



FACT SHEET

City of New Bedford's Environmental Investigation of the New Bedford High School Building and Campus

City of New Bedford/TRC, August 2012

This fact sheet describes what the City has done to determine that it is safe for people to occupy the New Bedford High School and use the campus. It summarizes findings since those reported in the August 2011 fact sheet and presents the next steps in the City's ongoing work. Terms in bold are defined in the Glossary of Terms at the end of the Fact Sheet.

It is safe for people to occupy New Bedford High School and use the campus around the school.

Inside the high school, TRC Environmental Corporation (TRC), the City's environmental consultant, evaluated the levels of **polychlorinated biphenyls (PCBs)** and **volatile organic compounds (VOCs)** in indoor air and determined that there is no significant risk to the health of building occupants in all rooms that were sampled except rooms A-110-1, A-203-2, and A-315-1. These rooms remain closed as a precaution until testing determines that PCB levels in air are below the Acceptable Long-Term Exposure Concentration (ALTEC) of 0.3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) total **PCBs**. This evaluation was based on Massachusetts Department of Environmental Protection (MassDEP) criteria, as well as U.S. Environmental Protection Agency (EPA) criteria. The evaluation assumed that someone spends 8 hours per day, 5 days per week for 27 years in each room of the high school.

Outside the high school, staff, students, and visitors use the campus for various reasons. Activities include people walking across the campus, participating in athletic programs, or cutting grass. TRC considered how people use the campus in evaluating whether people could potentially be exposed to chemicals in the surface soil (soil that is not beneath pavement). TRC determined that the potential exposures to surface soils do not pose a significant risk, considering the possibility of inhaling dust, eating a small amount of surface soil, and coming into skin contact with surface soil. In reaching this conclusion, TRC considered how often and at what intensity high school staff (such as faculty and maintenance personnel), students, and visitors may use the campus.

Ongoing Studies

On behalf of the City, TRC has undertaken four studies related to the building and campus: 1) evaluation of building materials and furnishings that may contain **PCBs**, development of plans to address these materials and furnishings, and removal of certain building materials and furnishings; 2) investigation and remediation of groundwater (water located beneath the ground in spaces in the soil) that may enter, or "seep" into the New Bedford High School mechanical room used by maintenance staff; 3) assessment and remediation of soil at the New Bedford High School; and 4) investigation of white dust released by some unit ventilators (univents) within the school.

Description of Investigation Findings

Building Materials and Furnishings. Some building materials at the high school contain **PCBs** at levels regulated by EPA, and **PCBs** have been detected in indoor air. The City has investigated and removed certain PCB-containing materials, and indoor air concentrations of PCBs declined after cleaning and adjusting the ventilation system and removing **PCB**-impacted dust in 2007 and 2008. In February 2011,

61 additional indoor air samples were collected from various locations in the school. **PCBs** were detected in indoor air samples in three rooms (A-110-1, A-315-1 and A-203-2) at levels above $0.3 \mu\text{g}/\text{m}^3$. As a precaution, these rooms were closed until testing indicates that the levels are below $0.3 \mu\text{g}/\text{m}^3$ total **PCBs**.

Indoor air samples were collected again in August 2011 following the removal of old fluorescent light ballasts and fixtures with residue from ballasts. Almost 3,000 light fixtures were replaced as part of the summer 2011 removal project, which also included auditorium cushion replacement and targeted paint removal. Indoor air concentrations of **PCBs** remained above $0.3 \mu\text{g}/\text{m}^3$ in the three closed rooms. **PCBs** were also detected in two other rooms (A-311-2 and A-307-3) and the 2nd floor hallway outside of the Green House office, at concentrations above $0.05 \mu\text{g}/\text{m}^3$. It is safe for the students and staff to continue using the 2nd floor hallway in Green House and rooms A-311-2 and A-307-3 while the investigation continues.

Following adjustments to the air handling system to increase the air exchange rate efficiency, an air sample was collected from Room A-203-2 in April 2012. Following validation of the April 2012 sample results, the univalent air filters were changed, ceiling tiles were replaced, and all moveable furniture within Room A-203-2 was removed by July 2012. An additional air sample was collected in July 2012 to further evaluate the potential **PCB** source(s). **PCBs** were detected during each sampling event at levels greater than $0.3 \mu\text{g}/\text{m}^3$ total **PCBs**.

Mechanical Room Investigation. The application of the waterproofing mortar between December 2010 and April 2011 was successful in eliminating groundwater seepage in a large portion of the mechanical room. A minor amount of water seeps into limited areas of the mechanical room during periods when the groundwater table is high (such as the late winter and early spring); most of these areas have been dry since March 2012.

Nearly 2,600 gallons of groundwater were removed from beneath the mechanical room during five total fluid extraction (**TFE**) events before July 2011. The **TFE** events encountered **non-aqueous phase liquid (NAPL)** and **PCBs** in the removed groundwater. The City's characterization of the **NAPL** and groundwater in August 2011 found that the **NAPL** contained a mixture of trichloroethene (a **VOC**), **PCBs**, and petroleum.

In 2012, the City added a hydraulic control system to prevent impacted groundwater and vapors from entering the building or the building's underdrain system, which empties to the City's wastewater system. The City continued its investigation of soil, groundwater and **NAPL** impacts using a Membrane Interface Probe System (**MIPS**) in April 2012. No **VOCs** associated with the site have been detected during routine monitoring of the groundwater captured by the hydraulic control system. Air emissions from the vapor extraction component of the hydraulic control system are directed to the former incinerator stack and are significantly below conservative (health-protective) criteria. Eighteen soil borings and two monitoring wells have been installed to define the extent of **NAPL** and groundwater impacts. It is safe for staff to continue working in this area since indoor air concentrations of **PCBs** and **VOCs** in the mechanical room are below EPA and MassDEP action levels.

High School Campus Soil. Soil removal and paving activities began in April 2011 and proceeded intermittently through January 2012 on weekends, holidays, and around other school events. Remedial activities were conducted throughout the high school campus. A total of approximately 11,143 tons of soil have been removed to date.

Univent Dust Issue. In January 2012, a white dust was observed coming from inside the univents in some B-block classrooms. TRC collected and submitted a sample of this dust to a laboratory for identification. The laboratory identified the dust as mostly aluminum oxide, which was found on the cooling coils inside of the univents. Aluminum oxide is a typical component of indoor dust when aluminum metal is present, and it does not pose a health threat.

The Next Steps

Building materials and furnishings. The City is continuing to investigate the PCB concentrations in indoor air inside the school. It continues to work with the School Department to optimize the ventilation system for the building and to evaluate potential sources of PCBs. The City will continue to work with the School Department to restore use of the three rooms that are currently closed, and will continue to monitor indoor air for the presence of PCBs.

Mechanical Room. Although seeps are not currently present within the mechanical room, the City continues to monitor previous seep locations. The City is also currently evaluating potential remedial alternatives for the **NAPL** and impacted groundwater beneath the mechanical room.

High School Campus Soil. The City and the operation and maintenance lessee (the solar company) are currently evaluating design options for the construction of the Solar Park proposed to be located north of the high school building between the two parking lots. Following completion of the design and construction of the Solar Park, a condition of No Significant Risk for soil at the NBHS campus will have been achieved, and the City will complete its final reporting to MassDEP.

Univent Dust Issue. The school's building engineers installed filters inside the univents that effectively capture the dust before it is blown into the classrooms. These filters will be changed periodically or on an as needed basis. The City is investigating various options for controlling the dust in the future, including possible replacement of the cooling coils.

For More Information

Data related to the four studies at the high school are posted at the City's website <http://www.newbedford-ma.gov/McCoy/sitemap/sitemap.html> in the "New Bedford High School (NBHS)" section; paper copies are available for review by appointment at the local Public Involvement Plan (PIP) information repository at the City's Department of Environmental Stewardship in room 304 of City Hall. Details about the investigation and removal of materials containing PCBs are provided in the April 2012 *Removal and Abatement Report for PCB Building Materials – 2009 through 2011*. Details about the investigation of the mechanical room and groundwater seeps are provided in a Fact Sheet (*Groundwater Seep Investigation Fact Sheet and Sampling Results – March 2010*), the March 2010 *Immediate Response Action Plan* for RTN 4-22409, the January 2011 *Immediate Response Action Plan Modification* for RTN 4-22409, the February 2012 *Immediate Response Action Plan Modification* for RTN 4-22409 and all associated status reports. Details about the investigation of soil on the campus are provided in the April 2011 *Phase II Comprehensive Site Assessment*, April 2011 *Release Abatement Measure Plan – Soil Excavation and Removal*, the July 2011 *Release Abatement Measure Plan Modification* and associated status reports. Details about the investigation of the univent dust are provided in the January 2012 *City of New Bedford's Environmental Investigation of the New Bedford High School Univent Dust Issue* fact sheet.

If you have additional questions, please contact Cheryl Henlin, City of New Bedford Environmental Stewardship Department, at (508) 991-6188 or email cheryl.henlin@newbedford-ma.gov

GLOSSARY OF TERMS

Membrane Interface Probe System (MIPS) – The membrane interface probe is a tool used to conduct real-time measurement of the concentration of volatile organic compounds relative to depth of soil material.

Non-Aqueous Phase Liquid (NAPL) – A liquid, such as oil, that does not dissolve readily in water. NAPLs are commonly classified as those that are less dense than water (light NAPL), such as gasoline, and those with a density greater than water (dense NAPL), such as the trichloroethene that is present beneath the mechanical room.

Polychlorinated biphenyls (PCBs) - Mixtures of up to 209 individual chlorinated compounds, with no known natural sources. Some PCBs can exist as a vapor in air to a limited extent. In the past, PCBs have been used as coolants and lubricants in electrical equipment because they do not burn easily and are good insulators.

Total Fluid Extraction (TFE) – A recovery process where a single pump is used to simultaneously extract both aqueous (water) phase and product (oil) from a well. In this case, the use of a vacuum track also enabled the removal of soil vapors.

Volatile organic compounds (VOCs) – VOCs are a variety of chemical compounds given off as gases from certain solids or liquids. VOCs are given off by a wide array of products numbering in the thousands. Examples of products that can give off VOCs when in use, and to some degree when stored, include: paints, lacquers, strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment (e.g., printers), correction fluids and carbonless copy paper, graphics and craft materials (e.g., glues and adhesives), markers, photographic solutions, and fuels and other petroleum-containing products.