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GE-Pittsfield/Housatonic Rest of River Cleanup

Rest of River Cleanup and the Upland Disposal Facility Will Not Pose a Health Threat from Airborne PCBs

SUMMARY

EPA's peer-reviewed human health risk assessment conducted from 2003 to 2005, which included PCB air sampling south of New Lenox Road and off October Mountain Road, concluded that there is no current human health threat from airborne PCBs from the Housatonic River. See Section 5 of EPA's 2005 Human Health Risk Assessment for details. Furthermore, air sampling for PCBs conducted over 20 years by both EPA and GE during past cleanups at the Site demonstrates that the Rest of River cleanup can be safely implemented.



SAMPLING FOR AIRBORNE PCBs

PCBs can become airborne through volatilization (vapor phase) and attached to dust (particulate phase). The sampling methods used by both EPA and GE are 24-hour samples that collect both phases. After collection, the samples are sent to a laboratory for PCB analysis. The results are then presented as the amount (mass) of PCBs contained in a cubic meter of air, typically expressed as micrograms of PCBs per cubic meter ($\mu\text{g}/\text{m}^3$).

For each construction area, before beginning work, GE must perform baseline ambient air sampling for PCBs, and then two back-to-back 24-hour monitoring events at the beginning of the work. If the initial sampling shows that PCB levels are acceptable, GE must then perform one 24-hour PCB sampling event per week for the duration of construction in each construction area. In addition, two back-to-back 24-hour monitoring events will be repeated when a new type of remediation activity occurs in an area. For the Upland Disposal Facility (UDF), GE must also perform baseline ambient air PCB sampling and sampling during construction, placement of material, and post-capping. EPA will periodically collect air samples at the same location of one of GE's monitors as a quality assurance check.

Concentrations of PCBs in air are highest at active work areas and decrease significantly with distance from these areas. That is why sampling is done at or near active work locations to ensure protection of public health in the nearby area, including excavation areas and the UDF. If data shows concentrations are protective at these locations, there is no reason to believe that concentrations would be higher farther away. Additionally, EPA will require all trucks and rail cars used for the transport of contaminated material during the cleanup be secured to inhibit dust from being released during transport. Therefore, there is no need to sample along transportation routes or other locations.

PCB AIR NOTIFICATION AND ACTION LEVELS DURING CLEANUP

To ensure the safety of the surrounding community and workers during cleanup and construction, EPA will set protective Notification and Action Levels for PCB air monitoring at the Rest of River cleanup:

- The Notification Level will be $0.050 \mu\text{g}/\text{m}^3$.
- The Action Level will be $0.100 \mu\text{g}/\text{m}^3$.

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The purpose of these levels is twofold:

- To monitor the concentration of PCBs in air to ensure the cleanup is being conducted safely for the public, nearby residents, and workers.
- To monitor active construction, placement of material, and post-capping monitoring of the Upland Disposal Facility (UDF).

If a PCB Notification Level is exceeded, GE must notify EPA as soon as practicable, but no later than 24 hours after receipt of the data. GE also must post a summary of the data or note the exceedance on a web page that GE will establish, within 72 hours after receipt of the data. GE is also required to implement additional response actions in consultation with EPA to prevent exceedances of the Action Level.

If a PCB Action Level is exceeded, GE must notify EPA as soon as practicable, but no later than 24 hours after receipt of the data. GE also must post a summary of the data or note the exceedance on a web page that GE will establish, within 72 hours after receipt of the data. Also, GE must stop work temporarily in the area of the exceedance; discuss with EPA appropriate immediate or short-term response actions; conduct additional air sampling, if warranted, to confirm the exceedance; evaluate the cause of the exceedance; and propose to EPA appropriate engineering controls or other corrective actions. EPA approval of appropriate response actions will be required before GE can restart work in the subject area.

In addition to PCB monitoring, GE is required to conduct monitoring for dust (also known as particulates). GE will conduct particulate monitoring daily during dry excavation for a minimum of 10 hours when construction is ongoing and throughout the duration of construction activities using real-time airborne particulate monitors. The monitors will be equipped with alarms that will indicate whether concentrations exceed a Notification or Action Level for dust.

PREVENTION OF AIRBORNE PCBs DURING CLEANUP & CONSTRUCTION

During the cleanup, GE will be required to implement control measures and best management practices to control dust and PCB air emissions. These measures include dust suppression (such as applying a water spray to unpaved haul roads and material staging piles), using covers on trucks and rail cars, proper decontamination of work equipment and vehicles, and preventing tracking of soils onto haul roads.

In the event of an exceedance of an air quality Notification or Action Level at active work areas additional response actions, mitigation measures, and/or engineering and operational controls will be evaluated and implemented, such as:

- Modifying dust-producing operations;
- Use or increasing use of dust suppression measures, such as application of water spray to unpaved haul roads and material staging piles;
- Reducing the speed of material-handling equipment;
- Prioritizing management of and reducing staging time for sediments and soils containing high PCB concentrations;
- Using a spray-on cover, biodegradable vapor-suppressive foam, or other temporary cover on exposed soil/sediment or over material stockpiles; and/or
- Erecting wind screens around material handling operations.



Example of secured truck used at the Raymark Superfund Site in Stratford, Connecticut

CLOSER LOOK

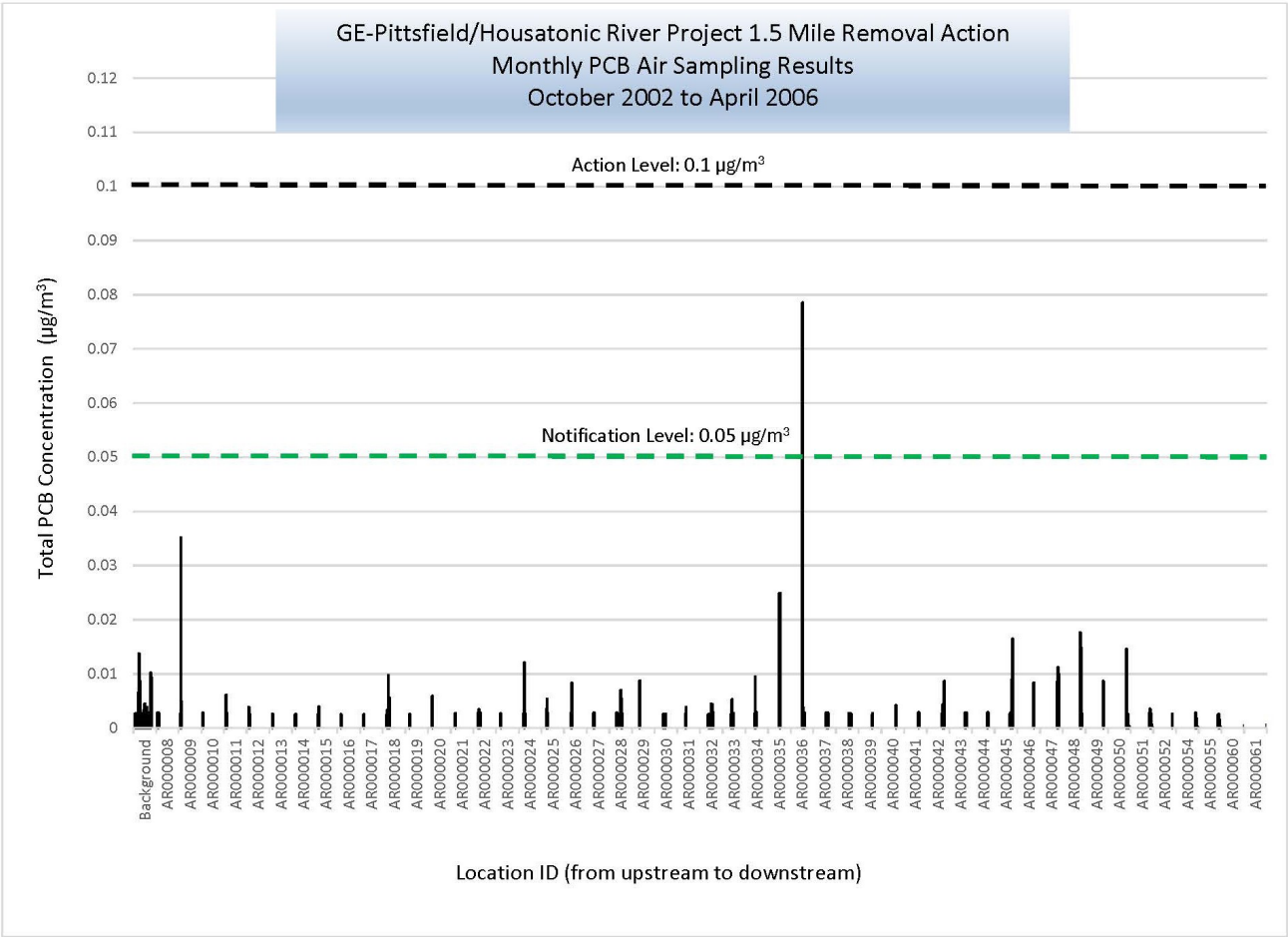
Past PCB Air Monitoring Results are Below Protective Levels:

Past air monitoring data collected during Site cleanups by both EPA and GE for over 20 years show that almost all cleanup monitoring results are much lower than the airborne PCB Notification and Action Levels. Moreover, the concentrations of PCBs in soil and sediment at these past cleanups were, in most cases, much greater (orders of magnitude) than those that will be encountered in the Rest of River. When there were isolated exceedances of the Notification or Action Levels at active work areas, GE implemented engineering controls such as limiting the duration an excavation area remained open, covering an active excavation area nightly, expediting the removal of temporary stockpiles, and increasing wetting of the exposed soils.

This Site-specific air monitoring data demonstrates that the upcoming remediation, transportation, placement, and operation of the UDF can be done safely.

Specific examples of this past data are as follows:

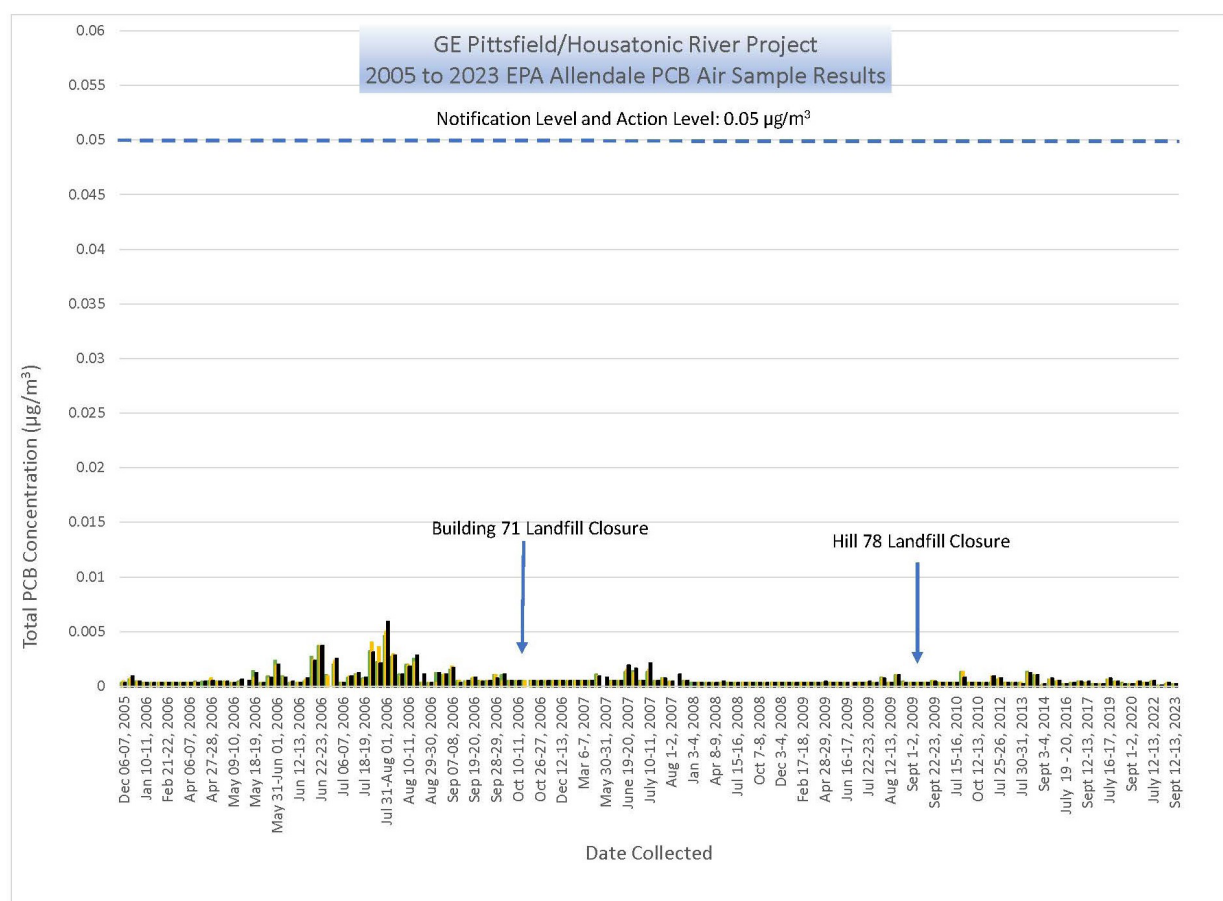
Air Monitoring Example One: In the four years of excavation that EPA conducted in the 1½-Mile Reach of the River in Pittsfield, there were no exceedances of the health-based PCB Action Level and only one exceedance of the PCB Notification Level. A large percentage of samples did not even detect PCBs. See graph below. The 1½-Mile Reach had sediment PCB concentrations similar to or higher than those that currently exist in the Rest of River. For more details, see EPA’s 2020 Response to Comments, page 33.



Note to Figure: The maximum concentration of PCBs detected in air during the 1½-Mile Removal action was observed on June 10, 2004, with a concentration of 0.07857 µg/m³. This air sample was a duplicate sample, with the parent sample having a concentration of 0.04297 µg/m³. Duplicate samples are collected for quality assurance purposes and the concentrations are compared to a parent sample. The duplicate sample was identified as an anomaly based on very low air volume collected in the sample resulting in a potential high bias in the data's analytical result. Both the parent and duplicate samples were below the Action Level of 0.1 µg/m³.

Approximately 71% of all air samples collected were below the laboratory's detection limits, meaning the concentrations were so low that the laboratory instruments were unable to quantify the concentration of PCBs in the collected air samples, and a large percentage of all detected results were well below the Notification and Action Levels. Note the data is plotted by station location and not chronologically.

Air Monitoring Example Two: EPA has conducted outdoor PCB air sampling at Allendale School in Pittsfield. Since the sampling began in December 2005, the maximum PCB concentration detected was 0.0059 µg/m³ in 2006, which was during placement of contaminated material into the nearby Building 71 landfill. Since 2007, after the capping of the Building 71 landfill, the maximum (0.0021 µg/m³) and average (0.0005 µg/m³) PCB air detections were well below the Notification/Action Levels for Allendale School. A large percentage of samples did not even detect PCBs. For more details, see EPA's 2020 Response to Comments document, page 16. The figure below graphically demonstrates the data.

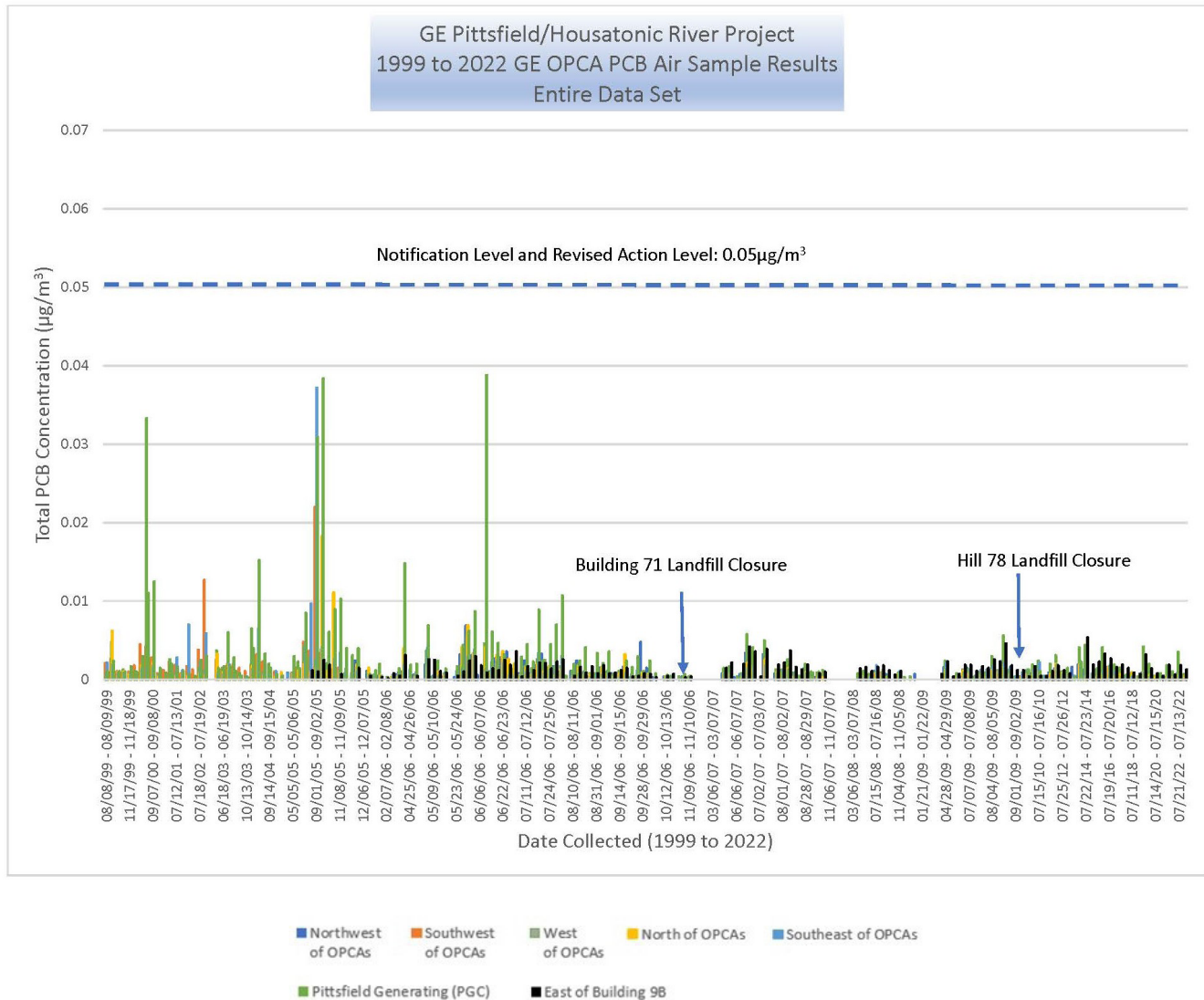


Legend:

■ Allendale 1 (ug/m3) ■ Allendale 1 Co-located (µg/m3) ■ Allendale 2 (µg/m3)

Note to Figure: Approximately 140 air samples have been collected through 2023. Over 50% of the results were below the laboratory detection limits. All other samples were below the Notification/Action Level of 0.050 µg/m³. The Allendale-1 Co-located sample is a duplicate location of the parent Allendale-1 sample.

Air Monitoring Example Three: Placement of PCB-contaminated material in GE's landfills in Pittsfield did not exceed either the Action Level or the Notification Level for PCBs in air for the On-Plant Consolidation Area (OPCA) air sampling. Further, the PCB levels of the material placed in those landfills were much higher than the material that will be placed in the UDF in the Town of Lee. For more details, see EPA's 2020 Response to Comments document (pages 15 and 16) and EPA's March 17, 2023, letter to the Town of Lee Board of Health (page 4). The figure below graphically demonstrates the data.



Summary: The past Site-specific PCB air monitoring data demonstrate that past concentrations of PCBs in air sampling during cleanups are lower than the protective air levels, even when monitoring cleanups of materials with much higher concentrations of PCBs than those that will be encountered in the Rest of River.

HOW EPA'S NOTIFICATION/ACTION LEVELS PROTECT HUMAN HEALTH

Based upon the scientific evidence and data, airborne PCBs pose a risk only if people are exposed to high levels of PCBs for a long period of time.

Nationally, for carcinogens, EPA estimates cancer risk in terms of the probability of a chemical causing cancer. For example, based upon scientific studies, EPA estimates that exposure to a particular carcinogenic chemical at a certain amount may result in a 1 in 1,000,000 increased risk of developing cancer assuming an estimated lifetime of exposure. EPA's acceptable risk range for carcinogens is an excess risk of cancer of 1 in 1,000,000 to 1 in 10,000 assuming a lifetime of exposure.

The Rest of River air Notification Level of $0.050 \mu\text{g}/\text{m}^3$ and the Action Level of $0.100 \mu\text{g}/\text{m}^3$ correspond to an excess lifetime cancer risk in the middle of EPA's acceptable cancer risk range. This means that exposure to these Notification and Action Levels over many years would lead to a 1 in 100,000 increased risk of cancer above a person's baseline risk.

These health-based Notification and Action Levels are set based on the conservative assumption that exposure occurs over an extended period of time (many years) every day. A one-time exceedance of the Action Level would not result in increased cancer risks.

The Notification and Action Levels for PCBs in air fall well within the EPA's and Massachusetts Department of Environmental Protection's protective range for cancer for waste cleanups.

THE REST OF RIVER AIR LEVELS COMPARED TO AIR LEVELS AT OTHER SITES

For EPA's New Bedford Harbor Site, EPA set a protective health-based "trigger" level at $0.110 \mu\text{g}/\text{m}^3$. This level is protective for cancer and non-cancer risks for a child and an adult. See Section 2 and Appendix A of the New Bedford Harbor Draft Final Ambient Air Monitoring Plan for Remediation Activities, February 2020. EPA also approved the $0.110 \mu\text{g}/\text{m}^3$ level for the Hudson River PCBs Superfund Site as a Quality-of-Life Performance Standard in residential areas.

The Housatonic Rest of River Action/Notification Levels are more protective than these cancer and non-cancer levels. This is a very conservative assumption for this Site. For there to be a health concern, the PCB air concentrations would have to average greater than the Notification Level/Action Level for an extended period of time every day. A one-time exceedance would not result in increased risks.

ADDITIONAL INFORMATION:

EPA web page, Superfund Risk Assessment <https://www.epa.gov/risk/superfund-risk-assessment>

EPA Region I, 2005, Rest of River, Human Health Risk Assessment, Section 5 <https://semspub.epa.gov/src/document/01/219190>

EPA Region I, 2020 Response to Comments <https://semspub.epa.gov/src/document/01/650441>

EPA Region I, March 17, 2023 Letter to the Lee Board of Health <https://semspub.epa.gov/src/document/01/673138>

EPA Region I, November 2021 Graphical Representation of Polychlorinated Biphenyl (PCB) Air Sampling Data at Allendale School Playground and General Electric On-Plant Consolidation Areas (OPCAs) <https://semspub.epa.gov/src/document/01/661268>

EPA Region I/Jacobs, New Bedford Harbor Draft Final Ambient Air Monitoring Plan for Remediation Activities, April 2018 <https://semspub.epa.gov/src/document/01/100013055.pdf>