

The New Jersey Department of Environmental Protection (NJDEP) has contracted Kleinfelder East, Inc. (Kleinfelder) to perform a Remedial Investigation (RI) of the soil and groundwater at the Sunshine Cleaners (PI: 267431), located at 1630 Tilton Road (B: 97, L: 13) in Northfield City, Atlantic County.

### Site History

Sunshine Cleaners is an active dry cleaning establishment that has been in operation since the 1960s. At least one dry cleaning machine used cleaning solvent containing tetrachloroethylene (PCE).

In the 1980s, PCE and other volatile organic compounds (VOCs) were first detected in a public water supply well operated by the New Jersey American Water Company (NJAWC). Well 4A is located on Mill Road, approximately 1,100 feet southwest and hydrogeologically downgradient of the site. Upon discovery of VOC-impacted water in NJAWC well 4A, an air stripper was installed to treat the impacted groundwater.

As a result of the detection of VOCs, the Atlantic County Health Department (ACHD) sampled potable wells at residential properties in the area surrounding Well 4A between 1988 and 1991. The results of this sampling indicated water samples from numerous residential wells along Argo Lane, Mill Road, Oxford Circle, Steelman Avenue, Surrey Avenue, Cornwall Avenue, Bay Drive, and Yorkshire Avenue were impacted with PCE and trichloroethylene (TCE, PCE breaks down to TCE over time) at concentrations exceeding applicable regulatory standards. Twenty-six residential wells had concentrations of PCE above the United States Environmental Protection Agency (USEPA) and NJDEP maximum contaminant levels (MCL) and four of those 26 wells also had TCE above the MCL. The highest PCE concentration at the time of sampling was reported at 24.7 parts per billion (ppb) at the 106 Oxford Circle residence. Due to contaminated wells in the area, the city of Northfield and NJAWC extended water lines to the impacted area in 1994.

Between 2004 and 2006, NJDEP collected soil and grab groundwater samples at the site to characterize the on-site environmental impacts. PCE concentrations were compared to the current NJDEP Class II-A Groundwater Quality Standards (GWQS). PCE was detected in on-site grab groundwater samples at concentrations ranging from non-detect (ND) to 28,000 ppb (the GWQS for PCE is 1.0 ppb). At the time of the 2006 site investigation, PCE concentrations in groundwater at the site were highest at a depth interval of 17 to 22 feet below grade. Maximum PCE concentrations were observed in two samples at concentrations of 28,000 ppb and 13,000 ppb, collected to the east of the dry cleaner building. PCE concentrations decreased with depth and ranged from ND to 11 ppb at 37 to 40 feet below grade.

Two on-site soil samples were collected by NJDEP as part of the January, 2006 Site Investigation. Both samples were analyzed for VOCs. No contamination was detected in either soil sample.

Concentrations of PCE in the off-site groundwater samples ranged from 0.27 to 169.24 ppb. Based on the results of the site assessment, NJDEP concluded that PCE detected on- and off-site, including detections in private water supply wells at the Mill Road area and NJAWC public supply well 4A, were potentially attributable to site operations at Sunshine Cleaners.

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For more information,

please contact:

**Karen Ricciardi**

**Office of Community Relations**

**P: 609-292-5299**

**F: 609-292-4401**

**E: [Karen.Ricciardi@dep.state.nj.us](mailto:Karen.Ricciardi@dep.state.nj.us)**

**[www.nj.gov/dep/srp/community](http://www.nj.gov/dep/srp/community)**

**Gary Lipsius**

**Bureau of Inv., Design & Construction**

**P: 609-984-0955**

**E: [Gary.Lipsius@dep.state.nj.us](mailto:Gary.Lipsius@dep.state.nj.us)**

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**CHRIS CHRISTIE**

**Governor**

**KIM GUADAGNO**

**Lt. Governor**

**BOB MARTIN**

**Commissioner**



## Remedial Investigation (RI)

The extent of PCE-impacted soil and groundwater at Sunshine Cleaners was partially characterized through previous NJDEP investigations. The primary objectives of this RI to be performed by Kleinfelder, on behalf of the NJDEP, included:

- Confirmation of PCE source area(s);
- Delineation of the horizontal and vertical extent of PCE-impacted soil and groundwater at the site and the surrounding properties;
- Identification of potential vapor intrusion pathways; and
- Evaluation of potential impacts to human health and ecological receptors.

## Field Activities

The RI activities were initiated in October 2010 and are currently ongoing. The RI activities included an assessment of soil, groundwater, and soil vapors.

Field activities conducted from October 2010 through August 2011 include:

- Site building walkthrough;
- Sensitive Receptor Survey (SRS);
- Performing an on- and off-site Membrane Interface Probe (MIP) screening of soil and groundwater;
- Performing a follow-up on- and off-site soil and groundwater investigation; and,
- Initiating an off-site vapor intrusion investigation.

Field activities that are planned from September 2011 through December 2011 include:

- Installation of on- and off-site permanent monitoring wells;
- Installation, development, and sampling of a series of new permanent groundwater monitoring wells on- and off-site; and,
- Updating a sensitive receptor survey.

The aforementioned activities will be conducted in accordance with the current NJDEP Technical Requirements for Site Remediation.

## Preliminary Findings

Based on the data generated to date, the highest concentrations of PCE were found in groundwater samples collected from Sunshine Cleaners facilities. The PCE plume was also found to be migrating off-site in the easterly and southerly directions. Preliminary data suggests that as the PCE travels off-site, it is also migrating with depth. Based on the preliminary data, a monitoring network is being installed to further evaluate the migration pathway. If the PCE plume is migrating with depth, the vapor intrusion risk may be lessened.

## Future Activities

Kleinfelder will collect groundwater samples from the monitoring network that is currently being installed. Kleinfelder will prepare an Interim RI Report describing site activities and sampling results. An expanded vapor intrusion investigation and mitigation (if required) will also be implemented.

A public meeting will be held in early 2012 to update all interested parties on the status of this case.

***NJDEP will provide a copy of all approved environmental reports to the City of Northfield upon the request of the municipality.***

\* For more information on vapor intrusion, please visit:  
[http://nj.gov/dep/srp/guidance/vaporintrusion/indoor\\_air.htm](http://nj.gov/dep/srp/guidance/vaporintrusion/indoor_air.htm)

\* For frequently asked questions about specific contaminants, please visit: <http://www.atsdr.cdc.gov/toxfaq.html>

