

**CASE STUDY CS149**

**PROJECT:** Remediation of Fuel Oil Contaminated Soil and Groundwater

**CLIENT:** Educational Establishment, Southern England

**DURATION:** One year

**COST RANGE:** £100,000 to £250,000

**STATUS:** Completed and Validated

**WORKS**

- Design, installation and operation of LNAPL removal and groundwater treatment system.
- Installation of plume delineation and remediation boreholes.
- Installation of headwork, manholes, permanent buried pipework and permanent reinstatement.
- Design and operation of a contaminated groundwater abstraction system and *in situ* biological remediation scheme.
- Provision and implementation of Environmental Permit and sewer discharge consent.

**SYNOPSIS**

This establishment had suffered leakage of heating oil from an above ground bulk storage tank and buried pipeline. The fuel oil had spilled onto and into the ground and permeated to the soil, groundwater and structure of the buildings. The works required the delineation of the LNAPL and associated dissolved phase plume and then the installation of free phase removal equipment and groundwater treatment. A Dual Phase Vacuum Extraction (DPVE) system was installed which moved the abstracted mixed fluid for separation and treatment prior to discharge to sewer under consent. The recovered fuel oil (some 5,000 litres) was recycled and re-used. The operation of the DPVE system was configured to limit the spread of hydrocarbon vapour into the structure of the building as required by the regulatory authority. The installation of air sparging boreholes and applied nutrients allowed for the *in situ* biological remediation of the hydrocarbon pollution within the vadose zone, particularly at the phreatic surface and capillary fringe.



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