Fowler, T. and Dockter, C. (2010), Optimizing remediation strategies for a former dry-cleaner site. Remediation Journal, 20: 83–104. doi: 10.1002/rem.20263

Abstract:
Residual tetrachloroethene (PCE) contamination at the former Springvilla Dry Cleaners site in Springfield, Oregon, posed a potential risk through the vapor intrusion, direct contact, and off-site beneficial groundwater uses. The Oregon Department of Environmental Quality utilized the State Dry Cleaner Program funds to help mitigate the risks posed by residual contamination. After delineation activities were complete, the source-area soils were excavated and treated on-site with *ex situ* vapor extraction to reduce disposal costs. Residual source-area contamination was then chemically oxidized using sodium permanganate. Dissolved-phase contamination was subsequently addressed with *in situ* enhanced reductive dechlorination (ERD). ERD achieved treatment goals across more than 4 million gallons of aquifer impacted with PCE concentrations up to 7,800 micrograms per liter prior to remedial activities. The ERD remedy introduced electron donors and nutrient amendments through groundwater recirculation and slug injection across two aquifers over the course of 24 months. Adaptive and mass-targeted strategies reduced total remedy costs to approximately $18 per ton within the treatment areas.