

Remediation

Radio Frequency (RF) Soil Heating – North London

Many current remediation technologies in the UK have limited efficiency, are time consuming and costly in removing Volatile Organic Contaminants (VOCs), Semi Volatile Organic Contaminants (SVOCs). Soil Vapour Extraction (SVE) is commonly used but can require significant timescales.

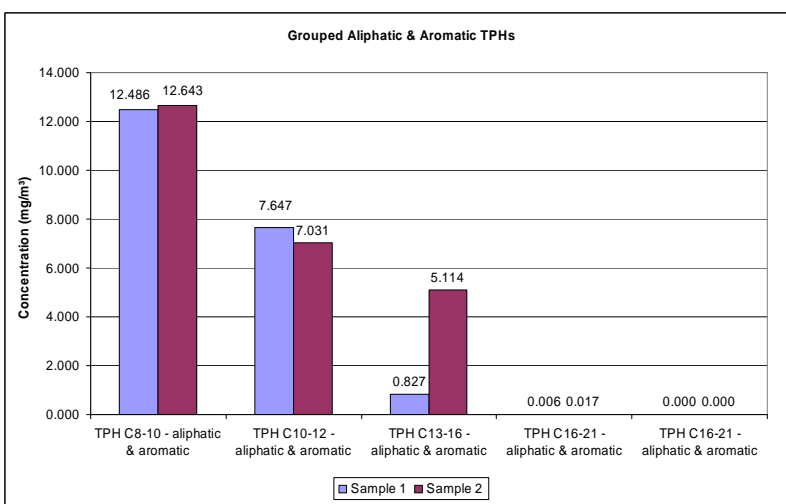
Ecologia has recently completed a project which has seen the first commercial use of Radio Frequency (RF) Soil Heating in the UK, to enhance Soil Vapour Extraction (SVE). The site was contaminated with a variety of VOC and SVOC compounds, affecting approximately 10,000m³ of soil, including a source area of approximately 1,000m³, with concentrations several orders of magnitude in excess of the remediation target.

Initial designs suggested that soil vapour extraction would be an appropriate technique to avoid the costs of excavation and complications associated with declassifying the excavated waste for re-use on site, however, estimates for the treatment were in excess of 1 year due to the high concentrations in the source area. This problem was overcome with the use of the RF heating in the source area.

The RF antennae were drilled to the required depth to focus the RF Heating on the most heavily contaminated soils. This is possible because the RF system does not involve the injection of liquids that may migrate.

The soils were heated in batches of 300m³ to approximately 50°C in two weeks per batch. The heated soils were then vapour extracted with an SVE system installed to treat the whole of the 10,000m³. A total of four batches were heated in two months allowing the source area to be treated with SVE within three months, the same time required to treat the lower level of contamination at the site.

During the project the vapour being drawn by the SVE system was analysed in the source area, before and during heating, to see if the heating had increased the molecular weight affected by the SVE system. The chart shows the results and a significant increase in the C₁₃ to C₁₆ range of hydrocarbons, which was not being removed by the cold SVE system.



The project has proved to be a success and was completed within budget and programme, within a 100% fixed price contract. If you would like more information about the RF heating please call Ecologia.