

March 19, 2019

Dear Parents, Faculty and Staff:

The Vermont Department of Environmental Conservation (VTDEC), in consultation with the Vermont Department of Health, has been monitoring indoor air quality at the Integrated Arts Academy at the H.O. Wheeler School as part of an ongoing environmental investigation in the area of Elmwood Avenue in Burlington's Old North End neighborhood. This is due to the presence of two chemicals – perchloroethylene (PCE) and trichloroethylene (TCE) – in the soil gas (air pockets between soil particles), which could enter 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.

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

In July 2018, the VTDEC 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 VTDEC requested the assistance of U.S. Environmental Protection Agency (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. Indoor air sampling was conducted by EPA in August and September 2018, and VTDEC conducted additional sampling in February 2019 to verify the data under winter conditions. Vapor intrusion is often highest during the winter months when windows are closed and heating systems are operating. This is the best time to conduct vapor intrusion investigation and to get the most accurate results.

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

Sample Location	Chemical	Results		
		August 9, 2018	September 1, 2018	February 20, 2019
First Floor, Room 103	Perchloroethylene	0.54 $\mu\text{g}/\text{m}^3$	<i>Not Detected</i>	0.149 $\mu\text{g}/\text{m}^3$
North Wing, Room 3	Perchloroethylene	<i>Not Detected</i>	<i>Not Detected</i>	0.183 $\mu\text{g}/\text{m}^3$
Basement, Center Room	Perchloroethylene	1 $\mu\text{g}/\text{m}^3$	<i>Not Detected</i>	0.312 $\mu\text{g}/\text{m}^3$
Outdoor Air in School Yard	Perchloroethylene	<i>Not Detected</i>	<i>Not Detected</i>	<i>Not Detected</i>

Shaded values indicate a concentration above the Vermont Residential Screening Value (0.63 $\mu\text{g}/\text{m}^3$).

The PCE concentrations detected in the indoor air are below levels that would present a health risk to teachers and staff (5 µg/m³) and students who attend the school (17 µg/m³). 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.

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.

Next Steps

VTDEC will resample indoor air in the school basement to verify that detections in indoor air are consistently below the residential screening value. This sample will be collected during the warm weather months to determine if there is a seasonal influence on the potential for vapor intrusion.

VTDEC has identified and is working with the parties who may be responsible for the source of contamination on Elmwood Avenue. The State of Vermont is working with the potentially responsible parties to complete an investigation and determine the actions needed to clean up any source(s) of the contamination and mitigate exposure to impacted properties in the study area.

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:

Michael Nahmias, Environmental Analyst
802-522-4595
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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>