

August 22, 2018

Dear Parents, Faculty and Staff:

The Vermont Department of Environmental Conservation and the U.S. Environmental Protection Agency (EPA), in consultation with the Vermont Department of Health, have been conducting an environmental investigation in the area of Elmwood Avenue in Burlington’s Old North End neighborhood. This is due to a concern that two chemicals – perchloroethylene (PCE) and trichloroethylene (TCE) – may have contaminated the soil gas (air pockets between soil particles), and possibly entered the air inside nearby buildings; including the Integrated Arts Academy.

Test results of indoor and outdoor air at the school show that it is safe for students, teachers and staff to be at school. TCE was not found in any of the samples collected on the school grounds or in the building. PCE was found in indoor air at very low levels on the first floor and in the basement of the school. These levels do not present a health risk. More testing will be done at the school in the coming months to see if there is a change.

Here is a summary of the work to date, details of testing at the school, and contacts if you have questions.

The Vermont Department of Environmental Conservation and the U.S. Environmental Protection Agency (EPA), in consultation with the Vermont Department of Health, have been conducting an environmental investigation in the area of Elmwood Avenue in Burlington’s Old North End neighborhood.

In July 2018, the Vermont Department of Environmental Conservation received a report documenting the presence of chlorinated chemical vapors in the soil gas (air pockets in the underground soil) along Elmwood Avenue. The specific compounds of concern are perchloroethylene (PCE) and trichloroethylene (TCE), and the chemical compounds that PCE and TCE create when they degrade in the environment. The Vermont Department of Environmental Conservation requested the assistance of EPA to determine the source of the soil gas, and if there was a possibility of these vapors entering the indoor air of nearby buildings.

The Integrated Arts Academy at the H.O. Wheeler school is in the area of this investigation. Indoor air and soil gas sampling at the school was conducted in conjunction with the City of Burlington and the Burlington School District. Both soil gas (air pockets in the soil beneath the school) and the indoor air of the building were tested for the presence of PCE and TCE.

TCE was not detected in any sample collected on the school grounds or in the school. PCE was detected in the indoor air and the soil gas. These are the results of the indoor air testing ($\mu\text{g}/\text{m}^3$ = micrograms per meter cubed):

Room	Chemical	Result
First Floor, Room 103	Perchloroethylene	0.54 $\mu\text{g}/\text{m}^3$
North Wing, Room 3	Perchloroethylene	<i>Not Detected</i>
Basement, Center Room	Perchloroethylene	1 $\mu\text{g}/\text{m}^3$
Outdoor Air in School Yard	Perchloroethylene	<i>Not Detected</i>

The PCE concentrations detected in the indoor air are below levels that would present a health risk to teachers and staff (5 $\mu\text{g}/\text{m}^3$) and students who attend the school (17 $\mu\text{g}/\text{m}^3$). The numbers in parentheses

are screening levels developed by the Vermont Department of Health, using a hypothetical scenario of the time spent per day and the number of years in school by both adults and students.

In addition to indoor air testing, the EPA collected 10 shallow soil gas samples from around the school property, and four soil gas samples from beneath the building's basement. The purpose of collecting these samples was to evaluate soil gas concentrations near the building. The concentrations of PCE detected in the soil gas ranged from 17 to 1,500 $\mu\text{g}/\text{m}^3$. It is important to note that the soil gas is not contaminating the air outside.

This data is used to guide where samples are taken for testing to ensure that the soil gas is not entering the indoor air at concentrations above Vermont's screening levels.

Given the presence of PCE in the soil gas, additional sampling will be conducted to determine if concentrations of PCE in indoor air at the school changes.

Although the public drinking water system was not suspected to contain PCE or TCE, the Vermont Department of Health Laboratory tested the drinking water at the school. As expected, neither PCE nor TCE were detected in the drinking water samples.

More information about the chemicals

PCE and TCE are often associated with dry cleaning and degreasing solvents. Perchloroethylene is also known as tetrachloroethene, tetrachloroethylene, and perc. PCE and TCE are part of a group of chemicals known as volatile organic compounds (VOCs). VOCs can transfer from groundwater into a gas and move through the tiny open spaces between soil particles. Soil gas can enter structures through a basement or crawl space, walls or floors, particularly when holes or cracks are present. Once in a structure, the colorless and often odorless gas may collect in the basement or move to upper levels. The movement of VOCs from groundwater or soil vapor and into a structure is referred to as vapor intrusion.

Health Impacts of PCE and TCE

PCE and TCE can produce a variety of health effects. Exposure to these chemicals can increase a person's risk of getting cancer. The chemicals can affect the development of a baby if a woman is exposed to them while pregnant. These chemicals can also affect the immune system and central nervous system. Health effects vary, depending on the level of exposure and the length of exposure.

For questions about the testing process, contact one of the Vermont DEC project managers:

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Kimberly Caldwell, Environmental Analyst
802-461-5857
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For the latest information on the ongoing investigation:

<http://dec.vermont.gov/waste-management/contaminated-sites/Elmwood>

For questions about the chemicals and possible health effects, contact the Vermont Department of Health:

Environmental Health Division
1-800-439-8550

For more information about health effects:

<http://www.healthvermont.gov/environment/chemicals/dry-cleaning-chemicals>