

Remediation

Source Excavation and Soil Vapour Extraction in The Chalk

Ecologia was contracted to assess and remediate a site where approximately 1500 litres of heating oil had leaked into the Chalk aquifer upgradient of a major public water supply abstraction.

The site presented a number of difficulties, being located on a steep gradient and immediately adjacent to a residential property. Groundwater was known to be at depth within fractured Chalk, but limited data was available about the hydrogeology.

Site assessments were undertaken using a combination of shallow percussive sampling and one of Ecologia's powerful crawler mounted rotary rigs. This established that the lateral extent of contamination was limited, but that kerosene had migrated to depths in excess of 28 metres through fissures in the unsaturated chalk.

The most heavily contaminated chalk was excavated to a depth of 4 metres below ground using conventional props and boards to support the excavation. Remedial targets to protect the Chalk aquifer were then derived using the P20 methodology, with soil data obtained from the drill cores and excavation samples. A remedial strategy was agreed with the Environment Agency, involving soil vapour extraction (SVE) from four deep wells in the source area.



The SVE system was custom-designed for this project to allow manual handling of the components into position on a steep wooded area where the unit was assembled. The system was also designed to operate on the only available power supply (domestic 240 V supply) with minimal noise. The system incorporated an on-line VOC monitor enabling real-time monitoring data to be downloaded to Ecologia's office. Ecologia calculated a treatment time of 18 months would be required to reach the agreed remedial targets; in fact the remediation was completed to the agreement of the Regulators after 16 months operation.