

RegenesiS Remediation Services™ – LNAPL Treated with Combined Remedies

Active Michigan Service Station Remediated Through Use of PetroCleanze® and ORC® Advanced



Hudsonville, Michigan

RRS was contracted to remediate a residual LNAPL and dissolved phase petroleum plume from historic gasoline and diesel fuel releases at an active service station. PetroCleanze® was chosen as the primary remediation technology to facilitate recovery of residual LNAPL and chemically oxidize contaminants without negatively impacting sensitive infrastructure. ORC® Advanced was also applied with the final PetroCleanze application event and in a downgradient plume cut off barrier to promote the enhanced aerobic bioremediation of the dissolved-phase petroleum hydrocarbons.

Eight injection/extraction wells and 28 direct-push injection points were used to apply the remediation reagents in the silty sand aquifer and smear zone over three application/injection events. Vacuum extraction was conducted between PetroCleanze applications to recover residual free phase petroleum hydrocarbons liberated from the soils. Reagent distribution monitoring confirmed PetroCleanze was dispersed across the targeted source area during each application event.

Prior to the first PetroCleanze application event, no measurable free product was observed on this site since 2006. Less than twenty-four hours after the first PetroCleanze application event, LNAPL was observed in four of the eight wells in the source area at quantities up to three inches thick. Not more than a sheen was observed in any wells on site after the third injection event.

A total of 2,160 pounds of PetroCleanze and 1,120 pounds of ORC Advanced were injected.

Remediation Details:

Site Type: Active Service Station

Remediation Approaches: In Situ Chemical Oxidation, LNAPL Recovery, Enhanced Aerobic Bioremediation

Technologies: PetroCleanze, ORC Advanced

Geology: Sand, Silt

Medium: Groundwater

COCs: Petroleum Hydrocarbons, Petroleum LNAPL

Surficial Treatment: 4,300 ft²

Treatment Interval: 4-10 ft. bgs

Cubic Yards Treated: 911

Cost Per Cubic Yard: \$53.90 applied

About RRS:

RegenesiS Remediation Services (RRS) is a dedicated team of scientists and engineers whose primary function is to provide environmental engineering and consulting firms with specialized groundwater and soil remediation planning, design, verification and application services.

This uniquely qualified group of remediation professionals combine excellence in field activity management and RegenesiS' class-leading technologies to bring sites to closure. RRS draws from REGENESIS' 19+ years of experience working with hundreds of leading environmental engineering firms on thousands of remediation projects around the world.