

Cascade Chemistries

CASE STUDY

LOCATION

Southeastern US

TECHNOLOGY

In situ chemical reduction (ISCR)

CHEMISTRY

SourceKillSM eZVI



PROJECT OVERVIEW

An active industrial facility in the southeastern U.S. was found to have to high levels of trichloroethylene (TCE) and daughter products in the groundwater and soil. The geology at the site consisted of fine sands with traces of silty, sandy clay from near the surface down to approximate depths of 40 to 46 feet bgs. Underlying this upper sandy zone was a clay layer, approximately 15 feet thick at the location of the former source area.

To address the contaminants and work with the lithology, an in situ chemical reduction (ISCR) approach was designed to inject a combination of SourceKill emulsified zero valent iron (eZVI) and KB-1 in the source area. An electron donor with KB-1 was used simultaneously in the downgradient dissolved plume areas.

Over eight work days, approximately 19,700 gallons of SourceKill were delivered across 92 temporary injection wells, as well as approximately 25,000 gallons of electron donor (ie, vegetable oil) and 472 liters of KB-1.

RESULTS

Since implementation, there has been 60x enhancement of site-wide reductive dehalogenation kinetics. Before treatment, the initial groundwater TCE concentrations exceeded 800,000 ug/l, but to date more than 96% of the parent compound has been destroyed and the owner is now able to petition for risk-based closure.

For more information, visit
[www.cascade-env.com/
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