Summary of Observations from the BoRit Site
September 1, 2008

**Streambank Stabilization**

The majority of removal activity currently in progress focuses on stabilization of the east bank of the Wissahickon Creek and evaluation of options for Rose Valley Creek and Tannery Run. During the site tour, a variety of asbestos-containing material (ACM) was observed along the stream banks, including friable material, relatively intact tiles, and intact piping. Clean soil brought to the site as part of access road development has already been placed over some areas of the slope down to the east bank of the Wissahickon Creek to cover larger areas of friable asbestos.

As indicated in the Action Memo, ACM that cannot be "suitably" covered will be removed from the stream banks during the stabilization effort. Although specific details were not provided in the Action Memo as to how such ACM will be identified in the field, it seems clear that the largest ACM components (e.g., piping) will need to be removed to avoid negative impacts on the stabilization design. Leaving friable ACM and smaller pieces of intact ACM in place may not significantly hinder implementation of the stabilization measures. However, the concern remains that placement of riprap and other stabilizing materials along the stream banks will crush currently intact ACM, converting it into friable form and increasing the potential for air emissions. As such, rigorous air monitoring and sampling should be conducted during the placement of stabilizing material on the stream bank. If elevated levels of asbestos are identified in air samples collected during stabilization, additional ACM removal may be necessary before stabilization continues.

Disturbance of soil and ACM along the Wissahickon Creek, Rose Valley Creek, and Tannery Run (including movement of heavy equipment, rerouting/dewatering creek sections, and limited removal of ACM) also has the potential to increase asbestos levels in the surface water and sediment, even if only temporarily. To ensure that such increases do not result in unacceptable, unmitigated risks to the community and wildlife, EPA should evaluate the need for surface water and sediment sampling throughout bank stabilization efforts (as a component of Removal Item 4 in the Action Memo) and for a monitoring period thereafter (as a component of Removal Item 6 in the Action Memo) at and downstream of the Site.

EPA should provide details as to how any ACM removed during bank stabilization efforts will be managed while on site (including initial removal, containment, and storage), how and when it will be transported off site (including travel routes), and how and where it will ultimately be disposed.

With regard to uppermost portions of the stabilized stream banks and soil cover areas on the Pile Property, additional detail is necessary to confirm that the cover will not be comprised by erosion or burrowing animals. The estimated rate of erosion (before and subsequent to vegetation) should be specified, along with expected maintenance requirements and frequency of the cover system. The typical depth of animal burrowing activities should be evaluated against

the proposed cover thickness, and EPA should consider including a gravel or adequate geotextile layer within the system if the proposed thickness is not sufficient to prevent animals and trespassers from inadvertently accessing ACM.

**Soil Cover across the Site**

Because the current focus of removal activity is on stream bank stabilization, specific project details have yet to be determined with regard to placement of soil cover and management of ACM elsewhere across the site. Once this phase of the removal effort nears, EPA should discuss with the CAG how they will identify those portions of the Site where soil cover is needed to prevent exposure to asbestos and ACM at the surface. What criteria will EPA use in identifying soil cover areas (e.g., percentage of asbestos), particularly if no obvious ACM is visible? Identification of areas to be covered is complicated by the finding, as discussed in Section II.B.1.iii of the Action Memo, that detectable levels of asbestos were found in soil even in areas where no visible ACM was present. The extent and location of sampling to assist in this determination should be specified, and a map of the proposed soil cover areas should be provided.

**Reservoir Property**

In Section II.A.1.ii of the Action Memo, EPA concludes that asbestos fibers on the banks of the reservoir are unlikely to become airborne because these areas "commonly have high moisture content due to fluctuation in the water level." For this reason, and because there will be no public access to the banks of the reservoir (under currently anticipated future land uses), the proposed removal action does not include activity on the reservoir property. Has EPA evaluated the effects of weather on potential dispersion of asbestos from this area? Periods of dry weather and/or drought could conceivably result in increased levels of dust and airborne asbestos fibers. Alternatively, heavy rain and/or flooding may result in migration of ACM to other portions of the property via overland flow. After the rain water dissipates, ACM carried away from the reservoir banks would be deposited on the ground surface where it would presumable dry out and become a potential source of airborne asbestos.

**Removal Action versus Remedial Action**

At various times, CAG members have expressed frustration that covering and stabilizing on-site ACM is the only option being considered at this time. This frustration seems to be fueled, in part, by confusion between the two cleanup programs under the Superfund program. EPA has determined that a removal action is warranted for the BoRit site at this time, pending completion of Hazard Ranking System (HRS) scoring by EPA's Site Assessment staff. Removal actions focus on stabilizing sites or situations that pose an imminent threat to human health or the environment. Remedial actions are generally longer-term actions to eliminate or substantially reduce releases or threatened releases of hazardous substances that pose risks to human health or the environment. Feasibility studies conducted during remedial actions evaluate a range of cleanup alternatives, commonly including options such as no action (as a basis for comparison of other options), treatment on or off site, and excavation of the hazardous substances. If the BoRit site were added to the NPL for remedial action, it would be reasonable to expect the feasibility

study to include evaluation of various options including excavation, mechanochemical treatment operations that change the nature of the asbestos fibers (e.g., microwave neutralization), and stabilization/solidification technologies (e.g., vitrification). Each cleanup option would be assessed and ranked in terms of potential effectiveness (long-term and short-term), protection of human health and the environment, implementability, cost, community acceptance, and other factors. Depending on differing risks and future land uses, it is also possible that portions of the site could be remediated independently and using specific cleanup options not selected elsewhere.

EPA's approach to the site (i.e., stabilizing the stream banks and covering ACM across the property) appears to be appropriate and consistent with the purpose of a Superfund removal action. The fact that EPA is continuing the HRS scoring process is encouraging. According to EPA guidance, unless wastes are physically removed and appropriately disposed off site, the HRS scoring must be based on site conditions prior to implementation of the removal action (refer to Question 3 at www.epa.gov/epawaste/inforesources/pubs/hotline/92report/may92.txt). Thus, the removal action currently underway at the BoRit site is not going to impact the site's potential for placement on the National Priorities List (NPL), opening the site up for Superfund remedial action.

One CAG member reported that she had been told that only one site per EPA region could be added to the NPL each year. However, there is no limitation on the number of sites that EPA can place on the NPL within a given year. A review of EPA's website for NPL updates (www.epa.gov/superfund/sites/npl/frlist.htm) highlights many instances where several sites within the same state or region are added to the NPL at the same time. Thus, the CAG need not worry that BoRit is in competition with other EPA Region 3 sites for placement on the NPL.

Finally, Section II.A.1.i of the BoRit Action Memo states that "for short periods of time in the 1980s and 1990s, portions of the pile area were used... for fire department training." Depending on the types of exercises and fuels used, fire training areas can be notorious sources of volatile and semivolatile organic compound contamination. Additional investigation is warranted as to the nature, duration, and location of fire training activities conducted at the BoRit site. If the training program was limited (as the Action Memo implies), the potential for significant, residual organic compound concentrations may be similarly low. The Action Memo, having been prepared under Superfund's Removal Program, is understandably limited to asbestos, as "actual or threatened releases [of this contaminant] may present an imminent and substantial endangerment to public health, welfare, and/or the environment" (Action Memo, Section IV). However, it is important that EPA fully evaluate the potential for volatile and semivolatile organic contamination related to historic fire training activity as part of the ongoing Site Assessment Program and within the context of HRS scoring for the site.

**Community Outreach**

Section III of the Action Memo indicates that Site fencing is often compromised, and that EPA has witnessed children and adolescents trespassing on the Site. EPA has already replaced fencing around the property as part of the current removal action. While these actions should serve to decrease unauthorized entry, even high quality perimeter fencing cannot completely

ensure that trespassing will not occur. Given the sensitive nature of children and adolescents as risk assessment receptors, can EPA support the CAG in raising awareness of Site risks among this age group? Are child-friendly outreach resources available at EPA, such as could be presented at nearby schools?

Prepared by Michele Benchouk, Booz Allen Hamilton