



## FACT SHEET

### CITY OF NEW BEDFORD'S ENVIRONMENTAL INVESTIGATION OF THE NEW BEDFORD HIGH SCHOOL BUILDING AND CAMPUS

City of New Bedford/TRC, August 2011

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 April 2011 fact sheet and presents the next steps for the 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, where PCBs were detected in excess of the Acceptable Long-Term Exposure Concentration (ALTEC) of 0.3 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). These rooms remain closed as a precaution pending removal of light fixtures and other PCB-containing materials from the high school during the summer of 2011. This evaluation was based on criteria established by the Massachusetts Department of Environmental Protection (MassDEP), 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 New Bedford 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.

#### **Studies Being Conducted**

On behalf of the City, TRC has undertaken three 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 materials and furnishings; 2) investigation 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; and 3) assessment and remediation of soil at the New Bedford High School.

## **Description of Investigation Findings**

**Building materials and furnishings.** Some building materials at the high school contain **PCBs** at levels regulated by EPA. The City has investigated and removed certain PCB-containing materials. **PCBs** have been detected in indoor air. The levels were reduced after cleaning and adjusting the ventilation system, and removing **PCB**-impacted dust in 2007 and 2008. Additional indoor air sampling (61 samples collected) was conducted in February 2011. This sampling targeted locations with light fixtures that contain old ballasts from which **PCB** oil appears to have leaked, leaving a residue on the metal tray that encloses the wiring and ballast. **PCBs** were detected in three rooms (A-110-1, A-315-1 and A-203-2) in excess of  $0.3 \mu\text{g}/\text{m}^3$ . As a precaution, these rooms were closed until testing determines the levels are below  $0.3 \mu\text{g}/\text{m}^3$  total **PCBs**.

PCBs were detected in five rooms (A-112-2, A-311-2, A-307-3, A-212-4 and A-315-4) above the EPA level to conduct further potential source investigation of  $0.05 \mu\text{g}/\text{m}^3$ . It is safe for the students and staff to continue using rooms A-112-2, A-311-2, A-307-3, A-212-4 and A-315-4 while investigations are being conducted.

Almost 3,000 light fixtures are being replaced as part of the summer 2011 work, as well as auditorium cushion replacement and targeted paint removal.

**Groundwater seeps.** The City initiated groundwater seep mitigation activities in the high school mechanical room in December 2010. As of June 2011, TRC has collected samples from 4 seep locations, 34 monitoring wells, 15 storm and sanitary sewer manholes, 17 indoor air locations and 12 subslab vapor locations, and initiated mitigation and remediation activities within the mechanical room.

TRC has conducted five groundwater vacuum extraction events as of July 2011 under a January 2011 Immediate Response Action (IRA) Plan Modification. The groundwater sampling results have indicated that the extractions have been effective in reducing the chlorinated VOC concentrations. In addition, the application of the waterproofing mortar has been successful in eliminating seepage throughout a large portion of the mechanical room. However, a small amount of seepage remains as of June 2011.

TRC has continued to investigate whether **VOCs** may be entering the high school from beneath the school. Low concentrations of **VOCs** were detected in air during sampling; however, they do not pose a significant risk to the health of building occupants based on criteria established by MassDEP. The City continues to investigate the sources of these **VOCs**, including **VOC**-containing cleaning products used inside the building.

Recently, the City has learned of the presence of **PCBs** in materials extracted from beneath the Mechanical Room floor, and is evaluating how this will impact remedial planning and close-out. It is safe for staff to continue working in this area since indoor air levels for **PCBs** for the Mechanical Room are below EPA action levels.

**Assessment of high school campus soil.** TRC submitted a Final Phase II Comprehensive Site Assessment (CSA) for the high school to MassDEP in April 2011. The Final Phase II CSA included the results of investigations conducted by VHB, BETA and TRC through November 2010 in order to support remedial

planning activities. The Final Phase II CSA included collection and laboratory analyses of soil, groundwater, indoor air and soil gas samples to characterize the nature and extent of impacts at the high school campus.

TRC has advanced approximately 481 soil borings, including surface soil samples, across the high school campus. Samples were tested for **arsenic, lead** and other metals, **PCBs, polyaromatic hydrocarbons (PAHs)**, extractable petroleum hydrocarbons (EPH), volatile petroleum hydrocarbons and/or **VOCs**; these results have been compared with MassDEP soil standards. A subset of these samples was tested for **dioxin and dioxin-like compounds**. The **dioxin and dioxin-like compounds** are also compared to MassDEP soil standards, and in this case MassDEP's background concentration for **dioxin** in soil, since the results are close to, and in several cases below, MassDEP's published background levels.

The Final Phase II CSA includes a risk characterization of the high school campus. TRC determined that the potential exposures to surface soils in the 0 to 1 foot depth zone 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. Various compounds were also detected in soil samples collected from depths greater than one foot below the ground surface and from soil under pavement (over 1,000 soil samples have been collected from NBHS to date). People would not contact the soils below the top foot or below pavement unless an extensive excavation or disruption of paved areas occurred as part of a future redevelopment or maintenance project.

### **The Next Steps**

**Building materials and furnishings.** The City has already begun removing building materials that require removal under EPA's regulations. It will complete this work during the 2011 summer vacation period in accordance with plans approved by the EPA. The planned activities include the removal and abatement of wall paints, auditorium chairs and fluorescent light fixtures.

**Groundwater seep.** The City continues to implement groundwater seep mitigation within the mechanical room. The City is also currently evaluating potential remedial alternatives for the impacted groundwater beneath the mechanical room.

**High School Campus Soil.** TRC submitted a Release Abatement Measure (RAM) Plan on behalf of the City in April 2011 for soil removal, regrading and paving activities. Implementation began during the April 2011 school vacation week. RAM-related activities have continued intermittently through June 2011 as work has been conducted on weekends and holidays.

The remedy underwent further engineering design to accommodate potential future use modifications (e.g., the City has chosen to use of some portions of the campus to generate electric power through solar panel installation, also referred to as a solar park), which is described in the recently submitted Modified RAM Plan. These measures will achieve a condition of No Significant Risk for soil exposures for the high school campus.

The City also conducted additional sampling for **dioxin and dioxin-like compounds**. TRC collected nine soil samples the week of June 5, 2011 and the results will be posted on the City's website following

validation. The results will be used to update TRC's evaluation of risk to those using the high school campus.

### **For More Information**

Data related to the three studies underway 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. Details about TRC's investigation of materials containing PCBs are provided in the March 2011 *Removal and Abatement Plan: New Bedford High School Building Interior PCB Removal & Abatement Plan*. Details about TRC's investigation of 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 and all associated status reports. Details about the investigation of soil on the campus are provided in *Phase II Comprehensive Site Assessment and Release Abatement Measure – Soil Excavation and Removal* for the high school campus. Data regarding the first set of soil samples TRC collected for dioxin analysis are provided as part of the July 2010 *Memorandum: Explanation of Dioxin Toxic Equivalent (TEQs)*.

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](mailto:cheryl.henlin@newbedford-ma.gov)

## **GLOSSARY OF TERMS**

**Arsenic** – Naturally occurring chemical element used historically for a variety of purposes, including wood preservatives, herbicides (weed killer), pesticides, and medicine.

**Dioxin** – Term is commonly used to refer to the compound 2,3,7,8-tetrachlorodibenzo-*p*-dioxin. It is also sometimes referred to as 2,3,7,8-TCDD. Dioxin is found everywhere in the environment and is released through nature processes, such as forest fires and volcanic eruptions, and through industrial processes, such as combustion of industrial waste or chemical manufacturing.

**Dioxin-like compound** – Compounds commonly detected in the environment along with dioxin and can cause adverse effects like dioxin. Most are less harmful than dioxin.

**Lead** – Naturally occurring chemical element used in building construction, lead-acid batteries, bullets and shot, weights, and is part of solder, pewter, and alloys, and utilized in paints.

**Polyaromatic hydrocarbons (PAHs)** – A group of over 100 different chemicals formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. PAHs are usually found as a mixture containing two or more of these compounds, such as soot. Some PAHs are manufactured and found in coal tar, crude oil, creosote, and roofing tar, but a few are used in medicines or to make dyes, plastics, and pesticides or are components of petroleum.

**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. PCBs have no known smell or taste. PCBs have been used as coolants and lubricants in electrical equipment because they do not burn easily and are good insulators. PCB manufacture was stopped in the U.S. in 1977. Products made before 1977 that may contain PCBs include: certain building materials, such as caulking, paint, adhesive and fluorescent lighting fixtures; electrical devices containing PCB capacitors and transformers; and hydraulic oils.

**Volatile organic compounds (VOCs)** – VOCs include 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 include: paints, lacquers, strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment (e.g., copiers and printers), correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions. Fuels/petroleum also contain VOCs. These products can release VOCs when in use, and, to some degree, when stored.