

RESPONSE JUSTIFICATION DOCUMENT
WEST LEBANON GROUNDWATER
WEST LEBANON TOWNSHIP, LEBANON COUNTY
SOUTHCENTRAL REGION

SUMMARY OF FACTS

The West Lebanon Groundwater Site (Site) is located in West Lebanon Township, Lebanon County. The Site is located on the USGS 7.5 minute topographic map for the Lebanon, Pennsylvania, quadrangle at 40° 20' 55" north latitude and 76° 27' 12" west longitude. Groundwater in a public supply well is contaminated with tetrachloroethylene, also referred to as perchloroethylene or PCE.

In October 2011, the Water Supply Program requested that the water from the Entry Point (EP101) of the West Lebanon water supply be tested for volatile organic compounds (VOCs) because of the proximity of a heating oil release to the West Lebanon Township supply wells. PCE was found in the sample at 10.4 parts per billion (ppb). Samples were then collected from Well 1, Well 2, and the Distribution system and EP101 was sampled again. No VOCs were detected in Well 1. Well 2 had 22.2 ppb PCE, EP101 had 10.4 ppb PCE, and the Distribution System had 17.2 ppb PCE. PCE contamination of the water has exceeded the Maximum Contaminant Level (MCL) of 5 ppb for public water supplies. MCLs are federal standards, incorporated by the PA Safe Drinking Water Act, that establish the maximum permissible levels of contaminants in finished water produced by public water supplies.

West Lebanon Township conducted an investigation to try and determine the source of the PCE contamination. Their contractor, Geological Services, collected soil samples around a garage on a neighboring property of the #2 well-house, where the tenant reportedly stored drums and sprayed oil around his garage as a weed killer. They also placed GoreSorbors around a nearby dump area and around the Well 2 well-house to determine if PCE was present in the soil gas. The GoreSorbors were placed below the surface of the ground to accumulate volatiles from within the soil. PCE was detected in the soil samples on the neighboring property at 16 parts per million (ppm) to 28.7 ppm. This exceeds the Act 2 Soil to Groundwater Medium Specific Concentration of 0.5 ppm for PCE. PCE was detected in the GoreSorbors at the dump area at levels up to 125 micro grams (ug). It was also detected in a few locations around the #2 well-house at much lower levels, up to 0.07 ug.

The residents are exposed to this compound through ingestion, inhalation, and dermal contact if the contaminated water from Well 2 is distributed through the municipal water supply system. PCE is a synthetic chemical that is widely used for dry cleaning of fabrics and for metal degreasing operations. Results of animal studies, conducted with amounts much higher than those that most people are exposed to, show that PCE can cause liver and kidney damage and liver and kidney cancers even though the relevance to people is unclear. Although it has not been shown to cause cancer in people, the U.S. Department of Health and Human Services has determined that PCE may reasonably be anticipated to be a carcinogen. The International Agency for Research on Cancer (IARC) has determined that PCE is probably carcinogenic to

humans. The main effects of tetrachloroethylene in humans are neurological, liver, and kidney effects following acute (short-term) and chronic (long-term) inhalation exposure. In the mid-1980s, the Environmental Protection Agency considered the epidemiological and animal evidence on PCE as intermediate between a probable and possible human carcinogen. The EPA is currently reassessing its potential carcinogenicity.

West Lebanon Water has about 300 metered connections that serve a population of 900 people. West Lebanon is currently buying water from the Lebanon Water Authority through an existing interconnection to service its customers. Supply Well #2, which is predominantly used for their water supply (Lynn Scheetz email 1/6/12), is currently unusable because the PCE levels in it exceed the Pennsylvania Safe Drinking Water Act Maximum Contaminant Level (MCL) of 5 ppb. They submitted a permit application to provide treatment on the well on December 16, 2011 (Tom Shaul email 1/12/12).

RESPONSIBLE PERSONS

The following "person"(s), as defined by Section 103 of HSCA, has been identified at this time as being a responsible person, pursuant to Section 701 of HSCA. Each responsible person, identified below is entitled to legal notice under Section 501(a) of HSCA.

- (1) Gary White, Lebanon, PA - Tenant who stored drums and sprayed oil as weed-killer
- (2) Donald A. White, Florida - Property owner

FINDINGS AND AUTHORITY TO ACT

Sampling by West Lebanon Water has determined that at the water system primary supply well #2 has levels of PCE greater than the MCL of 5 ppb for public drinking water. PCE in soil samples on a neighboring property exceed the Act 2 Soil to Groundwater Medium Specific Concentration of 0.5 ppm.

PCE is a hazardous waste as defined under the Solid Waste Management Act, July 7, 1980 (P.L. 380, No. 97, *as amended*), 35 P.S. §§ 6018.101 *et seq.*, and a hazardous substance as defined under Section 103 of the Hazardous Sites Cleanup Act, Act of 1988, (P.L. 756, No. 108), 35 P.S. § 6020.101 *et seq.* The residents will be exposed to this compound through ingestion, inhalation, and dermal contact if the contaminated water is distributed through the public water supply. An inhalation threat may exist from vapor intrusion into occupied structures as a result of the PCE contaminated soil and groundwater.

Based upon the facts:

- a) A release or threat of a release of a hazardous substance as defined by HSCA has occurred.

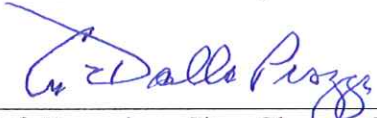
- b) This release or threat of release threatens both human health and the environment by multiple exposure pathways. The Department is authorized to undertake a response action at this site under Section 501(a) of HSCA, Act 108, the Act of October 18, 1988, 35 P.S. Section 6020.501(a).

REFERENCES

- 1) Water Sample Results – West Lebanon, dated 11/9/2011 and 11/18/2011
- 2) Soil Sample and Soil Gas (GoreSorber) Results – West Lebanon, dated 12/9/2011 and 12/21/2011
- 3) Community Water System Inventory, 7/15/2010
- 4) Water Supply Inspection/Notice of Violation/Response, 10/17/2011-12/5/2011
- 5) DEP email messages dated 1/6/2012 – 1/13/2012

DEP APPROVAL

Based on the facts and findings outlined in this Response Justification Document, further investigation or response action is deemed appropriate, pursuant to Section 501(a) of the Hazardous Sites Cleanup Act.



Chief, Hazardous Sites Cleanup Section

1-24-2012
Date



Regional Program Manager, Environmental Cleanup
and Brownfields Program

1/29/12
Date