



EPA Considers Options for Contaminated Wells

Wedron Groundwater Contamination Site

Wedron, Illinois

February 2013

For more information

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The U.S. Environmental Protection Agency is considering several options to protect Wedron residents whose drinking water wells are contaminated with benzene, a chemical found in petroleum products. U.S. EPA has sampled 36 private wells in Wedron. Currently, six homes exceed the safety limits for benzene levels in drinking water and two homes are close to the limit so are included in the latest consideration. The private wells tap into a groundwater plume polluted by petroleum products from multiple potential sources. “Groundwater” is an environmental term for an underground source of fresh water. A plume is a mass of contaminated groundwater. The plume is moving, so U.S. EPA experts expect other wells besides the eight already identified could eventually be affected by the pollution. If that happens, U.S. EPA has funds to include more homes in the mitigation measures outlined below.

Under the authority of federal law,¹ U.S. EPA will spend around \$500,000 in taxpayer funds to protect residents in the eight target homes from exposure to contaminated water. The money will also be used to investigate pollution threats to the rest of the town and look for more sources of the contamination. The federal Agency classifies the latest project as a “time-critical removal action” because of the imminent health threat the benzene poses to residents in the eight homes.

Action plan

In the short term, U.S. EPA has been providing bottled water to contaminated homes since December 2011. The time-critical removal action authorizes the federal Agency to take more long-term measures and consider three options. U.S. EPA will continue to provide bottled water to residents with contaminated wells until an alternative water source is implemented. The federal Agency will also provide temporary whole-house treatment units until a final longer-term option is chosen. U.S. EPA experts understand that while residents of the eight affected homes are currently not drinking tainted water, the units will remove the potential for inhaling chemicals during showering, washing clothes and other water uses. With the installation of the temporary whole-house treatment units, U.S. EPA will then evaluate three long-term options:

- Option 1 is to install permanent whole-house treatment units that utilize carbon treatment to remove a family of petroleum-based pollutants called volatile organic compounds or VOCs. The property owner would be responsible for maintenance of these units after one year.
- Option 2 is to drill a double-cased, shared deep well and connect each residence’s water line to it via a common water main.

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¹ EPA undertakes emergency environmental actions under the authority of Section 104(a)(1) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA commonly known as the Superfund law), 42 U.S. Code, and Section 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan. For more technical information read the documents posted on the Wedron website www.epa.gov/region5/cleanup/wedron/index.html including the Nov. 16, 2012, Action Memorandum.

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Residents connected to this shared well would have to agree to pay for maintenance and regular sampling.

- Option 3 is tying the affected eight homes into a deep well in Wilbur Thompson Park. A private business, Fairmount Minerals, is working with U.S. EPA to allow access to the park and the well.

U.S. EPA staffers expect that implementing these measures will take 120 days after legal agreements are in place.

Pollution history

Wedron has a history of contaminated drinking water dating back 30 years. In 1982, Illinois EPA began a groundwater investigation after the Illinois Department of Public Health received complaints from several residents of gasoline-type odors in their private well water. Illinois EPA collected groundwater samples from several private wells between 1982 and 1984 and confirmed the presence of chemicals found in gasoline. In addition, an investigation of several potential sources of contamination was completed, but no source was found.

In 1984, the Illinois Commerce Commission installed two deep wells on the former Martin Marietta property near the existing Wedron Silica technical center, and seven residences were connected. None of those homes are now experiencing contaminated drinking water.

In 2011, some residents again reported gasoline odors from their water. As a result, Illinois EPA collected groundwater samples in October 2011 and found homes with benzene levels above the health standard. In November 2011, the LaSalle County Health Department told these residents to no longer drink or use their well water. Illinois EPA then contacted U.S. EPA, which began the current investigation.

U.S. EPA's July 2012 investigation detected high levels of benzene and other compounds associated with gasoline in soil and groundwater samples. Benzene and other VOCs were also detected in soil samples at multiple locations that could be the source areas of the groundwater plume.

Vapor issue

As part of U.S. EPA's latest action plan, inspectors will conduct a "vapor intrusion" investigation in the area within the plume. Vapor intrusion occurs when volatile chemical vapors in the underground water rise up through the soil and seep into buildings through foundation cracks and holes, resulting in indoor air

pollution. Soil gas, sub-slab and indoor air tests are performed to find vapor intrusion problems. During soil gas and sub-slab testing, probes are pushed into the ground or under building foundations to detect vapors trapped between dirt particles. A simple air-sampling canister can measure the concentrations of chemical vapors in the indoor air. U.S. EPA staff will be asking property owners of the target homes for permission to test for vapor intrusion.

Looking for the source

Groundwater contamination is one of the most challenging pollution problems faced by people and environmental and health agencies. The contamination can take years to clean up and sources are often difficult to find. U.S. EPA's investigation has identified multiple potential sources of Wedron's benzene pollution, and the federal Agency continues to look for other sources. U.S. EPA's focus has been first to protect residents' health from exposure to benzene by providing a safe source of drinking water and then pursuing the investigation of the source(s) of contamination.

Current and former commercial and industrial properties known at the site include Fairmount Minerals Ltd., Wedron Silica Co., the former Martin Marietta Corp., Illinois Railway LLC, the former Doyle Hoxsey gas station and store, the former W.D. Grain Co, and the former LaSalle County Farm Supply Co. Past train derailments may have also contributed to the problem.

Last July, U.S. EPA and Illinois EPA collected soil samples from 18 locations in Wedron using a special tool called a geoprobe that can collect samples beneath the surface. The results of the soil sampling identified several potential pollution sources, but more testing is needed. U.S. EPA conducted an investigation last August at the former Hoxsey gas station to determine if underground tanks or piping are present. Investigators found some piping but no tanks. Also last July, U.S. EPA, Illinois EPA and the Illinois Fire Marshal's office oversaw the excavation and removal of an underground tank uncovered during an expansion along the Illinois Railway tracks bordering N. 2153 Road (LaSalle County 11). Illinois Railway hired a contractor to remove the liquid in the tank, clean the tank and remove the affected soil.

Based on the results of these groundwater and soil tests, further investigation is necessary at the Hoxsey property, along the railroad tracks, and on the Wedron Silica properties. Other potential sources of contamination include a former junk yard and other facilities U.S. EPA is trying to identify.