



“By using In-situ bioremediation we were able to save our client money, replacing an inefficient Pump & Treat system, while meeting regulatory compliance.”

PROJECT DETAILS

Location:

Western United States

Project Type:

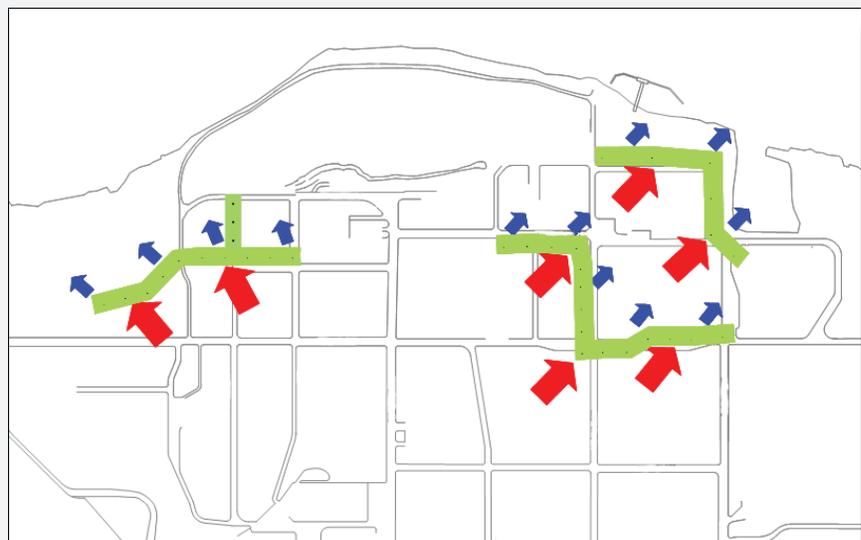
In-situ Anaerobic Bioremediation

PROJECT SUMMARY

In March of 2000, a major chemical company commissioned TEA, Inc. to design and construct a full-scale in-situ anaerobic bioremediation system as the primary remedial strategy for 200(+) acres of their operating chemical plant in Northern California. The system has operated for 14+ years, destroying annually 30,000 to 50,000 pounds of chlorinated hydrocarbons, including: tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), vinyl chloride, carbon tetrachloride, chloroform, and methylene chloride.

REMEDIATION PLAN

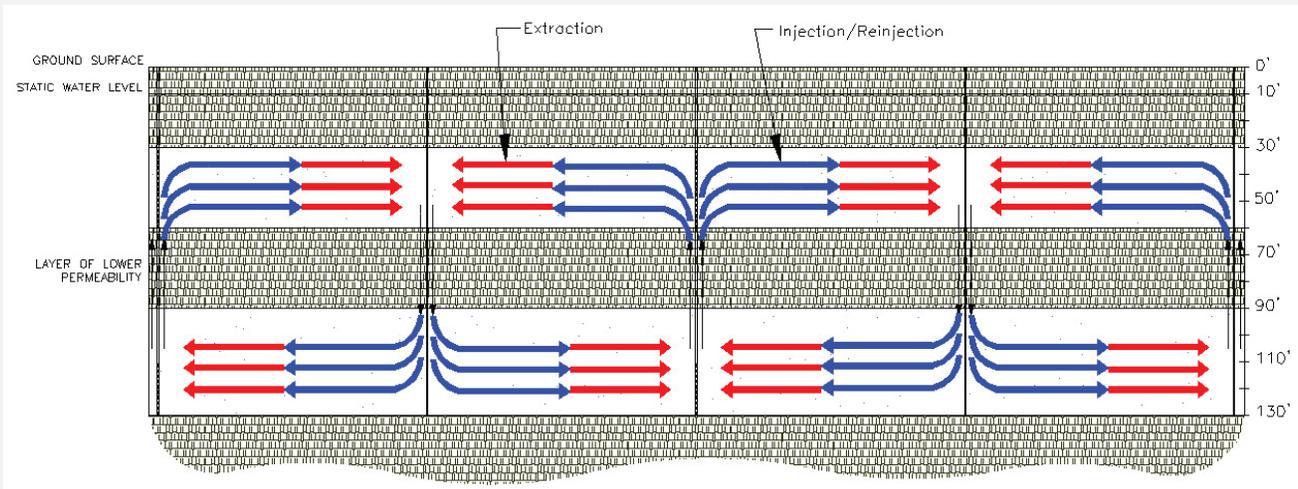
The in-situ bioremediation system is comprised of 39 wells that horizontally circulate groundwater and inject amendment in two intervals of the affected saturated sand unit. In 2014, nine of the wells were shut down after meeting cleanup standards approved by the regulatory agency. Three existing bio-reactive zones extend a total of approximately 4,000 linear feet within the operating and non-operating areas of the chemical facility.



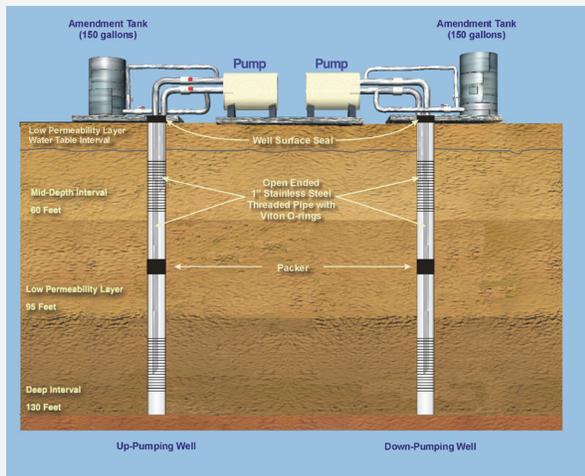
THE RESULTS

Regulatory compliance of the in-situ bioremediation system is based on evaluating groundwater concentration data from monitoring wells located upgradient and downgradient of the bioremediation wells and along the site perimeter. Comparison of the upgradient and the downgradient monitoring well data indicates that the organic chemical concentrations have been reduced by an average of 89%. The data demonstrates that the bioremediation system is destroying organic contaminant mass, improving groundwater quality downgradient of the treatment zones, and effectively inhibiting contaminant migration.

INDUCED GROUNDWATER FLOWPATH

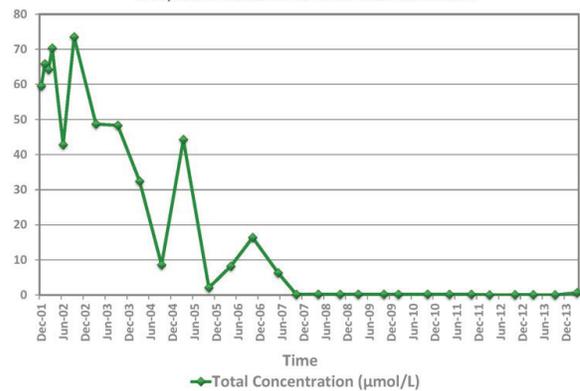


WELL SKID DETAILS



TOTAL CONCENTRATION

TOTAL CONCENTRATION FOR CARBON TETRACHLORIDE, CHLOROFORM, METHYLENE CHLORIDE, TETRACHLOROETHENE, TRICHLOROETHENE, cis-1,2-DICHLOROETHENE AND VINYL CHLORIDE



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