

Health Consultation

INTERMET/WAGNER-HAVANA SITE
227 WAGNER STREET

HAVANA, MACON COUNTY, ILLINOIS

EPA FACILITY ID: IL984779827

MARCH 4, 2009

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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HEALTH CONSULTATION

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Prepared By:

Illinois Department of Public Health
Under cooperative agreement with the
Agency for Toxic Substances and Disease Registry

Purpose

After several rounds of groundwater sampling, the Illinois Environmental Protection Agency (Illinois EPA) requested that the Illinois Department of Public Health (IDPH) evaluate recent monitoring data and remediation efforts at the former Wagner Casting site. In response to this request, IDPH evaluated the information available to determine if the site currently poses a public health hazard.

Background and Statement of Issues

Site Location and Description

The former Wagner Casting site is a 31.8-acre property in Havana, Mason County Illinois. Industrial, residential and commercial properties surround the site. Pear Street borders the site to the west and Wagner Street to the north (Attachment 1). A cooling pond used by a coal-fired power plant is southwest of the site. Residential properties border the site to the northwest, and a vacant lot is to the north. Farmland borders the property to the south and east. Based on the topography of the land and environmental surveys done by Gannett-Fleming, Inc., area groundwater was determined to flow to the northwest and discharge into the Illinois River, which is approximately 0.25 miles west of the site.

A foundry was built on the property in 1970 by the Dana Corporation for the manufacture of piston rings, door hinges, gaskets and metal castings. The plant operated until August 1989 at which point it was purchased by Wagner Casting, which operated the plant from October 1989 to February 1991. The facility was shut down until March 1993 when Wagner resumed operations. Internet Corporation purchased Wagner in 1998, but declared bankruptcy in the fall of 2004. The plant has been shut down since that time.

Environmental contamination was discovered during the purchase of the property by Wagner Casting from Dana Corporation. Past practices by Dana Corporation caused soil and groundwater to be contaminated by chlorinated volatile organic compounds (VOCs) used as industrial solvents. Tetrachloroethylene (PCE), trichloroethylene (TCE), trichloroethane (TCA), 1,2 dichloroethene (DCE), 1,1-dichloroethane and vinyl chloride were found in both on-site and off-site soil and groundwater. The source of the contamination extends beyond the southern portion of the foundry building in an approximately 200-foot by 140-foot area. Employees working for Dana Corporation apparently improperly disposed of used chemicals in a grassy area south of the building. The quantity of chemicals disposed in this way is unknown.

After Wagner Casting discovered soil and groundwater contamination in 1992, a soil vapor extractor (SVE) was installed and began operating in 1995. Wells were installed into the contaminated groundwater and VOCs were allowed to evaporate through the use of a vacuum blower. Illinois EPA approved the discontinuation of the system in 1998 due to low VOC readings. An updated and improved SVE began operating in October 2003 and ran until May

2006 when it was again shut-off due to low VOC readings. Follow up soil and groundwater samples showed the contamination was contained and reduced both on and off the site.

Nineteen monitoring wells were installed between 1992 and 1995 to monitor on and off-site contamination. Tests showed a reduction in on-site contamination since the SVE was installed.

Gannett-Fleming has been sampling groundwater regularly since 1992. The most recent sampling occurred in November 2007. Private wells and monitoring wells were sampled for VOCs and semi-volatile organic chemicals (SVOCs).

According to the Public Works Department for the City of Havana, the area surrounding the facility is using public water, with a few exceptions. The Havana municipal wells are north of the contamination and are not in the plume area. The city banned the installation of new private drinking wells in 1998. Some wells constructed before 1998 are still in operation, but are reportedly not used for drinking purposes. IDPH identified one property owner who was not using public water in the area. This private well user stated that they are “allergic” to chlorinated water and therefore used private water. According to the City of Havana Public Works, the area surrounded by the site has been on public water since at least the late 1970s when public water lines were installed to accommodate the Wagner Casting facility.

Demographics

The 2000 census indicated that the city of Havana had a population of 3,582 with a median income of \$35,684. About 12% of the population, 418 residents, live below the poverty line. Approximately 98% of the population was of Caucasian descent and all the residents spoke English.

Site Visit

IDPH staff visited the site on May 29, 2008, and easily accessed the parking lot of the property from the highway. The roughly 32-acre property contains 225,000 square feet of interconnected brick and metal buildings. All windows on the buildings were boarded up and all doors and loading docks were closed and locked. The site was not fenced and was accessible from Pear Street; however, Intermet employs security guards who are present 24 hours a day, seven days a week. Trespassers could not gain access to the buildings without the knowledge of a security guard.

The buildings were in good condition and were currently empty with the exception of a few debris piles scattered throughout the structure. The building is zoned M-2 for heavy industrial uses, but operations of the plant ceased in June 2004.

In May 2007, IDPH staff observed the sampling of groundwater wells located both on and off the site. Geologists from Gannett-Fleming Inc. conducted the sampling and samples were split with a representative from Illinois EPA. These wells were resampled in November 2007.

IDPH again returned to Havana, Illinois on June 27, 2007 to survey the area surrounding the facility. Staff found no evidence of private wells used for drinking purposes. Due to the proximity of fire hydrants and water meters to the houses in the community and information from the Havana Public Works Department, IDPH is satisfied that all members of the community down-gradient from the site, with the one noted exception, use public water for drinking purposes.

IDPH staff most recently visited the site on June 6, 2008 and the conditions described above had not changed.

Discussion

Chemicals of Interest

IDPH compared the results of each groundwater sample collected with the appropriate comparison values, specifically U.S. Environmental Protection Agency (USEPA) maximum contaminant levels (MCLs) for drinking water, to select chemicals for further evaluation for exposure and possible carcinogenic and non-carcinogenic health effects. MCLs have been established by USEPA for public water supplies to reduce the chances of adverse health effects from contaminated drinking water. These standards are well below levels for which health effects have been observed and take into account the financial feasibility of achieving specific contaminant levels. These are enforceable limits that public water supplies must meet.

Chemicals found at levels greater than MCLs or those for which no MCL exists were selected for further evaluation. IDPH assumed that the samples were collected and handled properly and that appropriate analytical techniques were used. The chemicals of interest for this site are PCE and TCE (Table 1).

Exposure Evaluation

A chemical can cause an adverse effect only if people contact it at a sufficient level for a sufficient time. That requires:

- a source of exposure,
- an environmental transport medium,
- a point of exposure,
- a route of exposure, and
- a receptor population.

An exposure pathway is complete if all of the components are present, and people were exposed in the past, are currently exposed, or will be exposed in the future. If parts of a pathway are absent or if data are insufficient to decide whether the pathway is complete or whether exposure could occur at some time (past, present, future), then a potential exposure pathway exists. If part of an exposure pathway is not present and will never exist, the pathway is incomplete and can be eliminated from further consideration.

The potential for exposed persons to experience adverse health effects depends on these three factors:

- how much of each chemical a person contacts,
- how long a person is exposed, and
- the person's health condition at the time of exposure.

Illinois EPA, along with Gannett-Fleming, has done extensive groundwater sampling and surveys in the area since 1994. During this time, it was determined which residents were using private water and for what purposes. Only one resident in the area has been identified as using private water for drinking purposes. No TCE and PCE have been detected in the private well of the household that still uses this water for drinking, washing, and cooking purposes.

Since there is a household in the area of the contamination plume that is drinking private water that may become contaminated, there is a potential exposure pathway for contamination from the Wagner Casting site. All other residents who are on public water lack an exposure point and do not have a complete exposure pathway. As long as other residents with wells continue to use public water, the pathway will remain incomplete and no exposure will occur.

IDPH used USEPA vapor intrusion guidance to consider whether TCE and PCE in the groundwater could migrate into homes via soil gas. Based on the levels of these chemicals in the groundwater and the depth of the groundwater, vapor intrusion would not be expected to occur at levels that would pose a public health hazard.

Toxicological Evaluation

Trichloroethylene (TCE) and Tetrachloroethylene (PCE)

TCE and PCE each have an MCL of 5 micrograms per liter ($\mu\text{g/L}$). TCE and PCE are closely related chemicals with similar health endpoints. In our review of residential well data, IDPH considered any individual or combined level of these chemicals greater than 5 $\mu\text{g/L}$ to exceed the MCL.

In May 2007, the highest combined TCE and PCE level found was 19.62 $\mu\text{g/L}$. This private well is used to water the lawn of an area business and is not used indoors for drinking, washing, or cooking purposes. The highest level of TCE detected in a private well was 8.52 $\mu\text{g/L}$, and a level of 17.0 $\mu\text{g/L}$ was found in a monitoring well. The highest level of PCE detected in a private well was 11.0 $\mu\text{g/L}$, and a level of 20.0 $\mu\text{g/L}$ was found in a monitoring well.

Sampling conducted in November 2007 found slightly lower levels of TCE and PCE than the May 2007 samples. The highest level of TCE detected in a private well was 5.79 $\mu\text{g/L}$, and the highest level of PCE detected was in the same private well at 8.2 $\mu\text{g/L}$.

IDPH estimated the dose of TCE or PCE for children and adults exposed to the highest level of these chemicals detected in private water. Assuming adults drink 2 liters of water per day and children drink 1 liter of water per day, exposure to that level of TCE and PCE may pose a very low increased risk of liver and kidney cancer.

No one is currently exposed to this level of TCE and PCE in their household water. No TCE or PCE has been detected in the private well of the household that still uses this water for drinking, washing, and cooking purposes.

Child Health Considerations

IDPH recognizes that children are more susceptible to chemicals because their developing systems are more vulnerable, and because they consume more food, drink more water, and breathe more air than adults do on a per weight basis.

It is important that people who live near the facility and currently have wells do not allow their children drink the water. Also, residents with wells should not use the water for cooking purposes.

Conclusions

IDPH concludes that exposure to contaminated groundwater related to the former Wagner Casting site poses no public health hazard at this time. Even though there is contamination in private wells surrounding the facility, the only home that is currently using private well water has had no contaminants detected in the well since sampling started in 1994. Contamination is present in the groundwater; however, as long as residents remain on public water, no exposure pathway is present.

Recommendations

IDPH recommends that residents using private water continue to have their wells sampled on a regular basis. We would prefer that these residents connect to the public water system, but it is the decision of the residents not to do so at this time. On July 16, 2007, IDPH sent letters to the residents whose wells were sampled that provided a health-based interpretation of their sample results.

Preparers of the Report

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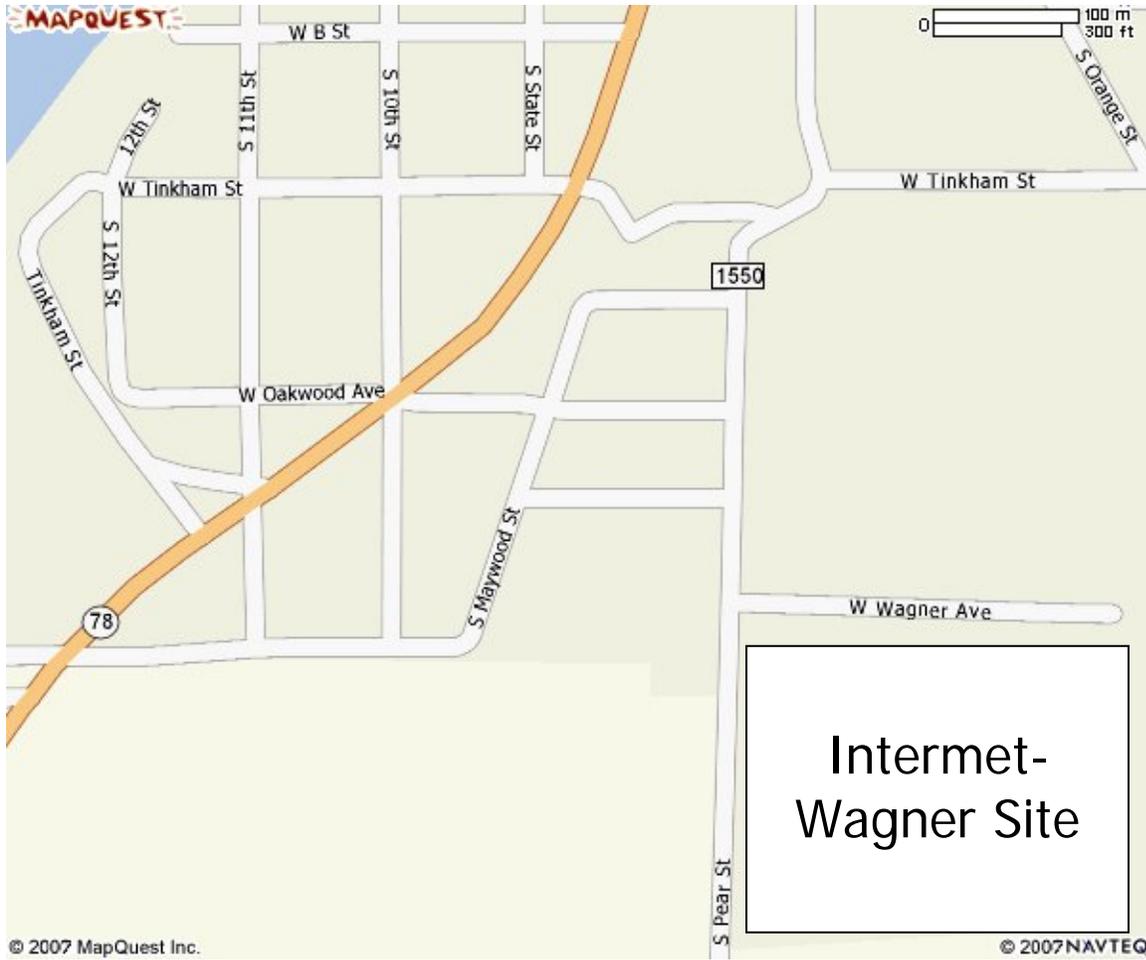
Table 1. Chemicals of Interest in Groundwater (in micrograms per liter)

Chemical	Maximum Level found in Monitoring Wells (in $\mu\text{g/L}$)	Maximum Level found in Private Wells (in $\mu\text{g/L}$)	MCL (in $\mu\text{g/L}$)
Tetrachloroethylene	20.0	11.1	5
Trichloroethylene	17.0	8.52	5

$\mu\text{g/L}$ = micrograms per liter

MCL = maximum contaminant level

Approximate Location Internet-Wagner Site



Certification

This Internet/Wagner-Havana Site health consultation was prepared by the Illinois Department of Public Health under a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry (ATSDR). It was completed in accordance with approved methodologies and procedures existing at the time the health consultation was initiated. Editorial review was completed by the Cooperative Agreement partner.



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The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation and concurs with its findings.



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