

عنوان مقاله:

Characteristics and Disposal Options of Sludges from an Oil Refinery Wastewater Treatment Plant in Iran, 2013

محل انتشار:

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خلاصه مقاله:

Background & Aims of the Study: Industrial wastewater sludges must be disposed in a safe way because they have hazardous effects on the human and environment. The aim of this study is to investigate the physicochemical characteristics and disposal options of sludges from oil-water separator (OWS) and dissolved air flotation (DAF) clarifier of a Refinery wastewater treatment plant. **Materials & Methods:** Sludge samples were collected in grab sampling manner, in 6 month (April-September 2013) in order to be analyzed for their physicochemical characteristics. Kolmogorov-Smirnov Z, independent t-test, Mann-Whitney U test, one sample t-test and Wilcoxon signed rank test were used for statistical analysis. Canadian Soil Quality Guidelines (CSQG) and Florida Department of Environmental Protection Soil Cleanup Target Levels (FDEP SCTLs) were used to discuss the disposal fate of the generated sludge. **Results:** As, Cd, Cu, Pb and Se were not detected in the studied sludge. As compared with CSQG, the investigated sludge were polluted for residential/parkland, agricultural, commercial and industrial applications, because they contained high concentrations of Cr, Ni and Zn. Also, according to FDEP SCTLs, the studied sludges were not suitable for residential and non-residential applications due to their high Al and Ni contents. DAF sludge had a high Zn concentration for residential application, too. **Conclusions:** present sludge management in the studied plant needs to be revised because metals' concentrations are above the international standards and guidelines.

کلمات کلیدی:

Disposal, Dissolved air flotation, Oil refinery, Oil water separator, Sludge, Iran

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