

ISCO Treats High Levels of TCE with Planned Enhanced Bio for TPH Treatment

157,000 lbs. of PersulfOx® Applied to Treat Illinois Manufacturing Facility

Project Highlights

- Remediation mandated after oil sheen observed in river adjacent to manufacturing facility
- In situ chemical oxidation (ISCO) paired with excavation to remediate site
- Tight treatment deadline met through supply of 51 PersulfOx SuperSacks, containing 2,204 lbs. each, which were delivered within a few days' notice
- TPH soil plume has been reduced by >90% (from 6,111 cubic yards to 555 cubic yards)

Project Summary

An operating metal fabrication facility, located in Illinois, caused subsurface impacts from the use of cutting oils and degreasing solvents. This resulted in high levels of TPH and TCE in soil and groundwater. The state of Illinois cited the facility for a violation when an oil sheen was observed seeping from the property into an adjacent river. A mechanical oil recovery system was installed and absorbent booms were used to stop oil from reaching the river. ISCO was selected as the remediation approach to treat the contamination below the active facility. The TCE area was treated with PersulfOx® via injection wells and a soil mixing application with an excavator.

Remediation Approach

Prior to the start of remediation activities, a change in the primary consultant was made and a new consultant was brought in. The new consultant imposed a tight deadline of several months to complete the full scope of remediation activities. REGENESIS was able to assist with keeping the project on-deadline through the timely delivery of 51 PersulfOx SuperSacks, containing 2,204 lbs. each. The PersulfOx SuperSacks were delivered within a few days' notice. The consultant installed a series of injection wells within and outside of the building. PersulfOx was injected into these wells during three applications over a three-month period. Additionally, the TCE area was treated with PersulfOx® through a soil mixing application using an excavator. The final step of the remediation plan is to treat the TPH-impacted soils outside the building through excavation and the application of Oxygen Release Compound (ORC®) Advanced Pellets which will supply a long-term oxygen source of oxygen for enhanced bioremediation of the residual TPH. The client is also evaluating the use of PlumeStop to change the FOC value of the soil for a site specific Tier 3 closure level via MNA for an area that had extremely high TPH values >40,000ppm.

Technology Description

PersulfOx is a sodium persulfate-based chemical oxidation technology which destroys both hydrocarbon and chlorinated solvent-type contaminants in the subsurface. PersulfOx contains a built-in catalyst which activates the persulfate component and generates contaminant-destroying free radicals without the need for the addition of a separate activator.

ORC Advanced Pellets are a pelletized version of REGENESIS' widely used ORC Advanced and are designed specifically for direct application into excavations, tank pits and trenches. This pelletized, dry application material minimizes airborne dust while eliminating the need for specialized equipment and spray water required for powder-slurry applications.



PersulfOx®

Site Type: Manufacturing, Industrial

Contaminant of Concern: TCE and TPH

Concentration: TPH - >17,000ppm;
cVOC - 2 ppm

Remediation Approach:
In Situ Chemical Oxidation,
Enhanced Aerobic Biodegradation

Soil Type: Silty Sand

Treatment Area: 11,500 square feet

Technology Used: PersulfOx, ORC
Advanced Pellets