

**Navy Response to EPA Comments on the
Draft Record of Decision for the Allen Harbor Landfill
NCBC Davisville, Rhode Island**

This document contains the Navy's responses to EPA's comments on the Draft Record of Decision (ROD) for the Allen Harbor Landfill (Site 09) at the former Naval Construction Battalion Center (NCBC) Davisville, Rhode Island. EPA's comments are dated 27 May 1997.

Comment 1. Page 1, Declaration, Statement of Basis and Purpose, ¶2. Remove the first part of the sentence since EPA signs the ROD. Paragraph 2 should now read, "The Rhode Island Department of Environmental Management (RIDEM) concurs with the Navy and the United States Environmental Protection Agency's (EPA) remedial action decision for Site 09."

Response: The text has been modified accordingly.

Comment 2. Page 1, Declaration. Reword 1st bullet to read: "Regrade the site and construct surface controls to minimize erosion and to promote proper runoff."

Response: The text has been modified accordingly.

Comment 3. Page 1, Declaration. Reword 2nd bullet to read: "Construct a landfill cover consisting of multiple soil layers and two impermeable layers which meets the requirements of the Resource Conservation and Recovery Act (RCRA)."

Response: The second bullet has been reworded to describe the conceptual design of the landfill cap which will meet the ARARs summarized in Appendix D of the ROD (includes RCRA). The bullet has been reworded to read: "Construct a landfill cover consisting of multiple soil layers and two impermeable layers which will meet the substantive requirements of federal and state laws (conceptually, the cap might consist of a 12-inch bedding layer, a landfill gas vent layer, a geomembrane liner or a flexible membrane liner, a compacted clay liner or a geocomposite clay liner, a 12-inch drainage layer, an 18-inch barrier protection layer, and a 6-inch vegetative support layer, constructed above the projected water level of a 100-year storm—the final design may vary depending on the specific capping materials which are selected);". These specifications are consistent with RCRA requirements. Providing this description is consistent with the response to RIDEM comment #1. Similar changes have been made throughout the ROD.

Comment 4. Page 1, Declaration. Reword 3rd bullet to read: "Construct an appropriate landfill gas venting/management system including fencing around the manifolds."

Response: The text has been modified to read: "Construct an appropriate landfill gas venting/management system which includes fencing around venting locations(s) (as feasible, the Navy will manifold the gas vents to reduce the area that would need to be fenced);" in order to include RIDEM's comment #12.

Comment 5. Page 2, Declaration. Reword 4th bullet to read: "Remove landfill debris beyond the low water mark and place debris under cap and include under the cover the contaminated sediment above the low water mark."

Response: The bullet has been reworded to read: "Remove and/or cover landfill debris from the site shoreline (and place removed debris under the new cap) and potentially include under the cover affected sediment from localized portions of the northern and southern intertidal zones of the site shoreline, as determined during design studies;"

The scope of this component is further described in Section X of the ROD as follows: "Loose, visible debris along the shoreline (which may include debris at or just slightly beyond the low water mark) will be removed and placed under the new cap. Debris which is half buried (e.g., rope, protruding pipe) will be cut-off at ground level and also placed beneath the new cap. The primary components of the site remedy are landfill capping and wetlands creation. The Navy may conduct limited sediment removal, as warranted (with placement under the new cap). The extent of sediment removal, which will be determined during the Remedial Design phase, may include limited amounts from the northern and southern portions of the landfill shoreline where moderate risks to marine receptors were identified. The remaining shoreline area will be covered by the created wetlands."

Comment 6. Page 2, Declaration. Reword 5th bullet to read: "Restore or replace (1 for 1) impacted wetlands along the shoreline of the site as determined appropriate in design studies. Performance standards satisfactory to all trustees, will be developed during the design studies."

Response: The 5th bullet pertaining to the construction of revetment will be retained. It is assumed that this comment refers to the 6th bullet pertaining to the construction of shoreline wetlands. As evidenced by historical aerial photographs of Allen Harbor, the current footprint of the landfill is nearly identical to the footprint prior to disposal activities. Therefore, it appears that any past loss of wetlands due to landfilling practices was minimal. As part of the Site 09 remediation, wetlands which may be impacted during construction activities will be restored or replaced on a 1:1 basis in accordance with federal and state ARARs. The Navy's primary intention for the newly created shoreline wetlands specified under Alternative 3 is to dissipate wave energy and reduce scouring of the landfill shoreline. An additional benefit which

would be realized through the creation of new wetlands includes natural resource improvements to Allen Harbor (e.g., improved wildlife and vegetative habitat). The text has been modified to state: "Create wetlands along the shoreline of the site as determined appropriate and feasible during design studies". Performance standards for the creation of shoreline wetlands will be determined during the Remedial Design phase. To date, the Navy has not received the expected proposed standards for wetlands creation from the U.S. Fish and Wildlife Service.

Comment 7. Page 2, Declaration. Reword 6th bullet to read: "Implement appropriate land use and groundwater use deed restrictions, install and maintain new warning signs to inform the public of the RIDEM ban on shellfishing in the harbor; and"

Response: It is assumed that this comment refers to the 7th bullet. As the BCT agreed to during the finalization of the Proposed Plan, the text pertaining to land use restrictions has been retained to read "...land use restrictions which may include deed restrictions regarding ground-water use...". The text pertaining to warning signs has been modified as recommended.

Comment 8. Page 2, Declaration. Reword 7th bullet to read: "Conduct long-term monitoring of landfill gas, groundwater, sediment, and shellfish quality to determine the effectiveness of the remedy. Performance standards satisfactory to the Navy, EPA and RIDEM will be developed during design studies. The environmental monitoring results and description of site activities will be provided in an annual report to USEPA and RIDEM and will be presented to the public at an annual informational meeting. If monitoring indicates that additional measures are needed to further contain contaminants additional remedial actions will be implemented as appropriate, such as vertical containment barriers."

Response: It is assumed that this comment refers to the 8th bullet. If in the future, data from the long-term monitoring program indicate that additional remedial actions are required to protect human health and the environment, then the BCT can consider the appropriate remedial action at that time. The Navy agrees that performance standards are warranted for evaluation of the effectiveness of the remedial action presented in the ROD. However, current information indicates that the primary pathway for the migration of COC is through erosion and overland runoff. Therefore, it would be inappropriate to include a vertical barrier contingency at this time. Further, the vertical barrier contingency was eliminated from the Proposed Plan, as the BCT agreed upon during the 6 and 13 December 1996 meetings. The Navy intends to employ previously-established mechanisms to communicate information to the public as outlined in the NCBC Community Relations Plan (e.g., RAB meetings,

Fact Sheets, public notices, etc.) rather than annual meetings suggested in the comment.

The text has been modified to read "Conduct long-term monitoring of landfill gas, ground water, sediment, and shellfish quality to evaluate the effectiveness of the remedy. Performance standards satisfactory to the Navy, EPA, and RIDEM will be developed during the Remedial Design phase. The environmental monitoring results and description of site activities will be provided in periodic (e.g., annual) reports to EPA and RIDEM. The environmental monitoring results will also be communicated to the public through the appropriate mechanisms outlined in the NCBC Community Relations Plan. If monitoring indicates that additional measures are needed to protect human health and the environment, then the Navy will conduct additional remedial actions, as appropriate."

Comment 9. Page 2, Declaration. Add an 8th bullet to read: "Conduct 5 year reviews with associated annual educational public meetings with presentations that would summarize site activities and the results of monitoring programs."

Response: A 9th bullet has been added for 5-year reviews. See Response to Comment #8 regarding additional annual informational meetings.

Comment 10. Page 2, Declaration Statement. Remove the paragraph and replace with the following:

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, and is cost-effective. This source control remedial action uses permanent solutions and alternative treatment technologies to the maximum extent practicable. The selected remedy does not satisfy the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element. The selected remedy will reduce mobility of contaminants through its containment features. Because this remedy will result in contaminants remain at the site above levels that allow unlimited use and unrestricted exposure, the Navy will review the remedial action to the extent required by law, including 5 year reviews pursuant to CERCLA, 42 U.S.C. 9621(c) Section 300.430(f)(4)(ii) of the NCP, to assure that it continues to protect human health and the environment.

Response: The Navy does not agree with the statements in the recommended text (e.g., a landfill cap is neither a permanent solution nor an alternative treatment technology and Alternative 2 is more cost-effective than Alternative 3). The paragraph has been modified to read:

“The U.S. Department of the Navy has determined that the selected remedy is protective of human health and the environment and meets or exceeds Federal and State requirements that are applicable or relevant and appropriate to the remedial action. The selected remedy is in accordance with EPA’s *Presumptive Remedy for CERCLA Municipal Landfill Sites* directive (OSWER Directive 9355.0-49FS) which states that containment technologies are the preferred remedies for municipal-type landfill waste. The creation of shoreline wetlands will be an integral component of the remedial action because it will protect the Multimedia Cap from erosion and, as an additional benefit, provide natural resource improvements to Allen Harbor. Pursuant to Section 121(c) of CERCLA, 42 U.S.C. 9621(c) and Section 300.430(f)(4)(ii) of the NCP, the Navy will conduct 5-year reviews of the selected remedial action to ensure continued adequate protection of human health and the environment because this remedy will result in COC remaining at the site above levels that allow for unlimited use and unrestricted exposure.”

Comment 11. Add, “U.S. Department of the Navy” above the signature line on the 1st signature page.

Response: The text has been added.

Comment 12. Add the sentence, “Concur and recommend for immediate implementation.” at the end of the first sentence on the 2nd signature page.

Response: The text has been added.

Comment 13. Add, “U.S. Environmental Protection Agency” above the signature line on the 2nd signature page.

Response: The text has been added.

Comment 14. Page 3, Community Participation, ¶2. Repword the last sentence to read:

The BRAC Cleanup Team (consisting of Navy, EPA and RIDEM representatives) has held periodic Technical Review Committee (TRC) and Restoration Advisory Board (RAB) meetings in order to update the community representatives and residents about the status of the Site 09 investigations on a bimonthly basis since 1989.

Response: The text has been modified accordingly.

Comment 15. Page 4, IV. Scope and Role of Response Action, ¶1. Add a sentence to read: “Risks to terrestrial ecological receptors were reported to be moderate to high in the Allen Harbor Watershed.”

Response: The recommended text appears misleading because risks in the Allen Harbor Watershed were not tied to the landfill alone. The following text has been added: "Risks to terrestrial ecological receptors were reported to be moderate to high within the Allen Harbor Watershed (an area in which the Allen Harbor Landfill was one of many possible contributors to ecological risk)."

Comment 16. Page 4, IV. Scope and Role of Response Action, ¶2, 3rd sentence. Add the information that the Multimedia Cap meets the requirements of RCRA, such as "Construction of an impermeable, multimedia cap which meets the requirements of RCRA subtitle C, at Site 09 will prevent human and terrestrial animal contact with site surface soil/fill material, reduce runoff and erosion of fill material, and prevent the potential leaching of COC from fill materials caused by precipitation infiltration."

Response: As per Response to Comment #3, the text has been modified to read: "Construction of an impermeable, Multimedia Cap at Site 09, as outlined in the Declaration section of this ROD, will prevent human and terrestrial animal contact with site surface soil/fill material, reduce runoff and erosion of fill material, and reduce the potential leaching of COC from fill materials caused by precipitation infiltration." The text "...and reduce the potential leaching of COC..." has been used because a Multimedia Cap is not 100% effective for eliminating precipitation infiltration, particularly considering that it will only be constructed at the site above the 100-year floodplain level. However, the primary pathway for COC migration (erosion and overland runoff) would be addressed.

Comment 17. Page 5, V. Summary of Site Characteristics, ¶3. The Phase II RI also included sediment sampling for the ERA. Add "sediment" to the list. The Phase III RI also included sediment, porewater, fish and shell fish tissue samples for the ERA. Add, "sediment, porewater, fish and shell fish tissue" to the list.

Response: The text has been modified accordingly.

Comment 18. Page 5, V. Summary of Site Characteristics, ¶4. The Phase I was conducted to start to define the nature and extent of contamination. Add the words, "start to" in the first sentence so that the sentence now reads, "The Phase I RI was conducted to start to define the nature and extent of COC in soil, groundwater and offsite shoreline sediment."

Response: The text has been modified accordingly.

Comment 19. Page 5, V. Summary of Site Characteristics, ¶5. Change the second sentence to read: "Metals, PAHs, VOCs, pesticides and PCBs were detected at elevated

levels in surface and subsurface soil samples collected throughout the site.”
(See tables 2-18, 2-19 and 2-21 in the Phase II RI.)

Response: The text has been modified to read: “Metals, PAH, VOC, pesticides, and PCB were detected at elevated levels in various surface and subsurface soil samples collected at the site.”

Comment 20. Page 6, V. Summary of Site Characteristics, ¶1. Change the first sentence to read, “Metals, pesticides and PAHs were detected in groundwater samples at or above health based levels.” (See table 2-25 in the Phase II RI)

Response: The sentence has been modified to read: “In general, metals, pesticides, and PAH were detected infrequently in ground-water samples and at low concentrations when detected; however, concentrations of these constituents were detected at or above screening levels in some samples.” (See Tables 2-23 and 2-25 of the Phase II RI.)

Comment 21. Page 6, V. Summary of Site Characteristics, ¶3. The Phase II and Phase III concentrations of VOC in the wells screened in the top of silt, sand and fill (Layer 1) indicate that the central and southeastern plumes are connected. VOCs in this layer were detected in elevated concentrations at MW 7, 19, 20 in the silt trough and at MW 6 & 21 along top of silt. Keeping in mind the radial groundwater flow these hits appear to be from the same plume. The same layer in the northern portion do appear to be isolated from the central and southeastern plume. The deep layers, bottom of silt, till and bedrock, appear to be isolated areas of contamination as indicated in the text. Remove the text within the parenthesis in the first sentence.

Response: The text within parenthesis has been removed.

Comment 22. Page 6, V. Summary of Site Characteristics, ¶5. Remove this paragraph. As previously stated, EPA has serious concerns with the geostatistical analysis performed by the Navy and disagrees with the conclusions that there is no correlation between the groundwater concentrations of contaminants and the sediment contaminant concentrations. When performed correctly, the geostatistic analysis of the landfill and nearshore do show a direct correlation from the landfill contaminated groundwater to the nearshore environment. EPA can support the conclusions of the first full paragraph on page 7 and recommends leaving that paragraph without changes.

Response: The Navy continues to assert that the geostatistical analysis was run properly. Due to the lack of agreement on this technical issue, the qualifying text at the beginning of the paragraph (“..the Navy believes that...”) is justifiable for the ROD. Removal or inclusion of this paragraph will not change the selection of Alternative 3 - Multimedia Cap. The paragraph has been retained.

Comment 23. Page 7. Section VI. A. Include a sentence that list the receptors evaluated: workers, residents, recreational users. It should also be stated here that people are known to trespass on the site, but this was not evaluated since the other receptors evaluated would incur greater exposures.

Response: The text has been modified accordingly.

Comment 24. Page 8, VI. Summary of Site Risks, ¶ 2. Add to Appendix C the tables from the RI, and reference the tables in this paragraph, that present the summation of all risks from all exposure pathways.

Response: The tables containing the summation of site risks were presented in the Draft ROD as Tables C-9 and C-10. These tables were referenced in paragraphs 3 and 4 on page 8 of the Draft ROD. The last sentence of paragraph 2 directed the readers' attention to these tables.

Comment 25. Page 9, paragraph 2, sentence beginning, "The exposure pathways of concern for future recreational users are" Insert **shellfish consumption** as a pathway of concern.

Response: The sentence has been modified as follows: "The exposure pathways of concern for future recreational users (in an descending order in magnitude) are inhalation of VOC from ground water while showering; consumption of shellfish; dermal contact with ground water while showering; and incidental ingestion of surface soil."

Comment 26. Page 11, VI. Summary of Site Risks, ¶ 3. In comment 24 concerning Landfill Seep Exposures from EPA comment letter dated 4-3-96 on the DF ERA dated 2-15-96, EPA disagreed with the Navy's assertion that seep exposures were not a complete pathway. EPA continues to believe that the seep exposures are complete pathways to the ROCs. Re-word the first sentence to state, "Although 6 analytes were designated as COC in surface water in the Allen Harbor watershed, maximum concentrations of five of theses were found only at the landfill seep stations LANDS and LANDN (Figure 6)."

Response: Because the conclusion of the paragraph has been retained (that COC in surface water do not pose an unacceptable risk), the end of the first sentence has been removed as requested. Due to sample turbidity, the Navy believes that the results of samples LANDS and LANDN may not be true "seep" samples that may reflect the condition of ground water at Site 09. The paragraph has been modified to read as follows:

"During the Freshwater/Terrestrial ERA, six analytes were designated as COC in surface water in the Allen Harbor watershed. The six COC were 4,4'-DDT, alpha-chlordane, Aroclor-1016, Aroclor-1254, heptachlor epoxide,

and total Aroclor (see Table C-14 of Appendix C). Maximum concentrations of five of these six COC were detected in turbid water samples from two of the fifteen sample stations included in the evaluation (LANDS and LANDN, see Figure 6). Due to the turbidity of the samples from these stations, it is uncertain whether the samples were representative of actual ground-water, surface water, or sediment conditions (or a combination thereof) at the landfill shoreline. Because these samples had to be dug out of the face of the landfill, they were collected under disturbed, or "artificial" conditions, and the results cannot be considered to reflect normal surface water conditions in the Allen Harbor watershed. Overall, of the six surface water COC, only heptachlor epoxide represents potential low-level risk in surface water and it was concluded that COC in surface water in the Allen Harbor watershed do not pose unacceptable risk."

Comment 27. Page 12, VII. Development and Screening of Alternatives, bullet under Groundwater. The RAO should be changed to, "Reduce human exposure to groundwater;" since both the shallow and deep groundwater is contaminated and the capping will minimize the leachate generation and therefore exposure to groundwater that may occur both by drinking the water or by swimming in the harbor.

Response: No unacceptable risks were identified for shallow ground water during the HHRA (i.e., the risks associated with the ingestion of ground water by residents relate to residents ingesting deep ground water, further, no unacceptable risks were associated with the incidental ingestion of shallow ground water by future construction workers). In addition, no unacceptable risks were identified for recreational users while swimming in Allen Harbor. The primary pathway for the migration of COC at Site 09 is through erosion and overland runoff and not through ground-water migration. The Remedial Action Objectives were developed during the FS to mitigate existing and potential threats to human health and the environment. The recommended modification is not based on site risks. Therefore, the Remedial Action Objective has not been modified.

Comment 28. Page 14, VIII. Description of the Remedial Alternatives, list of remedial components included under alternatives 2-4. See previous comments from the Declaration.

Response: The text has been modified accordingly.

Comment 29. Page 15, VIII. Description of the Remedial Alternatives, Alternative 3, ¶1, 4th sentence. EPA notes that the Navy used initial caps to make "Multimedia Cap" a defined term and we recommend that you continue the use of initial caps for the rest of the document.

Response: The text has been modified accordingly. The same was done for the term "Soil Cap".

Comment 30. Page 15, VIII. Description of the Remedial Alternatives, Alternative 3, ¶1, 4th sentence. Indicate that the cap will be constructed IAW RCRA, such as, "The Multimedia Cap will be designed and constructed to meet the requirements of RCRA Subtitle C and will minimize infiltration (thereby reducing the potential for COC to leach from the fill into groundwater), control surface runoff and erosion, and prevent human and terrestrial animal contact with fill materials."

Response: As per Response to Comment #3, the text has been modified to read: "The cap will be designed and constructed in accordance with federal and state ARARs (Appendix D). The Multimedia Cap will reduce precipitation infiltration (thereby reducing the potential for COC to leach from the fill into ground water), control surface runoff and erosion, and prevent human and terrestrial animal contact with fill materials." The text "...reduce precipitation infiltration..." has been used because a Multimedia Cap is not 100% effective for eliminating precipitation infiltration, particularly considering that it will only be constructed at the site above the 100-year floodplain level. However, the primary pathway for COC migration (erosion and overland runoff) would be addressed.

Comment 31. Page 15, VIII. Description of the Remedial Alternatives, Alternative 3, ¶2, 1st sentence. For clarity change the first sentence to read, "Conceptually, the cap will consist either of a 12-inch bedding layer, a landfill gas vent layer a geomembrane liner or a flexible membrane liner, a compacted clay liner or a geocomposite clay liner, a 12-inch drainage layer, ..."

Response: The recommended text may be confused to read that the cap will not be multilayered (i.e., either a 12-inch bedding layer, or a landfill gas venting layer...etc.). The text has been modified to read "Conceptually, the Multimedia Cap will comprise several layers including a 12-inch bedding layer..."

Comment 32. Page 16, VIII. Description of the Remedial Alternatives, Alternative 4, ¶1, 3rd sentence. Rewrite the 3rd sentence to read, "The multimedia cap would be the same as the one described in Alternative 3 and is shown in Figure 8."

Response: The text has been modified accordingly; however, "similar to" was retained instead of "the same as" because the inclusion of vertical barriers would affect the construction/design of the landfill cap along the perimeter of the site.

Comment 33. Page 17, IX. Summary of the Comparative Analysis of Alternatives, ¶1, 3rd sentence. Add the RCRA landfill citation, such as, "At municipal landfill

sites, EPA's stated presumptive remedy is containment of site constituents, with or without additional remedial actions, based on site conditions, (*Presumptive Remedy for CERCLA Municipal Landfill Sites* OSWER Directive 9355.0-49FS).

Response: The text has been added.

Comment 34. Page 18, IX. Summary of the Comparative Analysis of Alternatives, first partial paragraph. Remove the last 2 sentences. See previous comments concerning the geostatistical report.

Response: The text has been retained with emphasis that the conclusions are the Navy's. See Response to Comment #22.

Comment 35. Page 18, IX. Summary of the Comparative Analysis of Alternatives, ¶2. Alternative 2 will not meet ARARs. Change the second sentence to read, "Alternative 2 will not meet federal and state ARARs."

Response: During the Proposed Plan, the BCT agreed to the text "Alternative 2 may meet the substantive requirements of the federal and state ARARs". Therefore, the text has not been changed.

Comment 36. Page 18, IX. Add a sentence to tie in the ARAR tables, such as, "The ARARs for the selected remedy and the actions to be taken to meet them are set forth in the tables in Appendix D."

Response: The text has been added.

Comment 37. Page 19, IX. Summary of the Comparative Analysis of Alternatives, 1st partial ¶. Add the following:

"The double barrier beneath the soil cover in Alternatives 3 and 4 provides additional protection to the environment in reducing the erosion potential of the landfill waste, whereas there is no redundancy between the soil cover and the landfill waste in Alternative 2. Therefore, the Navy is confident that a Multimedia Cap can be constructed to overcome these potential problems."

Response: It is agreed that the double barriers of a Multimedia Cap typically can provide more protection against the erosion of fill material (i.e., in the subsurface); however, the primary function of the double barrier system is to reduce infiltration into (and therefore, leachate generation from) landfill wastes. As shown in Figure 2-1 of the Site 09 FS, a Soil Cap can also be constructed of multiple (redundant) layers over the fill materials. In order to address the primary pathways of concern (erosion from the landfill surface and overland runoff), the Navy believes that a Soil Cap will actually be more effective in

this coastal environment for protecting landfill wastes from tides, wave action, and storm events (e.g., the Soil Cap would be easier to repair, the deeper root system with the vegetation on a Soil Cap would better hold soils in place than the shallow-rooted grasses used on a Multimedia Cap, a Soil Cap would be less susceptible to damage during flooding, etc.). The design of the selected Multimedia Cap alternative will account for such site-specific conditions, as feasible.

Comment 38. Page 19, IX. Summary of the Comparative Analysis of Alternatives, ¶5. Remove the last sentence which discusses cost. This paragraph should compare the Alternatives only on the basis of the title of the section, "Reduction of Toxicity, Mobility, or Volume".

Response: The reference to cost has been removed but the sentence (modified) has been retained because the potential need for future remedial actions in this case relates to issues of COC mobility.

Comment 39. Page 19, IX. Summary of the Comparative Analysis of Alternatives, ¶5. Add the following to the end of the paragraph:

"Capping under Alternative 3 will increase the amount of unsaturated waste that is above the water table by lowering the water table across the landfill by approximately seven feet. The capillary rise due to negative pressures under the cap is not expected to exceed this amount. The effect of the increase in salinity due to capillary action on waste previously saturated by groundwater will be minimal. Therefore, the effect on the contaminant loading from the groundwater to the sediments in the intertidal zone will also be minimal. This assumption will be monitored during the long term monitoring of the site sediments and groundwater."

Response: As discussed during a phone conversation on 4 June 1997, it is anticipated that the Multimedia Cap will reduce the water table within the landfill by something less than 7 ft. EPA noted that the estimated value of 7 ft was based upon the site's ground-water mound of 7 ft above msl (Figures 3-10, 3-11, and 3-12 of the Phase III RI) being present due to infiltration (which the cap would theoretically eliminate thereby lowering the ground-water table to sea level). However, under current conditions, both precipitation infiltration and ground-water flow from the west affect the water table at Site 09. As shown in Figures 3-10, 3-11, and 3-12 of the Phase III RI, the water elevation to the west (see MW09-13S) is generally between 4 and 5 ft above msl. Therefore, reducing precipitation infiltration with the Multimedia Cap will likely lower the water table to a level between that of the western boundary and that of the shoreline. In Appendix D of the Draft Final FS (EA July 1996), the predicted ground-water elevation changes under the different remedial alternatives was presented. Here, the water table is shown to decrease by up to 2 ft under

Alternative 3. Further, Figure 3-25 of the Phase III RI shows water levels at Site 09 which were collected during a dry season (which may suggest what the water table may look like with reduced infiltration through multimedia capping). Figure 3-25 shows similar water table elevations under dry conditions as the predicted elevations under capping conditions in Appendix D of the FS.

The following text has been added: "Capping under Alternatives 3 and 4 will increase the amount of unsaturated waste that is above the water table by lowering the water table across the landfill by up to approximately 2 ft under Alternative 3 and up to approximately 5 ft under Alternative 4. Therefore, by reducing potential leachate generation, in conjunction with controlling the primary pathways of landfill erosion and overland runoff, the potential for COC transport to intertidal sediment will be further reduced. The effects of potential capillary rise of ground water (due to negative pressures under the cap) and the potential increase in salinity (due to capillary action and/or reduced freshwater infiltration from precipitation) on waste previously saturated by ground water will be monitored during the long-term monitoring program for Site 09."

Comment 40. Page 21, IX. Summary of the Comparative Analysis of Alternatives, ¶3. The section on community acceptance must be updated after the comment period is complete.

Response: The public comment period ended on 15 May 1997 and the section on community acceptance has been updated for the Draft Final ROD.

Comment 41. Page 21, X. Selected Remedy, ¶1. Add a sentence to tie in the ARAR tables, such as, "The ARARs for the selected remedy and the actions to be taken to meet them are set forth in the tables in Appendix D."

Response: The text has been added.

Comment 42. Page 21, X. Selected Remedy. See previous comments on Alternative 3 in the declaration and section VII and make the appropriate changes.

Response: The text has been modified accordingly.

Comment 43. Page 23, X. Add the following to site grading, landfill cover, gas venting/management system, revetment construction and wetland restoration, all of the bullets where engineering specifications will be determined the design phase: "Detailed plans will be developed during the alternative's design phase and submitted for regulatory agency review and concurrence."

Response: The text has been added.

Comment 44. Page 23, X. Add the following to the LTM bullet:

Annual reports which would include a description of site activities and a summary of results of environmental monitoring would be submitted annually to RIDEM and USEPA.

Response: The following text has been added: "The environmental monitoring results and description of site activities will be provided in periodic (e.g., annual) reports to EPA and RIDEM."

Comment 45. Page 23, X. Add the following to the 5 year review bullet:

Under CERCLA 121(c) remedial action (or lack thereof) that results in contaminants remaining on-site must be reviewed at least every five years. During five-year reviews, an assessment is made of whether the implemented remedy is protective of human health and the environment and whether the implementation of additional remedial action is appropriate.

The five-year site reviews for Alternative 3, will evaluate the alternative's effectiveness at reducing potential human health risk from exposure to groundwater and at preventing groundwater from contributing to Allen Harbor sediment contamination in excess of human health and ecological risk-based values. These evaluations will be based on how successful the alternative is at maintaining acceptable sediment levels (at or below ecological risk-based values) beyond the revetment in the newly created intertidal zone. Acceptable sediment levels would be based on NOAA effect range - medium (ER-M) toxicity criteria. These performance standards will be developed cooperatively with the Navy, EPA, RIDEM and the other trustees during the design studies.

Analytical data collected during RI (Phase I, Phase II and Phase III) and RD activities will be used to estimate the baseline conditions. The detailed approach would be developed during the design phase and submitted for regulatory agency review and concurrence.

Response: The text has been incorporated with modification. The primary pathway for COC migration is through landfill erosion and overland runoff; therefore, it would be inappropriate to focus the 5-year reviews on ground-water risks. It is agreed that ground-water, sediment, and shellfish will likely be monitored to ensure the protection of human health and the environment; however, the Navy's investigations have shown that ground water is not the primary pathway for COC migration. The risks associated with ground water at Site 09 were identified in the HHRA as ingestion of deep ground water by future residents (which will be addressed by the land use restrictions). The

scope of the long-term monitoring program will be determined during the Remedial Design phase.

The ROD should not give the impression that NOAA's non-enforceable ER-M guidance values will serve as performance standards for sediment. NOAA has stated in the past that ER-M values should not be used as remediation goals. Although the performance standards may likely be a modification of ER-M values which will better suit the site-specific conditions, the actual method of determining performance standards has not yet been determined and should not be presented in the ROD (other than stating that they will be developed in the Remedial Design phase).

Comment 46. Page 24, XI. Statutory Determinations, ¶1. Add the words, "and contaminated sediments" to the first sentence between the words, "...removing or covering landfill debris" and "...along the site shoreline", in line 5, to indicate that the Navy's intention that the contaminated sediments in the intertidal zone will be removed, covered by the revetment, or capped.

Response: The text has been modified in accordance with Response to Comment #5.

Comment 47. Page 25, XII. Documentation of No significant Changes. If during the comment period no substantive comments are received to create the need for changes to the proposed remedy, the following sentence should be included instead of the third sentence: "The final remedy selected, as described in this document does not differ significantly from the proposed plan." If the remedy does differ significantly, it should be so stated.

Response: The text has been modified accordingly. No significant changes to the Proposed Plan are noted.

Comment 48. Page 2, Appendix C: Correction: The future construction worker scenario was not really based on the assumption of "multi-media cap". For consistency and clarify, please state in the text that the risk assessment was based on the assumption that some type of cap would be used because this is a landfill.

Response: The text has been modified accordingly.

Comment 49. Page 3, Appendix C, ¶ 2. Change the second sentence to read, "Nevertheless, potential exposure to hypothetical residents consuming onsite groundwater as a source of drinking water was evaluated as a conservatively prudent measure to determine if groundwater use deed restrictions were necessary to implement as part of the remedy."

Response: The text has been modified accordingly although it is noted that the HHRA portion of the RI does not determine remedial actions, only evaluations of risk (potential remedial alternatives are developed during the FS).

Comment 50. Page 5, Appendix C, Marine Ecological Risk Assessment Methodology. Remove the 3rd through the 5th sentences of the first paragraph. The summation of three Phases of the RAPS evaluated the overall health of Allen Harbor as compared to the Narragansett Bay. While this information was useful in building a data base from which to build on to integrate the Phase III RI-ERA, the methodology described in these sentences is not typically used in superfund ecological risk evaluations.

Response: The sentences have been removed.

Comment 51. Appendix D. EPA notes that the Navy failed to make several changes to the tables contained in the Site 9 FS documents, (see EPA comments dated March 20, 1996 and September 4, 1996). Therefore the following changes need to be made to the tables in Appendix D.

A. Table D-1. Change the status of the 40 CFR 230 to relevant and appropriate, since the groundwater discharges to the surface water at this site.

Response: The status has been changed to relevant and appropriate. The "action to be taken to meet ARAR" has been changed to "AWQC may be considered for the development of performance standards."

B. Table D-3. Change the status of 40 CFR 121 to relevant and appropriate, since the groundwater discharges to the surface water at this site. Additionally change the action to be taken to meet ARAR to read, "AWQC will be used to evaluate the performance of the remedy."

Response: The status has been changed to relevant and appropriate. The "action to be taken to meet ARAR" has been changed to "AWQC may be considered for the development of performance standards."

C. Table D-3. Change the action to be taken to meet ARAR for the final cover guidance to read, "Cap design will conform to these standards."

Response: The text has not been changed because the standardized Multimedia Cap design recommendations presented in the guidance document will have to be modified to account for the shoreline environment.

D. Table D-3, Clean Air Action Section 5, 160 through 169A. Change the status to applicable since the remedy will include gas venting.

Response: The status has been changed to applicable.

E. Table D-3, LDR. Change the status to applicable, since there will be materials from the site placed on the landfill.

Response: The status has been changed to applicable.