Hudson River PCBs Superfund Site

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Hudson River PCBs Superfund Site Fact Sheet

- **Second Five-Year Review**
- **Certification of Completion of the Remedial Action**

April 11, 2019

EPA Releases Final Five-Year Review Report for Hudson River PCBs Superfund Site and Certifies that Dredging and Related Construction Work was Properly Completed

EPA is announcing two actions today:

1. The issuance of the five-year review, which includes EPA's decision to **defer** a determination of the protectiveness of the remedy in the Upper Hudson River **until more years** of Hudson River fish tissue data are gathered.
2. In a separate action from the issuance of the five-year review, EPA also issued a "Certification of Completion of the Remedial Action" today to GE for activities it conducted that were components of the remedy selected for the cleanup of the Upper Hudson River. This is the second certificate in a series of three: the first was issued in 2012, the second today, and the third **is not expected to be available to GE for more than five decades.** Consequently, the third certificate, the "Certification of Completion of Work" is **not** being contemplated and is not a part of today's announcement.

EPA's important work to address contamination along the Upper Hudson River continues. Under a separate agreement with the Agency, GE is conducting a detailed investigation of the polychlorinated biphenyl (PCB) contamination that may be present in sediment carried onto land during flooding.

EPA is also working closely with the New York State Department of Environmental Conservation (NYSDEC) to determine what additional supplemental studies should be conducted in the lower portions of the Hudson River from the Troy Dam downstream to New York City. Those supplemental studies will inform EPA on the need for a remedial investigation and if a potential cleanup is necessary in this portion of the river.

What is a Five-Year Review?

The purpose of the five-year review at a Superfund site is to determine whether a cleanup remedy remains protective of human health and the environment. All cleanup decisions under the federal Superfund program must be protective of human health and the environment. However, many cleanup remedies achieve protectiveness without complete removal of contaminants.

As required, EPA issued its first five-year review for the Hudson River PCBs Superfund site in 2012, while the dredging was still underway. EPA concluded that the remedy was proceeding as planned, and that it was expected to be protective of human health and the environment upon completion of all components of the remedy.

In June 2017, EPA took the very unusual step of releasing for public comment a draft of the second five-year review report. The 2017 draft report evaluated the large amount of data on fish, sediment and water quality collected up to December 31, 2016; however, because dredging ended in late 2015, this included only one year of post-dredging data. The 1000-page draft report found that the remedy is not yet protective of human health and the environment; but that it was expected to be so after the natural attenuation element of the remedy occurs over a period of more than five decades, as projected in the EPA's 2002 decision document, called a Record of Decision (ROD). During the 90-day public comment period, EPA held three public meetings, and received over two thousand comments, which were carefully reviewed.

A number of commenters urged EPA to also consider a large number of additional sediment samples being collected during 2017 by NYSDEC. In January 2018, EPA received from NYSDEC the data from those samples, and over the past year EPA has carried out an intensive, in-depth review of those data, in collaboration with NYSDEC.

The results of EPA's collaborative review of these data were considered by the Agency before it finalized the final second five-year review report, which was issued on April 11, 2019 (www.epa.gov/hudson). In the final version of the report, **EPA has deferred making a determination of protectiveness until sufficient additional years of post-dredging sediment and fish tissue data are collected** to support a scientifically reliable evaluation of the improvement in PCB concentrations in fish.

Second Five-Year Review

EPA's Protectiveness Determination: Second Five-Year Review Report

- **EPA has decided to defer conclusions about whether the remedy is or will be protective of human health and the environment because there is not enough fish data yet to draw a scientifically reliable conclusion.**
- Lowering PCB levels in fish tissue over an extended period of time (decades) is the key objective of the remedy selected in 2002 by EPA and agreed to by New York State; recognizing that concentrations in the fish offer an important indicator in gauging the health of the river ecosystem.
- Because dredging ended just two years before the five-year review, only limited post-dredging data were available for the review. The post-dredging data show PCBs continue to decline in the water and sediment as a result of the cleanup.
- Declines in fish tissue are expected to occur over time as the remedy anticipated. As also expected, fish tissue levels have not yet reached protective levels.
- Most experts agree that it will take as many as eight years or more of post-dredging fish data to reliably establish a pattern in the levels of PCBs in fish. The next five-year review will include at least six years of post-dredging sediment data.
- EPA is committed to continuing to collect and evaluate water, sediment, fish and habitat data necessary to track the recovery of the river.

Goal: Reducing PCB Levels in Fish

The primary purpose of the Hudson River PCB site remedy is to reduce PCB levels in fish, in order to protect humans and other species (e.g., mink, otter, osprey, eagle, heron, etc.) that consume the fish. The 2002 ROD set a remediation goal of 0.05 mg/kg of PCBs in the fish (a level that would allow people to eat fish from the river once a week) and projected that meeting that goal will require more than five decades of natural recovery after the completion of the dredging. The ROD projected that fish would more quickly reach two interim targets – the first when fish would be clean enough for people to eat one fish meal every two months; and the second when fish would be clean enough for people to eat one fish meal every month.

In the 2002 ROD, EPA was clear that even with the massive amount of dredging, it would still take five decades or more for the goal of 0.05 mg/kg PCBs in fish to be reached. This slow process of improvement is called "natural attenuation," and is explicitly an element of the selected remedy, along with the dredging.

In advance of the 2002 ROD, EPA had also evaluated a considerably more extensive cleanup alternative, involving much more dredging. That alternative would have accelerated achievement of the fish recovery goal by only a few years, which EPA found did not justify the extra years of disruption to the river and river communities as well as the significant extra cost required.

Collaborative Review and Comprehensive Analysis

EPA took additional time to finalize the five-year review in order to allow the Agency to consider the extensive public input offered in response to the June 2017 proposed five-year review report and engage in a comprehensive consultation with NYSDEC officials and its consultants. Over the course of 2018, EPA worked collaboratively with NYSDEC in exhaustively reviewing the data from approximately 1200 sediment samples taken by the state in 2017 in the Upper Hudson River, along with the results from some 215 sediment samples taken by General Electric (GE) in 2016 under EPA direction. Available fish tissue samples were also analyzed in combination with sediment samples in an effort to review the effectiveness of the remedy (which includes dredging and natural attenuation) in the Upper Hudson in advancing the river's recovery. Both sediment and fish data were reviewed by river reach (pools in the Upper Hudson separated by dams), as well as by river section (as defined by the 2002 ROD). The analysis by river reach was preferred by NYSDEC and provided the ability to look at fish populations within each reach to determine if they were showing improvement after dredging, or if populations in certain reaches (pools) were lagging behind what was projected in the remedy. Additionally, the individual sediment data points were plotted and analyzed by reach and river section to determine if areas of higher concentrations ("hot spots") remained in the Upper Hudson after dredging.

Data was analyzed by both total PCB concentration as well as by "Tri Plus" PCB concentration. "Tri Plus" concentrations represent an important subset of total PCBs known to bioaccumulate in fish (and any person or animal eating the fish), thus serving as an important metric for assessing the "protectiveness" of the remedy in promoting recovery of the Upper Hudson.

Key Findings from Analysis of EPA/NYSDEC Data

- The dredging was very effective in removing the contaminated sediments that exceeded the thresholds EPA set for dredging in the Upper Hudson. **Collective analysis of both the GE and NYSDEC data show that over 99% of the sampled locations are below the surface sediment criteria set in the ROD, in both dredged and non-dredged areas.**
- **There are no areas that would be characterized as "hot spots" in the Upper Hudson. Instead, only three very localized "areas of interest" were identified with slightly elevated levels of PCBs.** EPA will specifically track these areas with NYSDEC as it continues its broader, ongoing monitoring to evaluate the "protectiveness" of the dredging and natural recovery in the Upper Hudson in the years ahead. This ongoing monitoring will assist EPA in determining whether additional active remediation should be required of GE in the Upper Hudson over time.
- **There has not been substantial recontamination of dredged areas in the Upper Hudson.** While some movement of sediment between dredged and non-dredged areas was always expected, it is not viewed as an obstacle to achieving protectiveness and will be monitored over time, along with other conditions.
- **Post-dredging fish, water, and sediment data results are inconclusive indicators of remedy "protectiveness" at this time. More time and monitoring are needed.** EPA will continue to review fish data collected through semi-annual sampling for a number of years before it can make reliable conclusions on the effectiveness of the remedy (the combination of dredging and natural attenuation) in the Upper Hudson.

***EPA developed a Technical Memorandum summarizing the results of the collaborative data evaluation, which can be found on EPA's project webpage: www.epa.gov/hudson.*

Certification of Completion of the Remedial Action

Certification is Not a Release from Liability

- EPA is not letting GE walk away or, as others would say, "off the hook," and GE's legal obligations for cleanup of the Hudson River remain and will continue for many decades to come.
- The certification is an acknowledgement that the dredging and associated construction work specifically required of GE under the Consent Decree was properly carried out. GE has continuing obligations under the Consent Decree to carry out an extensive Operation, Maintenance and Monitoring program. This requires, among other things, that regular sampling of water quality, sediment and fish tissue continue and that the protective caps installed in a few parts of the Upper Hudson River are properly maintained.
- The issuance of the certification is not based on the findings of the five-year review, including the protectiveness of the remedy; rather it is an acknowledgement that certain activities were carried out by GE, as required under the Consent Decree.
- The 2006 Consent Decree includes "reopener" provisions under which EPA can require GE to perform additional remedial work, if specified conditions are met. The reopener can be triggered if EPA receives new information which, along with any other relevant information (including prior sampling results, etc.), causes EPA to determine that the remedy will not be protective of human health or the environment, and that specific, additional work will address or respond to that lack of protectiveness.

What is the Certification of Completion of the Remedial Action?

In late 2005, GE entered into a legally binding agreement with EPA to carry out the work called for in the 2002 ROD. This lengthy, detailed agreement, called a judicial Consent Decree, was finalized by a federal judge in 2006. The Consent Decree provides, among other things, that once GE has performed the dredging and associated construction work that it was required to do under that agreement (which included dredging, capping, habitat restoration, and deconstruction/decontamination of the sediment processing facility), the company is entitled to request and receive from EPA a certification that it properly completed these activities. This is called the "Certification of Completion of the Remedial Action," and it is one of three such certifications provided for in the Consent Decree. The others are the "Certification of Completion of Phase 1 Field Activities," which was provided to GE in 2012; and the "Certification of Completion of the Work," which is the final certification confirming that all work required under the Consent Decree has been completed. This latter certification is not expected to be available to GE for more than five decades.

Importantly, the term "Remedial Action" is explicitly defined in the 2006 Consent Decree as not including the Operation, Maintenance and Monitoring (OM&M) phase that follows the dredging. Rather, the term only refers to the dredging, capping, habitat restoration, and deconstruction/decontamination of the sediment processing facility that GE conducted with EPA oversight between 2009 and 2016. The OM&M period is when much of the natural attenuation is expected to occur.

As authorized by the Consent Decree, in January 2017 GE requested that EPA issue the certification that the remedial action construction work was properly completed. Under the Consent Decree, EPA was to have responded to that request within one year (January 2018). EPA delayed its response to GE's request for the certification until EPA completed the collaborative assessment of sediment and fish data with NYSDEC and finalized the second five-year review report.

Covenant Not To Sue

Some community members have expressed concern over the granting of a "Covenant Not to Sue" to GE as part of EPA's issuance of the Certification of Completion of the Remedial Action.

A "covenant not to sue" is a promise by one party to the settlement of a lawsuit that it will not sue the other party for certain specified claims, provided the other party fulfills its end of the agreement.

Under the 2006 Consent Decree, GE is entitled to receipt of a "Covenant Not to Sue" in concert with the issuance of the "Certification of Completion of the Remedial Action", acknowledging it has fulfilled specific obligations under the Consent Decree. EPA's covenant not to sue GE again for cleanup of the PCB contamination in sediments of the Upper Hudson River does not mean that GE is relieved of all further responsibilities in the Upper Hudson River, or elsewhere in the Hudson, under the Superfund law or the Consent Decree. The "Covenant Not to Sue" does not extend to the Upper Hudson River Floodplain or the Lower Hudson River, nor does it protect GE from the obligation to perform additional work in the Upper Hudson, including potentially more dredging, if EPA deems the remedy is not protective of human health or the environment and a "reopener" is triggered.

Important Work to Restore the Hudson Continues

- Dredging the river is not the only work that EPA is advancing to clean up the Upper Hudson. Comprehensive investigations to assess and mitigate PCB contamination that may be present in sediment carried onto local floodplains and landlocked segments of the Old Champlain Canal are actively underway.
- GE remains responsible for PCBs that have contaminated certain parts of the Hudson floodplain between Fort Edward and Troy. Under EPA oversight, GE is currently carrying out an extensive study of PCBs in the Upper Hudson River floodplain, involving many thousands of samples.
- If at any time PCBs are detected in the Upper Hudson River floodplain at elevated levels that are a potential health concern, a short-term response action is taken promptly. GE, under EPA oversight, has already conducted over 60 such short-term response actions.
- As part of the process, EPA is talking to local leaders and others who have asked for help in fast-forwarding floodplain remediation in support of economic development and quality of life projects. EPA is reviewing these requests with an understanding of the benefits of such an approach for strengthening the fabric of local communities along the river.
- GE also remains legally responsible for its PCBs that reached the Lower Hudson River, from Troy south to New York City harbor. EPA has begun supplemental studies in the Lower Hudson to determine whether additional, more detailed study and/or cleanup is necessary in this portion of the river. EPA is consulting with NYSDEC on this work, and regular monitoring of fish and water in the Lower Hudson continues.

Site History

Over a 30-year period ending in the 1970s, GE discharged an estimated 1.3 million pounds of PCBs into the Hudson River from two factory sites in Fort Edward and Hudson Falls, about 40 miles north of Albany. In 1984, EPA added 200 miles of the Hudson River to the Superfund National Priorities List, covering the entire stretch from Hudson Falls to the southern tip of Manhattan in New York City.

In 2002, after many years of study and public debate, EPA selected the dredging remedy for the 40-mile stretch of the Upper Hudson River between Fort Edward and Troy. The dredging remedy was memorialized in a detailed document called a Record of Decision (ROD), which was developed in partnership with the NYSDEC. The remedy was designed to address the most highly contaminated areas in the Upper Hudson River through active remediation – dredging and, where necessary, capping -- followed by allowing the river to recover naturally through "monitored natural attenuation" (MNA) which is expected to continue to reduce PCB levels in surface sediment throughout the river. EPA was clear in the 2002 ROD that the MNA process would take at least five decades before the remediation goal would be reached, and even longer in some parts of the Upper Hudson.

In 2006, a federal judge finalized the legally binding agreement between EPA and GE, called the judicial Consent Decree, which required GE to carry out the work called for in the 2002 ROD. Following this agreement, and under close supervision from EPA and NYSDEC, GE performed the dredging between 2009 and 2015. The project is one of the largest environmental dredging projects in the U.S. to date. A total of 2.75 million cubic yards of contaminated sediment was dredged from the 40-mile stretch of the Upper Hudson River. Over 310,000 pounds of PCBs were removed – twice as much as originally anticipated, and 72% of the overall total mass estimated in the sediment of the Upper Hudson River (exceeding the 65% reduction assumed in the ROD). Millions of aquatic plants were reestablished in areas that were disturbed by dredging. The dredging project cost GE an estimated $1.7 billion. It generated 500 jobs while ongoing and created significant infrastructure along the river in Fort Edward.

Staying Informed: Hudson River PCBs Site Webpage

EPA's Hudson River site webpage now features an in-depth collection of frequently asked questions and provides links to the second five-year review report, a technical summary presenting the data collected and collaboratively reviewed by EPA and NYSDEC, as well as important historical documents such as the ROD, Consent Decree and more. The EPA website offers a number of ways for the public to gain greater insight into the decision-making process and stay informed. EPA will continue to involve the public in the process of cleaning up the Hudson River, including through supporting regular Community Advisory Group meetings, issuing fact sheets and press releases, as well as maintaining information through its website and social media. For more information about the EPA's work to clean up the Hudson River, visit www.epa.gov/hudson.

For More Information

For more information, visit,* call toll-free, or write to the EPA Region 2 Hudson River Office at the address below. More information about the Hudson River PCBs Superfund site is also available online: www.epa.gov/hudson.

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**The Hudson River Office hours are Monday - Friday 8:00 am - 4:30 pm, with evening hours by appointment.*