

Oxidation of DNAPL in the oil-based emulsion for the reuse of oil

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The oxidation of dense non-aqueous phase liquid (DNAPL) using fenton reagent and plasma-ionized water was investigated to reuse the silicone oil-based emulsion which had used to remove DNAPL. Emulsion was prepared by mechanical homogenization of silicone oil in deionized water. As target DNAPLs, trichloroethylene(TCE), perchloroethylene(PCE), 1,2-dichlorobenzene (DCB) were applied. After the treatment of emulsion with fenton reagent and plasma-ionized water, the effect on emulsion property, particle distribution and degradation of silicone oil, were investigated. As a results, DNAPL in the oil-based emulsion was effectively removed by oxidative treatment.