

# Free-Phase Hydrocarbons Significantly Reduced on Historic Spill Site Within Four Months

PetroCleanze™ Combined with Dual-Phase Extraction Remediates Diesel Plume

## Project Highlights

- PetroCleanze™ applications combined with High Vacuum Dual-Phase Extraction (HVDPE) reduced site contaminant mass and totally eliminate free-phase hydrocarbons within four months
- TPH concentrations reduced by over 97% at key monitoring well

## Project Summary

A leak from an above ground diesel tank caused groundwater contamination, including free-phase and dissolved hydrocarbons, and significant bound hydrocarbon mass at this manufacturing site. Remediation efforts conducted for nearly a decade included excavation, freephase hydrocarbon recovery, groundwater treatment, bio-venting, high-vacuum dual-phase extraction (HVDPE), and chemical oxidation. However, a free-phase hydrocarbon layer still existed over much of the site as indicated in key monitoring wells.

REGENESIS® recommended the use of PetroCleanze to desorb bound hydrocarbons from the plume area, which was the source of the reoccurring freephase layer. A design was developed that included a regimen of PetroCleanze injections and HVDPE events to desorb and recover the bound hydrocarbons still existing on the site, which would then be recovered by use of the existing HVDPE system.

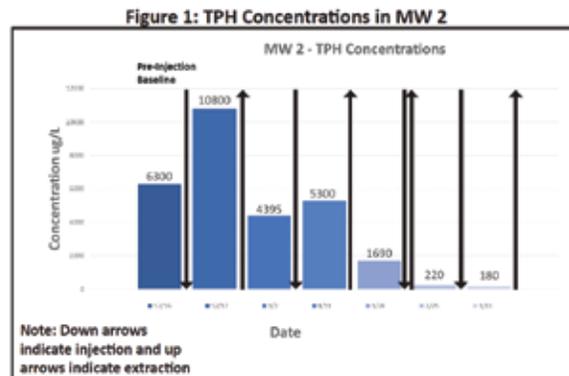
A total of 107,000 gallons of PetroCleanze was applied through 57 injection points in a grid pattern. Four injection events occurred over the course of four months at depths of 19-27 feet below ground surface. HVDPE was conducted between injection events to recover desorbed hydrocarbon mass.

## Technology Description

PetroCleanze is a customized formulation of the widely used RegenOx® *in situ* chemical oxidation technology. The primary function of PetroCleanze is to increase the desorption rates of hydrocarbons bound in saturated soil and make them available for more efficient and rapid treatment using a range of enhanced recovery technologies.

## Results

Following treatment of the site with PetroCleanze, combined with HVDPE, groundwater hydrocarbon contamination was significantly reduced, as evidenced by a 97% reduction at key monitoring well MW-2 (See Figure 1). The consulting firm leading the project is currently performing quarterly monitoring ahead of petitioning for site closure.



## Site Details

Site Type: Manufacturing

Contaminant of Concern: TPH

Concentration: 41,000 ug/L

Remediation Approach: *In Situ* Chemical Oxidation (ISCO), Enhanced Desorption

Soil Type: Silty Sand and Clay

Technology Used:

**PETRO CLEANZE**  
Enhanced Desorption



1011 Calle Sombra San Clemente, CA 92673  
T: (949) 366-8000 | www.regenesis.com