

# Remediation of Impacted Groundwater on a Busy Construction Site, UK

## Installation of a PlumeStop barrier, with no disruption to the build programme



### Summary

A brownfield site in the UK was in the process of being bought by a developer in order to construct a multi-story residential development. Prior to purchasing the site, the developer commissioned a due diligence exercise, to identify any potential environmental liabilities and risks. Following the Phase II investigation, two underground storage tanks were identified as the source of a hydrocarbon plume. The plume posed an unacceptable risk to the environment and remediation was required as part of the pre-construction works under UK planning legislation.

The Remediation Contractor removed the underground storage tanks and treated the most heavily contaminated soils through ex-situ bio piling. These works removed the source of the contamination and addressed the most heavily impacted soils. However, as part of the remediation strategy, it was considered prudent to mitigate against any lateral migration of the petroleum hydrocarbons in the groundwater, especially as this might be aggravated during the piling works.

### Design & Application

REGENESIS was asked by the Environmental Consultant to provide a remedial solution to mitigate against the off-site migration of the contaminated groundwater. REGENESIS designed a PlumeStop barrier and was subsequently employed as subcontractor on the works. The barrier injections were made along the downgradient boundary of the site, targeting the groundwater in a gravel formation at 2 – 5m BGL. On this site, PlumeStop was co-injected with ORC-Advanced to enhance the aerobic biodegradation processes in the subsurface.

### What's Special?

- The injection works only took two days to complete - avoiding disruption to the construction programme.
- The barrier will remain active for decades, capturing and degrading the contamination at the site boundary, without reducing the permeability of the aquifer.
- Regenesis was involved early in the project, allowing us to work closely with all stakeholders in order to meet their requirements. This resulted in the most appropriate groundwater remedial design, and a timely and cost efficient treatment on site.

### Remediation Details

#### Site Type:

Former Manufacturing Facility

#### Project Driver:

Real Estate Transaction

#### Remediation Approach:

In Situ Adsorption and Bioremediation, in Barrier Formation

#### Technologies:

PlumeStop® and ORC-Advanced®

#### Geology

X	Made Ground
X	Gravel
	Sand
	Silt
	Clay

#### Medium

X	Groundwater
	Saturated Soil
	Vadose Zone

#### COC

X	Petro HCs
	Petro LNAPL
	Chlorinated VOCs
	Metals

#### COC Concentration Levels:

590 µg/l

#### Treatment Level:

2m to 5m BGL

#### Barrier Length:

20m