

Table A-7.C. Technical implementation considerations for surfactant-enhanced subsurface

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|----------------------------------|--|---|---|---|
| Data requirements | Site-specific data for technology evaluation | Groundwater hydraulic conductivity | | |
| | | LNAPL characteristics | | |
| | | Contaminants of concern | | |
| | | Groundwater quality/geochemistry | | |
| | Bench-scale testing | | Soil cores for column tests | |
| | | | Groundwater for phase testing | |
| | | | Contaminants of concern | |
| | | | LNAPL characteristics | |
| | | | Surfactant system selection | Decide whether the remediation will be solubilization or mobilization via surfactant. Also complete phase studies for surfactant system optimization. |
| | Pilot-scale testing | | Contaminants of concern | |
| | | | LNAPL characteristics | |
| | | | Delivery of surfactant solutions(wells) | |
| | | | Treatment of extracted mixture | |
| | Full-scale design | | Groundwater hydraulic conductivity | |
| | | | Sweep volume | Number of pore volumes anticipated |
| | | | Soil type(s)/lithology | |
| Homogeneity | | | | |
| Treatment system | | | | |
| Performance metrics | | LNAPL transmissivity, residual saturation, concentration | | |
| | | Mass recovered | | |
| | | Achieve remedial objective | | |
| Modeling tools/applicable models | | UTCHEM | | |
| Further information | | EPA. 1995. Surfactant Injection for Ground Water Remediation: State Regulators' Perspectives and Experiences. EPA 542-R-95-011. https://clu-in.org/download/remed/surfact.pdf | | |
| | | Ground-Water Remediation Technologies Analysis Center. 1997. In Situ Flushing Technology Overview Report. TO-97-02. http://clu-in.org/download/remed/flush_o.pdf | | |
| | | NAVFAC. 2006. Surfactant-Enhanced Aquifer Remediation (SEAR) Design Manual. TR-2206-ENV. https://clu-in.org/download/contaminantfocus/dnapl/Treatment_Technologies/SEAR_Design.pdf | | |
| | | NAVFAC. 2003. Surfactant-Enhanced Aquifer Remediation (SEAR) Implementation Manual. NFESC TR-2219-ENV. www.clu-in.org/download/techdrct/td-tr-2219-sear.pdf | | |
| | | ITRC. 2003. Technical and Regulatory Guidance for Surfactant/Cosolvent Flushing of DNAPL Source Zones. DNAPL-3. http://www.itrcweb.org/Guidance/GetDocument?documentID=20 | | |
| | | EPA. 1991. In Situ Soil Flushing. EPA 540-2-91-021. https://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=48709&CFID=44521176&CFTOKEN=34276849 | | |