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EPA National Remedy Review Board  
c/o Bob Cianciarulo  
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Boston, MA 02109-3912

Re: The Commonwealth of Massachusetts' summary of its position on the proper remedial approach for the General Electric-Housatonic River Site/Rest of River project

Dear Board members:

The Commonwealth of Massachusetts, through its Executive Office of Energy and Environmental Affairs ("EEA"), the Massachusetts Department of Environmental Protection ("MassDEP") and the Massachusetts Department of Fish and Game ("DFG"), appreciates the opportunity to provide a written summary to the National Remedy Review Board (the "Board") of the state's position on the proper remedial approach for the General Electric-Housatonic River Site/Rest of River project.

It is the Commonwealth's understanding that in late July, EPA's Region 1 will meet with the Board to present its proposed remedy for the Rest of River ("ROR") based on an assessment of the remedial alternatives analyzed by General Electric ("GE") in its October 2010 Revised Corrective Measures Study ("CMS") and on comments on the CMS by interested stakeholders, including the Commonwealth. On January 31, 2011, the Commonwealth submitted detailed comments on the revised CMS followed by an addendum on February 22, 2011 analyzing in more detail areas within the ROR floodplain that could be excavated without causing significant environmental damage. At the outset, the Commonwealth's comments highlighted the ecological uniqueness and significance of the Housatonic River watershed as the proper context and starting point for evaluating the impacts and merits of the remedy alternatives in the revised CMS. With that paramount consideration in mind, the Commonwealth's comments set forth a conceptual remedy proposal for the ROR, based on our conclusion that none of the existing remedy alternatives strike the right ecological balance and will cause substantially more ecological harm than benefit to this unique ecosystem.

While this written summary of the Commonwealth's position outlines the most important themes and points made in our previous comment letters on the CMS, the Board's page limitations preclude us from providing you with the same level of detailed comments and graphics contained therein. We urge the Board to review the full version the Commonwealth's comments and information supporting our conceptual remedy proposal, which is attached to this letter as Attachment B.

In providing this written summary to the Board, the Commonwealth is at a disadvantage due to the lack of specific information we have about Region 1's proposed remedy. We asked that the remedy review board process be deferred until there was extensive dialogue with Region 1 concerning the appropriate remedy. This dialogue could result in a consensus on how to proceed, or at least give the Commonwealth a detailed understanding of Region 1's proposed remedy so that you would have the benefit of a meaningful assessment of that proposal from the perspective of the Commonwealth's remediation and ecology experts. Unfortunately, that request was not granted. As we write these comments, while we now have a general understanding from Region 1 of their concerns about certain aspects of the Commonwealth's conceptual remedy proposal, we have not had detailed discussions with Region 1 regarding the scope and ramifications of the sediment, floodplain and disposal components of Region 1's proposed remedy. We continue to be disappointed that a remedy is being presented to you without the Commonwealth being fully briefed, and believe that this detracts from your ability to evaluate the proposed remedy, and whether it has the support of key stakeholders. For these reasons, the Commonwealth requests that the Board's comments back to Region 1 include the directive that Region 1 directly engage with the Commonwealth on the specifics of Region 1's proposed remedy, and then report back to the Board on how Region 1 has considered and addressed the Commonwealth's interests and concerns, with reference to underlying principles and balancing approach of our alternative remedy proposal.

As we will discuss below, the stakes are high for this ROR remedy and it is incumbent on the Board to carefully scrutinize Region 1's assumptions and balancing approach, mindful of the scope and special character of the Housatonic River ecosystem to Massachusetts and the points raised by our alternative remedy proposal.

## **Introduction**

The Housatonic River suffers from a legacy of contamination resulting from PCBs that were released from the GE facility in Pittsfield from the 1930s through the 1970s, contaminating the Housatonic River sediment, banks, and floodplain soils. Despite this legacy of contamination, the Housatonic River Watershed encompasses a rich and unique ecosystem supporting many plant and animal species and their associated habitats protected under the MA Endangered Species Act ("MESA"), including wetlands, floodplains, vernal pools, surface waters, and forested areas. These are natural resources precious to the Commonwealth, and they must be protected, even as we rightfully demand that contamination from decades of industrial abuse be rectified once and for all.

However, after extensive review of the remedial alternatives presented to date, the Commonwealth has concluded that none of the current combinations of alternatives achieve the remediation goals without causing irreparable harm to this unique, diverse and vital ecosystem that has been designated by the Commonwealth as an Area of Critical Environmental Concern (ACEC). This reality led us to propose an alternative phased, long-term remedy that minimizes human health risks posed by PCBs in the environment while carefully balancing potential other benefits of remediation against destructive ecological impacts to this rich and unique system that such remediation might impose. Our proposed remedy will protect human health from risks associated with direct contact with PCB's, but avoids intrusive work on the riverbanks and elsewhere that results in actual damage to unique ecological resources that exceeds the benefits of lower PCB concentrations to affected wildlife.

The Commonwealth's approach is fully consistent with the nine (9) remedy decision criteria specified in the RCRA permit for the ROR cleanup ("permit criteria"), which includes an evaluation of how an alternative provides overall protection of human health and the environment, and also requires EPA to carefully weigh the long-term adverse effects on environmentally sensitive areas. Indeed, EPA's own remediation guidance (EPA 2005, *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites*), provides for the weighing of the long and short term benefits of meeting certain ecological Interim Media Protection Goals (IMPGs) against the environmental damage that would be incurred through the remediation actions necessary to achieve those IMPGs. Similarly, in *A Risk Management Strategy for PCB-Contaminated Sediment (NRC 2001)*, the National Research Council ("NRC") makes the point that there is no "one size fits all" approach or "right answer" to PCB remediation strategies. Instead, the NRC recommends an iterative approach to risk assessment that takes into account stakeholder and community interests as well as the ecological significance of the contaminated site.

With these considerations in mind, our proposed remedy calls for the removal of PCBs when needed to protect human health from risks associated with direct contact with PCBs, but avoids intrusive work solely to meet established ecological interim media protection goals ("IMPGs"). In that regard, while EPA's permit criteria include an assessment of the extent to which an alternative will attain ecological IMPGs, an alternative is not disqualified from selection because it will not attain them in every area of the site. This is particularly appropriate in the instant case, where it arises out of a determination that in virtually all instances the actual and inevitable damage to this existing, unique ecological resource will far exceed the theoretical benefit of lower PCB concentrations for the affected wildlife and their habitats.

Moreover, in weighing the relevant permit criteria, the Commonwealth necessarily considered the risk intended to be addressed through compliance with the ecological IMPGs, including by drawing on our knowledge of the status and health of wildlife populations. As highlighted below, the Housatonic River watershed supports one of the greatest concentrations of species listed and protected under MESA in the Commonwealth. The existence of large and robust wildlife populations in the Primary Study Area ("PSA") for ROR have been reaffirmed through recent field studies conducted by the Natural Heritage Endangered Species Program ("NHESP"). Despite intensive study by multiple parties and voluminous reporting, there is no meaningful empirical evidence that has been presented to-date showing *population-level* impacts of PCBs on any wildlife species in the PSA. In fact, as shown by the results of the NHESP surveys and other evidence, the PSA appears to support robust populations of many species.

Thus, when considering the potential effects of PCBs on wildlife, it is important to distinguish between the health of wildlife *populations*, defined at an appropriate scale, as distinct from the risk of morbidity and mortality to *individual* animals when weighing the relative impacts of not achieving ecological IMPGs against permanently eliminating or altering unique species subpopulations and habitats that depend on ecological features such as the ongoing dynamic action of the meandering river.

In addition, while the argument for population-level impacts to individual species hinge largely on models with many assumptions and a great deal of uncertainty, *even if* populations of certain common species such as mink and otter were to be experiencing localized population-level impacts as a result of PCBs, it is the Commonwealth's view that the ecological harm that would be caused by implementation of many of the remediation alternatives would still far outweigh the benefits. In saying this we are not discounting potential ecological impacts of PCBs; rather, we are selecting the least damaging ecological choice from a suite of less than ideal options. Many of the species of greatest theoretical concern (e.g. piscivorous carnivores) are common to abundant throughout much of the Commonwealth, being highly mobile and resilient. All of these factors support our conclusion that, on balance, elevating the attainment of ecological IMPGs over the long-term adverse impacts on the affected habitats caused by such remediation cannot be justified, particularly in light of the absence of PCB-caused population-level effects on wildlife.

Finally, while the Commonwealth's comment letters during the CMS process have emphasized the importance of restoring areas that have been remediated for public health reasons, restoration should *not* be the determinative consideration when deciding, as a threshold matter, whether to meet an ecological remediation goal at the expense of excavating or reengineering the delicately balanced, dependent ecosystem. Relevant to the implementability permit criterion, it is clear that any remedy that relies upon bank stabilization results in the permanent loss of the dynamic nature of the river. Such a loss cannot be mitigated or restored. This reality warrants according more weight to a remedy approach that demonstrates its long-term reliability and effectiveness by avoiding remediation for ecological reasons unless it can be shown that doing so *clearly* outweighs the short and long-term impact on the affected wildlife and their habitats.

The Commonwealth proposed a conceptual remedy based on the above principles with the following components:

- Excavate Woods Pond to remove approximately 300,000 cubic yards of PCB-contaminated sediment and bring the average concentration of PCBs in Woods Pond to 1 ppm, with the highest concentration at 6 ppm. This reduces the downstream risk to public health and safety by eliminating up to 25% of the mass of PCBs in the *entire rest of the river* from Lenox to the Long Island Sound. It would also increase the sediment trapping efficiency of the pond, protect downstream public health and safety in the event of a dam failure, and enhance recreational uses of the pond – all without causing any significant ecological damage, as there are no MESA state-listed species habitats within the pond, a nearby staging area is available, and a nearby rail line could transport the excavated material off-site.
- Perform no bank or river excavation and stabilization as such work, by its nature permanently changes the character and ecosystem of the river. Such work is not necessary to meet any of the direct-contact human health goals identified by the EPA and will inevitably cause severe and long-lasting destruction of the Housatonic River ecosystem and state-listed rare species, which far outweighs any environmental benefits from PCB removal.
- In the floodplain, ensure that EPA's human health excess cancer risk of  $10^{-4}$  and a non-cancer risk limit equal to a hazard index of 1 are met for all direct-contact exposure scenarios. Perform further remediation to add an additional layer of protection when it can be done without causing significant environmental damage to highly sensitive rare species habitats. In the less ecologically sensitive areas in the floodplain, a combination of institutional controls, exposure-area averaging, and carefully selected excavation should be used to achieve target risk levels.
- Transport all excavated material off-site, taking advantage of the nearby rail line. Under no circumstances should there be a hazardous waste landfill constructed in Berkshire County for the excavated material. To site a new hazardous waste landfill here would result in an unacceptable additional adverse impact to the local community given that there are viable alternatives at existing, out-of-state disposal facilities.
- Perform ongoing monitoring of the success of past and future remediation efforts, ongoing consideration of new technologies as they become available, and reconsider final options as more data is gathered.
- Implement a more robust, comprehensive set of institutional controls similar to those employed by the Great Lakes states to reasonably address the human health risk associated with fish and waterfowl consumption, including increased signage, best management practices, and public

education and outreach activities using a range of media, with a particular focus on high use areas.

Recognition of the ecological uniqueness and importance of the Housatonic River watershed is at the core of the Commonwealth's proposal. Summarized below are the dramatic impacts that the remedial measures evaluated in the CMS, including Region 1's proposal as we understand it, would have on the meandering character of the river, its banks, the floodplain, and on MESA state-listed species and their habitat to underscore the importance of preserving this ecosystem.

## **The Ecological Uniqueness and Significance of the Housatonic River Watershed**

The Housatonic River watershed is one of the most biologically rich and unique regions of the Commonwealth. Its limestone bedrock creates an exceptional hydrological base, supporting rich, calcareous soils and wetlands found only in this region. These rich soils and wetlands of the valley floor create a unique ecosystem which supports many species found nowhere else in Massachusetts. The Housatonic River watershed is home to 110 species of plants and 51 species of animals that are protected under Massachusetts Endangered Species Act, M.G.L. c. 131A, ("MESA") and the MESA regulations at 321 CMR 10.00. It also contains 13 high priority Natural Communities, 12 certified vernal pools and up to 107 potential vernal pools.

In addition to the wide range of state-listed species under MESA, the Housatonic River supports a substantial and highly productive fisheries resource. Thirty-seven species of fish have been found in the river and its supporting waters providing important, valuable and diverse recreational fisheries for both warm and coldwater species. Moreover, the Housatonic supports coldwater habitat including the main stem of the Housatonic River and its direct tributaries. These coldwater fisheries are protected under 314 CMR 4.06 of the MA Surface Water Quality Standards ("MA WQS") as coldwater habitat. The MA WQS require that both the fish population and habitat be protected and maintained as designated or existing uses. Recognizing these unique resources, the Commonwealth has designated the Upper Housatonic Watershed (which includes the primary study area of the CMS) as an Area of Critical Environmental Concern (ACEC). In that designation, the EEA Secretary found as follows:

The Upper Housatonic River Area of Critical Environmental Concern ("ACEC") encompasses the 13-mile corridor of the Housatonic River from southern Pittsfield to northern Lee, and portions of the supporting watersheds that drain into the river from the east and west. This section of the Housatonic River includes a complex ecosystem of the river, adjacent wetlands and floodplains, coldwater tributary streams, large expanses of wildlife and rare species habitat, and the steep, forested, western slopes of October Mountain State Forest. There are also historical and archaeological resources, farmland and open space, and scenic and recreational areas. The ACEC includes all nine of the inland resource features listed in the ACEC regulations - including fisheries, wetlands and surface waters, water supply areas, floodplains and steep slopes, agricultural and forested areas, historical and archaeological resources, wildlife and rare species habitats, and public recreational and natural areas.

The regionally significant biodiversity and wildlife habitat in the ACEC is indicated by the exceptional number of rare species (32), Certified and Potential Vernal Pools (46), and the combined total of 11,405 acres or 93% of the area delineated as viable habitat by the Division of Fisheries and Wildlife's (DFW) Natural Heritage & Endangered Species Program (NHESP). Of this total, 7,869 acres (64%) of the ACEC is designated as BioMap Core Habitat and Supporting Natural Landscapes, 3,536 acres (29%) as Living Waters Core Habitat and Critical Supporting Watershed. Regulated areas of rare species Priority Habitats and Estimated Habitats total 3,130 acres or 25% of the ACEC, with the majority of these acres included in the BioMap and Living Waters areas. There are more than 21 river miles of Coldwater Fisheries, with breeding populations of native brook trout, and other fishery resources totaling approximately 30 fish species. Common wildlife in the region includes bobcat, coyote, deer, bear, and moose. The extensive

wildlife habitats of the ACEC, including many rare and unique habitats, illustrate the close ecological interdependence of the various natural and cultural resource features of the ACEC. The area is important for fishing, tourism, recreation, forestry, and agriculture.

The Primary Study Area (the “PSA”) for the Rest of River remediation extends from the confluence of the East and West Branches of the Housatonic River in Pittsfield, to Woods Pond in Lenox. This stretch of Housatonic River in the PSA is a low-gradient, large river that is free to migrate across hundreds of acres of Commonwealth-protected open space and sculpt the floodplain. The meandering river is constantly reshaping the landscape, creating an incredible diversity of habitats including oxbow wetlands, backwaters, sloughs, and vernal pools (Figures 7-9). The fertile soils, shifting banks and dynamic nature of the river are precisely what make the Housatonic River segments of the PSA an ecologically unique resource among all the major rivers in the Commonwealth. The PSA also supports an abundance of diverse and ecologically sensitive wildlife resources including 25 state-listed species.

In addition, the Commonwealth’s Division of Fisheries and Wildlife (“DFW”), a division of the Department of Fish & Game, owns one or both sides of approximately 85% of the land along the river’s bank in the PSA, including the 818 acre George L. Darey Housatonic Valley Wildlife Management Area (the “Darey WMA”). The Darey WMA is spread across multiple parcels consisting of river-front and floodplain and is one of western Massachusetts’ most heavily utilized wildlife management areas for all types of passive recreation, including hunting, fishing, trapping, hiking, canoeing, kayaking, bird watching, and wildlife viewing. Thus, in addition to its regulatory interests, the Commonwealth is a major landowner within the PSA, with stewardship responsibilities over a wildlife management area that is highly valued by recreational stakeholders.

### ***The PSA is a Critical Area for Biodiversity and State-listed Species***

The Housatonic River watershed supports one of the greatest concentrations of plant and animal species listed for protection under MESA in the Commonwealth. The Commonwealth has documented 25 state-listed species within the PSA alone, including 6 species that are listed as “Endangered” and 9 that are listed as “Threatened.” The list of these 25 state-listed species is shown in Table 1.

The Commonwealth has divided the PSA into four sections as illustrated in Figure 1. It is striking that almost the entire PSA is mapped as priority habitat for one or more state-listed species by DFW’s Natural Heritage & Endangered Species Program (“NHESP”) pursuant to the MESA regulations (Figure 2). Figures 3, 4 and 5, in turn, depict the high degree of overlap between priority habitats of individual species, with some areas being mapped for up to 15 state-listed species at any given point on the ground. See Table 2 for the list of the 15 species in the core habitats.

As shown in Figure 6, the PSA contains core areas for 15 species, which covers a majority of the PSA. While all 25 of the state-listed species with habitat in the PSA may experience some level of negative impact due to remediation activities, the 15 species for which core areas have been designated are particularly sensitive to such impacts.

From a MESA standpoint, the Housatonic River watershed has long been recognized for its diversity of rare species, many of which are found nowhere else in the Commonwealth. Moreover, recent field surveys conducted by the NHESP have greatly improved our understanding of the distribution of state-listed species, vernal pool-breeding amphibians, and important natural communities. More specifically, 2010 NHESP report entitled, *Rare Species and Natural Community Surveys in the Housatonic River Watershed of Western Massachusetts*, summarizes the most intensive and comprehensive ecological field study in the history of the NHESP. Nearly 50 people participated in field studies and conducted nearly 2,500 site visits, with a level of effort encompassing 495 days and more than 9000 person-hours. See

Appendix B in the Commonwealth's January 31, 2011 comments on the revised CMS, which is attached to this letter.

The NHESP surveys targeted a total of 60 state-listed species including 31 plants, 3 butterflies and moths, 5 dragonflies and damselflies, 2 freshwater mussels, 4 fish, 2 salamanders, 3 turtles, and 10 marsh birds. The project also targeted 12 priority (S1-S3) natural community types. A total of 47 target species and 21 non-target state-listed species were encountered during these surveys. Among the newly documented species were 10 Endangered, 5 Threatened, and 6 Special Concern species. Moreover, all of the target natural communities were found, plus an additional 4 priority natural community types were documented for the first time in the critical supporting watershed.

In short, these recent MESA-related surveys provide fresh documentation of the wide range of robust state-listed species and amphibian populations within the PSA that occur despite PCB contamination. These surveys underscore the critical importance of avoiding and minimizing impacts to these species and their habitats as a core consideration of the Rest of River remedy selection process, and counsel strongly against sacrificing an actual, existing rich ecology in the name of achieving a theoretical ecological benefit from PCB removal.

### ***The Importance of Preserving the Meandering and Dynamic Character of the Housatonic River and Floodplain***

In recognition of the ecological significance of the Housatonic River watershed, the Commonwealth has invested substantial public funds and resources to acquire and protect this unique river and floodplain environment. These natural areas with a high degree of "ecosystem integrity" retain not only a full complement of native plants and animals, but also the natural *processes* that maintain those species in the long term. Low gradient rivers with intact, undeveloped floodplains move, and it is this channel migration that maintains a diverse mosaic of wetlands and habitats that support species diversity over time. One of the most unique aspects of the Housatonic River and floodplain in the PSA is the degree of meandering of the river and the presence of backwaters, side channels, oxbows, and remnant oxbows that have developed into diverse wetlands. Indeed, it is extremely unusual to see this morphology in rivers of this size in Massachusetts or elsewhere in southern New England. To underscore this critical point, we have included a series of visual representations in Appendix A (Figures 7, 8 and 9) that illustrate the channel migration and wetlands formation process that characterize the Housatonic River system.

**Figure 7** illustrates the great diversity of wetland types and habitat features created by the meandering Housatonic River within the PSA.

**Figure 8** illustrates how these vital habitat features are formed by the meandering river. River segments that remain relatively stable allow for the establishment of streamside and aquatic vegetation, while fallen trunks and branches (snags) provide additional aquatic habitat. Gradual channel migration and sudden meander cut-offs greatly increase the variety of habitats available on the floodplain through continual creation of floodplain wetlands, which then undergo gradual vegetation succession.

As shown in Figure 8a, gradual erosion occurs on the outer bank of a meander while sediment deposition occurs on the inner bank. This process causes the river to migrate, thereby creating a deeper, more sinuous meander. Eventually, often during a major storm, the river channel cuts off to establish a straighter path, creating an oxbow lake (Figure 8b; Figure 7). Over time, the floodplain ponds reconnect to the river during flood events, leading to sediment deposition in the oxbows, as well as an exchange of organisms. As the oxbows gradually fill with sediment, the changes in vegetation ("succession") lead to the great diversity of wetland types found in the

PSA, including oxbow lakes, vernal pools, sloughs, side channels, shrub swamps, marshes, wet meadows, and various types of floodplain forest (Figures 8c-d).

**Figure 9** illustrates two recent examples of meander cutoff, oxbow and side channel formation from the 1970s to 1990s. Recent M.S. thesis research by Heather Pierce and Dr. Melinda Daniels of the University of Connecticut, confirms that the Housatonic has undergone considerable channel migration from the 1940s through 2001, with particularly dramatic changes during the 1970s. Among other findings, this research highlights that current geofluvial models do not adequately predict the amount of channel migration that was observed during the study period. Scientists are only beginning to understand complex riverine systems such as the Housatonic, so there is a great deal of uncertainty about the effects of any attempts by humans to manipulate these systems. The implications of this uncertainty for the remediation selection process are discussed later in this letter.

In short, for these floodplain ecosystem processes to continue to maintain biological diversity, the stream banks must be “soft” or natural—that is, the river must be able to shape its floodplain and erode and deposit sediment. ***In the absence of channel migration, floodplain oxbows and wetlands will gradually fill with sediment over time, and the diverse mosaic of wetlands in different states of succession will be lost.***

Thus, it is important to consider carefully the uniqueness of the Housatonic River system, including the severity of such a loss on the ecology and biodiversity of the Commonwealth and Southern New England, when selecting a remedy for the Rest of River. We cannot stress enough that there simply are no other rivers in Massachusetts (and few in New England) of the size of the Housatonic with the kind of floodplain dynamics illustrated in Figures 7 through 9. These defining characteristics of the Housatonic River, in turn, weigh heavily in the Commonwealth’s development of its proposed remediation approach.

### **Reduction of Human Health Risks – A Commonwealth Priority**

The Commonwealth strongly supports remedial alternatives that reduce the level of risk to human health from the PCBs in the system. The Human Health Risk Assessment (“HHRA”) report for ROR evaluated three primary exposure scenarios through which people may be exposed to PCBs, including direct contact with soil and sediment during recreational, residential, commercial and agricultural activities in the floodplain; consumption of fish and waterfowl taken from the river; and consumption of agricultural products produced in the floodplain such as milk, eggs and plants. The results of the HHRA demonstrated that remedial actions for the ROR are necessary to reduce human health risks.

The revised CMS presents an analysis of the ability to achieve certain human health risk standards through a combination of various sediment and floodplain alternatives. For consumption of agricultural products, all proposed alternatives will meet acceptable risk standards, including the Monitored Natural Recovery (MNR) option. For direct contact with soil and sediment, current conditions do not meet human health standards in many of the floodplain areas and in one sediment area (located within the banks of Woods Pond). Using highly protective assumptions about human health exposure frequencies, EPA has established a range of acceptable concentration limits to guide the remedy selection. The Commonwealth supports this range, and advocates remediation of floodplain soils to meet the EPA’s human health excess cancer risk of  $10^{-4}$  and a non-cancer risk limit equal to a hazard index of 1, as well as further remediation to add an additional layer of protection when it can be done without causing significant environmental damage.

Consistent with these principles, the Commonwealth’s proposed remedy calls for no river excavation or bank stabilization because the upper bound limit of  $10^{-4}$  for direct contact exposure is already met in these

areas and to require further remediation will cause irreversible damage to the meandering character of the Housatonic River ecosystem and to the associated state-listed species and their habitats.

***Fish and waterfowl consumption as a key driver for the scale of Region 1's proposed river and bank remediation***

Region 1 has indicated to the Commonwealth that a key driver for the scope of river excavation and bank stabilization in ROR is the need to ensure that the public is adequately protected from the human health risks associated with consuming fish and waterfowl taken from the river. To put this issue in perspective, the decades-long history of the PCB contamination of the Housatonic River is well known to residents and sportsmen in Berkshire County, and there does not appear to be a significant subpopulation of persons who fish the river for subsistence purposes. This long-standing and widespread awareness of the PCB contamination in the river, together with the absence of evidence that fish and waterfowl consumption has been a significant problem, support the Commonwealth's view that an enhanced institutional controls can serve as a reasonable risk management measure in this area. Moreover, GE's analysis of the alternatives in the CMS indicates that none of the proposed alternatives, including the most aggressive ones, will allow for unrestricted consumption of fish and waterfowl within a reasonable time period.

We understand that EPA Region 1 may be focusing on the lesser goal of restricted fish consumption, i.e. 14 meals a year. This goal was modeled, and the CMS indicates that there is one remedy (SED 8/FP 7) that could achieve this goal for adults and children for all reaches within 23-74 years, depending upon the specific reach.

The Commonwealth questions whether a fourteen meal goal is appropriate public policy. Presumably, if the EPA mandates this goal and orders a remedy to meet it, the existing signs warning against *any* fish consumption from the river would be replaced with warnings indicating that fourteen meals a year for children and adults, or adults only (depending upon the remedy) is appropriate. Yet there would still need to be warning against fish consumption in excess of that amount, since the modeling results indicate an unacceptable risk above 14 meals per year. This sends a diluted and ambiguous message about the health risks of eating fish in this river, and increases the likelihood that there would be fish consumption above the levels deemed safe. In contrast, signage warning against any fish consumption is clear and unambiguous, and much less likely to be transgressed.

Moreover, to achieve the goal of 14 meals a year for adults and children, the amount of ecological damage is simply staggering. SED 8/FP 7, the only remedy that achieves this goal, involves removal of sediment in the river of 351 acres, and removal of soil in the floodplain in 377 acres, 14 miles of riverbank stabilization, 97 acres impacted by staging roads and access areas, and will take 52 years! See CMS Executive Summary, p. 12. It will result in a take of 32 rare species, and for 22 of these species, the take would likely impact a significant portion of the local population, which is not allowed under MESA. CMS, Table 8-6, p. 8-40.<sup>1</sup> Perhaps most importantly the 14 miles of bank stabilization will permanently and irrevocably destroy the crucial feature of this river—its meandering nature, which creates a wide array of successional habitats for a uniquely rich and diverse collection of species. We emphasize that there is no possible mitigation or restoration for this impact.

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<sup>1</sup> The modeling results indicate that two of the other remedies (SED 5/FP 4, SED 6/FP4, and SED 9/FP 8) would allow adults to eat 14 meals of fish in some or all of the reaches. But a warning system that sends the message that limited fish consumption is acceptable for adults, but not children, is diluted and ambiguous. And these other remedies would still require enormous destruction of the river bottom, the stabilization of the banks, and takes of significant portions of the local populations of rare species.

Regardless of PCB contamination, there are other limitations on the consumption of fish from the Housatonic River. First, there is comprehensive fish consumption advisory in place recommending that a large percentage of the population – children under 12, nursing mothers, pregnant women and women who may become pregnant – refrain from eating *any* fish caught in *any* freshwater body in Massachusetts due to the presence of mercury.<sup>2</sup> (Massachusetts is one of over two dozen states with such an advisory, including all six New England states.<sup>3</sup>) If the message is, “Don’t eat the fish”, it does not matter if the warning is due to the presence of mercury alone or combined mercury and PCB contamination. Considering that the widespread presence of mercury in the environment will necessitate the continuation of these advisories into the foreseeable future, a PCB remedy based primarily on the goal of unrestricted fish consumption is illusory.

The Commonwealth’s position is that a pro-active, robust set of outreach activities, including implementing recent research on effective fish advisories (such as those described for the Great Lakes Fish Consumption Advisories, <http://www.ijc.org/php/publications/pdf/ID1540.pdf>) are an appropriate means of addressing the human health risks in this area. Such measures include best management practices and public education and outreach activities using a range of media, with a particular focus on high use areas. This approach is also warranted when viewed within the context of the Commonwealth’s overall remedy proposal, which is predicated on the principal of adaptive management. Thus, in addition to a comprehensive program of institutional controls and outreach, our remedy proposal calls for ongoing monitoring, including routine sampling and analysis of fish tissue together with regular audits of the effectiveness of the institutional controls. If these evaluations demonstrate that there remains an unacceptable risk to human health from consumption of fish and waterfowl from the river, then appropriately scaled remediation could be considered. This adaptive management approach has a second benefit — it would enable the decision makers to assess how effective the source control measures in the first stretch of the river have been before taking actions that would cause irreversible damage. Analysis of fish tissue data since 1994 (CMS Figures 6-2a, 6-2b, 6-3a, and 6-3b and Table 6-12) suggests that initial efforts on source removal and remediation of the first two miles of river have already begun to reduce PCB fish tissue concentrations. It is premature to commit remedial actions that will have irreversible effects on this ecosystem before the full beneficial effects of the completed source reduction measures have been established.

In short, given the scale and irreversible nature of alterations to the ROR ecosystem resulting from river and bank remediation solely to meet a fish and waterfowl consumption goal and the limited benefit of reducing PCB concentrations to allow for a limited number of fish meals for a limited segment of the population, the Commonwealth insists in the strongest possible terms that this trade-off is unacceptable. .

***The mass removal of PCBs from and periodic dredging of Woods Pond is an additional, alternative means of addressing risk***

At the outset, we want to highlight that the removal of PCBs in Woods Pond will not cause any significant ecological harm because there are no state-listed rare species habitats within the pond or surrounding area, and the non-listed species would actually benefit from sediment removal by restoring open-water habitat and water quality such as dissolved oxygen. Given this absence of environmental harm, the removal of a major source of PCBs in the river system by dredging Woods Pond is an additional, alternative means of addressing risk.

As discussed in more detail in its comment letter on the revised CMS, the Commonwealth’s conceptual remedy calls for a scope of removal that results in a pond-wide average of 1 ppm with no area exceeding

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<sup>2</sup> See: <http://www.mass.gov/dph/fishadvisories>

<sup>3</sup> See: <http://water.epa.gov/scitech/swguidance/fishshellfish/fishadvisories/tech2008.cfm#figure2>

6 ppm. Most of the PCB contamination in the ROR system is located between the confluence of the East and West branches of the river and Woods Pond Dam, with some of the highest concentrations found within Woods Pond. Further, based on the estimate contained in the 2003 ROR RCRA Facility Investigation Report, approximately 15 to 25% of the PCB mass in the entire ROR system is in Woods Pond itself. Remediation to an average of 1 ppm level would result in the removal of approximately 300,000 cubic yards of sediment, equating to approximately 92% of the PCBs in the pond. Finally, as important to achieving the above objective, the Commonwealth's remedy proposal calls for the subsequent periodic dredging of excessive amounts of contaminated sediment that accumulate behind Woods Pond dam to maintain an average of 1 ppm PCBs throughout the pond.

The Commonwealth believes that the above described scope of removal of PCB mass from the pond will also increase Woods Pond's PCB trapping efficiency, thereby improving and enhancing the natural ability of the pond to capture contaminated sediment eroding from the upstream banks. In addition, removing significant quantities of PCBs behind Woods Pond Dam will protect public health against downstream contamination if there were ever a dam failure. As an ancillary benefit, this dredge would deepen the pond from its current depth of 2.5-5.5 feet to a range of 4.7-9.8 feet, thereby greatly enhancing recreational opportunities.

Region 1 has indicated to the Commonwealth that it is unacceptable to EPA as a matter of policy to propose mass removal of PCBs as a remedy component that is not based on corresponding reductions in risk to humans or the environment. In response, the Commonwealth states that its approach to Woods Pond would reduce risk in both areas by eliminating large quantities of PCBs from the river system and from behind the dam. By any reasonable measure, these actions lower the overall risks of PCBs to humans and the environment in ROR, and in particular, the risk of downstream contamination associated with a dam failure. Indeed, Region 1's own description of the "control of sources of releases" permit criterion requires an evaluation of "the extent to which each alternative would eliminate the effects of a flood that would cause contaminated sediments to become available for human and ecological exposure."<sup>4</sup> In short, under the Commonwealth's proposal, a major quantity of PCBs would be removed from Woods Pond at the outset, and the excavated pond, which would be periodically dredged, would serve as a sediment trap for PCBs moving downstream from the river on an ongoing basis. From a permit criteria standpoint, the Commonwealth's approach to Woods Pond properly addresses the reduction and control of sources of PCB releases, while ensuring that the unique ecological character of the ROR system is preserved.

***An adaptive management approach is particularly appropriate for this ROR remedy***

As highlighted above, the Commonwealth's conceptual remedy requires compliance with human health standards on an ongoing basis. This means requiring GE to perform ongoing monitoring and assessment of areas remediated for human health reasons, and additional remediation to the extent necessary to meet and maintain human health standards as determined by such monitoring and assessment. In addition the Commonwealth proposes the removal of excessive amounts of contaminated sediment that accumulate behind Woods Pond dam to sustain an average of 1 ppm throughout the pond.

From a big picture perspective, the continuing source control upstream of the Rest of River system as well as the work proposed in the floodplain and in Woods Pond will likely alter PCB levels, and reassessment will allow for the collection of data that are representative of these new conditions and relevant to the implementation of subsequent, phased remedial work.

First, the Commonwealth proposes that monitoring and assessment be conducted to evaluate how successful/effective the remedial measures have been to eliminate the human health risks and control the

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<sup>4</sup> *Housatonic River Public Charette* document (May 7, 2011), p.9.

continuing sources. This would include qualitative evaluation of the institutional controls on consumption of fish and waterfowl from the river, quantitative assessment of potential recontamination of the floodplain, and a quantitative evaluation of the effectiveness of a Woods Pond sediment trap.

Second, the assessment would evaluate the potential for implementing additional response actions to address the remaining contamination in the river and floodplain, considering new technologies and methodologies, as well as the success of similar restoration projects on the Housatonic River (e.g., cleanup and restoration of vernal pools) or on analogous river systems. Monitoring would include routine sampling and analysis of fish tissue, river sediment, Woods Pond sediment, and floodplain soil. Periodic evaluations of the ecosystem (i.e., fluctuations of threatened/endangered species and habitat changes) will also be necessary. These assessments would continue until the conditions in the river are documented to pose no significant risk to human health and the environment.

Third, the Commonwealth proposes that GE be required to evaluate on a regular basis the availability of innovative remedial approaches and technologies that can be utilized to reduce human health and ecological risks without unacceptable consequences to the ecosystem, and that GE implement, to the extent feasible, such approaches and technologies should they become available.

In sum, the Commonwealth believes that consistent with the implementability permit criterion, adaptive management must be a core component of the selected ROR remedy to ensure that remedial approach is phased and flexible enough to act on new data, science, technologies, and site-specific conditions.

### **Preserving the Special Character of the Housatonic River Ecosystem – A Commonwealth Priority**

At the outset of this summary to the Board, the Commonwealth highlighted the uniqueness and importance of the Housatonic River ecosystem, underscoring its exemplary value from a MESA and biodiversity perspective and the dynamic nature of the meandering action of the river in creating and maintaining habitats. For these reasons, the Commonwealth's assessment of the merits of various remedy approaches is properly focused on the extent to which the alternative would result in short and long term adverse impacts on the defining ecological features of the ROR ecosystem.

The Commonwealth's remedy is predicated on a common sense approach of weighing the comparative ecological costs and benefits associated with remediating or preserving a particular area for ecological reasons – an approach that is fully consistent with the permit criteria to be applied by Region 1. As discussed below, when we weigh these comparative ecological costs and benefits, it is clear to us that any potential benefits associated with meeting the ecological IMPGs would be far outweighed by the short and long term damage to the river and floodplain. Our balancing approach focuses on protecting human health, while according proper weight to unique, ecological character of the ROR system, as envisioned under any meaningful application of the permit criteria.

#### ***Expected impacts of remedy alternatives evaluated in the CMS***

Set forth below are the Commonwealth's conclusions about the expected impacts of the alternatives in the revised CMS (except for monitored natural recovery) on the Housatonic River ecosystem.

1. Extensive bank and river bottom stabilization associated with sediment remediation alternatives SED 3 – SED 10 (+/-14 linear miles) are proposed solely to address perceived ecological risks from PCB contamination; none of these proposals are needed to meet EPA's human health goals for direct contact with soil and sediment. Yet all of these alternatives will have a particularly severe and long-lasting impact on the integrity of the Housatonic River-floodplain ecosystem as well as on state-listed species and their habitats.

2. The short and long-term impacts of floodplain remediation on state-listed species and the Housatonic River-*floodplain* ecosystem, are in some cases substantial and should be avoided, but are generally less of a long term concern when compared to the scope and long lasting impact resulting from large scale bank and river bottom stabilization in the PSA.
3. The Commonwealth believes that any potential benefits associated with remediation to achieve ecological IMPGs would be far outweighed by the short and long-term damage to the meandering character of the Housatonic River ecosystem and to the associated state-listed species and their habitats. Consequently, as discussed elsewhere in this submission, the selected ROR remedy should focus on eliminating public health hazards associated with direct contact exposure to PCBs.

### ***Specific impacts on the integrity of the Housatonic River and Floodplain Ecosystem***

As discussed in detail earlier in this letter, the natural riverine processes of meandering, erosion, and channel migration lead to creation of floodplain wetlands and landforms including levees, side channels, backwaters, sloughs, and oxbows. These wetlands and landforms develop and evolve on a time scale of tens to hundreds of years. The resulting floodplain comprises complex heterogeneous patches (i.e., “mosaics”) of different successional stages, including herbs, grasses, deciduous trees, and conifers, creating high species diversity.

The effects of armoring and stabilizing the river banks on the floodplain wetlands created by the above natural processes are as follows:

- First and foremost, the armoring or stabilization of the banks will eliminate the meandering and channel migration of the river. The affected portions of the river would evolve into a single-thread channel without the complex mosaic of floodplain wetlands that currently exist.
- If the channel migration process is eliminated, the existing wetland habitats will eventually fill in with fine sediment, re-forest, and meld into one homogenous habitat, with lower species diversity.
- The species that rely on the mosaic of wetlands and plants for foraging, refugia, and/or rearing will also vanish.
- These habitats, functions, and values cannot be fully re-created or restored by human intervention, because the habitats result from interactions of complex processes operating over hundreds of years.
- “Soft” engineering methods for bank stabilization will have the same impact on floodplain wetlands as bank armoring. Both are designed to prevent erosion and channel migration. While soft engineering methods may look better aesthetically, they will not prevent or mitigate the above described impacts to floodplain wetlands.
- Additional functions and values that would be lost or degraded by armoring or stabilizing the river banks include:
  - Energy dissipation (slowing down the flood waters);
  - Surface and subsurface water storage and exchange (making water available to animals and underground aquifers);
  - Landscape hydrologic connections (connecting habitats together for wildlife and plants);
  - Trapping, retaining, and cycling of elements and compounds (e.g. nutrients)

- Particulate detention (holding sand, silt, and clay in the floodplain);
- Organic matter transport (moving organic matter around);
- Detrital biomass (creating and storing decaying leaves and other organic debris);
- Spatial structure of habitats (providing multiple places for wildlife and plants to live);
- Connectivity of habitats and movement routes (providing a means of connecting different types of habitats together and allowing movement of animals).

In short, the impacts associated with the implementation of the SED 3–SED 10 remediation alternatives would have long-lasting and potentially irreversible adverse effects on the natural process of channel migration. This result would, in turn, fundamentally alter the integrity of a riverine system that supports and maintains the diversity of unique ecological features, species and habitats that are the hallmarks of the Housatonic River in the PSA.

In the floodplain, the impacts associated with excavation include alteration of soils, vegetation, and hydrology in certain wetland types such as marshes and vernal pools. This outcome will make successful restoration challenging, and the loss of mature floodplain forest will take many decades to regenerate. Moreover, excavation of the floodplain results in habitat fragmentation associated with road and staging area construction, causes impacts to state-listed species, and increases the risk of introducing invasive species. For these reasons, the selected ROR remedy should prioritize the excavation of floodplain areas for the protection of human health, and avoid intrusive work when performed solely for perceived ecological benefit.

#### ***Specific Impacts to State-Listed Species protected by MESA***

The revised CMS contains detailed analyses of the extent to which various remedial alternatives will impact state-listed species and their habitats, as well as an analysis of the feasibility of restoring various habitat types, post-remediation. Although the Commonwealth disagrees with some of the methods used, and some of the species-specific impact analyses, the Commonwealth agrees with the general conclusion that except for monitored natural recovery, all of the remedial alternatives identified in the revised CMS will result in the “take” of numerous state-listed species.

For example, in a preliminary analysis, we estimate that combined alternatives SED3/FP3 and SED10/FP9 may result in the take of 26 and 22 state-listed species, respectively. We further determined on a preliminary basis that SED3/FP3 and SED10/FP9 have the potential to result in a significant impact to the local populations of 9 and 6 state-listed species respectively. As discussed earlier in this submission to the Board, we are particularly concerned about the potential for moderate to severe long-term impacts to the 15 species found in “core areas” in the PSA (listed in Table 2), which, due to their distribution, life history characteristics, and/or challenges associated with restoration of their habitat, are particularly vulnerable to remediation activities.

#### ***Disposal of all removed material must be out of state utilizing rail transport.***

The Commonwealth has made clear to Region 1 that we *vigorously* oppose two disposal options outlined in the revised CMS that call for disposal of removed material to be sited within Berkshire County. These two options include a Confined Disposal Facility (“CDF”) to be built within a local waterbody and the installation of an Upland Disposal Facility constructed in an area near the River. The Commonwealth opposes the creation of new landfills, given that there are existing, off-site, permitted disposal facilities that are equipped to accept this material.

Woods Pond is a potential location for both the CDF and the Upland Disposal Facility<sup>5</sup>. However, as highlighted at the outset, the Upper Housatonic River Area has been designated by the Commonwealth to be an ACEC. The ACEC includes all nine inland resource features as designated by regulation, including fisheries, wetlands and surface waters, water supply areas, floodplains and steep slopes, agricultural and forested areas, historical and archaeological resources, wildlife and rare species habitats, and public recreational and natural areas. A disposal facility in or around Woods Pond is clearly not appropriate in this type of area, and the prohibition against siting a landfill in an ACEC has previously been identified as an applicable or relevant and appropriate requirement (ARAR) by the Commonwealth. In addition, installation of a disposal facility would not meet the requirements of several of the Commonwealth's regulations including the Massachusetts Water Quality Certification regulations (314 CMR 9.06) and the Massachusetts Wetlands Protection Act regulations (310 CMR 10.00). The CDF would also reduce necessary flood compensatory storage area.

Installation of a disposal facility in Berkshire County would also have extremely negative impacts to the communities surrounding the facility including economic, aesthetic, recreational, and potential health impacts should the facility fail. Reliance on tourism is a significant economic factor for Berkshire County communities and the landfill would potentially have both short terms and long term damaging impacts to this very important industry. Further, construction of yet another such facility just expands the number of locations that would be affected by PCB-contamination, requiring additional long-term monitoring, operation and maintenance beyond what is already a long-term burden on the community, which runs counter to the concept of the anti-degradation provisions incorporated into the Massachusetts waste site cleanup regulations. The costs (including the social costs) of such a facility must be weighed against the simplicity and finality of disposal of this material in a pre-existing facility. The Commonwealth therefore supports disposal at an existing, out of state disposal facility properly permitted to receive such materials, and believes that rail is a feasible alternative to transport the material.

The current freight rail system owned by Housatonic Railroad Company, Inc. (HRRC) runs adjacent to the portions of the Housatonic River subject to removal actions under our concept, including Woods Pond. GE evaluated the feasibility of utilizing rail transport in the CMS but determined to not consider it due to "fewer logistical issues" with truck transportation. Based on our experience on other projects, the scope of the Commonwealth's concept, and data presented in the CMS, the Commonwealth believes that rail would be a cost-effective and efficient way to transport contaminated media generated under the Commonwealth's concept for Rest of River. The Commonwealth notes rail transport to a rail-served landfill is successfully being conducted for PCB-contaminated sediment being dredged from the Hudson River near Fort Edward, New York<sup>6</sup>.

The CMS (Appendix B) presents the results of an evaluation, conducted by R.L. Banks and Associates, Inc. (RLBA) of Arlington, Virginia, a rail consulting firm, examining the feasibility of using rail to transport contaminated media. RLBA concluded that rail transport of excavated materials would be technically feasible. The main issue cited by GE in the CMS regarding use of rail transportation was the need to construct access roads and staging areas in certain areas of the river to transport excavated sediments and soils to the rail line. RLBA acknowledged that the availability of loading areas within the project area is an important factor in determining the feasibility of using rail transport. However, their preliminary review indicated that "potential loading sites exist adjacent to or in very close proximity to HRRC tracks" and depending on the viability of these sites would eliminate the need to construct entirely new staging/loading tracks. Under the Commonwealth's concept, the principal removal volumes would be generated from Woods Pond, which is adjacent to existing HRRC tracks.

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<sup>5</sup> There are also two additional upland disposal facility locations identified including Forest Street in Lee and near Rising Pond.

<sup>6</sup> U.S. EPA, Region 2 News Release, EPA Marks the Startup of the Final Phase of Hudson River PCB Dredging; 500 Jobs Created By This Cleanup Project, 06/10/2011.

RLBA's evaluation noted that outbound loaded railcars could be moved by HRRC to an interchange with a longer-haul railroad to access off-site, permitted disposal facilities. Such an interchange exists with CSX in Pittsfield. This interchange can hold over 200 cars to which HRRC currently sends and receives a train every day, which averages 30 to 35 cars per day. From that location, there are many rail-served landfills that could accept these materials as is currently being done with excavated Hudson River sediment near Fort Edward, New York.

Finally, RLBA considered the range of removal volumes and projected project durations presented in the CMS in further evaluating the feasibility of rail transport. The Commonwealth's concept is within the range of removal volumes and project durations presented in the CMS. RLBA concluded that the maximum removal scenario and project duration presented in the CMS could be managed by rail transport. Based on the information regarding the existing rail infrastructure presented in the CMS and the successful use of rail transport for other similar projects, the Commonwealth believes that it is feasible and cost effective to utilize rail transport for the removal actions under our concept.

## Conclusion

In conclusion, the Commonwealth believes that the true driver for an appropriate remedy for the Rest of River is the unique and irreplaceable character of this river ecosystem. It should be the threshold consideration that underlies and shapes the balancing of the permit criteria that will result in EPA's selection of the remedy. The Commonwealth has been clear that it supports taking all reasonable measures to protect the public from exposure to PCBs; commensurate with the demonstrated risk. Our key concern is that Region 1's remedy proposal will not strike the right balance between protection of public health and preserving the core, defining ecological features of the ROR. As acknowledged by EPA, a sound remediation approach involves complex balancing of competing interests and values. The Commonwealth believes that the conceptual remedy alternative that we put forth in our comments on the revised CMS meets the RCRA permit criteria and represents a common sense, incremental approach to cleaning up the Housatonic River, achieving the goal of protecting the health of our citizens while preserving the integrity of this unique place for the benefit of future generations.

We urge you to carefully scrutinize Region 1's remedy proposal with reference to the Commonwealth's assessment of the ecological features, diversity and robustness of the ROR system and our risk and impact evaluation of the remedy alternatives. At this point in the process, it is critical that Region 1 be directed by the Board to meaningfully engage with the Commonwealth on our concerns and critique of their remedy approach. EPA must err on the side of ensuring that Region 1's remedy decision is fully informed by the interests and concerns of the Commonwealth and the Berkshire community.

The Commonwealth much prefers to work cooperatively with EPA to craft a remedy for the Rest of River that appropriately balances the ecological costs and benefits associated with remediating or preserving a particular area for ecological reasons. However, in the event EPA proposes a remedy that fails to properly account for the unique ecological character of the ROR system, the Commonwealth will not hesitate to exercise all of its rights and authorities to challenge such a remedy.

For example, the Dispute Resolution provisions of the Consent Decree provide the Commonwealth with numerous opportunities to review and comment on positions to be advanced by EPA in the dispute resolution process. The Commonwealth fully expects that EPA will provide it with a *meaningful* opportunity for such review and comment, which must include an adequate timeframe for the Commonwealth to conduct its review and a demonstration by EPA that the Commonwealth's comments have been appropriately taken into account and addressed. Should EPA fail to provide the Commonwealth with such a meaningful opportunity for review and comment, the Commonwealth will

seek immediate review by the District Court, which has retained jurisdiction over the subject matter of the Consent Decree pursuant to Paragraph 211.

In addition, Paragraph 22.bb of the Consent Decree expressly provides the Commonwealth with the right to challenge the waiver of an ARAR by EPA, both to the Environmental Appeals Board and the Court of Appeals. During the CMS review process, the Commonwealth identified numerous state ARARs that are essential to ensuring that the selected remedy's impacts are avoided, minimized and mitigated in accordance with the Commonwealth's laws, regulations and requirements. Such state ARARs include, but are not limited to, the MA Endangered Species Act, which plays a central role in protecting the diverse array of state-listed species and their habitats in the ROR, and the other state ARARs resulting from the designation of the Upper Housatonic River Area as an Area of Critical Environmental Concern, which encompasses the 13-mile corridor of the Housatonic River from southern Pittsfield to northern Lee, and portions of the supporting watersheds that drain into the river from the east and west. Should EPA waive a state ARAR without the Commonwealth's prior agreement, the Commonwealth shall take whatever action it deems necessary to protect this extraordinary natural resource.

Finally, it is our position that the avenues described above to challenge an unacceptable EPA remedy are in addition to the Commonwealth's rights and authorities to challenge such a remedy under RCRA, its implementing regulations, and other applicable laws and regulations including, without limitation, 40 C.F.R. § 124.19.

Thank you again for the opportunity to present our views to the Board on this momentous remedy decision.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Sullivan, Jr.", written in a cursive style.

Richard K. Sullivan, Jr.  
Secretary, Executive Office of Energy  
and Environmental Affairs