VERMONT

State of Vermont
Department of Health
Commissioner's Office
108 Cherry Street • PO Box 70
Burlington, Vermont 05402
HealthVermont.gov

[phone] 802-863-7280

Agency of Human Services

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The Health Department has heard concerns from parents and community members asking for buildings A-E of Burlington High School, where varying levels of PCBs were detected in the air, to be reopened. We appreciate these communications and would like to share some additional information. We know that school administrators, along with the city of Burlington, are working hard to find an alternate location for students to be in soon. We recognize the importance of the students being back in a classroom and are committed to prioritizing the review of additional air sampling data, responding quickly and efficiently. We recently reached out the school to offer this support and request more communication with the consultants.

The Health Department's PCB indoor air screening value of 15 ng/m^3 is based on the potential for PCBs to produce adverse health effects. The effects are not limited to a single cancer or one system. The effects include multiple cancers - melanoma, non-Hodgkin lymphoma, breast and liver cancer- leading the International Agency for Research on Cancer to classify PCBs as carcinogenic to humans and the US Environmental Protection Agency (EPA) to classify PCBs as probable human carcinogens. The systems affected by PCBs include the immune, reproductive, nervous and endocrine systems. More specifically, possible non-cancer health effects include thyroid hormone changes, changes to brain development in utero, impaired immunologic development, fertility problems, and an increased chance of developing type 2 diabetes.

When the Health Department developed the PCB indoor air screening value, both cancer and non-cancer mathematical equations were used since there are both cancer and non-cancer health effects. Vermont bases all cancer risk assessment calculations on the excess lifetime cancer risk of one in a million. **The non-cancer effects are not based on one in a million risk over a long-term exposure but rather on effects that may happen after a single year of exposure.** We can see that the discussion at the September 29, 2020 School Board meeting focused heavily on the cancer risk and left the severity of the non-cancer risk largely undiscussed. While the cancer risk can seem intangible, it is important to understand that PCBs are simply one of the many hundreds or thousands of chemicals to which we are exposed. While the risk from an individual chemical may sound low, these chemical exposures add up. Unfortunately, cancer is all too common in the US and Vermont. It's important to note that the majority of rooms in buildings A-E are greater than 15 ng/m^3 and many of them an order of magnitude greater. This essentially increases the cancer risk by an order of magnitude in some rooms.

While we can't go back and retroactively calculate past PCB air levels, it's likely that anyone who spent time at the school was exposed to PCBs in the past since the source of the exposure is unlikely to be new. When EPA calculates their

values they use averages for exposure times. This leaves those that are more exposed unprotected. Teachers often spend more than their contracted 7.5 hours per day in the building and teachers and students are in the building during summer months.

Vermont protects the most vulnerable and those more exposed by considering more than the averages, for example, those working longer days. Levels that are calculated for the most vulnerable also protect the average person.

The levels set by EPA for noncancer effects are based on science used until 1994, when the toxicity level was established. **The EPA levels do not take into account the studies published in the past 26 years** on sensitive neurodevelopmental and reproductive outcomes. When the 1994 toxicity level is adjusted to take into account the science published in the last 26 years, the Vermont non-cancer screening value is quite close to the Vermont cancer screening value.

Importantly, EPA says its PCB air values should not be interpreted, nor applied, as "bright line" criteria, but may be used to guide thoughtful evaluation of indoor air quality in schools. **EPA recommends that the concentrations of PCBs in indoor air be kept as low as reasonably achievable**. The Vermont screening level of 15 ng/m^3 is simply that — a screen. This is a value that can be used to identify when potential sources are present in a building. In 2013-2014, four Vermont schools, built during the time when PCBs were used in building materials, were sampled for PCBs in indoor air. Of the 77 samples collected, only 7 were above the screening level of 15 ng/m^3.

At Burlington High School, PCBs are present in caulk inside buildings A-E at concentrations above 50 ppm. Anything above 50 ppm is deemed "not authorized" by EPA and therefore must be removed. With existing sources inside the building and the caulk identified as "not authorized," the indoor air levels in Burlington High School are not as low as possible.

The Health Department supported the District's decision to keep the school closed not only because the air levels were high, but also because the majority of rooms were not tested and we don't understand why some rooms are low and others are high (i.e., the school has not been characterized). If we can determine why there are low air levels in some rooms, and those reasons apply to the untested rooms, it is possible that certain areas or rooms of the school would not significantly increase a person's risk. It's also possible there are reasons such as building F was not cleaned as thoroughly as buildings A-E and therefore, levels in buildings A-E could increase when dust builds up. Additional air testing and characterization are needed to understand the scope of the indoor air contamination in buildings A-E.

We don't know how the levels will change as less fresh air is brought into the building and the building is heated in the winter. There is concern that the levels will increase under these circumstances.

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In the middle of September, the State and EPA requested further characterization of the building for this reason. We are not aware of air levels in any other New England or New York school as high as they are in building F and we still do not know the source of these extremely high levels. Without knowing the source, it is possible that similar sources exist in other areas of the school such as in the untested rooms of buildings A-E. This calls for further characterization of the school before it could be occupied again, if re-occupancy is the school district's goal.

PCBs are one of only six chemicals (or chemical classes) that EPA has taken action on under the Toxic Substances Control Act (TSCA). Under TSCA, EPA evaluates potential risks from chemicals and acts to address any unreasonable risks chemicals may have on human health and the environment. Under TSCA, **EPA has taken action on only six chemicals or classes of chemicals – lead, asbestos, mercury, formaldehyde, PFAS and PCBs. This fact, along with the numerous serious health effects and the persistence in both the environment and our bodies, speaks to the seriousness of PCBs.**

PCBs are a group of 209 individual chemicals many of which stay in our bodies for years — often decades. Their half-lives are up to 70 years. When there is even a single year of exposure to someone who is going to become pregnant or breastfeed, this can lead to exposures in the next generation. In other words, students and teachers exposed to PCBs at BHS will likely pass on PCBs to their children.

People have also raised concerns about the mental health of students that have not been in school for months. These are valid, and important considerations, especially when added to the stresses we are all facing during the COVID-19 pandemic. While the mental and physical health risks are difficult to compare, there is no question that everyone wants these children back in a classroom.

We look forward to working with school administrators, consultants, state and federal partners on further characterization of the buildings.

Thank you again for bringing these concerns to our attention,

Mark A. Levine, MD
Commissioner

Sarah Vose, PhD
State Toxicologist

Lori Cragin, PhD
State Epidemiologist for Environmental Health