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Memorandum

To: Sarah Porter, City of New Bedford Conservation Agent
From: David M. Sullivan, LSP, TRC Environmental Corporation
Subject: Safety of Keith Middle School Student during Remedy Implementation
Date: June 19, 2018
CC: Michele Paul, Raymond Holberger, Dept. of Environmental Stewardship
Project No.: 281331

In response to the concerns expressed by a member of the New Bedford Conservation Commission regarding the Keith Middle School (KMS) Wetland Sampling and Remediation Project. The remedial activities will include removal and capping of a small amount of shallow sediment that has been impacted by polychlorinated biphenyls (PCBs) and heavy metals (predominantly lead and zinc). The total amount of sediment to be removed is estimated to be 4 cubic yards and the capped material will have a total surface area of 2,250 square feet. The impacted sediments are present in three areas located on the eastern and southern side of the wetland that is adjacent to the school. Because the extent of impacted sediment is small, the removal and capping will be done by hand.

As part of a Hazard Communication Program for this work, TRC will develop a Fact Sheet briefly explaining the anticipated activities at the Site and the mitigation measures detailed herein that will be available to students, teachers, and members of the public to answer questions they may have regarding the proposed activities. In addition, please consider the following with regards to scheduling and procedures that will be implemented to ensure the safety of students and school personnel:

Project Schedule

Based on our inquiries with school authorities, the YMCA runs a summer school for kindergarten to grade 8 students from June 25 to July 27 starting at 8:00 AM and running until 3:00 PM. The students in this program stay inside (there are no outdoor recreational or educational facilities at KMS). In addition, there are intermittent users of the community room all summer. The remedial activities are planned to occur over a two to four-week period, and we expect that the removal and handling of sediments impacted by PCBs will occur after July 27th.

Properties of the Contaminants

The sediment that the City is targeting for remediation are primarily contaminated with PCBs and heavy metals. While these contaminants are considered toxic, they have several properties that allow them to be handled and managed safely:

- **High molecular weight** – Due to the high molecular weight of the contaminants and properties associated with having a high molecular weight, the contaminants addressed by the remedy do not vaporize easily (if at all), making it highly unlikely that students, teachers or parents would be exposed to vapor contamination (inhalation exposure).

- **Low vapor pressure** – The vapor pressure of the contaminants is quite low, which also limits the ability of the contaminants to be vaporized, and thus unlikely to be inhaled.
- **Affinity for soil/organic materials** – The contaminants tend to adhere to soils and organic materials (such as the decayed plant materials in the wetland sediments targeted by the remediation). The likelihood of contaminants separating from the sediments as they are removed from the site is highly unlikely.
- **Low solubility** – Another property associated with the contaminant's affinity for soils/sediments is the low aqueous solubility of the contaminants. Essentially, these types of contaminant prefer to adhere to solid materials like soil and sediments and dissolve sparingly in water, therefore it is unlikely that water in contact with the sediments will be contaminated with PCBs and metals. This has been demonstrated by the previous sampling of water in the wetland.

Site Control to Limit Potential Direct Exposure or Construction Hazards

The entrances and exits from the community room are located in the front northeast corner of the KMS building. As remedial activities are limited to the northwest side of the KMS property, anyone entering or exiting the building will not be impacted by the remedial activities.

Temporary security fencing will be placed around the work areas and tied into the existing permanent fencing during all remediation activities. The fencing will be locked during all times remediation personnel are not present at the site. The fencing will encompass the entire work area, including the frac tanks and dewatering area, and then opened and closed as need be to allow for egress of trucks and equipment during the work day. This will prevent children and members of the general public from coming in direct contact with excavated sediment and construction equipment. Signage will be placed on the fencing identifying the handling of hazardous materials. Additionally, the New Bedford Police Department will be notified of the activity and the Department of Environmental Stewardship will arrange for stepped up afterhours and weekend patrols to guard against unauthorized access to secured areas.

Heavy equipment operations are planned to be confined to the northwest quadrant of the KMS property, with pre-defined traffic flow pattern. The majority of heavy equipment operations will be conducted by the City of New Bedford's Department of Public Infrastructure (DPI) and minor activities by subcontractors and trucking firms. The DPI crews are familiar with safe work operations in urban areas.

Hazardous Material Handling

There will be no stockpiling of excavated sediments during remediation activities. Excavated sediment will be loaded into a dewatering box that will be staged on-site so the sediment can be dewatered. The dewatering liquids will be discharged to the two on-site frac tanks. Solid material in these liquids will be removed by settling in the frac tanks and filtration prior to return of the liquid to the wetland downgradient from the work areas. Once the sediments are dewatered, they will be transported off-site for disposal. In addition, excavated materials will be promptly containerized and covered prior to offsite shipment for disposal.

Environmental Monitoring and Decontamination Procedures

Protective measures will be utilized to minimize and control any potential releases and/or exposures to contaminated sediments during remedial activities with the potential for exposure to site personnel and the

public. TRC personnel will be on-site during the excavation, capping and off-site transport of contaminated sediment and will conduct environmental monitoring activities as described below.

- **Instrumented air monitoring for dust** – Because the remedial activities will be performed in a wetland, it is unlikely that significant, if any, amounts of dust will be generated due to the high moisture content of the sediment. Nevertheless, in an abundance of caution, instrumented air monitoring for dust will be performed using a combination of real-time dust monitoring upwind and downwind of the work area, and at a point near the closest receptor.

During sediment excavation, soil/sediment capping and management activities, real-time field screening of breathing zone dust levels will be conducted using direct reading instruments that are designed to monitor air quality on a real-time basis. A second instrument will be used to monitor dust levels downwind of the excavation. A third dust monitor will be placed towards the nearest receptor, regardless of wind direction.

Dust monitoring data will be logged at 60-second intervals and will be monitored periodically by field personnel during remediation activities. Data will be downloaded daily. If sustained ambient dust levels exceed the EPA National Ambient Air Quality Standard of 150 µg/m³ at downwind sampling locations (a sustained reading would consist of a reading lasting 15 minutes or longer), dust suppression activities will be increased with a greater usage of water sprays. Monitoring levels are subject to change and may be made more stringent as additional soil data are obtained and evaluated.

- **Volatile organic compound (VOC) air monitoring** – Although VOCs are not chemicals of concern for Site soil/sediment targeted under this remedy, as a precaution, VOC air monitoring will be performed using a hand-held photoionization detector (PID) to monitor for the presence of VOCs within the work area breathing zone and along the perimeter of the Site.

Instrument readings from breathing zones within the work zone will be used to help evaluate the need for instituting additional safety measures or upgrading personal protective equipment (PPE) levels (both considered to be very low probability events for VOCs).

- **Heavy equipment decontamination** – Trucks and heavy equipment will be decontaminated prior to leaving the Site to ensure that any loose soil/sediment or debris does not impact offsite properties. Heavy equipment will be decontaminated at a pre-established area where a decontamination pad will be constructed. This area will be used to support dry decontamination procedures (i.e., brushing-off of soil, etc.) and, as needed, citrus-based solvent swabbing. Vehicles/equipment leaving the Site will be required to stop and get inspected by TRC to ensure excess soil/sediment or debris is removed from the vehicle/equipment and its tires before exiting the site.

Site-specific Health and Safety Plan (HASP) and Safety Briefings

A site-specific HASP will be prepared by TRC. The HASP will be shared with all site personnel (e.g., DPI, subcontractors) to communicate health and safety concerns. TRC will host initial and daily safety briefings to

June 19, 2018

Page 4 of 4

help maintain a high level of safety awareness, especially with regard to nearby receptors, such as school children and other school visitors.

Please feel free to contact TRC or the City's Department of Environmental Stewardship if you have any comments or questions.

Thank you.