Hudson River PCBs SUPERFUND SITE

Region 2: NJ, NY, PR, VI • 290 Broadway, New York, NY 10007

Sediment Sampling Program 2002 Data Collection

October 2003

This fact sheet provides information about the sediment sampling that was conducted in 2002 by the General Electric Company (GE) to support the design of the dredging needed to remove PCB contaminated sediment from the Upper Hudson River. GE is conducting the sediment sampling called for in the February 2002 Record of Decision (ROD) for the Hudson River PCBs site under an agreement with the U.S. Environmental Protection Agency (EPA). The multi-year sediment sampling program began in the fall of 2002 and resumed during 2003 as seasonal weather conditions allowed. Information about the sediment sampling that is being conducted in 2003 by GE will be provided in spring 2004 and summarized in a separate fact sheet.

What Was Found

More than 5,000 sediment samples were collected from approximately 1,100 locations. Sampling conducted in 2002 focused on areas in the river targeted by EPA for dredging in the ROD. Sampling occurred from October 3 to October 31, 2002 and was limited to River Section 1 (from Hudson Falls to Thompson Island Dam) and a portion of River Section 2 (from Thompson Island Dam to Northumberland Dam). Sampling began near the northern tip of Rogers Island and progressed downstream (see map on next page).

Out of 5,515 sediment samples collected, 5,105 were analyzed for PCBs. The remaining samples were analyzed for other chemicals. Those samples that were not analyzed for PCBs were archived and may be analyzed later, if necessary.

The median concentration of the PCB measurements in these samples—the level at which half the samples are above and half are below—was 2.7 parts per million (ppm). Among the samples analyzed for PCBs, 29% (or 1,487 of 5,105) were above 20 ppm; 17% (or 857 of 5,105) were above 50 ppm. Thirty-five of the 5,105 samples—less than 1%—were greater than 1,000 ppm and two of the 5,105 samples were greater than 10,000 ppm.

How the Data Will Be Used

The data collected will help determine the distribution of PCBs in the sediment, refine estimates of the amount of PCBs in the sediment, refine the areas to be dredged, and establish chemical and physical properties of the sediment to evaluate engineering options for sediment removal and processing.

2002 Sediment Sampling

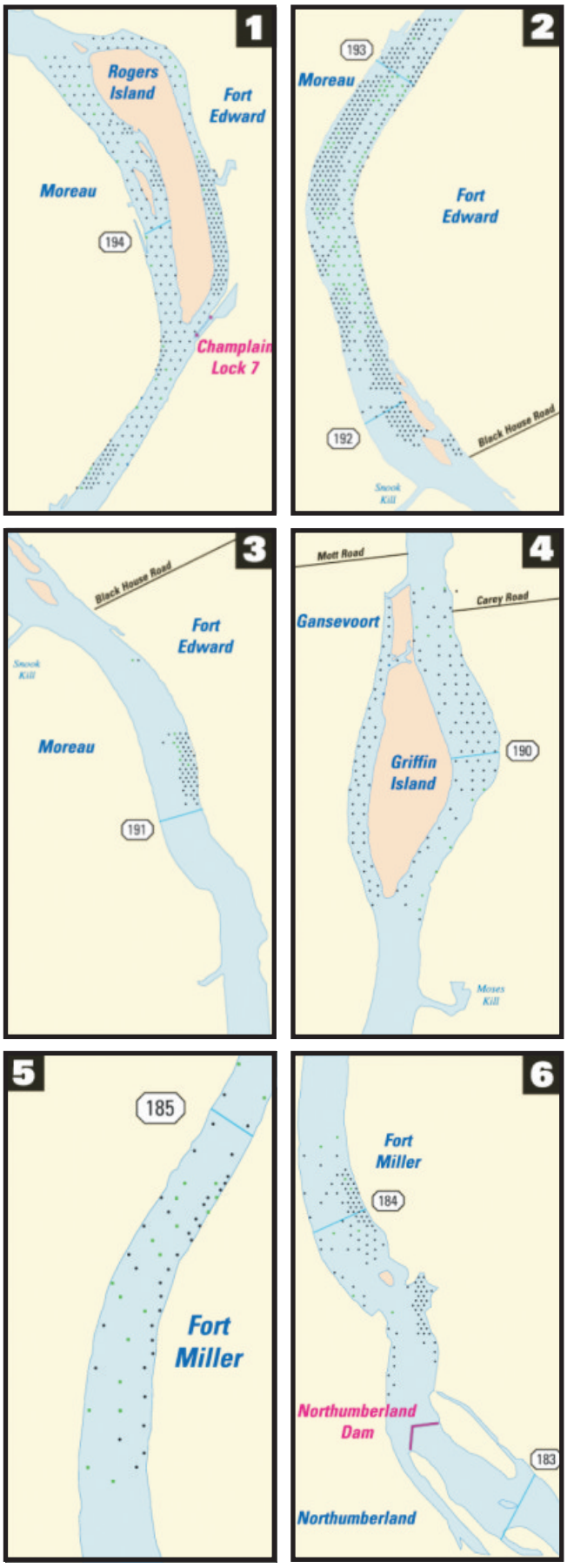
More than 5,000 samples obtained

Crews conducting the 2002 sampling were carried on five boats equipped with global positioning systems (GPS). Other smaller boats were used to support the effort and to permit EPA and the U.S. Army Corps of Engineers staff to oversee the work on the river. The former West River Road marina in the Town of Moreau was used as a boat launch site and staging area for the program.

In areas targeted for dredging in the February 2002 ROD, sample locations were identified based on an 80-foot triangular grid. In other areas, a 160-foot triangular grid was used. Sampling locations were transmitted electronically to the sampling vessels and downloaded into each vessel's on-board GPS for accurate positioning. Shore-based control points were established at each Champlain Canal Lock to guide the vessels to pre-programmed coordinates.

These locations are represented on the numbered, detailed maps, which correspond to the numbered areas on the main map. Sampling locations represented as black dots depict locations from which a sediment core sample or grab sample was obtained during the 2002 program. Sampling locations represented by green squares depict locations at which a collection was attempted but abandoned due to inability to collect a sample or to a lack of sediment.

Legend	Maps are not drawn to scale
1	Reference Number On Main Map
	Dam/Lock
180	River Mile
Moreau	Municipality Name
●	Location Where Sediment Core or Grab Sample was Obtained.
■	Abandoned Location Where No Core or Grab Sample was Obtained.



Ultimately, the collection of samples was attempted at 1,169 locations. Core samples were obtained at 967 locations (approximately 83%), and grab samples were collected at 35 locations (approximately 3%). The remaining 167 locations (approximately 14%) were abandoned due to the inability to collect a sample or lack of sediment. In total, sediment samples were collected at 1,002 locations, an average collection rate of 59 cores per day. With each core containing four to five sediment samples, a total of 5,515 samples were obtained in 2002.

The Coring Process

Sediment samples were collected from the river by coring, a process that removes sections of river sediment in hollow tubes for testing. Before samples were collected, the sediment was probed with steel rods to estimate the approximate thickness and grain size. The average probing depth for the 2002 sampling was 61 inches and ranged from less than one inch to 156 inches.

Cores of sediment were obtained by manually pushing a plastic or aluminum tube into the sediment and then advancing the tube deeper into the sediment by vibrating it until it did not penetrate farther. The tubes were brought up from the bottom of the river and capped at both ends. This process resulted in the collection, on average, of two to three feet of sediment per core.

Each sediment core was weighed, and the sediment type, water, probing, and core penetration depths and approximate length of the recovered core were recorded.

Sediment Processing

Sediment samples were packed on ice, off-loaded from the sampling vessels at the staging area, and transported to GE's Fort Edward facility for processing the next day.

Sediment cores were sliced into approximately five sections, processed, and labeled. These samples were then transported to independent laboratories that were approved by EPA and New York State for analysis of PCBs, other chemicals, and engineering characteristics.

Prior to the shipment to the laboratories, the sediment samples were examined for cultural resources such as artifacts. If materials believed to be cultural resources were observed, they were then separated from the sediment, placed in sealable plastic bags, labeled, and placed in storage for analysis. During the 2002 program, approximately 112 potential cultural resources, including pieces of wood, brick fragments, pottery, glass and shells, were retained for more detailed study.

Sediment Sampling Reporting

GE has prepared a draft report, the Year 1 Data Summary Report, on the fall 2002 sampling program, referred to as the Year 1 Sampling Program. The Year 1 Data Summary Report is currently being evaluated. Within several months, GE will follow up with the draft Supplemental Data Summary Report, which will incorporate EPA comments on the draft Year 1 Data Summary Report. This report will also include data collected during 2003 in three areas of the river identified as candidates for dredging during Phase 1, the first year of the dredging program. The candidate areas are the upper portion of River Section 1, the area of River Section 1 in the vicinity of Griffin Island, and the areas of River Section 2 near hot spots 33-35. After EPA review, the final Supplemental Data Summary Report will be made available to the public.

2003 Sediment Sampling Program

In addition to the sampling conducted in candidate areas for Phase 1 of the dredging, GE has also been collecting samples in other areas of River Section 2 and in River Section 3. Sampling was attempted in more than 4,500 locations from May through September 2003. When combined with the more than 1,000 sample locations occupied in 2002, this represents more than 90% of the sample locations anticipated for this program. The sampling will be substantially complete by the end of October, although some samples will be taken during spring 2004. Results of this 2003 sampling program will be reported to EPA in a report on the second year of sampling.

Determining Where to Dredge

Data collected from the 2002 and 2003 sediment sampling will be used to determine the areas to be dredged. Areas targeted for dredging will be identified consistent with the criteria specified in the February 2002 ROD. A mass per unit area (MPA) will be calculated for each sampling location, based on the analytical data collected. The MPA incorporates the concentration of PCBs (how much), the density (how much is wet or dry), and the thickness of the sediment.

A weight-of-evidence approach will be used for dredge area delineation based primarily on these MPA calculations in addition to other criteria identified in the ROD and Remedial Design Work Plan. PCB concentrations will be used to determine how deep in the sediment to dredge.

Later this year, GE will submit a Phase 1 Dredge Area Delineation Report recommending areas to be dredged during the first year of dredging. After EPA review, this report will also be made available to the public. A report documenting areas to be dredged in Phase 2 will be submitted to EPA in 2004.

For More Information

Visit, call, or write to the Hudson River Field Office at the address below or log on to **www.epa.gov/hudson.**

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The Field Office hours are Monday – Friday 8:00 am – 4:30 pm, with evening hours by appointment.

EPA Superfund Regional Public Liason
EPA Region 2 has designated a Regional Public Liason as a point-of-contact for community concerns and questions about the federal Superfund program in New York, New Jersey, Puerto Rico, and the U.S. Virgin Islands. To support this effort, EPA has established a 24-hour, toll-free number that the public can call to request information, express concerns, or register complaints about Superfund. The Regional Public Liason for EPA's Region 2 office is: George H. Zachos, U.S. EPA, Region 2, 2890 Woodbridge Avenue MS-211, Edison, New Jersey 08837, (732) 321-6621,Toll-free (888) 283-7626.