


**GE-Housatonic River Site
Rest of River Cleanup Plan**
Outline of Proposed Revisions
June 2020

Copies of These Slides and a Transcript of the Audio are Available at
www.epa.gov/ge-housatonic



Thank you for joining us for this presentation regarding the U.S. Environmental Protection Agency’s Proposed Revisions to the Cleanup Plan for the General Electric Housatonic River “Rest of River” Project in Massachusetts and Connecticut. My name is Bob Cianciarulo, I manage the Remediation Branch that oversees the Housatonic Project for EPA’s New England Office in Boston. I will narrate the presentation.

Overview

- This presentation includes an overview of changes to the Housatonic River cleanup plan proposed by EPA in the Summer of 2020.
- For background materials on EPA's 2016 cleanup plan, see EPA's web page – www.epa.gov/ge-housatonic.
- Other fact sheets and helpful information are also on the web page, including a copy of the slides used in this presentation as well as a transcript of the audio portion of this presentation.



This presentation includes an overview of changes to the Housatonic River cleanup plan proposed by EPA in the Summer of 2020. This presentation mainly covers differences from EPA's original plan, so if you need a refresher on the 2016 cleanup plan, see EPA's web page – www.epa.gov/ge-Housatonic - for copies of the 2016 Permit and our 2014 Statement of Basis which outlined site risks and the details of the plan that are not being changed. Other fact sheets and helpful information are also on the web page, including a copy of the slides used in this presentation as well as a transcript of the audio portion of this presentation.

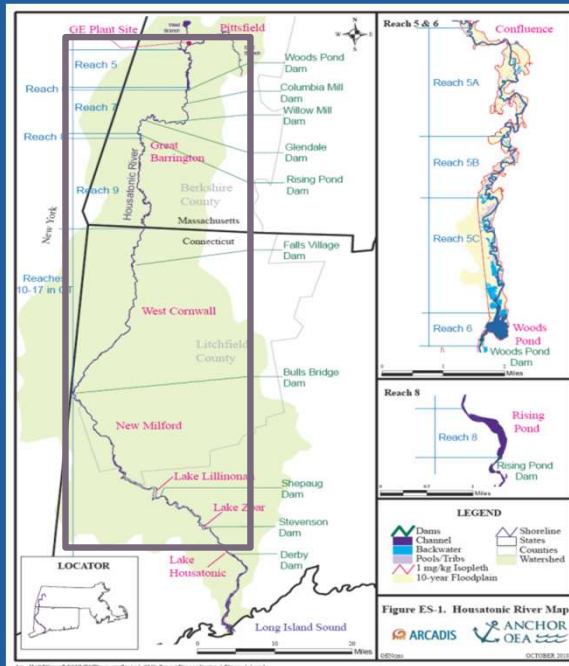
Area Covered by Rest of River

Reaches 1-4
East Branch

Reaches 5-9
MA

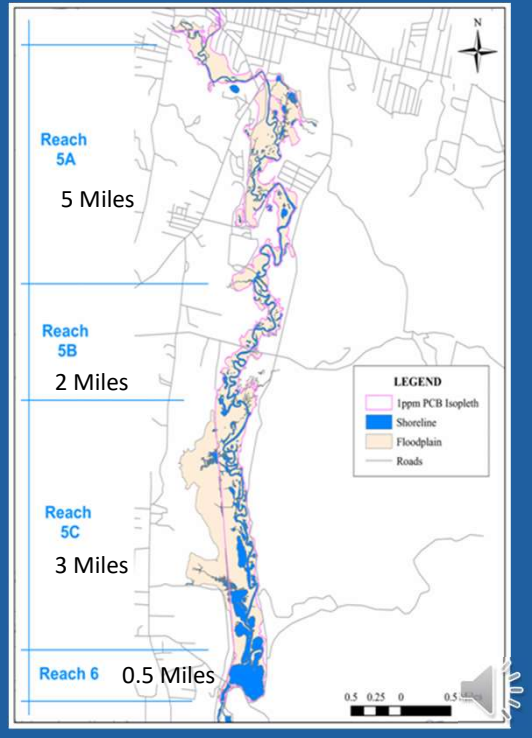
Reaches 10-16
CT

Reach 17
CT, tidal and
other Superfund
sites



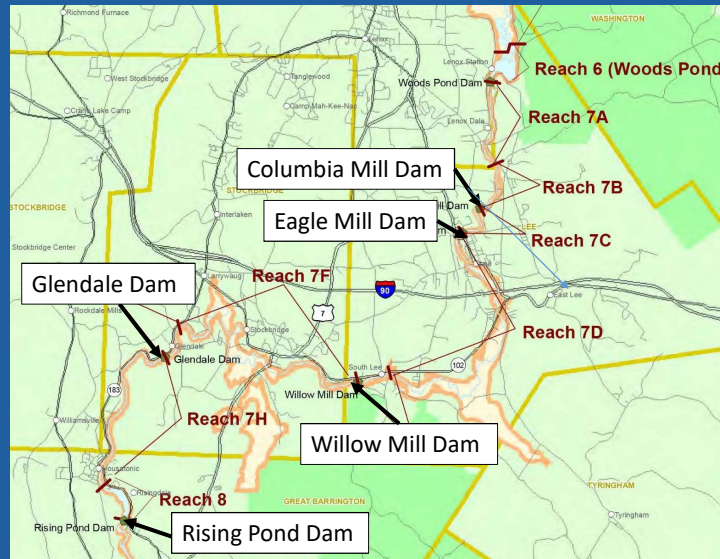
First let's take a moment to orient ourselves and review some terminology you may hear during this presentation. EPA has been overseeing the General Electric Company's cleanup of their Pittsfield plant area and adjacent areas for over two decades, per the terms of a 2000 Consent Decree with the company. Cleanup of polychlorinated biphenyls (or PCBs) from the Housatonic River included projects covering the first two miles of river downstream of GE's plant area on the east branch of the Housatonic, north of the confluence of the east and west branches at Fred Garner Park in Pittsfield. From the confluence south, the project has been termed "the Rest of River" from that point through Massachusetts and Connecticut. The river study has been divided into several "Reaches" and "Sub-Reaches". Our Rest of River study area covers Reaches 5 through 16, with 5 through 9 in Massachusetts and 10 through 16 in Connecticut, over 120 river miles in all.

Reach 5 sub-reach designations and Reach 6 (Woods Pond)



You'll hear me refer to these reaches several times during this presentation. Reach 5 and 6 are considered our "primary study area", encompassing about 10 and a half river miles. This includes Reach 5A from Fred Garner Park to the Pittsfield town line-5 miles, Reach 5B, from the Pittsfield/Lenox town line to Roaring Brook in Lenox (2 miles), and Reach 5C from Roaring Brook to Woods Pond near the Lenox Dale/Lee line (3 miles). Reach 6 is Woods Pond itself-about one-half mile long.

Reaches 7 and 8



Reaches 7 and 8 round out the remainder of the Rest of River study area where EPA anticipates active remedy construction including dredging and/or capping. Reach 7 includes four impoundments – ponded areas behind dams. Reach 8 is Rising Pond in Great Barrington.

Process Thus Far

- EPA finalized its cleanup plan in 2016, outlined in a Resource Conservation and Recovery Act (RCRA) Permit
- This Permit was appealed by five parties.
- EPA's Environmental Appeals Board (EAB) "remanded" certain Permit issues back to EPA for resolution, including the issue of disposal.
- Documents from EPA's 2014 Permit proposal, 2016 Permit, and the appeal are all on EPA's website www.epa.gov/ge-housatonic.



Now, let's review the process thus far. In June 2014, EPA proposed a comprehensive cleanup plan for the Rest of River area to address PCB contamination in soil and sediment in and around the River. After a public comment period, in October 2016, EPA finalized a cleanup plan in the form of a Permit under the Resource Conservation and Recovery Act or RCRA. That Permit was appealed by five parties --General Electric, Housatonic River Initiative, Berkshire Environmental Action Team, C. Jeffrey Cook, and a group of five Berkshire towns, known as the "Rest of River Municipal Committee". The states of Massachusetts and Connecticut, Green Berkshires, and the Massachusetts Audubon Society also filed briefs as part of the process. Appeals of Permits such as this are first sent to EPA's Environmental Appeals Board (EAB). In January 2018, the EAB rendered its decision on the appeals, upholding much of EPA's cleanup decision but "remanding" back to EPA for resolution two issues, with the main issue remanded being EPA's decision to require out of state shipment and disposal of all contaminated soils and sediment from the project.

As noted earlier, this presentation only covers changes being proposed since this appeal, so refer back to EPA's webpage for background info on that cleanup plan and the appeal.

Mediation

- The Settlement Agreement announced on February 10, 2020 included several planned modifications to the 2016 Permit, which are now being formally proposed for public comment.
- As part of the Agreement, EPA pledged to propose a modification to the Permit consistent with the terms of the Agreement
- EPA is holding a public comment period on this Draft Revised 2020 Permit.



Faced with this Remand, EPA agreed to enter mediation with all of the parties who had appealed the Permit decision to the EAB. After a lengthy mediation process, EPA and seven other parties reached a settlement agreement announced to the public in February 2020. EPA's current proposed Permit Revision updates the cleanup plan to reflect the terms of that Settlement Agreement. The public comment period is taking place during the summer of 2020.



The parties to this settlement agreement include EPA, General Electric, the Connecticut Department of Energy and Environmental Protection, the City of Pittsfield, the Berkshire Environmental Action Team, the Massachusetts Audubon Society, C. Jeffrey Cook, and the five-town Rest of River Municipal Committee, including the towns of Lee, Lenox, Stockbridge, Great Barrington, and Sheffield, Massachusetts.

Summary of Major Themes

- Hybrid disposal approach, with the most contaminated waste transported out of state and the remainder consolidated safely on-site in a lined Upland Disposal Facility.
- Expedited start to work on investigation and design of the cleanup.
- Significant cleanup enhancements to the remedy.
- Substantial economic development package to municipalities of \$63 million, along with land transfers, and other community benefits.
- Reduced impact to the community and enhanced coordination with stakeholders.
- EPA commitment to further research on innovative technologies, demonstration efforts and pilot studies.



The major themes of that settlement agreement, which were discussed during three separate public information meetings in Lee, Great Barrington, and Pittsfield in February and March 2020 include:

- A “Hybrid Disposal” approach, with the most contaminated waste transported out of state and the remainder consolidated safely on-site in a lined Upland Disposal Facility.
- An expedited start to work on investigation and design of the cleanup – GE has already begun to submit plans as required by this agreement.
- Significant cleanup enhancements to the remedy, which I will discuss further in a moment.
- Substantial economic development package to municipalities of \$63 million, along with land transfers, and other community benefits.
- Reduced impact to the community and enhanced coordination with stakeholders.
- A commitment from EPA for further research on innovative technologies, demonstration efforts and pilot studies.

Expedited Start to Work

- Reduce litigation and its cleanup delays through all parties committing to forego litigation challenges if EPA's revised cleanup plan is consistent with the Settlement Agreement.
- GE has begun to implement the investigation and design components of the cleanup plan to accelerate the commencement of the Rest of River cleanup rather than wait for EPA to finalize the Permit.



An important aspect of the Settlement Agreement is the agreement by all parties to forego challenges to the plan if EPA follows through with a Permit consistent with the agreement. EPA has been attempting to finalize this remedy selection for many years, while the river continues to pose a risk to human health and the environment. Additionally, in the Settlement Agreement, GE committed to start immediately on the investigation and design components of the cleanup. Already, GE has moved forward, submitting a draft Statement of Work and beginning to plan necessary follow-up investigations and work plans.

Draft Revised Permit

- The Draft Revised 2020 Permit and supporting Statement of Basis are available for public comment.
 - See www.epa.gov/ge-housatonic for these documents
- EPA is seeking comment on the proposed changes.
 - A “virtual public hearing” will be held
 - Written comments can also be submitted
 - See the website for key dates and directions on how to comment.



EPA has now released a Draft Revised 2020 Permit reflecting, in redline/strikeout text the proposed changes to the Permit issued in 2016. We have also released a “Statement of Basis”, which is essentially a fact sheet that outlines supporting information for the proposed changes, as well as a full Administrative Record of documents considered or relied upon in making this proposal. All of this information is available on EPA’s website at www.epa.gov/ge-Housatonic.

We are currently accepting public comments and, due to restrictions on large public gatherings, will be holding our Public Hearing ‘virtually’ via a web-based platform and call-in lines. See our website for specific dates, information on how to access this virtual public hearing, and other ways you can submit your comments.


Key Documents Outlining the Proposed Changes

U.S. EPA | GE PITTSFIELD/HOUSTATONIC RIVER SITE

LEARN MORE AT: epa.gov/ge/houstonic

Statement of Basis for EPA's Proposed Revisions to the Remedial Action for the Housatonic River "Rest of River"

THE RIVER The Housatonic River is contaminated with polychlorinated biphenyls (PCBs) released from the General Electric Company (GE) facility in Pittsfield, MA. The entire site consists of the 134-acre GE facility, the Housatonic River and its banks and floodplains from Pittsfield, MA, to Long Island Sound, and other contaminated areas. Under a federal Consent Decree, GE is required to address contamination throughout the site, including in the River.



YOUR OPINION COUNTS. OPPORTUNITIES TO COMMENT ON THE PLAN

EPA participated in three public information sessions in February and March 2020 in Lee, Great Barrington, and Pittsfield. At those meetings, EPA outlined the changes reflected in this document and the Draft Revised 2020 Permit and provided questions from the public on the plan. EPA is accepting public comment on the proposed changes outlined in this proposal from Monday, May 18, 2020, through Monday, June 1, 2020. EPA's proposal is based on current information and the proposal could change in response to public comment or new information. During the public comment period, EPA will schedule a Public Hearing where the public will have an opportunity to make oral comments during the hearing for EPA to consider. You may also submit written comments: see page X to find out how. Note: For comments to be considered for purposes of EPA's Response Action Summary on the Final Revised Permit, comments must be received in writing during the public comment period or orally at the formal Public Hearing or via a voicemail box at 617-918-1700.

For further information about public hearing logistics, see epa.gov/ge/houstonic or call Zalianna Purnell of EPA's Community Affairs office at (617) 918-1506.

SUMMARY OF THE PROPOSED REVISED CLEANUP PLAN

After continued legal study of the impacts of PCBs released to the Housatonic River from the GE Pittsfield/Housatonic River site in Pittsfield, MA, and in consideration of the 2018 EPA Environmental Appeals Board Order Remanding in Part and Denying Review in Part and the Settlement Agreement reached in February 2020 regarding certain aspects of the cleanup plan EPA selected in 2016, EPA is proposing amendments to cleanup actions. Included are Performance Standards and Corrective Measures, or remedial action, for the "Rest of River" component of the GE Pittsfield/Housatonic River site. EPA's Proposed Revised Remedial Action was developed after a lengthy period of mediated discussions with a variety of stakeholders, and consultation with Massachusetts and Connecticut environmental agencies. The changes proposed herein reflect the agreements reached during such negotiations and consultation. Unless otherwise discussed herein, the remedial action selected in 2016 remains unchanged.

Revised | June 2020

GENERAL ELECTRIC COMPANY, PITTSFIELD, MASSACHUSETTS
DRAFT PERMIT SUBMITTED TO THE U.S. ENVIRONMENTAL AGENCY
AND SELECTION OF REMEDIAL ACTION AND RELATED A MAINTENANCE FOR REST OF RIVER
FOR PUBLIC COMMENT - JUNE 2020

This draft permit modification includes proposed changes to the 2016 Revised RCRA Permit. The changes being proposed for public comment are noted in **redline** or **strikeout** text. All other permit provisions have been the subject of a prior public comment period and if approved have subsequently been upheld by the EPA Environmental Appeals Board. After the conclusion of the public comment period, unless changes to the redline/strikeout language are warranted based on public comment, the redline/strikeout changes will be adopted, and a clean version of the Permit will be finalized and signed.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
EPA NEW ENGLAND**

**PERMIT UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
AS AMENDED (42 U.S.C. SECTION 6901 ET SEQ.)**

General Electric Company
140 Plastics Avenue
Pittsfield, Massachusetts 01201
EPA ID No. MA100204409

The Permittee is required to conduct certain activities at areas affected by releases of hazardous waste and/or hazardous constituents from the General Electric Facility located in Pittsfield, Massachusetts, in accordance with Sections 3004(a), 3004(v), and 3005(c) of the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), as specified in the conditions set forth herein.

This Permit has been prepared for RCRA Corrective Action activities to be performed by General Electric pursuant to a final Consent Decree, *United States, et al., v. General Electric Company* (0-Mass-1) ("Consent Decree"). The Consent Decree memorializes an agreement to address releases of waste materials, including hazardous substances, hazardous waste, and/or hazardous constituents from the General Electric Company's Facility in Pittsfield, Massachusetts, including, but not limited to, the releases of hazardous waste and/or hazardous constituents addressed in this Permit. This Permit, upon the Effective Date, shall replace the HSWA Permit previously issued to the Permittee, initially issued on February 8, 1991, modified effective January 3, 1994, revised on October 2000 and revised again, effective December 5, 2007. Upon the Effective Date of this Revised Permit, the previously issued 2007 Permit hereby is revoked, and, pursuant to the Consent Decree, the Remedial Action set forth in the Permit shall be implemented pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Consent Decree.

Dated: _____

Signed: _____
Deann Olson, Director
Office of Site Remediation and Restoration/Permitting, Regional Administrator
U.S. Environmental Protection Agency, EPA New England
3 Post Office Square - Suite 100
Boston, Massachusetts 02109-3912

As noted in the prior slide – see our website for the 2020 Statement of Basis and for the redline/strikeout Draft Revised 2020 Permit. The statement of basis lays out the details of the Proposed Revised Cleanup Plan, EPA's basis for the proposal, as well as information on other regulatory determinations where EPA is seeking public comment.

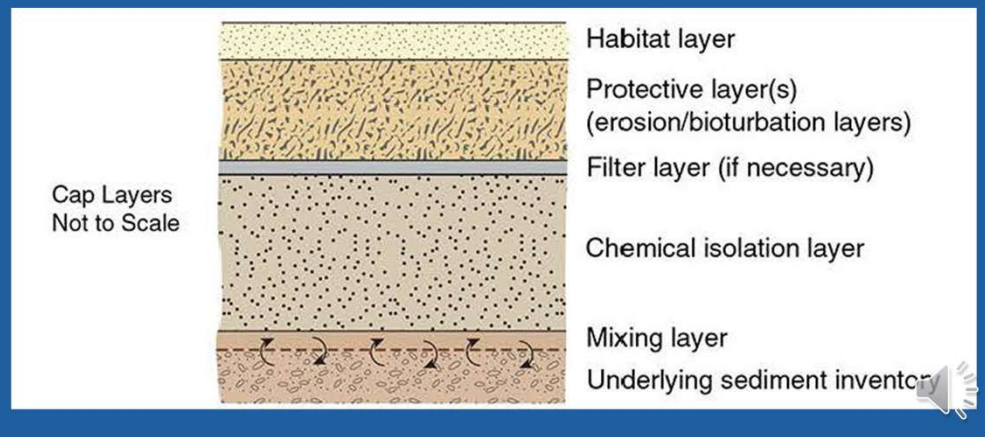
Summary of Proposed Revisions to the Cleanup Plan



Now, let's look more closely at some of the changes being proposed in the Permit Revision

Engineered Caps

Purpose: To prevent exposure to underlying sediments and to minimize/prevent upward migration of PCBs into the sediment/surface water.



The cleanup plan selected in 2016 relies heavily on excavation in the river bed followed by placement of engineered caps to prevent exposure to underlying sediments and to minimize or prevent upward migration of PCBs into the sediment and surface water. These caps have numerous layers as shown in this figure, and are designed to isolate contamination while being stable enough to prevent erosion or washing away. It also includes a habitat layer at the surface to mimic the sediment characteristics of the materials being removed. The 2016 remedy included approximately 300 acres of capping in the river bed.

Less Reliance on Capping in River

- Eliminate almost 100 acres of capping, 1/3 of all capping in original plan, by removing more contaminated sediments in six different reaches of the River



By contrast, the 2020 proposed revisions provide for additional excavation so that capping will not be required in almost 100 acres previously slated for capping, a one-third reduction. These areas include reaches 5C, four Reach 7 sub-reaches, and Reach 8

Less Reliance on Capping in River

- For Reach 5C (Between Roaring Brook and Woods Pond), excavate PCB contaminated sediment to 1 ppm rather than capping residual contamination in-place.
- For Riverbanks in Reach 5, review of riverbank concentrations and erodibility and consider additional bank removal.



Specifically, Reach 5 C – between Roaring Brook and Woods Pond – will now be excavated to a PCB concentration of one part per million and, thus, will not need to be capped. In addition, new permit provisions require a review of river bank contamination and erosion potential which could lead to additional river bank remediation beyond what was contemplated in the 2016 permit.

Dam Removal

- Rather than capping, remove sediments to 1 ppm PCB cleanup level behind Columbia Mill Dam and Eagle Mill Dam, eliminating 18 acres of capping.
- Remove the Columbia Mill Dam and the remnants of Eagle Mill Dam



In Reach 7 impoundments, there will also be substantially more excavation in lieu of capping. In addition, the dams at Columbia Mill and Eagle Mill will be removed as part of the cleanup and sediments will be cleaned up to the one part per million PCB standard – eliminating 18 acres of capping in these two impoundments. The photo on the right shows an aerial photo of both Columbia Mill and Eagle Mill – the dams are highlighted with red lines, Columbia at the top and Eagle Mill further downstream at the bottom left. The photo on the left shows the dam at Columbia Mill.

Less Capping Behind Dams

- At the other three Massachusetts dams, GE will commit to additional excavations and less reliance on capping:
 - Willow Mill
 - Glendale
 - Rising Pond
- In total, this eliminates at least 20.5 acres of capping in these three impoundments.



Further downstream, more sediment will also be excavated from the impoundments at Willow Mill, Glendale Mill, and Rising Pond. At a minimum, this additional cleanup will eliminate at least 20 ½ acres of capping from the cleanup plan in these areas.

Vernal Pools



- Broaden the approach to remediation of vernal pools by testing methods for excavation and restoration of vernal pools as well as use of innovative non-invasive methods to cleanup.



For vernal pools, the proposed revisions to the permit broaden the approach to remediation by slating some pools for excavation and restoration as well as use of innovative non-invasive methods to cleanup in other pools. Baseline ecological data will be collected, and these methods will then be evaluated before determining the best course of action for cleanup of all contaminated vernal pools. The evaluation will focus on both reduction of PCB availability and how the remediation meets ecological criteria for success. This is an example of an “adaptive management” approach to the cleanup.

More Extensive Cleanup on Residential Floodplain Properties

- At the property owner's option, conduct additional floodplain remediation on specific residential properties to eliminate the need for use restrictions called for in the original plan. (26 properties in Pittsfield, 6 in Lenox)
- Conduct additional cleanup for heavily used areas of Mass Audubon's Canoe Meadows property.



The floodplain cleanup aspects are also being enhanced by the proposed revisions. Specifically, in some residential properties in Pittsfield and Lenox, where the floodplain areas are not typically used for residential purposes, the property owners will now have the option to have GE conduct additional cleanup on these properties so there'll be no need to place any future use restrictions on these areas. In addition, the revisions call for additional cleanup in certain areas of Mass Audubon's Canoe Meadows property – areas not previously slated for cleanup.

Other Permit Language Modifications

- Revisions to “Future Work” Provisions to address comments from the EAB
- Additional language regarding Performance Standards and Corrective Measures required to implement the changes outlined in the Settlement Agreement



The permit revision also includes changes to certain provisions governing GE’s responsibility to do work in the future, should the need arise. These changes were made in response to one of the issues remanded to EPA by the Environmental Appeals Board. Furthermore, there are additional changes in permit language in order to properly set forth the changes outlined in the Settlement Agreement.

Treatment Technology Research

- EPA has committed to a continuing effort towards the identification of opportunities to apply existing and potential future research resources to PCB treatment technologies and will solicit research opportunities for research institutions and/or small businesses to target relevant technologies.
- GE and EPA will continue to explore current and future technology developments and, where appropriate, will collaborate on on-site technology demonstration efforts and pilot studies.



We have received numerous comments and questions over the years regarding technologies to destroy or otherwise render the PCBs harmless. While EPA hasn't found a technology that could allow us to avoid excavation of the PCB contamination or require its disposal in a landfill, in the Settlement Agreement, EPA has committed to a continuing effort towards the identification of opportunities to apply existing and potential future research resources to PCB treatment technologies and will solicit research opportunities for research institutions and/or small businesses to target relevant technologies. GE and EPA will continue to explore current and future technology developments and, where appropriate, will collaborate on on-site technology demonstration efforts and pilot studies.

“Hybrid” Disposal Approach



As you can see, the permit revisions include many improvements to the overall remedy, I'll come back to this in the end to give you a better feel for some of the overall quantities, mass reduction, duration and cost. But first, let's delve more deeply into the proposed change that's generated the most interest—the Hybrid disposal approach.

“Hybrid” Disposal Approach

- Rather than a single solution to dispose of contamination either on-site or off-site, the agreement calls for a two-pronged solution.
- The most contaminated soils and sediments will be shipped out of state for disposal. Specifically, soils/sediments regulated as:
 - hazardous waste under the federal Resources Conservation and Recovery Act (RCRA)
 - PCB wastes averaging greater than 50 ppm
- The remaining excavated soils and sediments will be consolidated into a local Upland Disposal Facility.
- A minimum of 100,000 cubic yards will be shipped off-site.



EPA’s 2016 Permit called for disposal of all soil/sediment from the project off-site. GE advocated for disposing of all of these materials on-site at up to three locations—two in Lee and one in Great Barrington. As part of the appeal, the EAB remanded the decision back to EPA Region 1, noting that our position on off-site disposal was not fully supported. As a result of the mediation process, we have now arrived at the current proposal – termed “hybrid disposal” calling for a combination of both approaches, removing the highest levels of contamination to a permitted out-of-state facility while consolidating the remaining lower-level contaminated soils and sediments into an on-site local Upland Disposal Facility. Hazardous waste under the federal Resources Conservation and Recovery Act (RCRA) and PCB wastes averaging greater than 50 ppm, will be sent off-site to a commercial disposal facility permitted to accept such wastes. At a minimum, 100,000 cubic yards of contamination will be shipped off-site.

“Hybrid” Disposal Approach

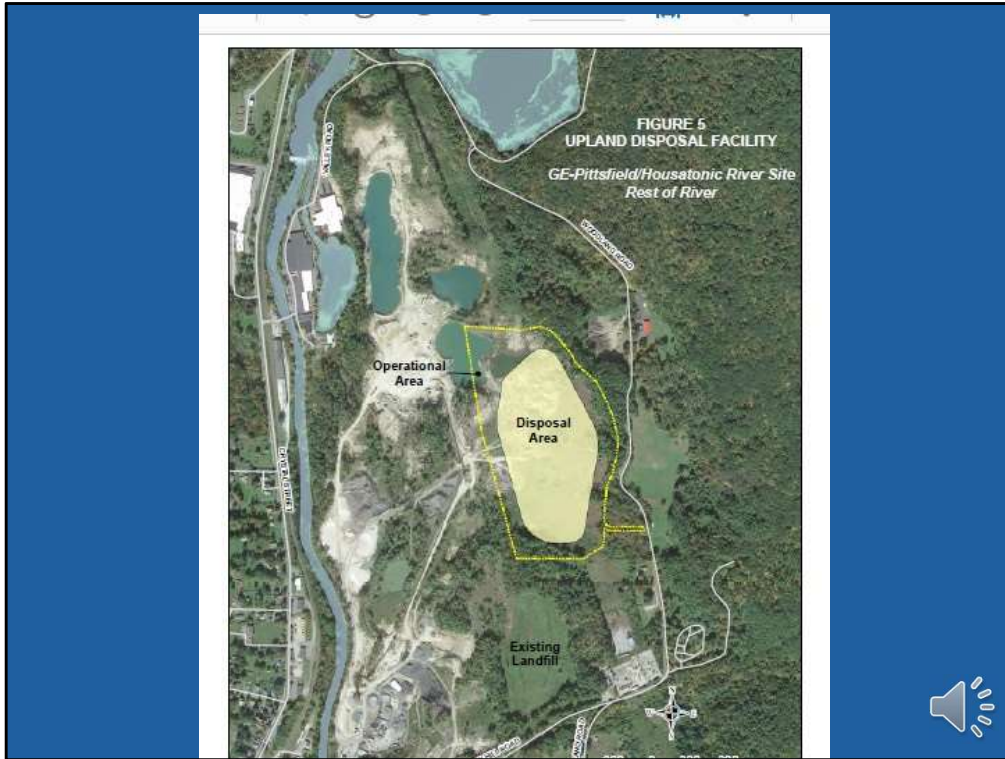
- The Upland Disposal Facility is proposed for a location adjacent to the Lane gravel pit in Lee near Woods Pond.
- The other two landfill locations previously proposed by GE will not be used for disposal of PCB material.
- The average concentrations of PCBs to be placed in the Upland Disposal Facility are estimated to be 20 to 25 milligrams per kilogram (or parts-per-million (ppm)), well below the 50 ppm federal criterion for commercial PCB landfills.
- Segregation of the material will be based on sampling protocols that are also outlined in the Permit.



The Upland Disposal Facility is proposed for a location adjacent to the Lane gravel pit in Lee near Woods Pond.

This means that the other two landfill locations previously proposed by GE – one adjacent to Rising Pond in Great Barrington and another near Forest Street in Lee - will no longer be pursued for disposal of PCB material.

The average concentrations of PCBs to be placed in the Upland Disposal Facility are estimated to be 20 to 25 parts-per-million, well below the 50 ppm federal criterion for commercial PCB landfills. Segregation of the material will be based on sampling protocols that are outlined in the Revised Permit.



Here is a figure showing the proposed Upland Disposal Facility location, adjacent to the Lane gravel pit and the Lee municipal landfill. The estimated landfill footprint is 20 acres.

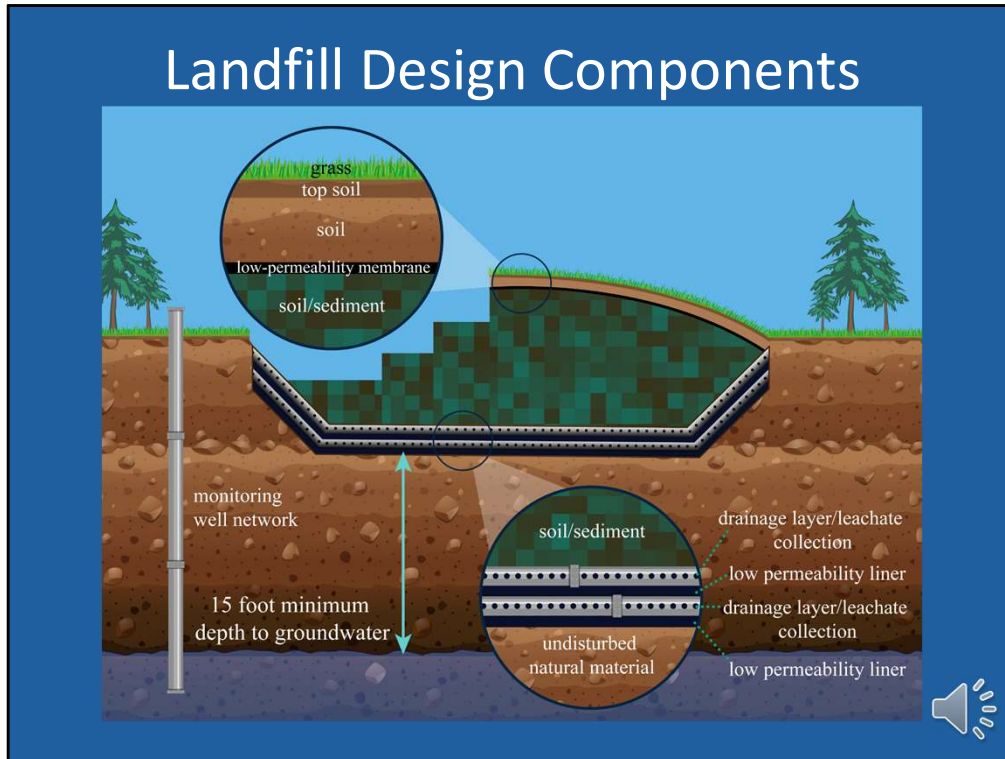
Upland Disposal Facility

- Will only accept materials from the Rest of River cleanup.
- Double liner under the landfill with leachate collection; minimum 15 feet from water table.
- Multi-layer low permeability engineered cap/cover on top of the landfill.
- Groundwater monitoring network.
- GE remains responsible for operations, maintenance, and monitoring.



This will be a dedicated facility, only for the disposal of materials from this cleanup – a single waste stream of contaminated soil and sediment. Despite only accepting lower levels of contamination, it would be designed consistent with a much more substantial facility. It would include a double synthetic liner under the landfill, be at least 15 feet above the water table, and the final cap would include a multi-layer low permeability cap. A groundwater monitoring network will be installed to monitor groundwater conditions over time, and GE will remain responsible for landfill operation, maintenance, and monitoring over time.

Landfill Design Components



Here is a cross-section example of the various landfill design elements – including double bottom liners with leachate collection and the proposed multi-layer low-permeability cap. Future land and groundwater use at the landfill will be restricted, though the final closed landfill would be available for future use, whether that is for solar development, open space, or other uses.

Landfill Construction Examples



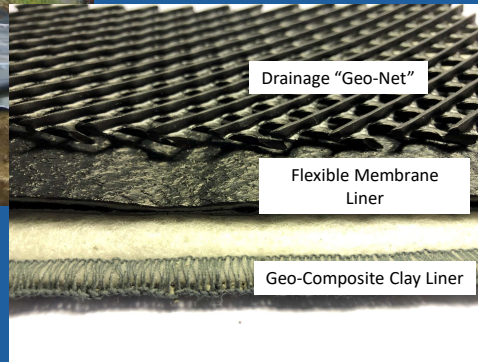
Let me show you a few photographs to give you a better feel for what we're talking about when we talk about landfill construction. First, as shown in the left photo, the area would be graded with fine sand to prevent punctures or tears and then photo on the right shows the bottom liner system subsequently being installed.

Preparing Bottom Liner and placement of waste



The left hand photo on this side shows construction of the various layers of that bottom liner. As we've discussed, this bottom liner would have two separate synthetic liners as well as a leachate collection system. The photo on the right shows placement of materials on top of the liner.

Typical Landfill Cap Layers



Here is an example of landfill capping. In the left hand photo, you can see workers spreading the flexible membrane liner, while in the background of the photo, you can see areas of this cap that have already been completed. The photo on the right shows three typical cap component, a geo-composite clay liner, basically a clay layer packaged between geotextile layers similar to heavy-duty landscape fabric, the flexible membrane, which is typically high density polyethylene or HDPE, and a drainage layer, where we often use this geo-net material which gives drainage from rainwater above a path to drain off of the landfill cap.

Welding Seams on HDPE Liner



As shown in in the prior photo, the HDPE liner material comes in large rolls and then the seams between the sections of the liner are welded together using heat.

Cover System Installation



And here are additional cover system installation photos.

Cover System Installation, topsoil & seeding



Once all of the synthetic cover materials are installed, a layer of soil is added to protect the cap and typically it is seeded for grass.

Sample Landfill Under Construction



Here is an example from a site with two separate landfill cells, as you can see, they are in varying stages of being capped



And here is another photo from that same project, the landfill in the foreground has been completed while work on the cap for the second cell – in the upper right – is still ongoing.

Hydraulic Pumping – Reduced Trucking

- The location of the Upland Disposal Facility creates an opportunity to pump rather than truck contaminated sediments from Reach 5C and Woods Pond.



Example: New Bedford Harbor



The location of the Upland Disposal Facility creates an opportunity to pump rather than truck contaminated sediments from Reach 5C and Woods Pond. It is estimated that this approach could eliminate approximately 50,000 truck trips from the project. The two photos here show an example of hydraulic dredging and pumping of contaminated sediments. The photo on the left shows the hydraulic dredge's cutterhead up close, and you can see the dredge platform in the top-center of the photo on the right – pointed out with the green arrow and the pipe back to the shore pointed out with the red arrow. The photo on the next page shows another perspective from this New Bedford example

New Bedford: Mechanical Dredging/Hydraulic Pumping



Another variation on the hydraulic approach was also conducted in New Bedford Harbor. In these photos, dredging was done mechanically from two separate platforms and then the sediment was hydraulically pumped to a centralized location for dewatering. The green arrows point to the two dredge platforms, while hopefully you can make out the floating pipes pointed out by red arrows.

Other Key Provisions

- Impose limitations on the transport of waste material on small residential streets.
- Require enhanced coordination with municipal officials, affected landowners, and other stakeholders regarding the work activities, schedule and traffic routes, and incorporate this information into work plans submitted to EPA prior to the work.
- Work cooperatively with stakeholders to enhance recreational activities such as canoeing, other water activities, hiking, and bike trails in the Rest of River corridor within the City and other impacted municipalities.



OK – moving on from the disposal aspect, there are a number of other key provisions I'd like to point out. The Revised Permit provisions also impose limitations on the transport of waste material on small residential streets, especially in the residential neighborhoods in Pittsfield adjacent to Reach 5A.

It also provides for enhanced coordination with municipal officials, affected landowners, and other stakeholders regarding the work activities, schedule and traffic routes, and incorporate this information into work plans submitted to EPA prior to the work.

EPA has also committed to provide technical contractor support for Municipalities in addition to providing Technical Assistance Grant (TAG) funding for community technical support.

Also, as part of the Settlement Agreement, GE has committed to work cooperatively with stakeholders to enhance recreational activities such as canoeing, other water activities, hiking, and bike trails in the Rest of River corridor within the City and other impacted municipalities.

Comparison of Key Metrics

	2016 Permit Remedy	Draft Revised 2020 Permit
Sediment Removal Volume (cy)	889,500	1,029,500
Bank Soil Removal Volume (cy)	25,500	25,500
Sediment Capping After Removal (acres)	298	202
Sediment Backfill After Removal (acres)	0	96
Floodplain Soil Removal Volume (cy)	75,000	78,000
Floodplain Acres Excavated (acres)	45	47
Total Soil/Sediment Volume Removal (cy)	990,000	1,133,000
Estimated PCB Mass Removed (pounds)	46,970	50,500
Estimated Time to Implement (years)	13	13

Notes:

Volumes and areas specified in this table are approximate and are for volume/cost estimation and for comparison purposes only.
 cy: cubic yards



The statement of basis includes information comparing the 2016 Permit with the Draft Revised 2020 Permit. This table, from the Statement of Basis, summarizes some of those key metrics. In particular, the revision is expected to result in the elimination of almost 100 acres of capping (at least 96 acres), removing 143,000 additional cubic yards of contaminated materials from the river, accounting for an estimated additional 3,500 pounds of PCBs removed from the river system. The remedy is expected to take 13 years to complete as the project moves down the river from north to south, though an evaluation will be done to determine if certain aspects of work can be done concurrently to speed the overall project progress.

Comparison of Key Metrics

- More soil/sediment removal from the river
 - Less Reliance on Capping in the river
 - Removes over 3,500 more pounds of PCBs from river system
- Removal of dams at Columbia Mill and Eagle Mill
- Highest levels of contamination taken off-site, remainder in a secure on-site facility
- Proposed Revised Remedy estimated to cost \$576 million (2020 dollars)



I noted earlier, these revisions mean more soil and sediment removal from the river and less reliance on capping in the river (a one-third reduction). The revised plan removes over 50,000 pounds of PCBs from river system – that’s over 3,500 more than the 2016 plan. This plan removes dams at Columbia Mill and Eagle Mill which likely have not been properly maintained in recent years. The plan also ensures that the highest levels of contamination taken off-site, with the remaining lower level material consolidated in a secure on-site facility.

The cost of this revised remedy is estimated at \$576 million in 2020 dollars.

Next Steps on EPA's Permit

- EPA is accepting public comments on the Proposed Modifications to the Permit.
 - Shown in redline/strikeout text in the Permit Revision
 - Supporting information summarized in the “Statement of Basis” and other information in the Administrative Record
- A “Virtual” Public Hearing will also be held
- Details regarding the Hearing and how to comment can be found at our website: www.epa.gov/ge-housatonic



EPA is accepting public comments on the Proposed Modifications to the Permit – please consult our website for specific dates and deadlines.

For ease of review, proposed edits are shown in redline/strikeout text in the Permit Revision.

Information supporting these changes is summarized in the “Statement of Basis” and numerous other documents have been included in the Administrative Record. All of these documents can be found on our website.

A “Virtual” Public Hearing will also be held – again, check our website for specific date and time.

Further documentation, details regarding the Hearing, and instructions on how to comment can be found at our website: www.epa.gov/ge-housatonic

Public Comment Period

- After considering and responding to comments, EPA will finalize a new revised Permit and a formal response to comments.
- EPA hopes to finalize a Revised Permit by the end of 2020.
- Comments can be submitted via e-mail to r1houstonic@epa.gov or by mail to:
USEPA, 5 Post Office Square, Boston, MA 02109



After considering and responding to comments, EPA will finalize a new revised Permit, which we hope to do by the end of 2020.

Comments can be submitted via e-mail to r1houstonic@epa.gov or by mail to USEPA, 5 Post Office Square, Boston, MA 02109.



I appreciate your attention to this presentation and look forward to receiving the public's comments on EPA's proposed revised cleanup plan for the Rest of River. Thank you.