

# Update on PCB Testing in Vermont Schools

Julia S. Moore, P.E., Secretary, Agency of Natural Resources

Daniel M. French, Ed.D., Secretary, Agency of Education

December 7, 2022

# What are PCBs?

- PCBs = polychlorinated biphenyls
- PCBs were manufactured between 1930 – 1979
  - During this time an estimated 1.5 billion pounds of these industrial chemicals were produced in the US
- Monsanto Corporation was the sole producer of PCBs in the US
  - Production was banned by EPA in 1979

# Why were PCBs Banned?

- Persistent, meaning they do not break down quickly
- Bioaccumulative, meaning PCBs can travel up the food chain
- Hazardous even at very low levels and can affect our health in many ways
  - Known carcinogen
  - May harm the immune, reproductive, nervous and endocrine systems



## Cancer

- Breast
- Liver
- Melanoma

## Noncancer

- Immune
- Reproductive
- Nervous
- Endocrine

# Why Test for PCBs in Vermont Schools?

- PCBs were used in hundreds of industrial and commercial applications
  - Common uses in school buildings include: caulking, paint, fluorescent light ballasts, window glazing, ceiling tiles, spray-on fireproofing, floor finishes, mastics (glue or resin) and carbonless copy paper
- Summer 2019: as part of planned high school renovation, Burlington conducted standard building material sampling
- August 2020: ANR notified Burlington found PCB concentrations in soil well-above standards; PCBs attributed to building materials
  - August 19, 2020: ANR/VDH request indoor air sampling
  - September 9, 2020: limited, preliminary data received
    - Indoor air concentrations range from ND to 6,300 ng/m<sup>3</sup>
    - Background concentrations assumed 22.5 ng/m<sup>3</sup>
  - September 10, 2020: all BHS classes go remote
- Concerns raised that similar conditions might exist in other school buildings, statewide
  - Act 74 (2021) requires schools to test indoor air for PCBs

# Why Test Indoor Air for PCBs?

- Historically, diet was assumed to be the primary source of PCB exposure
  - PCBs accumulate up the food chain
- Other common PCB exposure pathways include: outdoor air; indoor dust; and soils
- When there are high levels of PCBs in indoor air, this can contribute much more exposure than diet and other common PCB exposure pathways alone
- Testing indoor air in Vermont schools and remediating sources helps reduce exposure
- When all other PCB exposure pathways (school and non-school) are set to average background levels, school indoor air PCB concentrations should not cause an unacceptable exposure

# How is Testing of Vermont Schools being Approached?

- Public schools and recognized independent schools constructed or renovated before 1980 are required to test by July 1, 2025
- DEC has hired consultants to do the indoor air testing for PCBs
- Sampling at each school will be representative
  - Consultants inventory and group “like rooms” in each facility before sampling indoor air (or any building materials) to ensure representative testing
- VDH and DEC have created a “temporary occupancy framework” to provide guidance on continued use of facility if PCBs are detected

# How is Testing of Vermont Schools being Approached?

- All work must be conducted consistent with the I-Rule
  - I-Rule is shorthand for ANR's *Investigation and Remediation of Contaminated Properties Rule*
  - Not limited to PCBs
  - Requires DEC approval before any site work starts
- Establishes procedures and requirements for conducting investigations and corrective actions at properties where “a release of hazardous materials has occurred”
  - DEC regulates PCBs indoor air in schools as a release
- Includes requirements for identifying the source and extent of contamination, consideration of corrective actions and cost-effective alternatives for mitigation and treatment (e.g., removal or containment), and assessment of the need for long-term monitoring or institutional controls

# Approach: Indoor Air Sampling

- As part of Act 74 (2021), the Vermont legislature committed \$4.5 million for DEC to “...complete air indoor quality testing for Polychlorinated Biphenyls (PCBs) in public schools and approved and recognized independent schools that were constructed or renovated before 1980.”
- VDH derived Screening Levels, School Action Levels (SALs) and Immediate Action Levels (IALs) to prioritize the need for action when PCBs are detected
  - PCB levels in the indoor air of schools should be kept as low as possible
  - SALs indicate when schools need to identify and abate potential sources of PCBs inside their buildings
  - IALs indicate the need for immediate, emergency corrective actions to reduce exposure. In order of priority, these actions are:
    - Eliminating the use of rooms where samples exceed the IAL;
    - Limiting the amount of time the space is used; and then
    - Deploying mitigation measures to reduce PCB concentrations in indoor air.



# Current Status: Indoor Air Testing

- Testing began in June 2022
- There are at least 325 school buildings that are required to test
- Test results are available for eight schools; three of these have had at least one sample that exceeded either the School Action Level (SAL) or the Immediate Action Level (IAL) and therefore require prompt attention
  - Cabot
  - Danville
  - Oak Grove (Brattleboro)
- Samples have been collected and results expected back shortly for 11 additional schools; and 15 schools are in the process of scheduling testing

# Approach: Mitigation

- Mitigation measures are immediate/interim steps to reduce or offset known negative effects. Common measures for mitigating PCB levels in indoor air include:
  - Increasing ventilation
  - Providing or increasing air filtration
- Mitigation is typically coupled with additional investigation and materials testing to inform permanent corrective actions
  - Important because often source(s) of the PCBs are not immediately evident
  - Access to funding is essential to responding quickly to exceedances of established action levels
  - Additional testing for effected schools anticipated to cost between \$30-75k
- In October, ANR and AOE received Emergency Board authorization to disburse up to \$2.5 million to fund follow-on materials testing and mitigation measures

# Approach: Remediation

- Remediation measures are intended to permanently address identified sources of PCB contamination. Common measures for remediating PCB levels in indoor air include:
  - Upgrading air handling/ventilation systems
  - Isolating/encapsulating suspected or known PCB source(s)
  - Removing and properly disposing of PCB-containing building materials
- Act 178 (2022) reserves \$32 million “...*within the Education Fund for purposes of funding the investigation, testing, assessment, remediation, and removal of polychlorinated biphenyls (PCBs) in schools.*”
  - AOE, ANR and VDH staff are drafting a plan for the General Assembly that will recommend how to disburse these funds, due on or before January 15, 2023.

# Next Steps

- Continue with testing efforts
  - DEC anticipates testing 30-40 schools per quarter through June 30, 2025
- Bring on-line PCB sample analysis capacity at VAEL (Vermont Agricultural and Environmental Lab)
  - Expect VAEL to have capacity to test ~30 samples per week
  - Will allow for faster results in determining efficacy of mitigation measures
- Prepare recommendations for legislative review/action on utilization of \$32 million PCB reserve for remediation (due January 15)
- Stay update-to-date on AGO-led litigation against 3M and DuPont who were the primary producers of PFAS-compounds

# Next Steps – cont.

- Work with schools with results above action levels to develop remediation plans, consistent with I-Rule standards
- Expanded communications support through AOE
  - Formation of Advisory Group with VSA
  - Development of operations guidance to assist school districts with planning, and to ensure continuity of in-person instruction
  - Implementation of "pre-game" planning sessions for those districts that will be going through testing in near future