

## Open Excavation Treatment at Former NJ Service Station

*RegenOx® and ORC® Advanced Pellets Remediate Petroleum Hydrocarbon Contamination*

### Project Highlights

- Former service station contaminated with BTEX levels measuring 11 ppm in groundwater and soil impacts removed through excavation
- Combined remedy to treat the open excavation with both in situ chemical oxidation and enhanced aerobic bioremediation technologies
- RegenOx and ORC Advanced Pellets technologies are compatible/non-corrosive with underground infrastructure and utilities infrastructure in the subsurface



RegenOx and ORC Advanced Pellets were applied to an open excavation to remediate remaining contaminants.

### Project Summary

A former service station in New Jersey was contaminated with high levels of BTEX (measuring 11 ppm in groundwater pre-treatment). Due to significant amounts of contaminated soil mass remaining at the former service station, an excavation was proposed by the environmental consultant. RegenOx and ORC Advanced Pellets were applied to the open excavation to chemically oxidize remaining saturated impacts and to promote enhanced aerobic biodegradation of petroleum hydrocarbons in the dissolved phase. Both of these technologies utilize alkaline chemistry (pH > 8), which is non-corrosive to nearby public utilities and the underground infrastructure at the service station.

### Remediation Approach

RegenOx and ORC Advanced were co-applied into an open excavation at the former service station site. The excavation extended approximately four feet into the saturated zone. Because the excavation was limited by physical constraints, RegenOx, a chemical oxidant, was applied to the base of the excavation to oxidize and desorb residual petroleum mass from the soil. ORC Advanced Pellets were co-applied to provide a slow release of oxygen (up to 12 months longevity) that promotes enhanced aerobic biodegradation of petroleum hydrocarbons. In total, 2,000 pounds of RegenOx and 882 pounds of ORC Advanced Pellets were co-applied to the 2,600 square foot excavation area.

**Site Type:** Service Station

**Contaminant of Concern:** Petroleum Hydrocarbons

**Concentrations:** BTEX - 11 ppm

**Remediation Approach:** Enhanced Aerobic Bioremediation, In Situ Chemical Oxidation

**Treatment Area:** 2,600-Square-Feet

**Soil Type:** Sand

**Technology Used:** RegenOx, ORC Advanced Pellets

### Technology Description

The advanced formulation of the Oxygen Release Compound (ORC Advanced) is a proprietary formulation of food-grade, calcium oxy-hydroxide that produces a controlled-release of molecular oxygen for periods of up to 12 months upon hydration. The pelletized form of ORC Advanced were designed to improve safety and handling for excavation applications.

RegenOx is an advanced chemical oxidation technology that destroys contaminants through powerful, yet controlled direct oxidation and free-radical reactions. This product maximizes in situ performance through the use of a solid alkaline oxidant (a sodium percarbonate complex) and a multi-part catalyst. These oxidation reactions do not inhibit natural bacterial populations and are compatible with biological treatment methods.