

Hockessin Groundwater Plume Community Update



United States Environmental Protection Agency

Region 3

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<https://response.epa.gov/Hockessingroundwater>

Purpose of the Meeting:

- Discuss EPA's process for potential proposal of the Hockessin Ground Water Plume Site.
- Explain and present EPA's Superfund Removal Assessment results.

Agenda:

- Superfund
- Local Geology
- Removal Assessment
- Vapor Intrusion
- Site Activities: Photos
- Removal Assessment Results
- Nature and Extent of Contamination
- Current Situation
- Community Outreach



Superfund Site Assessment:

- EPA continued site assessment activities in April 2016.
- EPA's Site Assessment Program referred the Site to EPA's Removal program in May 2016 to evaluate potential vapor intrusion and groundwater issues.

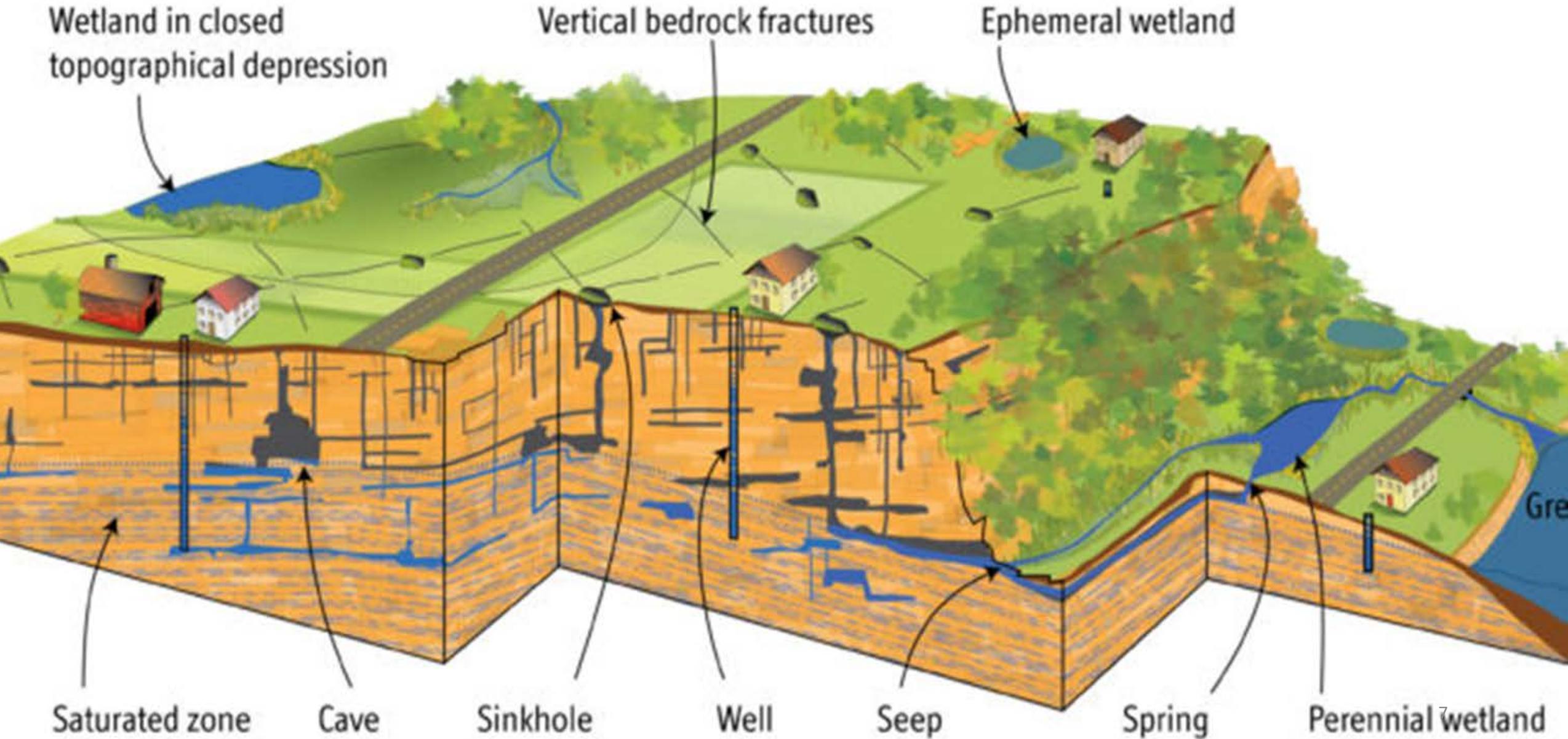
****Removal Actions** are immediate, short-term responses intended to protect people from immediate threats posed by hazardous waste sites. Examples of removal actions are excavating contaminated soil, providing water filtration equipment, erecting a security fence, or stabilizing a berm, dike, or impoundment. Removal actions may occur at National Priorities List (NPL) or non-NPL sites.*

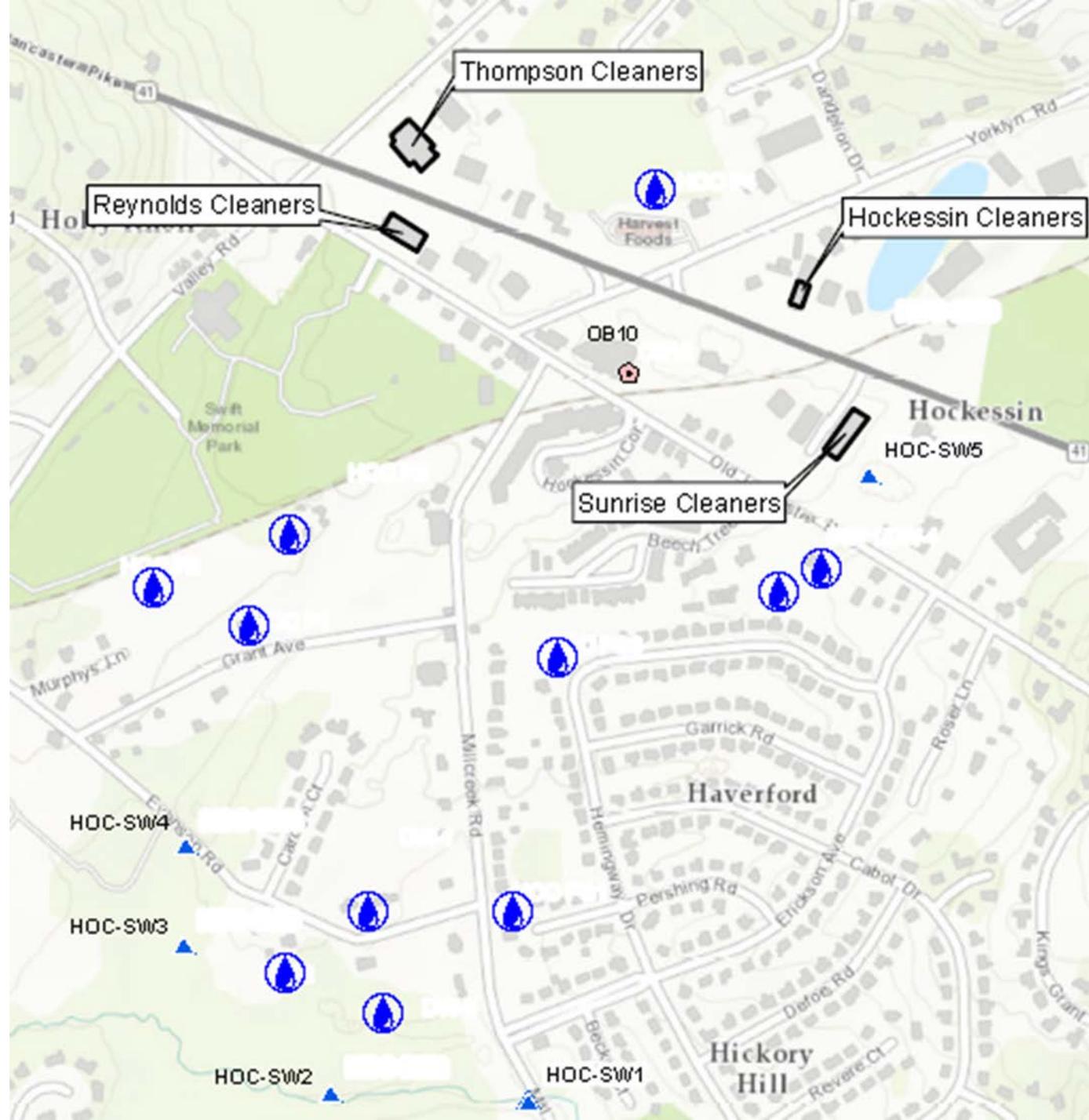
Complex Site Geology:

- **Wissahickon Formation** – highly weathered and degraded schist.
- **Cockeysville Marble** - coarse-grained marble.
- **Karst Topography**– characterized by dissolution of soluble rocks forming sinkholes, channels, and cave systems.

Six drinking water wells, one irrigation well, and four residential wells located in the Cockeysville Marble, which is a highly productive water producing geological formation.

Typical Karst Environment

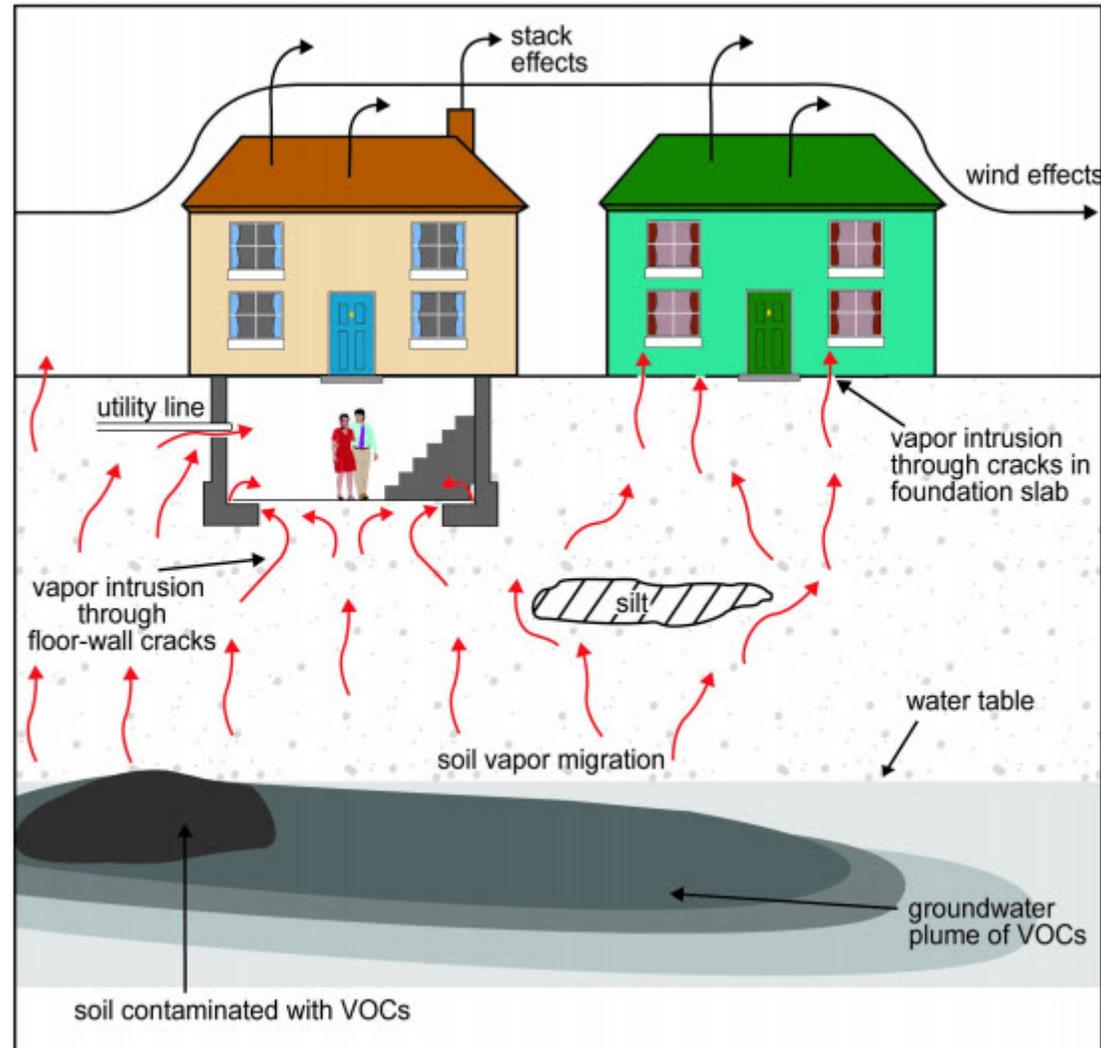




Removal Assessment:

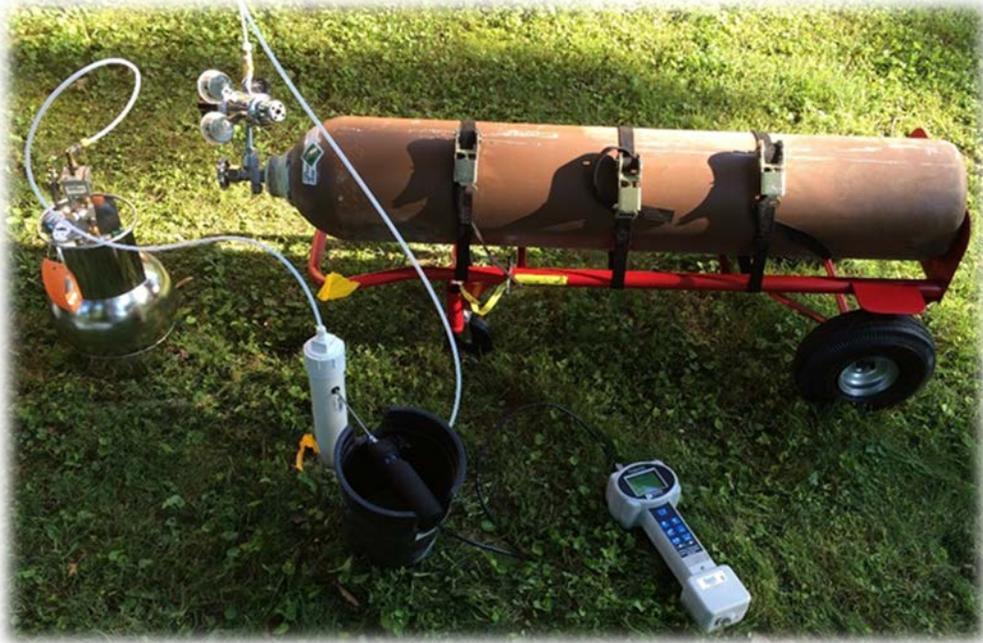
- In September 2016, EPA sampled soil vapor from 32 shallow sampling locations to assess Vapor Intrusion (VI) risks.
- Conducted two rounds of groundwater sampling in order to assess the impacts to the shallow and deeper groundwater aquifer.
- Sampled nine stream locations and two surface water bodies to assess if contaminated groundwater was impacting the local creeks and lakes.
- In February 2017, EPA sampled eight indoor sub-slab vapor samples from daycares, homes, and a public building to determine the VI risks in areas above the groundwater contamination.

Vapor Intrusion



Site Activities:

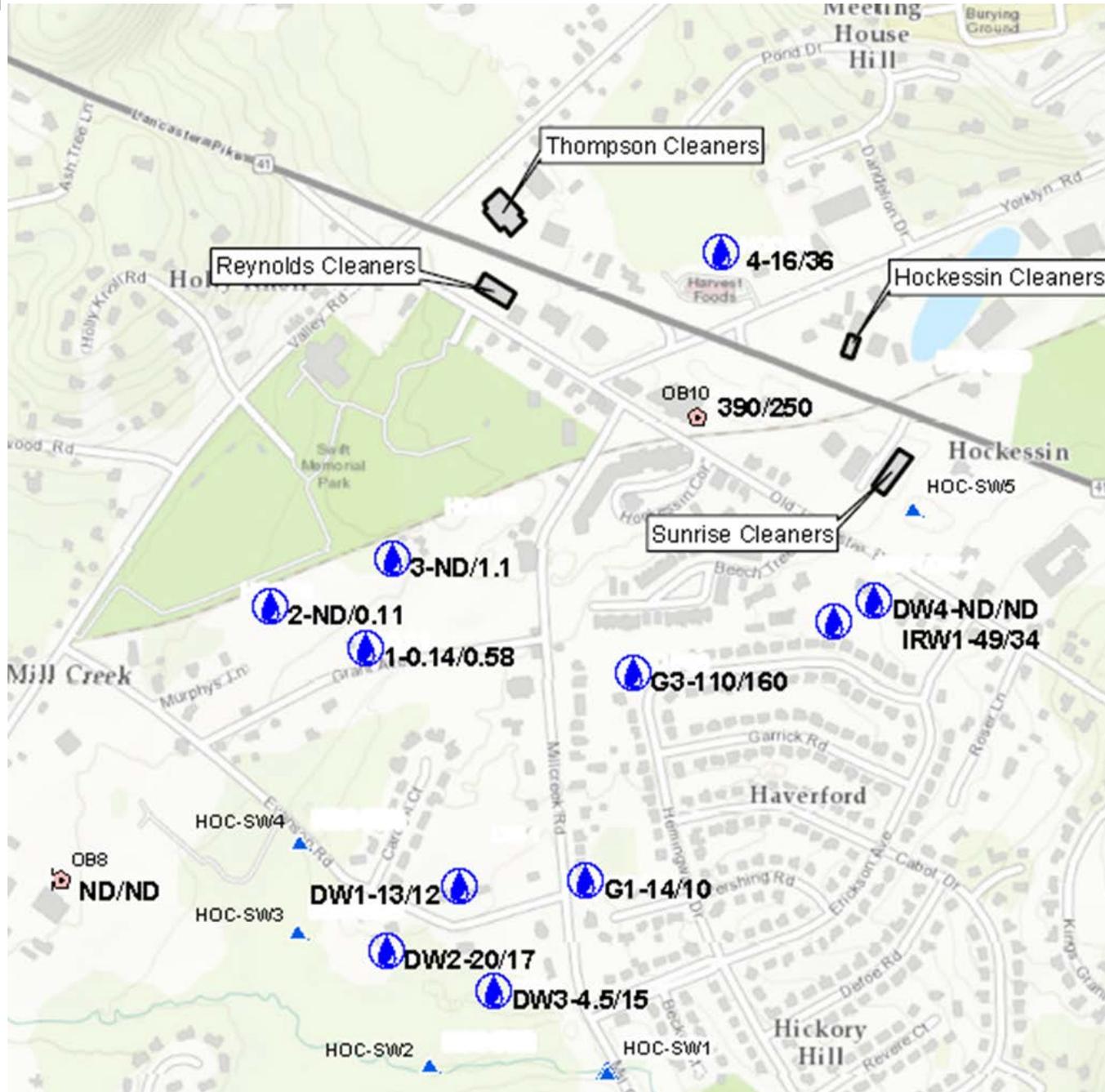




Removal Assessment Results:

- September 2016: Contamination indicated in 4 of 6 municipal wells, 1 observation well, an irrigation well and 3 residential wells. PCE indicated at max concentration of 390 ppb in the deep groundwater aquifer.
- September/October: 2 rounds of soil vapor sampling. PCE identified in 15 of 32 soil boing locations with a max concentration of 47 ppb v/v.
- March 2017: 8 Indoor sub-slab vapor intrusion samples were completed. PCE indicated in 7 of 8 samples with a max concentration of 4.1 ppb v/v.
- April 2017: Contamination indicated in all 6 municipal wells, no significant change in other wells.

September 2016 & April 2017 PCE Comparison



Concentrations PCE parts per billion
ND= non-detect

Source Area:

- Six shallow monitoring wells at the Sunrise cleaners were sampled in April 2017. PCE was identified in 5 of 6 wells with concentrations as high as 11,000 ppb.
- Three shallow monitoring wells at the Hockessin Cleaners cleaners were sampled in September 2016 and again in April 2017 and PCE was identified in all 3 wells with concentrations as high as 7,500 ppb.

The public drinking water provided by Artesian is treated to meet Federal and State Drinking Water Standards to less than 1 ppb PCE.

Nature and Extent of Contamination:

- Due to the complex nature of the geology it is problematic to determine contamination pathways.
- If the site is proposed and listed, additional characterization and development of remedial alternatives for the sources areas and overall remediation of the Site will be conducted after listing of the Site during a “Remedial Investigation and Feasibility Study”

Current Situation:

- Throughout Assessment Process the drinking water supplied by Artesian Water Company continues to meet Federal and State Safe Drinking Water Act standards, as shared annually in its water quality reports.
- DNREC has requested EPA's assistance with the management and remediation of the Site to continue protect the public from exposure to PCE and protect the environment.
- If the site is listed on the NPL, EPA will lead the clean-up effort.

Current Situation continued:

- EPA has received a letter of concurrence from the Governor of Delaware to to the NPL.
- NPL listing and future activities: The NPL listing process includes:
 - EPA finalizes the HRS package
 - Site proposed to the NPL
 - 60 day public comment period
 - EPA holds a public meeting
 - Final decision on the NPL listing

Community Outreach:

- A fact sheet and brochure available.

HOCKESSIN GROUNDWATER SITE

Hockessin, New Castle, DE. **AUGUST 2016** *Community Update*



EPA To Conduct Environmental Sampling In The Hockessin Community

- Beginning in August 2016, the U.S. Environmental Protection Agency (EPA), will be conducting environmental sampling for the Hockessin Groundwater Site located near the intersection of Lancaster Pike and Yorklyn Road.
- EPA will be performing an assessment of soil vapor and groundwater in an area of Hockessin believed to be contaminated with a dry cleaner solvent known as Perchloroethylene (PCE). The assessment will help to define the presence of PCE existing as a vapor in the unsaturated zone and if this soil vapor has the potential to migrate into homes, thus presenting health concerns. This phenomenon is known as vapor intrusion or VI.
- To learn more about soil vapor and vapor intrusion visit: <https://www.epa.gov/vaporintrusion/what-vapor-intrusion>



Above: An EPA contractor is shown performing a soil vapor assessment using a Geoprobe Drill Rig.

What You May Notice

- EPA personnel and contractors
- Geoprobe drill rig
- Utility markings
- Support equipment trucks
- Safety cones
- Potential traffic control personnel

Brief Background

Since 2005, the Delaware Department of Natural Resources and Environmental Control (DNREC), has been investigating the presence of PCE in the groundwater impacting the six municipal drinking water wells located in Hockessin, DE. These municipal wells, which are operated by the Artesian Water Company, supply drinking water to the local community. The drinking water supply is being treated and currently meets Delaware water quality standards. Current efforts by the EPA will help further delineate the groundwater contamination plume and identify potential VI problems.

Next Steps

Depending on the results of the soil vapor assessment, further steps may be needed to prevent vapor intrusion. These steps should be available in approximately 60 days.

Questions? Contact us!

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Community Update



HOCKESSIN Groundwater SITE



January 2017

Community Outreach continued:

- Copies of the Preliminary Assessment and EPA investigation documents are available for viewing upon request. Feel free to contact us!
- If the site is proposed to the NPL, EPA will accept public comments on the proposal and hold a public meeting on the listing process.
- If the site is listed to the NPL, EPA will develop a formal Community Involvement Plan, as well as several strong and meaningful outreach activities to keep the community up-to-date, involved, and empowered.
- Reports and additional background information is available at <https://response.epa.gov/Hockessingroundwater>

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