



First Remediation in UK Utilizing ERH and Dual Phase Extraction

A five acre industrial site in Yorkshire, United Kingdom was purchased by a major developer with a view to redevelopment for residential end use. The site had been occupied for approximately 50 years by a large manufacturing facility, and subsurface investigations showed high levels of contamination up to 7m below grade, including dissolved, adsorbed, and free phase chlorinated hydrocarbons in low permeability soils and mudstones. The contaminants of concern were trichloroethene (TCE) and vinyl chloride (VC). Groundwater analyses indicated significant VOC concentrations.

Due to the tight timescale specified by the client for demolition of the facility and remediation of subsurface contamination, Electric Resistance Heating (ERH) combined with Dual Phase Vacuum Extraction (DVE) was selected for the in-situ remedy after preliminary site tests proved positive for the selected technologies. The objectives of the remedy were to achieve stringent cleanup targets for residential end use. For soils, the remedial targets were a reduction from an average of 202,380 ug/kg TCE to 4,600 ug/kg, and from 715 ug/kg VC to 13 ug/kg. Groundwater remedial targets were to reduce TCE from 538,200 ug/L to below 11,000 ug/L. Since the site was located amidst high density housing, the project requirements included minimum disruption of soils (ie. fugitive emissions), minimum disruption to local environment, and completion of the entire project in the Fall 2007.

The project design, installation of 69 electrodes/DVE wells, site construction and start-up were completed in May 2006. After 6 weeks of operations, the core zones were at or above 90C. As of July 2007 contaminant removal has surpassed 1,600 liters. The remedial system is on schedule for completion according to the performance objectives set by the client for their redevelopment program. Complete project information, including power requirements, mass extraction and final sampling results should be available by the end of 2007.