

Recovery of Non-Aqueous Phase Liquids (NAPL) from porous media using food grade amphiphiles.

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Food-grade surfactants Lecithin (from soy) and Tween 80 (used in food such as ice-cream) were employed for the mobilization of non-aqueous-phase liquids from porous media. The hypothesis of this work was that food grade surfactants can be employed for oil-spill remediation and that there may be a synergistic benefit when two surfactants are combined. The non-aqueous phase of this project was Hexadecane (red dye was added to improve visualization), and the aqueous phase consisted of different ratios of the surfactants Lecithin and Tween 80. From the study, it was determined that a 40:60 by weight Lecithin-Tween 80 mixture has a better performance in the mobilization of Hexadecane from the porous medium than either surfactant at the same overall surfactant concentration. This study was exploratory and warrants further research in the realm of EOR (Enhanced Oil Recovery) and OSR (Oil Spill Remediation).

References

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