ATTACHMENT 17
EXCERPTS FROM THE REGIONAL RESPONSE TO THE NATIONAL REMEDY REVIEW BOARD COMMENTS ON THE SITE INFORMATION PACKAGE FOR THE GE-PITTSFIELD/HOUSATONIC RIVER PROJECT, REST OF RIVER (AUGUST 3, 2012) (HRI RESPONSE ONLY)

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MEMORANDUM

DATE: August 3, 2012

SUBJECT: Regional Response to National Remedy Review Board Recommendations for the GE-Pittsfield/Housatonic River, Rest of River

FROM: James T. Owens III, Director
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U.S. EPA New England Region 1

TO: Amy R. Legare, Chair
National Remedy Review Board

Stephen J. Ells, Chair
Contaminated Sediments Technical Advisory Group

The National Remedy Review Board and the Contaminated Sediments Technical Advisory Group (the Boards) completed their review of the proposed cleanup action for the Housatonic River, Rest of River site, in Pittsfield, MA, as documented in its memorandum of October 20, 2011. The Region appreciates the Boards' input and recommendations. Subsequent to the Boards' review, the Region has made significant progress in addressing many of the issues raised by the Boards, coordinating with our state partners in Massachusetts and Connecticut, and moving toward a potential remedy for the Rest of River. We have summarized these efforts in a series of technical documents that are being released to the public in advance of a formal remedy proposal. The Region has incorporated the Boards' recommendations, as appropriate, into these technical documents, which serve to supplement the Site Information Package submitted to the Boards in June 2011: a draft Outline of Potential Performance Standards for Alternative SED 9/FP 4 MOD (included as Appendix A), a Revised Comparative Analysis of Alternatives (included as Appendix B), and General Attachments (included as Appendix C), or the Region has otherwise addressed the Boards' recommendations as described below. The Boards' recommendations are listed below in italics followed by the Region's response (see Attachment C-1 of Appendix C for the complete text of the Boards' comments and recommendations).

Recommendation No. 1 - Site Characterization

In the package presented to the Boards, modeling results played an important role in evaluating MNR as a remedial option. The Boards recommend that additional adult

largemouth bass fish tissue data be collected and analyzed in the context of historical data and model output. If the apparent discrepancy between the 2008 data (mean of about 5 ppm PCB in fillet) and model output (about 18 ppm) remains, the modeling should be updated to provide risk projections that more appropriately reflect current conditions. In addition, the updated sampling results may be used to evaluate the effectiveness and benefits of the upstream remediation.
Related to the above recommendation, but from broader perspective, the Boards recommend that the Region expand the adult fish tissue collection efforts to provide an adequate baseline database for evaluating the effectiveness of completed, ongoing and planned remedial actions.

Based on the model predictions described in Appendix F of the package, the Region concluded that Woods Pond, even if modified by deepening and changing the flow direction of the input channel, could not be an effective sediment trap. Based upon a brief analysis of the empirical data for the site, however, it appears to the Boards that the model predictions for trapping efficiency may not be consistent with some of the historical sedimentation data for the site. The Boards believe that a modified Woods Pond, acting as a sediment trap, could reduce the amount of PCBs released over the dam in addition to the reductions that would result from other proposed active remedial measures. Therefore, the Boards recommend that the Region further evaluate the potential incremental improvement in sediment trapping of a modified Wood Ponds and recommends that the Region ask engineers from the US Army Corps of Engineers to assist in this evaluation.

Region's Response

The Region does not believe that there is a true discrepancy between the measured fish tissue concentrations and the modeled concentrations, as the apparent discrepancy lies in the abnormally low lipid content of the fish that were analyzed. This issue is explored and discussed more fully in Attachment C-2 of Appendix C.

Based on the Boards' input, the Region requested that GE conduct additional adult fish tissue sampling in September 2011. GE submitted the data to the Region in January 2012. The concentrations are largely the same as measured in 2008. The Region has reviewed those data, and GE's analysis and those reports are available on the website at http://www.epa.gov/region1/ge/thesite/restofriver/reports/497987.pdf.

As a follow-up to the Boards' recommendation, the Region worked with the U.S. Army Corps of Engineers and the Commonwealth of Massachusetts to further evaluate the potential for incremental improvement in sediment trapping in Woods Pond. The Region agrees that additional deepening or other measures could enhance the Woods Pond component of a cleanup plan. The results of this evaluation are included in Attachment C-3 of Appendix C. This information was used to inform the Revised Comparative Analysis of Alternatives (Appendix B).

Recommendation No. 2 - Human Health/Ecological Risk

During the presentation, the Region stated it is conducting a risk-based PCB cleanup as described in 40 Code of Federal Regulations (CFR) 761.61(c). The Boards recommend that, since, for example, the Region plans to leave soils with PCB contamination in excess of 50 parts per million (ppm), the Superfund program closely coordinate with the Region's Toxic Substances Control Act program to ensure the remedy meets the requirements of 40 CFR 761.61(c).

From the presentations by the Commonwealth and the Region to the Board, it appears that there is a fundamental disagreement concerning the interpretation and application of some of the criteria for remedy selection. Particularly noteworthy are the differences in perspective on the balancing of short-term and potential long-term environmental impacts from remedy implementation and the reduction of long-term risks predicted to be achieved by a protective remedy. The presentation by the Commonwealth indicated that it sees the impacts to Commonwealth-listed species resulting from the need to control stream meandering as a long-term impact whereas the Region contends that habitat restoration and other impact reduction measures will be effective in meeting the requirements of the Commonwealth's endangered species law and therefore any impacts will be only short-term. The Commonwealth's presentation also indicated that it believes the long-term ecological risks (e.g. adverse effects to mink and wood duck) were acceptable when balanced against the impacts of remediation on habitat loss. Alternately, EPA sees these long-term ecological risks as requiring remediation to meet the threshold criteria for selecting a remedy that is protective. The Boards recommend that the Region consolidate the discussion on the documented ecological impacts at the site and compare them to the Agency's requirements under CERCLA and the RCRA Permit to select a remedy protective of all identified receptors (assessment endpoints). This consolidated presentation will allow for a direct comparison of short –term and long-term risks and impacts and how these risks are balanced, justified and consistent with remedy selection criteria in any decision documents.

The Boards note that CERCLA and the RCRA Permit identify protectiveness of human health and the environment as a threshold criterion that all remedies must achieve. Furthermore, the NCP states that the use of institutional controls should supplement (not substitute for) active response measures (e.g., ICs should not substitute for active response measures as the sole remedy unless such active measures are determined not to be practicable). The remedy supported by the Commonwealth appears to rely solely on institutional controls (ICs) to protect human health through consumption of fish by restricting all consumption, whereas the remedy preferred by the Region would achieve a measure of risk reduction that results in risks from fish consumption within the acceptable risk range and at a hazard quotient of 1 under a central tendency exposure scenario in virtually all reaches. The Board recommends that the Region emphasize in the decision document (through both deterministic and probabilistic risk methods) that the remedy allows for some degree of fish consumption and, consistent with the NCP, does not rely solely on ICs to achieve a level of protectiveness for this exposure.

Regional Response

The Region is coordinating internally with the Toxic Substances Control Act (TSCA) program to ensure the remedy meets the requirements of 40 CFR 761.61(c).

Since the Board meeting, the Region and representatives from HQ and the states of Massachusetts and Connecticut have been working cooperatively for the last several months to discuss potential approaches to clean up the Rest of River. These discussions focused, in part, on the need to address the risks from polychlorinated biphenyls (PCBs) to humans, fish, wildlife, and other organisms while avoiding, mitigating, or minimizing the impacts of the cleanup on the unique ecological character of the Housatonic River. In May 2012, EPA released a fact sheet summarizing many of the discussions among EPA and the states. This fact sheet, entitled "Potential Remediation Approaches to the GE-Pittsfield/Housatonic River Site 'Rest of River' PCB Contamination" has been attached in Attachment C-4 of Appendix C for your information. The Revised Comparative Analysis of Alternatives (Appendix B) reflects the current thinking from these discussions.

In these discussions, it was agreed that the protection of human health, including the consumption of fish, was a high priority. The draft Outline of Potential Performance Standards (Appendix A) reflects that thinking.

Recommendation No. 3 - Principal Threat Waste

The package presented to the Boards included a discussion of principal threat waste (PTW). While the discussion addressed contaminant mobility, it did not specifically address toxicity and why the high concentrations of PCBs (some locations at greater than 800 ppm) in floodplain soils would not be considered PTW materials subject to Comprehensive Environmental Response, Compensation and Liability Act's (CERCLA's) and the NCP's preference for treatment to the maximum extent practicable. Consistent with A Guide to Principal Threat and Low Level Threat Wastes (OSWER Directive No. 9380.3-06FS) which addresses the preference for treatment of highly toxic materials, and in light of A Guide on Remedial Actions at Superfund Sites with PCB Contamination (OSWER Directive No. 9355.4-01FS) which states that PTW will generally include soils contaminated at concentrations greater than 100 ppm PCBs, the Boards recommend that in its decision documents, the Region more thoroughly explain how its reading of Agency guidance and its approach to treatment at this site are consistent with the statute and NCP.

Regional Response

A Guide to Principal Threat and Low Level Threat Wastes (OSWER Directive No. 9380.3-06FS), Highlight 2, lists contaminated sediment and contaminated soil as examples of "source material." The description of a source material as a principal threat waste is based on whether the material is considered to be highly toxic or highly mobile and generally cannot be reliably contained or poses a significant risk to human health or the environment if exposure were to occur. This directive also states a preference for

treatment of highly toxic materials and, as the Boards note, in A Guide on Remedial Actions at Superfund Sites with PCB Contamination (OSWER Directive No. 9355.4-01FS), it states that principal threat waste will generally include soil contaminated at concentrations greater than 100 ppm PCBs in residential areas.

At the Rest of River site, contaminated sediment and bank soil in many reaches of the river have been demonstrated to be highly mobile, resulting in downstream transport and unacceptable risks (e.g., greater than 10^{-3} for human fish consumption) to human health and the environment and are considered to be principal threat wastes. However, there are no locations at which concentrations greater than 100 ppm occur on residential properties.

With respect to contaminated sediments, EPA's *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (EPA, 2005) states that although the NCP provides a preference for treatment for "principal threat waste," treatment has frequently not been selected for contaminated sediment. High costs, uncertain effectiveness, and/or community preferences (for on-site operations) are factors that lead to treatment being selected infrequently at sediment sites. The contaminated sediment guidance goes on to state that "... the practicability of treatment, and whether a treatment alternative should be selected, should be evaluated against the NCP's nine remedy selection criteria. Based on available technology, treatment is not considered practicable at most sediment sites." Also, "[i]t should be recognized that in-situ containment can also be effective for principal threat wastes, where that approach represents the best balance of the NCP nine remedy selection criteria."

Recommendation No. 4 - Remedial Action Objective

The review package states that RAOs will address human and ecological risks as well as downstream migration of PCBs. The Boards recommend that any decision documents for an engineering performance-based (dredging to a depth to allow placement of a 2-2.5 foot cap) remedy that isolates PCBs in the sediments through a bank-to-bank design should clearly explain why a numeric remediation goal (known as interim media protection goals [IMPGs] in the review package) for sediments that is protective of human health will not be developed. The decision documents should also better explain where the IMPGs/cleanup standards will be applied (i.e., in which exposure area) in the floodplain and how meeting these levels will be met and how the RAO will be achieved.

The current thinking on how the RAOs for the remedy will be achieved is reflected in the draft Outline of Potential Performance Standards in Appendix A and in the Revised Comparative Analysis of Alternatives (Appendix B).

Recommendation No. 5 - Remedy Performance

Based on the information presented, the Boards believe that the proposed cleanup at this site would leave large quantities of PCBs in floodplain soils. In the future, EPA may determine that leaving this remaining waste on site is not protective of human health and

the environment. Therefore, the Boards recommend that the Region consider including a contingency remedy (e.g. pursuing other response actions in an adaptive framework) in the decision documents that would describe a cleanup approach resulting in more risk reduction through additional floodplain soil source removal or other active remediation alternatives.

The Region's presentation included a discussion on implementing an adaptive management approach to the remedial action. The Board and CSTAG recommend that the decision document better describe that the selected remedy is based on the current understanding and knowledge of the site and that its implementation will be phased and conducted within the adaptive management framework. For example, the first phase of implementation could begin with remediation (or a demonstration project) of Reach 5A and Woods Pond (pending the results of further analysis of Woods Pond being a potential sediment trap) that includes habitat replacement and reconstruction. Additionally, the Region should describe the various implementation contingency approaches (e.g., remediation and habitat mitigation/replacement/reconstruction methods) that will be developed to provide implementation options within the adaptive framework. This description should also include provisions to pilot test amendments to the cap, such as active amendments and/or granular activated carbon, to reduce the bioavailability of PCBs. Recent pilot projects for in-situ amendments at Hunter's Point (CA) and Grasse River (NY) have demonstrated reduction in PCB bioavailability.

The Region stated that there are a number of dams (including the ones at Woods Pond and Rising Pond) that must be maintained in order for the remedy to be protective. The Boards note that dams are being removed in a number of places across the country to improve the environmental conditions of rivers. Therefore, the Boards recommend that the remedy include requirements for addressing contaminated sediments stored behind the dams as part of any future dam maintenance and/or dam removal activities. Costs for dam maintenance (to the extent necessary to ensure that sediments remain contained) and/or sediment removal activities should be included in the cost estimates.

A critical component potentially affecting the success of the Region's preferred remedy is the prevention of the future releases of PCBs from the eroding banks in the upper seven miles or so of the river. The Commonwealth and many of the stakeholders acknowledge that the banks are eroding significant amounts of PCBs but are strongly opposed to the type of hard bank stabilization techniques that were used in the upper two miles. The Boards recommend that the Region provide additional information in the decision documents supporting the effectiveness of softer bioengineering techniques in this part of the river with its low gradient, locations with steep banks, and high flow rates during storm events. The Region also should explain the key uncertainties that were considered in evaluating the long-term effectiveness of these bioengineering techniques. In its presentation to the Boards, the Commonwealth was confident that the extensive bank stabilization proposed in the preferred remedy would prevent the river from meandering and the subsequent formation of new oxbow lakes. The Commonwealth believes that containment of the river within its current banks would have long-lasting detrimental and irrevocable impacts on the floodplain wetlands, vernal pools, and many of the

Commonwealth-listed wildlife and plant species that depend on these habitats. The Boards recommend that in the decision documents the Region expand its rationale on why bank stabilization will not result in the long-term adverse impacts to the ecosystem suggested by the Commonwealth. The rationale should address the relative importance of oxbow lake formation versus periodic flooding on the long-term continued existence of wetlands, vernal pools, and the Commonwealth-listed species that rely on a wetland ecosystem. The Boards also recommend that in the decision documents, the Region directly address the Commonwealth's position that channel migration is critical to "maintain[ing] a diverse mosaic of wetlands and habitats that support species diversity over time." The Boards believe it would be useful for purposes of evaluating alternatives and ensuring meaningful public participation for the Region to estimate how many of the 66 vernal pools and how many acres of wetlands would disappear or be ecologically non-functional if the river stops meandering.

Regional Response

The Region and representatives from HQ and the states of Massachusetts and Connecticut have been working cooperatively for the last several months to discuss potential approaches to clean up the Rest of River. These discussions focused, in part, on the need to address the risks from polychlorinated biphenyls (PCBs) to humans, fish, wildlife, and other organisms while avoiding, mitigating, or minimizing the impacts of the cleanup on the unique ecological character of the Housatonic River, including the meandering nature of the river and contaminated eroding banks, and habitat areas for state-listed species of concern in floodplain areas. The draft Outline of Potential Performance Standards (Appendix A) and the Revised Comparative Analysis of Alternatives (Appendix B) reflect the current thinking from these discussions. In these documents, there are provisions that if a future change in land use in the floodplain occurs, then performance standards for the new use would apply and could require additional removal; and provisions for the evaluation of residual levels of contamination in the floodplain that could impact the compliance with the biota and downstream transport performance standards. The Region believes that the potential approach outlined in these documents strikes the appropriate balance between these priorities. The response to the bank restoration questions posed by the Boards is included in Attachment C-5 of Appendix C.

Adaptive management is included in many facets of the current thinking in the draft Outline of Potential Performance Standards (Appendix A) and the draft cleanup plan summarized in Appendix B. The implementation of adaptive management ranges from conducting the river cleanup and restoration in a phased approach to piloting the inclusion of an additive such as organic carbon.

The Region believes that the potential for dam removal and/or maintenance can be dealt with in two ways. The first is a contingency remedy providing for cleanup of contaminated sediment behind the dams to dovetail with a dam removal action; the second is through a combination of institutional controls on dam monitoring and

maintenance, and by having GE remain responsible for incremental increases in costs associated with the PCBs encountered in normal dam maintenance by a third party.

Recommendation No. 6 - Stakeholders

The Boards appreciate all of the time and effort taken by the stakeholders to provide their thoughts on the future actions to be taken at this portion of the site.

The package provided to the Board outlines the complexity of the remedy components as selected through the RCRA permit process yet implemented as a Superfund remedial action. It may be challenging to stakeholders to understand the logic/basis of the remedy option components, how they fit into the overall remedy, and how the remedy as a whole meets and is consistent with Superfund remedy selection criteria and guidance. The Board recommends that the Region develop a communication plan for the stakeholders to concisely and clearly convey how the individual components of the remedy fit together to achieve the remedial action objectives and meet the criteria for remedy selection.

Regional Response

The Region agrees with the Boards that the role of the regulatory programs at the site is complex and can be confusing. The Region has worked with the stakeholders to clearly communicate the nine criteria for remedy selection specified in the Reissued RCRA Permit. The Region sponsored a series of workshops and a charrette that, among other things, did just that. The Region will continue to communicate with stakeholders through an outreach program as we go forward.

Recommendation No. 7 - Early Action

In the presentation the Region identified three residential areas above Superfund residential PCB action levels (i.e. 1 ppm per OSWER Directive No. 9355.4-01 FS, A Guide on Remedial Actions at Superfund Sites With PCB Contamination) and high use recreational areas (river access, camping, etc) above PCB action levels. Since the Rest of River will be implemented as a Superfund remedial action, the Board recommends that the Region consider conducting an early action (e.g., removal or early interim action) in parallel with the other Rest of River activity to address the exposure as soon as practical.

Regional Response

The Region has initiated action with GE for the Removal Action Area outside the Rest of River in which GE has to sample and remediate "Actual and Potential Lawns" on the residential properties within the floodplain of Rest of River that exceed the 2 mg/kg residential cleanup level (based on the Massachusetts residential cleanup standards). The Region will consider other early actions during the remedial design phase of the Rest of River cleanup.

The Region appreciates the Boards' assistance on this complex project. In the months ahead, we will continue to work on a potential approach to cleanup to release for public comment. If you have additional questions regarding the responses in this memorandum or any of the information presented in the appendices, please feel free to contact me or Susan Svirsky, Remedial Project Manager, at 671-918-1434.

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