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# CASE STUDY

# VACUUM-ENHANCED REMEDIATION OF HYDROCARBON CONTAMINATION

PROJECT: Dundee Distribution Yard & Call Centre Facility

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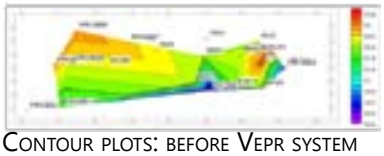
|---|---|---|---|
| PROJECT VALUE: | £365,000 | PROJECT TIMESCALES: | 5 YEARS |
| DATE AWARDED: | JULY 2009 | FORM OF CONTRACT: | NEC |

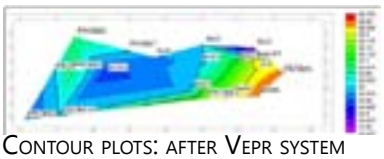
## CHALLENGE:

**A geologically complex site with variable glacial deposits overlying the fractured sandstone aquifer. A major fault, situated close to the site boundary added further complexity to contaminant distribution. An extensive free product plume was impacting the major aquifer and risked off-site migration. As a live site, remedial work had to minimise disruption to vehicle movements in the busy goods yard and telecommunications associated with the call centre.**

## SOLUTION:



CONTOUR PLOTS: BEFORE VEPR SYSTEM



CONTOUR PLOTS: AFTER VEPR SYSTEM

- State of the art sonic rotary drilling enabled recovery of high quality geological and contaminant samples, facilitating detailed and precise site characterisation
- Sonic drilling also minimised vibrational disturbance to telecomms
- Night time drilling minimised disruption to workforce
- A robust remediation strategy was required. The use of a vacuum enhanced product recovery (VEPR) system enabled the efficient recovery of widespread but patchily- distributed hydrocarbons to levels that no longer posed a risk to groundwater
- Installation of well head gear within below-ground inspection chambers facilitated access whilst allowing unimpeded operation of the goods yard
- Use of vacuum recovery and product skimming in combination with water draw down enabled simultaneous recovery of free phase hydrocarbons from rock fractures and residual phase from the unconsolidated glacial till, whilst continuing to treat contaminated groundwater above ground.
- Controlling groundwater during the treatment phase minimised risk by preventing migration of the dissolved contamination and free product plume

## OUTCOMES:

- 27,000 litres of partially weathered heating oil recovered
- 77,000 $m^3$ of contaminated groundwater treated
- Off-site plume migration prevented