Case History

PCE Remediation – Minneapolis, MN

Accelerated Remediation Technologies, Inc. (*ART*) was retained by a major client to install the ART In-Well Technology to remedy PCE impacted soil and groundwater at an industrial facility near downtown Minneapolis, Minnesota. Dry cleaning activities were performed at the site in the 1980s, resulting in tetrachloroethene (PCE) contamination in soil and groundwater. Soil types consist of sandy materials with inter-layered silty clayey deposits. Depth to groundwater is approximately 30 feet below grade. The in-well water column exceeds 30 feet.

A major consulting firm installed and operated a vapor extraction/air sparging system since 1995. Within a few years of operation, PCE concentrations in groundwater reached asymptotic levels which are significantly higher than cleanup limit. After several more years of remedial efforts, it became obvious that the existing vapor extraction/air sparging remediation system would not achieve reduction of contamination to levels required for closure. Elevated PCE concentrations continued to be present in most monitoring wells at the site despite more than 10 years of system operation. It was determined that a different remedial alternative was necessary. Following a thorough evaluation of several options, the ART Technology was selected.

As requested by the site owner, ART performed a demonstration of the ART Technology in a single well to evaluate the efficacy of the technology in the most contaminated source area at the site. *The ART Technology combines in-situ air stripping, air sparging, soil vapor extraction, Dynamic Subsurface Circulation and enhanced bioremediation/oxidation in an innovative wellhead system. The system is designed to be installed in a 4-inch well or larger. Hundreds of ART installations have been implemented at sites nationwide and overseas to remedy a myriad of contaminants including chlorinated compounds, petroleum hydrocarbons, MTBE and 1,4 dioxane.*

Following the 90 day ART Technology demonstration study, PCE concentrations in monitoring wells within the ART well radius of influence were reduced by approximately 93%. Consequently, the client authorized a site wide implementation of the ART Technology. ART installed a total of six treatment wells and designed associated remedial components utilizing the existing blower system and piping. The system was started in mid 2006. Sampling of monitoring wells site-wide indicated reductions of up to 97% of PCE concentrations within 120 days.

Contaminant (µg/l)	**Tetrachloroethene (PCE)**			
	Pre-ART	***30 Days***	***120 Days***	***Total Reduction***
MW-1	1100	1800	210	81%
MW-2	500	490	89	82%
MW-4	7900	1100	300	96%
MW-6	5800	300	180	97%

The *ART Technology* achieved significant reduction of PCE contamination at a site where remediation efforts had stalled. Sampling results following both the demonstration study and full site implementation confirmed that the ART Technology was significantly more effective in treating soil and groundwater contamination.

For more information about the *ART Technologies*, contact
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