

**Project:** *In-situ* Bioremediation using DCL Biosolv

**Client:** Manufacturer

**Location:** Telford, Shropshire

**Duration:** 12 months

**Works**

- Design of remediation system
- *In situ* treatment of tetrachloroethene (PCE) contamination in soil and groundwater
- Injection of 9,500 litres of diluted DCL Biosolv
- Installation of groundwater monitoring boreholes
- Quarterly groundwater sampling and monitoring
- Progress reports and compilation of final validation report



**Synopsis**

A persistent plume of chlorinated solvents, principally tetrachloroethene (PCE), was present underneath the floor of this busy manufacturing site. Following a period of DNAPL recovery, *in-situ* bioremediation was used to meet the required remediation targets. The average groundwater PCE concentration before bioremediation was 6,900 µg with a maximum of 33,000 µg/l. DCL Biosolv was first diluted with water, using a mobile dilution / injection unit, and then gravity fed to 34 previously installed boreholes. A total volume of 9,500 litres was injected containing 1,150 kg of DCL Biosolv, over a period of 4 days.

Following the product injection works, groundwater was monitored and sampled to assess the progress of remediation. Parameters monitored include soil gas concentrations, groundwater level, conductivity, oxidation-reduction potential, dissolved oxygen and pH. Groundwater samples were recovered for analysis by an independent accredited laboratory.

Monitoring results showed rapid onset of conditions required for reductive dehalogenation of PCE and associated chlorinated solvent contaminants. Groundwater sampling 13 weeks after injection of DCL Biosolv showed 98% reduction in PCE. As a check for rebound, groundwater sampling continued for 12 months and showed a 98.3% overall reduction in PCE to an average concentration of 109 µg/l. There was a 93.2% overall reduction of trichloroethene (TCE) to an average concentration of 23 µg/l.

