

LNAPL Removal at a Former Manufacturing Site, Northwest Italy

Enhanced desorption removes viscous mineral oil from groundwater



Remediation Details

Site Type:
Former manufacturing plant

Project Driver:
Liability removal

Remediation Approach:
Enhanced desorption and physical abstraction

Technologies:
PetroCleanze®

Introduction

Historical leakage from machinery at a manufacturing plant in Northwest Italy had caused contamination of the underlying soil and groundwater. The contaminated site fell into disuse, but now has been given a temporary alternative use as a motocross track, whilst it is being remediated for future sale.

The contamination consists of a thick, heavy oil floating on top of the groundwater surface. Due to its high viscosity, preceding oil removal activities (both manually and with skimmers) had proven unsuccessful, even though these had been undertaken over a number of years.

Design & Application

Enhanced chemical desorption using PetroCleanze is being implemented at the site, in order to reduce the viscosity and mobilise the oil, for a subsequent mass removal using a vacuum truck system.

Four injection wells have been used for both the application activities and the subsequent mass removal. This treatment has been implemented in multiple campaigns, several months apart, in order to progressively improve the site conditions.

What's Special?

- The remediation works have not been disruptive, allowing the motocross activities to continue uninterrupted for the entire duration of the remedial works;
- The application of the technologies in multiple campaigns ensures contaminant 'rebound' is avoided after each injection.
- PetroCleanze has been shown to be a fast and effective solution for the removal of the viscous mineral oil, making it easily recoverable
- This efficient in situ remediation solution has avoided the need for the installation of a much more costly P&T system.

Geology

	Bedrock
X	Gravel
	Sand
	Silt
	Clay

Medium

X	Groundwater
	Saturated Soil
	Vadose Zone

COC

	Petro HCs
X	Petro LNAPL
	Chlorinated VOCs
	Metals

COC Concentration Levels:
Up to 30cm of LNAPL

Treatment Depth:
From 6 to 9m BGL

Treatment Area:
Approx. 50m²

Remediation Cost:
Approx. €30k