

## Richter Road Ground Water Contamination Site Tabernacle Township, Burlington County

The New Jersey Department of Environmental Protection (NJDEP) Site Remediation Program (SRP) is conducting potable well, ground water, and soil gas sampling to delineate ground water contamination at the Richter Road Ground Water Contamination Site in Tabernacle Township. NJDEP is also investigating potential sources of the contamination.

### Summary:

The Richter Road Ground Water Contamination Site is in a residential area of Richter Road and Hill Road in Tabernacle. In February 2006, the Burlington County Health Department received a report that a potable well test in the area of Richter Road detected tetrachloroethene (PCE) and trichloroethene (TCE) at levels exceeding New Jersey Drinking Water Standards. PCE and TCE are volatile organic chemicals (VOCs) commonly used as dry cleaning solvents and degreasing agents. The New Jersey Drinking Water Standards for these contaminants are 1 part per billion (1 ppb) or 1 microgram per liter (1 ug/L).

### Private Potable Well Sampling:

In response to the reported contamination, the Burlington County Health Department sampled private potable wells in the area in February and March 2006. The results revealed several additional private potable wells were contaminated with PCE and TCE at levels exceeding New Jersey Drinking Water Standards. NJDEP/SRP was notified of the situation on March 10, 2006 and expanded sampling to 40 additional private wells in April 2006. An additional 44 private wells were sampled in May and November 2006. NJDEP/SRP sampled 48 additional wells in May and September 2007. Sampling by residents, the Burlington County Health Department and the NJDEP/SRP revealed approximately 31 private potable wells with PCE and TCE at concentrations exceeding the New Jersey Safe Drinking Water Standards. The affected homeowners were notified and Point-of-Entry Treatment (POET) systems were installed on the affected wells, with funds provided by NJDEP/SRP to supply potable water for the residents. Routine monitoring of the treated and raw (untreated) water is conducted to determine the frequency of the carbon changes. Typically, for the Richter Road area, treated (between carbon tanks) samples are tested quarterly and the raw water is tested yearly.

Methyl tertiary butyl ether (MTBE) has also been detected in one home on Richter Road between Hill and Cramer Roads. A safe drinking water supply has been provided to this residence.

### Groundwater Sampling:

To identify potential sources of the contamination at Celebration Plaza, the NJDEP/SRP has collected 37 ground water samples from 10 locations in the vicinity of Celebration Plaza at the intersection of Route 206 and Cramer Road and near Hill Road, in May 2006. Samples were collected using a Geoprobe®. A geoprobe is a sampling tool mounted to a vehicle used to collect soil and ground water samples. The samples were analyzed for VOCs. PCE was found to be as high as 110 ppb in a sample collected on the downgradient portion of the Celebration Plaza property, indicating that a likely source of PCE was at that location.

In July 2006 NJDEP/SRP collected 18 ground water and three soil samples from seven locations at the Celebration Plaza and at off-site upgradient and downgradient locations to identify the possible source of the contamination. A background sample was collected southwest of the site on Old Indian Mills Road. Samples were analyzed for VOCs and the results revealed that one ground water sample collected in the area of the septic tank, exhibited PCE at 7 ppb. Two other samples, collected upgradient of the subject site on Old Indian Mills Road, had no VOCs above Ground Water Quality Standards (GWQS) and are representative of background conditions in the area. Samples collected downgradient of Celebration Plaza, near the former tank field of the Highway Petroleum Service Station site, exhibited levels of Toluene, Ethylbenzene, Xylenes, and MTBE above background, which may be indicative of a release of petroleum product from the tanks.

**All questions and comments should be directed to:**  
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### **Geoprobe Investigation**

In July 2007, NJDEP conducted ground water and soil gas sampling to delineate the shallow ground water contamination plume, quantify the maximum concentration in the plume at various depths and to collect soil gas samples to evaluate the possibility of vapor intrusion into homes. Vapor intrusion occurs when soil gas migrates from the contaminated soil or ground water seep through cracks and holes in foundations or slabs of buildings and accumulate in basements, crawl spaces or living areas.

During this investigation, NJDEP installed 20 borings and collected 38 ground water samples and 20 soil gas samples on Richter, Cramer, Wynn, Cramer, Worrell and Reidel roads. The maximum concentration of PCE was 29.5 ppb, of TCE was 3.5 ppb and of MTBE was 1024 ppb. The site is located in the Pinelands National Preserve and therefore, Class I-PL GWQS apply. The Ground Water Quality criteria for Class I-PL is background water quality. Soil gas results revealed no contaminant, including PCE, TCE, and MTBE above NJDEP health-based soil gas screening values. These results indicate there is no potential for vapor intrusion that necessitates further evaluation.

NJDEP is planning to install approximately 20 additional borings to delineate the extent of MTBE contamination in ground water in March 2008. These vertical profiles will be performed in the vicinity of Route 206, Richter and Cramer roads. The source of MTBE ground water contamination has not yet been determined.

### **Highway Petroleum Incorporated (HPI)**

Highway Petroleum Incorporated (HPI) operates a gasoline service station on the northeast corner of Route 206 and Cramer Road. In May 1999, seven Underground Storage Tanks (USTs) were removed after ground water samples indicated that a gasoline leak had occurred from the USTs. By the end of 1999, 176 tons of contaminated soil were removed from the site. Based on the results of the post-excavation soil sampling, soil remediation is complete.

Three ground water monitoring wells have been installed onsite and sampled to assess the extent of ground water contamination resulting from the discharge from the former USTs. PCE has been detected in the ground water at the HPI site. The maximum on-site PCE concentration was 114 ppb, measured in October 2002. Currently, the maximum on-site PCE concentration is 1.4 ppb. It appears the PCE contamination may be attributable to an off-site upgradient source. The Department's Bureau of Underground Storage Tanks (BUST) has required HPI to conduct a preliminary assessment/site investigation to determine if any on-site sources may have contributed to the PCE contamination detected in the ground water.

Methyl tertiary butyl ether (MTBE) has been detected in ground water at the HPI site with a maximum concentration of 7.48 ppb, measured in August 2000. Currently, the maximum onsite MTBE concentration is 1 ppb.

Benzene, toluene, ethylbenzene and xylenes (BTEX) compounds have also been detected in the ground water onsite with the highest levels being collected from the shallow interval of a vertical profile sample location. Low levels of toluene, ethylbenzene and xylenes have also been detected at a levels above background from one grab ground water sample location collected directly across Cramer Road. All levels are below vapor intrusion trigger numbers for site related contaminants.

BUST is currently requiring HPI to conduct six additional vertical profile ground water samples within 200 feet of the former USTs to complete the vertical and horizontal delineation of the ground water contamination. Ground water samples are required to be collected at 10-foot intervals extending from the top of the water table down to a depth of approximately 60 feet. Two additional shallow monitoring wells are also required to be installed at locations within 250 feet of the former USTs.