

# Remediation

## Dual Phase Extraction & BioSparging - Tewkesbury

Ecologia Environmental Solutions were given instruction in 2005 to undertake the remediation of two adjacent sites at an industrial estate in Tewkesbury. The ground beneath the sites had become contaminated following a large loss of diesel from a transfer pump. The system, that Ecologia designed and built at its workshop, uses a multi technology approach to solve the combined problems of:

- free product on the water table;
- soil contamination and dissolved phase contamination.

The system was designed to utilise a high vacuum system to remove soil vapour, free phase oils and highly contaminated groundwater. The system uses treated water to facilitate the injection of nutrients and uses a high flow compressor to 'sparge' the groundwater so that the oxygen content can be maintained for in-situ bioremediation.

The soil vapours are treated with activated carbon and the contaminated waters are treated with a sequential filter system before being discharged to foul sewer. The high vacuum system removed 1,700 m<sup>3</sup> of air and water from the extraction network every hour. The treatment system is fully automated and equipped with telemetry, which allows our staff to monitor the system in real time, each day, without a site visit thereby saving travel costs and providing a much higher level of monitoring, maintenance and fault repair. The remediation project is being undertaken under the terms of Ecologia's mobile treatment licence (EAWML 10088).

The system designed for this project utilises a network of horizontal pipes, laid in trenches. This design allows both sites to remain fully operational during the installation and remediation works. The extraction network covers an area of approximately 6,000m<sup>2</sup>.



The remediation system, designed and manufactured by Ecologia in Kent



Re-instatement of a section of hardstanding after installation Of Horizontal extraction and injection pipes



Detail of the extraction points at the boundary