

COST-EFFECTIVE TREATMENT TO ADDRESS PCE AT FORMER DRY CLEANING SITE

**CASE STUDY:
Remediation Success Achieved
With Little Disruption to Exclusive
Chicago Suburb**



REGENESIS



Overview

Former Dry Cleaner Remediated With Cost-Saving Technology



Soil mixing with PersulfOx® cost less than half of the thermal desorption treatment.



Very aggressive remediation goals were met on a quick timeline.

A former dry cleaning site in an upscale Chicago suburb was contaminated with chlorinated solvents, specifically perchloroethylene. The former dry cleaner location is in a busy commercial area on a major thoroughfare and adjacent to upscale residential townhomes. Various treatments including soil excavation and removal and thermal desorption were considered, but were not feasible because they were too costly and disruptive to businesses and residents.





In situ soil mixing with PersulfOx limited disruption to nearby businesses and residences.



One application of PersulfOx was powerful enough to reduce contaminant levels from 18,000 ppm to 150 ppm.

Cabeno Environmental, a turnkey environmental contractor, worked alongside REGENESIS® to create an effective remedial design for this high-profile site. They chose to treat the contaminated soil with *in situ* soil mixing using PersulfOx, an activated persulfate. This technology was chosen because it effectively and rapidly promotes *in situ* oxidation of a wide range of organic contaminants.

After Cabeno Environmental conducted a pilot test to refine the remedial design, the site was treated with hydrogen peroxide and 83,146 pounds of PersulfOx. Within one month of completing the soil mixing, the closure sampling was conducted. This quick timeline along with strict remediation goals demonstrated the power and effectiveness of the PersulfOx technology.



Background

Uniquely Challenging Site Conditions



This former dry cleaner site had previously been remediated and received a No Further Action (NFR) designation. However, recent testing showed levels of contamination and free product present. This prompted the owner of the site to pursue a new remediation plan. The site is located within a developed suburb next to a busy thoroughfare outside of Chicago. Nearby property owners were concerned about the impact that this contamination could have on their property values and business operations, so it was crucial to remediate the site with as little disruption as possible. Treatments such as thermal desorption and excavation would have been alarming to the community and were also cost-prohibitive. Soil mixing was chosen because it was less disruptive and available at less than half of the cost of the other options.





Timeline

Former Dry Cleaner Remediated With Cost-Saving PersulfOx Technology



- **July 2019**

Pilot test



- **August-September 2019**

Full-scale application takes place over a period of two weeks



- **September 2019**

Closure Sampling Taken

Treatment

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After Cabeno Environmental and REGENESIS determined PersulfOx to be an effective remedial treatment for the site, a pilot test was conducted. Cabeno Environmental provided technical input to determine an accurate amount of the remedial agent needed for the site. The initial perchloroethylene concentrations were at 18 thousand parts per million (ppm) and the target level was 150 ppm. PersulfOx along with hydrogen peroxide were mixed with 3,000 cubic yards of soil.

The treatment consisted of only one application of PersulfOx and very minimal soil remixing. Three weeks following the application, the closure sampling was conducted.





Technology Used

PersulfOx



PersulfOx is an *in situ* chemical oxidation (ISCO) reagent that destroys organic contaminants found in groundwater and soil through abiotic chemical oxidation reactions. It is an all-in-one product with a built-in catalyst which activates the sodium persulfate component and generates contaminant-destroying free radicals without the costly and potentially hazardous addition of a separate activator. The patented catalyst enhances the oxidative destruction of both petroleum hydrocarbons and chlorinated contaminants in the subsurface.





Results

Target Cleanup Levels Were Met Within Timeline and Budget



Following treatment, the site’s target cleanup levels were met. The project was completed within a quick timeline and in a cost-effective manner. The approach chosen which incorporated PersulfOx prevented disruption to this busy commercial and residential area. With the remediation complete, the risk and liability of the perchloroethylene contamination has been eliminated, providing relief to the site owner, surrounding businesses, and nearby neighborhoods.



The Consultant

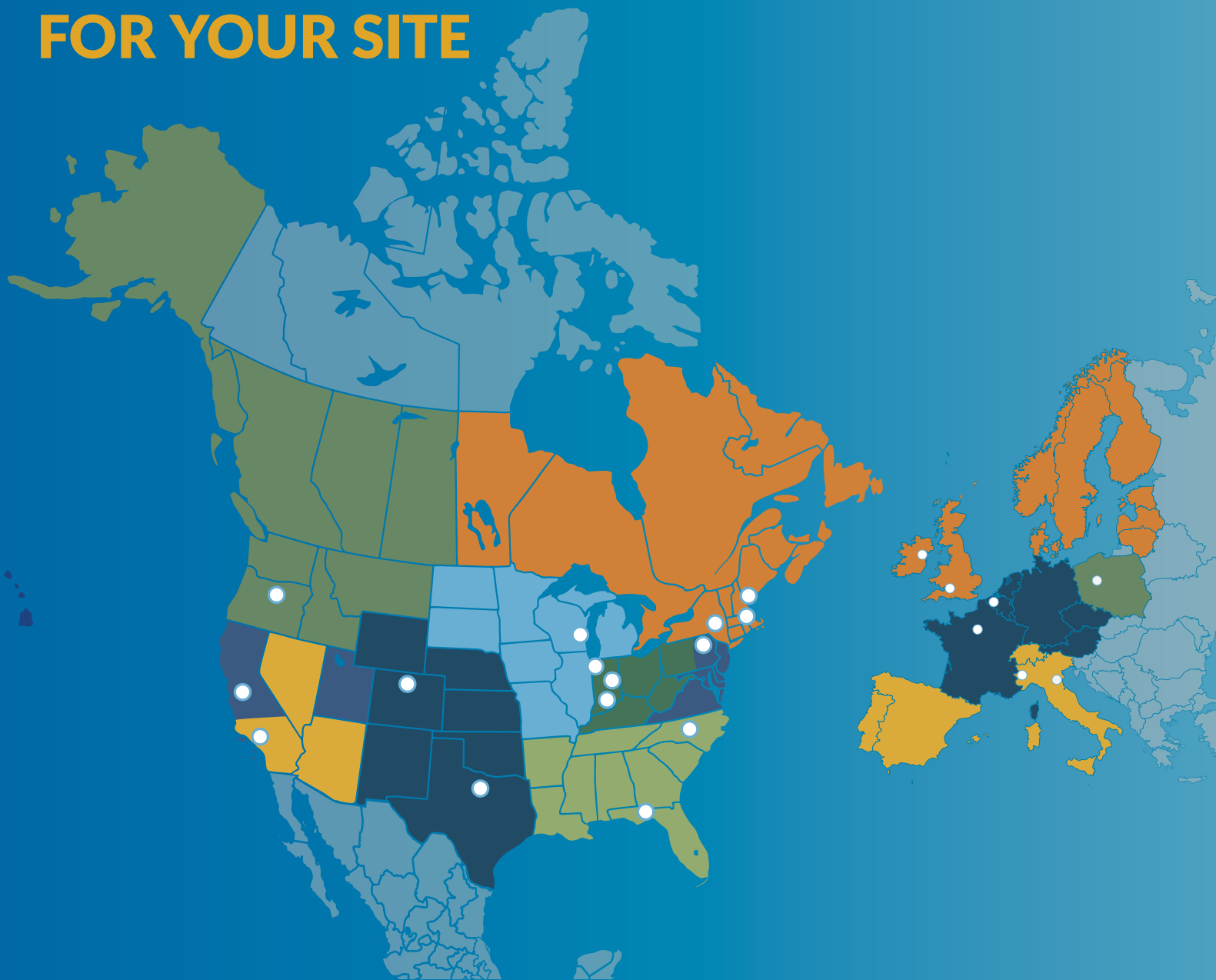
About CABENO Environmental Field Services, Inc.



CABENO works closely with clients to develop the best strategy at reaching remediation goals. Whether it is free product recovery combined with enhanced bioremediation, in-situ soil mixing, or ex-situ oxidation and offsite disposal. CABENO has soil mixed and injected inside dry cleaners in active strip malls, installed free product recovery systems at gas stations, injected along the roadside, and installed systems that ultimately would be buried beneath the slab in active facilities. CABENO also provides Vapor Intrusion Mitigation Services.

931 Country Creek Drive
New Lenox, IL 60451 USA
Tel: +1 815 774 3747

WE'RE READY TO HELP YOU FIND THE RIGHT SOLUTION FOR YOUR SITE



Global Headquarters

1011 Calle Sombra
San Clemente, CA 92673 USA
Ph: (949) 366-8000
Fax: (949) 366-8090

Europe

Bath, United Kingdom
Ph: +44 (0) 1225 731 447

Dublin, Ireland
Ph: +353 (0) 1 9059 663

Torino, Italia
Ph: +39 (0) 11 19781549

Ieper, België
Ph: +32 (0) 57 35 97 28



www.REGENESIS.com

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