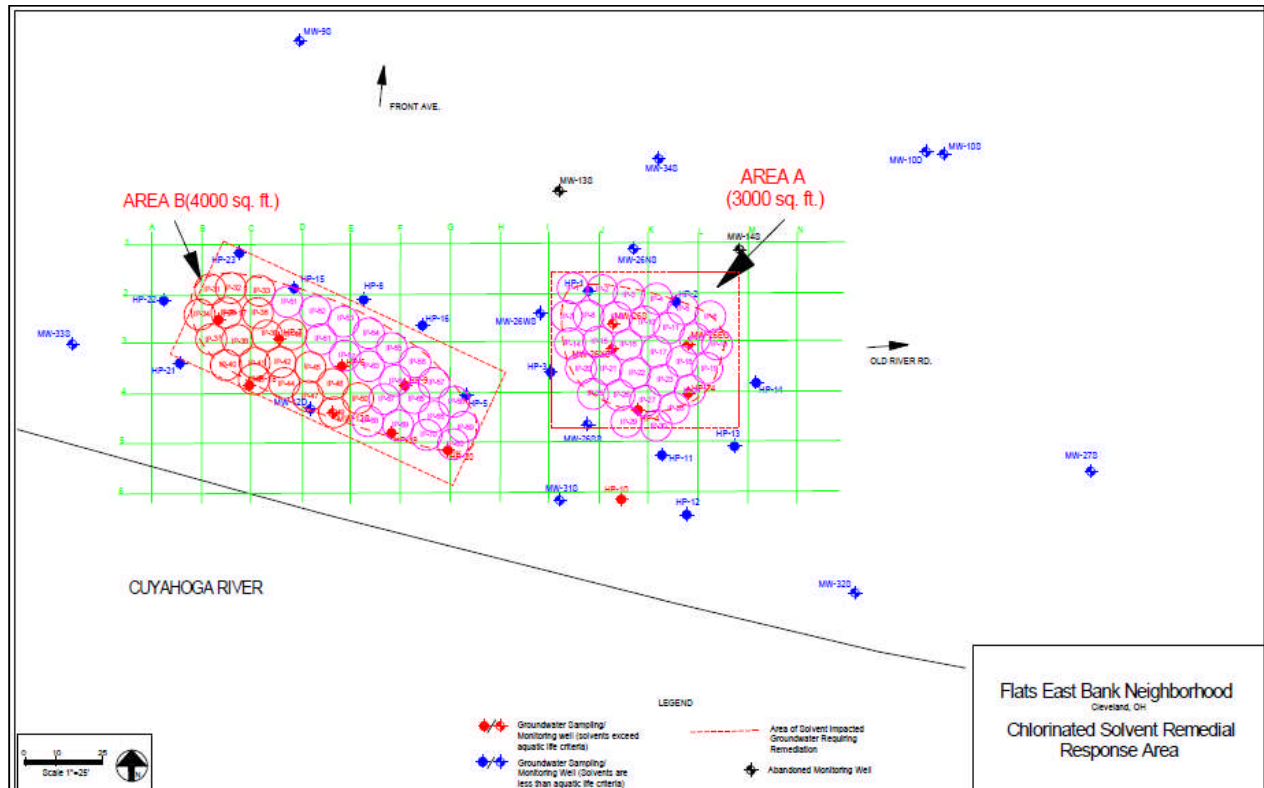


Project Summary

Cleveland Development Project

The remediation site is located in Cleveland, Ohio. The site contained soil and groundwater impacted by trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride, and hexavalent chromium. The in-situ injection program targeted these compounds through the use of compressed nitrogen and a solution of EHC-M, calcium propionate, and an oxygen scavenger. A total of 70 injections were performed in October 2010 within treatment Area A and B. A map of the injection points and monitoring wells can be viewed below.



Remediation Plan

The objectives of the program were to create and maintain a reducing environment to remediate the presence of chlorinated solvents and hexavalent chromium, while limiting the creation of daughter products. The injection program introduced a solution of EHC-M, sodium sulfite, and calcium propionate to provide a short- and long-term source of organic hydrogen donors and an oxygen scavenger to quickly and effectively promote a reducing environment in the subsurface.

Results

Over a period of 8 months, TCE concentrations averaged a decrease of 97.9% in the targeted monitoring wells at the site. The site has been closed and is in the process of being developed based on the results of the remedial program. Reductive dechlorination was stimulated by the addition of EHC-M, a combination of organic hydrogen donor and zero valent iron.

Monitoring wells inside the treatment area experienced large decreases in CVOC concentrations and all hexavalent chromium concentrations are below standard. The geochemical data and field parameters indicate that reductive dechlorination has continued across the site and reducing conditions have been maintained in all of the monitoring wells. The pH has remained neutral and the redox potentials are all reducing. CVOC concentration trends for affected monitoring wells are located in the graphs below.

