

# Operational Petrol Fueling Station, Milan, Northern Italy

## PetroCleanze removes high concentrations of sorbed hydrocarbons



### Summary

A major leak from underground storage tank (USTs) at an operational petrol fueling station near Milan, resulted in a significant hydrocarbon contamination plume extending 50m outside the site boundary. The leaking USTs were excavated, however a significant mass of contaminant remained sorbed to the soil, providing an ongoing source of contamination.

A remedial solution was required that tackled both the contaminant source and addressed the migrating plume.

Previous attempts to remediate the contamination included dual phase vapour extraction (DPVE), pump and treat (P&T) and air sparging. However; ongoing, these proved to be ineffective after a initial period of good contaminant removal.

### Treatment

As a pilot test, PetroCleanze, a powerful desorption reagent, was applied to an area of the highly contaminated source zone to release the sorbed contaminant and LNAPL bound to soil. Once in solution, the contamination was physically extracted by a vacuum truck from the same well where product was applied.

Additionally, a full scale barrier of ORC-Advanced injections was placed at the site boundary to treat contamination migrating offsite.

### Why of Interest?

Stand alone physical extraction systems are unable to remove contamination bound to soil. PetroCleanze however desorbs bound contamination into solution allowing for physical extraction of the desorbed mass.

### Remediation Details

#### Site Type:

Operational Petrol Fueling Station

#### Remediation Approach:

Enhanced physical extraction, in-situ chemical oxidation and enhanced aerobic bioremediation

#### Technologies:

PetroCleanze® ORC-Advanced®

### Geology

	Bedrock
	Gravel
X	Sand
X	Silt
	Clay

### Medium

X	Groundwater
	Saturated Soil
	Vadose Zone

### COC

X	Petro HCs
	Petro LNAPL
	Chlorinated VOCs
	Metals

#### COC Concentration Levels:

Very high TPH, including LNAPL  
Very high BTEX and MtBE

#### Treatment Depth:

3m to 10m BGL

#### Remediation Cost:

€20.000