiments reveal no detectable release of heavy metals to the percolating water. The effectiveness of the spent shale in removing Pb^{2+} from wastewater has been investigated. The spent shale is very efficient to remove most of Pb^{2+} , where 1 m³ of spent shale has an efficiency to remove from 94% to 64% of Pb^{2+} from about 1300 m³ wastewater containing 50 ppm Pb^{2+} . The efficiency decreases substantially with increasing Pb^{2+} concentration in the wastewater. In real situations, where Pb^{2+} concentration is very low (i.e. less than 5 ppm), the efficiency of the spent shale is expected to be 100%.

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