

Contamination of Ground Water by PCE – A National Perspective

By Michael Moran, U.S. Geological Survey

Although new technologies are evolving, more than 80 percent of commercial dry cleaners in the United States still use perchloroethene (PCE) as a cleaning solvent. PCE has physical and chemical properties that make it likely to persist in ground water, if released to the environment. The U.S. Geological Survey, through its National Water-Quality Assessment Program, has collected or compiled data on the occurrence of PCE in ground water from major aquifers around the country. These data represent the occurrence of PCE in the ground water resource as a whole and not occurrence at specific release sites.

PCE was detected at measurable concentrations in nearly one in 10 wells in major aquifers throughout the country. Concentrations of PCE exceeded the MCL more than any other volatile organic compound except one. Trichloroethene (TCE) was found most commonly with PCE and its presence may be due, in part, to reductive dechlorination of PCE. Regulated hazardous waste facilities, like dry cleaners, are probably the source of most of the PCE in ground water and dissolved oxygen and depth to the water table control the fate of PCE. Ground water resource managers should monitor for PCE and use source control as a method for protection.

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