UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

February 4, 2011

4SD-SSB

MEMORANDUM

SUBJECT: Data Evaluation: Plateau Sampling Event, Zonolite Road Vermiculite Site GAO 144, Atlanta, Dekalb County, Georgia

FROM: Tim Frederick, Life Scientist
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TO: Terry Stilman, On-Scene Coordinator
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THRU: Glenn Adams, Chief
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TSS has reviewed the data collected by START on December 6, 2010. The samples were collected to confirm the presence of asbestos and asbestos-containing vermiculite chips in the subsurface of a mounded "plateau" area on the Zonolite Road site. The purpose of this review is to evaluate the most recent data in the context of the larger investigation of the site and to provide recommendations to the Emergency Response Section.

Human Health Risk Assessment (HHRA) Report

The HHRA has determined that the risks associated with airborne asbestos are minimal under current site conditions. All soil data were reported to be either non-detect or trace (present but below levels that can be quantified) except for two samples that reported low percentage levels of Libby amphibole asbestos (0.5% and 0.75%). These concentrations were both in an area west of the former exfoliation facility that appears to be an artificially raised plateau.

Activity-based air samples (ABS) were also collected. ABS techniques seek to mimic aggress disturbance of soil to determine the concentrations of asbestos that could become airborne through typical use of the site. Of the four activity-based samples collected, three did not detect

any asbestos. The only detection of airborne asbestos (Libby amphibole) in an activity-based air sample was at the detection limit of the analytical technique and was also located identified in the plateau area. In addition, vermiculite was reportedly observed below land surface in the plateau area though the nature and extent of the material was not determined.

Additional evaluation of the subsurface of this area was suggested in the conclusion of the HHRA report.

Asbestos Technical Review Workgroup Site Visit

A site visit was conducted on October 20, 2010 with invited members of EPA's national Asbestos Technical Review Workgroup (TRW) in attendance. The group included members from Region 8 familiar with Libby, MT vermiculite, members of the Emergency Response Team (ERT) familiar with sampling efforts at sites that received vermiculite from Libby, and On-Scene Coordinators (OSCs) from other Regions that are familiar with the investigation of the Libby "sister sites." The draft data, historical information, and known current site uses were presented to the team. Included in the input provided by the visiting group was a recommendation to conduct visual confirmation of the presence/absence of vermiculite below land surface in the soil plateau and surrounding areas.

Investigation of Soil Pile Plateau Site Visit

EPA Region 4 and contractor personnel visited the site again on November 12, 2010. The purpose of the visit was to dig into the plateau and other areas on the site to confirm the presence/absence of vermiculite beneath the ground surface. Test holes were dug in several areas of the plateau and selected other areas of the site. In each of the test holes dug in the plateau, vermiculite was observed within 6-12" below the land surface. Vermiculite was not observed in any of the test holes dug on other areas of the site. Based on these findings, it appears that vermiculite is present below the land surface in the artificial plateau area. Depth of the built-up plateau area ranges from between 0'-6' above the natural grade.

The HHRA Report determined that risks are minimal at the Zonolite Road Vermiculite Site under current site conditions. However, quantities of vermiculite suspected to contain asbestos have been visually identified beneath the land surface in the plateau area.

EPA's *Framework for Investigating Asbestos-Contaminated Superfund Sites* (EPA 2008) provides a step-wise process for evaluating risks associated with asbestos. Step 1 asks "Does (did) the site use asbestos or materials contaminated with asbestos?" The Zonolite Road vermiculite site is known to have used vermiculite from Libby, MT that is contaminated with a distinct form of asbestos. The "Libby amphibole" form of asbestos has been identified in environmental samples collected at the site.

Step 2 of the Framework process asks "has there been (or is there a threat of) a release to the environment." Identification of the Libby amphibole in environmental samples and the visual presence of vermiculite beneath the land surface in the plateau area is evidence that a release has occurred.

Step 3 of the Framework process asks "Is human exposure likely under current or future site conditions?" The HHRA Report indicates that current exposure/risks are minimal. However, the vermiculite present in the plateau area could result in exposure/unacceptable risks if it is disturbed in the future. The proposed future land use of the site is as a public park that would include a community garden. Plans for the space include gardens located on the area where the plateau is located. Given this detailed future land use, disturbance of the subsurface soil in the plateau seems likely. Potential exposure to asbestos-containing vermiculite and soil through gardening activities appears to be a plausible future exposure pathway.

Based on this potential exposure pathway, EPA conducted additional sampling on December 6, 2010. Samples of the subsurface soil and bulk samples of buried vermiculite were collected to confirm the presence of asbestos within the plateau area.

Plateau Soil/Vermiculite Sample Results

Soil samples collected in the subsurface of the plateau were found to have concentrations ranging from "no asbestos found" to 2% tremolite. Asbestos was identified in each of the bulk samples of vermiculite from <1% to 2% tremolite. See attached draft data summary of the EPA samples and splits collected by WR Grace.

Recommendations

A relationship between the concentration of asbestos in a source material (soil/asbestos-containing vermiculite) and the concentration of fibers in air that results when the source is disturbed is very complex and depends on a broad range of variables. No method has been found to predict the concentration of asbestos in air reliably as it relates to a measured concentration of asbestos in the source material. A low concentration of asbestos in source material may, when disturbed, result in a high concentration of airborne asbestos. Therefore, soil or material concentrations, such as <1%, should not be used to define a "safe" concentration of asbestos for Superfund decision making.

Future land use of the site will result in vigorous and routine disturbance of the soil in the plateau area. An action is warranted in the plateau area to prevent recreational gardeners using the public park from potentially elevated concentrations of airborne asbestos that could result from regular disturbance of the soil and asbestos-containing vermiculite present in the plateau.

If you have any questions regarding this review, you can contact me at 404-562-8598 or frederick.tim@epa.gov.

References: EPA 2008. *Framework for Investigating Asbestos-Contaminated Superfund Sites.* OSWER Directive #9200.0-68. September 2008. (http://go.usa.gov/CVS).