



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

November 6, 1998

James Shafer, Remedial Project Manager
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: EPA Review of the Draft Feasibility Study for the Former Robert E. Derecktor Shipyard, dated September 1998 - Naval Station Newport

Dear Mr. Shafer:

I am writing in response to your request for EPA to review the *Draft Feasibility Study for the Former Robert E. Derecktor Shipyard*, dated September 1998. Detailed comments are provided in Attachment A.

The title of the FS should more appropriately be labeled "off-shore," since insufficient information is presented for the on-shore. The majority of the information presented and the development of alternatives all focus on the off-shore. Since the investigation and proposed removal actions for the on-shore remain incomplete, it is difficult to draw conclusions about the appropriateness of remedial alternatives evaluated for the on-shore.

A clearer justification for the basis for determining hot spots must be provided in the FS. After a laborious process of developing risk based preliminary remediation goals ("PRGs"), the FS arbitrarily multiplies the PRGs by a multiple of 5. While I recognize that this alternative may remove the most contaminated areas of the offshore, it is unclear how a protectiveness finding can be made for this alternative.

We understand that the revised PRG document will be incorporated into Appendix B. As you know, the PRGs are still undergoing regulatory review and may change as a result. Changes in PRGs may affect the evaluation of alternatives in the FS.

In various sections of the report, references are made to "a 5-yr review" or 5-yr reviews over a 30 year period. With respect to the 30 year period, it should be explained that this time frame was used for the purposes of cost estimating only. Five year reviews are required as long as wastes above health based levels remain at the site. The text should be modified to reflect this requirement.

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Executive Order 11990, Protection of Wetlands, is listed as an ARAR with an applicable status for Alternatives 2, 3, and 4 (Tables 5-5, 5-8, and 5-11, respectively). Under Alternative 2, the text (§5.2.2, page 5-19) states that "...This alternative includes actions to evaluate whether degradation or improvement to the subtidal wetlands is occurring...." Under Alternatives 3 and 4, the text (§5.2.3, page 5-31 and §5.2.4, page 5-36, respectively), states "...the land under the ocean at this site does not fit the definition of a wetland stated in the executive order." The text of the FS must be revised and must be consistent with the ARARs tables.

Alternatives 3A, 3B, and 4 include dredging of contaminated sediments and the disposal of miscellaneous solid waste encountered during dredging (*e.g.*, pipe, conduit, cable, *etc.*). It is expected that numerous shellfish would also be removed by dredging activities. The management of the shellfish should be discussed for these alternatives.

The text, tables, and appendices should be reviewed to ensure that the volumes and costs for each alternative are consistent throughout the report. For example, the volume of estimated contaminated sediment to be dredged under Alternative 3A is stated as 33,700 cubic yards on page 4-11; however, Figure 4-2A shows a total of 33,561 cubic yards. Other examples are provided in Attachment A. Please undertake a detailed review of the report to ensure consistency throughout.

Some of the most highly contaminated off-shore areas are located adjacent to outfall locations and appears to indicate that the numerous outfalls (shown on Figures 1-3A and 1-3B) have significantly contributed to the sediment contamination. The results of the drainage system investigations performed during the SASE should be better summarized in the FS report. The presence of accumulated residue and debris within the pipe network leading to the outfalls, and building floor drains that are connected to the storm water drainage system should be identified in the FS with corresponding sample analysis, as available. Evaluation of whether accumulated residue and debris within the drainage system could be continuing sources of contamination to the off-shore environment should be included in the FS. Any on-shore work related to ensuring that future outfall discharges do not re-contaminate the off-shore environment (*e.g.*, storm drain network sampling and cleaning, inspection of building blue prints, tracer studies, *etc.*) should be clearly specified in the FS.

Since investigations of drain lines from four of the 45 catch basins were inconclusive [in the open area south of Building 42 (CB42-1 through CB42-4)], please summarize activities that resulted after the SASE.

The ARARs tables in the FS are not correct. ARARs tables should be provided for each alternative retained for detailed analysis in the FS. Please replace the ARARs in the FS with the ARARs tables provided in Attachment B. The National Contingency Plan gives EPA the authority to develop ARARs for remedial activities.

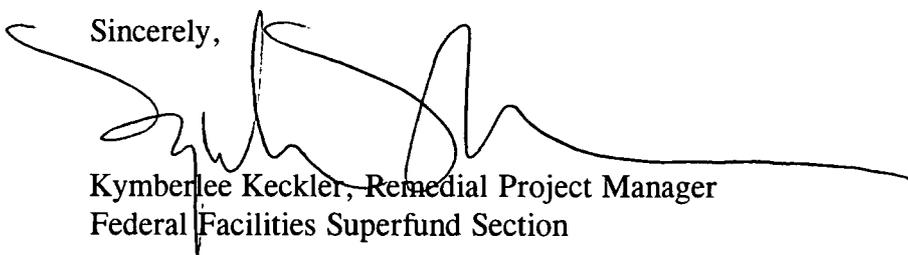
The Location-Specific ARAR and Action-Specific ARAR tables (Tables 5-8, 5-9, 5-11, and 5-12) should be reviewed for both accuracy and completeness. Several ARARs listed on Table 5-11 are Action-Specific and not Location-Specific (including Hazardous Waste Management Regulations and Clean Air Act Regulations). Several additional potential state ARARs should be evaluated for inclusion in the ARAR tables including Regulations for the RI Pollutant Discharge Elimination System, Rules and Regulations Pertaining to the Operation and Maintenance of Wastewater Treatment Facilities, and Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases.

The costs quoted in the document do not appear to include potential cost of habitat mitigation measures that may be required. The FS must analyze required habitat restoration, including a discussion of the appropriateness of active restoration versus passive restoration and an allowance for these costs.

If the limited dredging is implemented, will a shell fishing and lobstering ban be required around the docks where the dredging is to occur? Please clarify throughout the document. It is important to evaluate this under the Overall Protection of Human Health and the Environment criterion and explain whether the ban has been instituted for reasons other than contamination at Derektor Shipyard. Add state shellfish/lobstering ban regulations as location-specific ARARs.

I look forward to working with you and the Rhode Island Department of Environmental Management toward the cleanup of Derektor Shipyard. Please do not hesitate to contact me at (617) 918-1385 should you have any questions or wish to arrange a meeting.

Sincerely,



Kimberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachments

cc: Paul Kulpa, RIDEM, Providence, RI
Melissa Griffin, NETC, Newport, RI
David Peterson, USEPA, Boston, MA
Cornell Rosiu, USEPA, Boston, MA
Jennifer Stump, Gannet Fleming, Harrisburg, PA
Ken Finkelstein, NOAA, Boston, MA
Steven Parker, Tetra Tech-NUS, Wilmington, MA
Mary Philcox, URI, Portsmouth, RI
David Egan, TAG recipient, East Greenwich, RI

ATTACHMENT A

<u>Page</u>	<u>Comment</u>
p. ES-4, ¶2	<p>In the first sentence insert "in waters owned by the State of Rhode Island" after "Coddington Cove."</p> <p>Change the second sentence to: "In addition, a ban on the collection of shellfish and lobster would need to be imposed by the State of Rhode Island, with the Navy posting the areas to be restricted, including the north breakwater."</p>
p. ES-4, ¶3	<p>In the first sentence insert "annual monitoring to determine contaminant levels and" after "dredging) includes."</p> <p>Insert new third and fourth sentences: "Annual monitoring is required to assess levels of contamination left in place after dredging or redistributed during the dredging activity. Habitat mitigation measures may be required to address dredging disturbance to protected habitats under applicable federal and state standards."</p>
p. ES-4, ¶4	<p>In the first sentence insert "annual monitoring to determine contaminant levels and" after "dredging) includes."</p> <p>Insert new fourth and fifth sentences: "Annual monitoring is required to assess levels of contamination left in place after dredging or redistributed during the dredging activity. Habitat mitigation measures may be required to address dredging disturbance to protected habitats under applicable federal and state standards."</p>
p. ES-5, ¶1	<p>Insert a new second sentence: "Habitat mitigation measures may be required to address dredging disturbance to protected habitats under applicable federal and state standards."</p>
p. 1-1, §1.0	<p>The first sentence of the second paragraph states that the FS was developed to address both on-shore and off-shore contamination issues at the site. While the FS presents some information regarding the on-shore contamination, the on-shore contamination is being addressed by other means (<i>i.e.</i>, removal actions, additional studies concerning naturally occurring arsenic levels, <i>etc.</i>). The first sentence of the second paragraph needs to be revised.</p>

- Figure 1-3A Three areas of potential concern are shown along the north waterfront. These areas of potential concern were identified during the preliminary assessment. The figure indicates that each of these areas are "fill areas along bulkhead." The SASE investigated the catch basins near these areas, but neither borings nor test pits were conducted in the fill areas. It does not appear that samples were collected from these fill areas. Comparing the location of these areas to Figure 2-1, the southern two areas are onshore from sample locations DSY-2 and DSY-28. The northern area is potentially onshore of DSY-27. DSY-2, DSY-27, and DSY-28 are among the most contaminated areas in the offshore environment. It should be clarified whether these "fill areas along bulkhead" were investigated post SASE or when they will be investigated.
- p. 1-12, §1.3.3 It is stated that the hydraulic conductivity ranges from 0.48 feet per day (MW03) to 1.71 (MW12) feet per day. Please clarify whether these values are for the overburden or the bedrock.
- The water elevation in bedrock well MW05 was continually below the elevation of seawater during the water level survey in September 1996. Potential explanations should be provided for this anomalous occurrence.
- p. 1-19, ¶1 A chronic water quality criterion for copper in salt water *does* exist. It just happens to be identical to the acute criterion (2.4 ug/l for total dissolved metals and 2.9 ug/l for total recoverable metals). Rhode Island water quality standards are also available and contain values for both acute and chronic exposures.
- p. 1-20, §1.4.1 It is implied that the PCB contamination in the off-shore area is from sources other than NETC/Derecktor Shipyard (*i.e.*, rivers that discharge to Narragansett Bay, atmospheric deposition, *etc.*). This implication should either be substantiated with relevant facts and references, or it should be removed from the report. Known PCB contaminated areas are present on the on-shore of Derecktor Shipyard. PCB transformers have also been purported to have been stored at Derecktor Shipyard.
- p. 1-23, §1.4.4 The purpose of this section is to summarize the nature and extent of contamination in the on-shore soil. Although the section summarizes the SASE findings, the section does not summarize the removal actions that have occurred. It is imperative that the current nature and extent of surface and subsurface soil contamination be adequately characterized in this FS if it is to include the on-shore.

Sump excavation activities and other removal actions completed on the on-shore need to be clearly identified in the text and with figures. The *Derecktor Shipyard Building S42-1 Sump Pit Removal/PCB Soil Removal Work Plan* and completion of associated activities needs to be discussed. Activities planned for sump pits S42-2, S42-3, S42-4, and S42-5 need to be identified.

- p. 2-1, last ¶ Change the first sentence to: "ARARs are promulgated federal environmental and state environmental and facility siting requirements..."
- p. 2-2, ¶1 Under both Applicable Requirements and Relevant and Appropriate Requirements change "facility citing" to "facility siting."
- p. 2-4, §2.2.1 The last sentence states that this section presents each medium of concern for this FS and includes marine sediment, shellfish, and terrestrial soils. However, the subsections only present discussions of marine sediment and terrestrial soils. While it appears that the shellfish medium of concern has been merged with the marine sediment medium of concern, this section should either be modified to include an independent discussion of the shellfish medium of concern or shellfish should be identified as an indirect medium of concern.
- p. 2-4, §2.2.1.1 The reference to Section 1.7 in the fourth paragraph should be changed to Section 1.6.2.
- p. 2-5, §2.2.1.2 Although this section discusses risks to humans as a result of exposure to PCBs and arsenic in terrestrial soils, is not complete. Section 1.4.4 of this FS states TPH was detected in surface soils in the North Waterfront area at concentrations up to 4900 mg/kg and in the Central Shipyard area up to 2000J mg/kg. The RIDEM Direct Exposure Criteria for TPH is 500 ppm (residential) and 2500 ppm (industrial/commercial). The text should explain to the reader why TPH was not assessed in the preliminary risk assessment and whether it poses an unacceptable risk. Elevated levels of PAHs (North Waterfront and Central Shipyard areas) and high concentrations of pesticides (Central Shipyard area) were detected in the surface soils. The text should explain to the reader the results of the preliminary risk assessment and whether PAHs pose an unacceptable risk. All of the contaminants of potential concern identified in the SASE preliminary human health risk assessment should be identified in this summary section of the FS.

Additional detail regarding the removal action is necessary in order to drop terrestrial soils as a medium of concern. At a minimum, the locations of contaminants that were identified as yielding unacceptable risk and the locations that are slated for removal actions need to be pictorially presented and discussed in the text. The schedule for the removal action completion must be included as well.

p. 2-9, Table 2-1 The potential and recommended PRGs for aquatic ecological receptors (resuspended sediment) for PCBs are listed as 530 mg/kg and 1060 mg/kg, respectively. The units of mg/kg should be corrected to $\mu\text{g}/\text{kg}$.

Why is the "recommended" aquatic-bedded sediment PRG for total PCBs presented in Table 2-1 different than what was presented in the most recent PRG development document?

Typically only one PRG per contaminant is presented in an FS. Therefore, presentation of both a "potential" and a "recommended" PRG seem to serve no purpose. The development of the PRGs will be included as an appendix to the FS. To clarify the text, please present only one PRG per contaminant in the body of the FS.

p. 2-12, ¶5 Regarding the second sentence, elsewhere in the report it discusses how the piers are used by divers collecting lobsters. The area around the piers should at least be considered viable lobster harvesting areas (since area lobsters are likely attracted to the piers for cover and then disperse throughout the area to forage).

p. 2-21, §2.3 Only four [DSY-27 (V9), DSY-28, and DSY-29 and DSY-30] of the eight stations presented in Table 2-3 were sampled below a depth of 0.5 feet, and three of these exhibited contamination below 0.5 feet. While the expected depth of contamination at the other four stations is shown as 0.5 feet in Table 2-3, it is very likely that the contamination extends below this depth at these stations. The assumed depth of contamination can greatly impact the quantity of sediment estimated to exceed PRGs. This section should emphasize the uncertainty of the sediment volume calculations.

In addition, it is stated that the detailed assumptions and calculations of area and volume for each area are presented in Appendix C. There are no assumptions or calculations listed in Appendix C. Please correct.

p. 3-4, ¶3 Change the second and third sentences to: "Since the wastes in the bay were disposed (without regulatory approval) by a generator of RCRA C

waste, the contaminated marine sediments will need to be handled as RCRA C hazardous waste. However, the waste may be tested for hazardous characteristics under applicable federal and state standards. Any waste tested and determined not to be hazardous may be disposed in a RCRA Subtitle D solid waste landfill without pretreatment. Because the available data regarding contaminant concentrations at depth is limited, and sediments have not been sampled for all disposal parameters, a contingency has been included for treating part of the materials as hazardous waste."

- p. 3-12, Table 3-2 While Access Restrictions were retained under Limited Action in Table 3-1, Access Restrictions were not included in Table 3-2. Please correct.
- p. 3-17, bullet 1 Insert after "Implementability:": The Navy will monitor and maintain the buoys, fences, and signs in perpetuity. In addition, the NETC Police...."
- p. 3-17, bullet 2 Insert after "costs for placement": "and long-term maintenance." Ensure that long-term maintenance is included in the cost estimate.
- pp. 3-19 to 3-25,
§3.3.5 Identify and evaluate dredging equipment and techniques that can generate smaller quantities of wastewater. Approximate the volume of wastewater that would likely be generated by dredging and excavation. Identify technologies and constraints on maintaining high solid content dredged materials while reducing the quantity of wastewater requiring treatment.
- p. 3-22, bullet 2 In the first sentence change "general marine dredging" to "dredging hazardous marine materials."
- p. 3-22, bullet 3 There may be operation and maintenance costs to any habitat mitigation measures that may be required under applicable federal and state standards.
- p. 3-24, bullet 2 Make same text change as for page 3-22, bullet 2.
- p. 3-25, bullet 1 Make same text change as for page 3-22, bullet 3.
- p. 3-25, §3.3.5.2 It is stated in the bullet on this page that the capital costs for hydraulic dredging of contaminated materials are "moderate." This should be changed to "moderate to high" to be consistent with Table 3-2 that lists capital costs for both dredging methods as "moderate to high."

- p. 3-25, ¶2 In the second sentence change "Disposal media" to "Hazardous materials."
- Insert a new third sentence: "Hazardous materials may be tested to determine if they are characteristically hazardous. If they are not hazardous, they may be disposed in a RCRA Subtitle D solid waste facility. Contaminated debris may also be decontaminated, to allow for reuse on the site or disposal as solid waste."
- p. 3-25, ¶3 In the first sentence insert "hazardous" before "materials handling."
- pp. 3-26 to 3-32, §3.3.6 Expand the discussion of dewatering activities and treatment/disposal of residual water. Identify what clarifier agent(s) is likely to be used (*e.g.*, alum) to remove inorganics by metal precipitation. Estimate the total mass of the agent(s) that might be needed to treat the wastewater, and identify any water quality issues related to use of the agent(s).
- Concerning treatment/disposal of residual water, identify conditions where suspended particle removal efficiencies may be significantly reduced (*e.g.*, may depend on particle sizes, specific gravity of wastewater). Identify any treatment volume constraints that might exist (*e.g.*, limitations on pre-treatment storage volumes, option A versus B) and may be a logistic bottleneck in the treatment of residual water.
- p. 3-27, §3.3.6.2 The disposal of residual water from dewatering at a POTW is considered a "viable option." Given the nature of the residual water (*i.e.*, high salinity), it is not evident that it would be acceptable to a POTW. Please specify whether the local POTW was contacted regarding the acceptability of the residual water. Initial inquiries should be made before identifying this method of disposal as a viable option.
- p. 3-28, ¶1 In the last sentence change "may be required" to "will be required."
- p. 3-28, ¶2 Change the first sentence to: "It is anticipated that once the marine sediment has been tested for hazardous characteristics, approximately 80% of the material may be disposed in a RCRA Subtitle D landfill following dewatering."
- In the second sentence change "However, because of uncertainties in characterizing the sediment contamination and sample frequency, it was assumed that a small volume (approximately 20 percent)" to "It is assumed that the rest of the material is tested as hazardous (approximately 20 percent) and."

- p. 3-29, §3.3.6.3 In the first bullet on this page, it is stated that RCRA Subtitle D and RCRA Subtitle C facilities are unlikely to be able to accept the volume of sediment anticipated. This is inconsistent with the remainder of the document that suggests that RCRA Subtitle C facilities are available to accept the anticipated volume (*e.g.*, Table 3-2, page 3-13) for treatment and/or disposal. This discrepancy should be corrected.
- p. 3-29, ¶5 Change the first sentence to "It is anticipated that once the marine sediment has been tested for hazardous characteristics, approximately 80% of the material may be disposed in a RCRA Subtitle D landfill following dewatering."
- p. 3-30, ¶1 In the first sentence insert "characteristic" after "the material is classified as." Since the source of the waste is from a RCRA C generator, all the material is hazardous waste until tested otherwise.
- p. 3-30, §3.3.7 It is stated that the TCLP 20 times "rule of thumb" is typically used for soils and is therefore a more conservative rule with respect to sediment. The "rule of thumb" was developed for generators of hazardous waste as a cost-effective way to help the generator determine whether it is necessary to run the TCLP on a solid waste. The rule therefore applies to a wide range of solid waste types and the suggestion that it is more conservative for sediment should be removed from the report.
- p. 3-30, §3.3.7.1 It is not apparent that on-base treatment (solidification/stabilization) is a cost-effective option relative to off-base treatment. A treatability study would be necessary for on-base treatment to determine the best volumes/combinations of stabilization agents to ensure that the treatment is effective for the site-specific waste. Transportation costs would also increase under the on-base treatment option owing to bulking from the addition of stabilization/solidification agents.

The capital costs for on-base treatment are listed as low to moderate and the O&M costs are listed as low. For off-base treatment, capital costs are listed as low and there are no O&M costs, suggesting that off-base treatment may be more cost-effective.

Section 4.0 discusses "stabilization" for the purpose of removing excess liquid only (not for the purpose of immobilizing compounds as discussed in Section 3.0). In addition, Table 3-3 (Page 3-33) appears to differentiate the purpose of stabilization for on-base treatment ("stabilization/solidification for bulking" where the word "bulking" appears to refer to the removal of excess liquid) and off-base treatment

("stabilization/solidification for treatment of metals"). If the intent of adding agents to the waste material is simply to remove excess liquid, then this should not be referred to as stabilization/solidification. The text and tables in Sections 3.0 and 4.0, and the associated cost estimates in Appendix D, should be modified to clarify these issues. Please limit the use of the term stabilization/solidification to its traditional meaning.

p. 3-32, §3.3.7.2 The statement "No sediment removed from the off-shore area is anticipated to require any off-base treatment" is confusing given that the previous bullet states that 20% of the dredged material (contaminated sediment) is expected to require treatment at a RCRA Subtitle C facility. This discrepancy should be corrected.

p. 3-33, Table 3-3 Process Option for Removal needs to include a bullet for habitat mitigation.

Process Option for Disposal needs to include testing for characteristic hazardous waste and possible decontamination of debris. Off-Base RCRA Subtitle C should be "landfill or TSDF"

Technology for Treatment - There was no discussion in the text of Thermal/Physical/Chemical/Biological Treatment.

p. 4-3, Table 4-1 Under the column "Receptor Addressed," aquatic ecological receptors should not be listed for the limited action alternative since there will be no reduction of ecological risk from this alternative. Under the column of "Key Components," the references to "Institutional Controls - lobster fishing ban" should be changed to "Institutional Controls - shellfish and lobster fishing ban" to be consistent with the text of the report.

p. 4-3, Table 4-1 Limited Action - Key Components: Add "shellfish" to "lobster fishing ban."

Limited Dredging, Hot Spot Dredging, and Dredging and Disposal - Key Components: Add "Testing for hazardous characteristics," "Possible decontamination of contaminated debris," and "Possible solidification of sediment."

Limited Dredging - Receptor addressed: Will there still be a risk from shellfish ingestion after the limited dredging?

p. 4-4, ¶1 Remove the last sentence. Technical limitations and costs are not grounds for implementing an alternative that does not meet ARARs unless the limited criteria for a waiver are met.

- p. 4-4, ¶3 Replace all but the first sentence with: "Since the wastes in the bay were disposed (without regulatory approval) by a generator of RCRA C waste, the contaminated marine sediments must be handled as RCRA C hazardous waste. However, the waste may be tested for hazardous characteristics under applicable federal and state standards. Any waste tested and determined not to be hazardous may be disposed in a RCRA Subtitle D solid waste landfill without pretreatment. Because the available data regarding contaminant concentrations at depth is limited, and sediments have not been sampled for all disposal parameters, a contingency has been included for treating part of the materials as hazardous waste."
- p. 4-4, bullet 3 Split this into separate descriptions of Alternatives 3A and 3B. For the limited removal, will institutional controls and access restrictions still be required for the inshore area to be dredged?
- p. 4-6, ¶1 In the second sentence insert "to enforce the ban and" after "RIDEM's cooperation would be needed."
- p. 4-8, ¶3 Remove this paragraph since this alternative will not meet ARARs.
- p. 4-8, §4.2.2 The last sentence of paragraph 1 states that long-term monitoring would include elutriate chemistry tests (PCBs, PAHs, metals). However, the cost estimate for Alternative 2 in Appendix D does not include elutriate testing. This discrepancy should be corrected.
- p. 4-8, §4.2.3 Separate the discussions of Alternatives 3A and 3B.
- p. 4-9, bullets Add "Testing for hazardous characteristics," "Possible decontamination of contaminated debris," and "Treatment of discharge water, if necessary."
- p. 4-9, ¶5 Clarify whether a shellfish/lobstering ban would still be required under the limited dredging (3A) alternative.
- p. 4-9, §4.2.3 Alternative 3B involves the removal and off-site disposal of sediments ("hot spots") with COCs in excess of five times the recommended ecological PRGs. The basis/justification for the factor of five should be provided.
- p. 4-11, ¶3 In the second sentence insert "tested for hazardous characteristics," after "transported to Pier 1,."

p. 4-11, §4.2.3 The fourth paragraph states that disposal contractors suggest using fly ash to absorb remaining liquids in the sediment after dewatering. Care should be taken if fly ash is used because it can contain elevated levels of metals that, in addition to the levels of metals present in the sediment, may cause problems when the waste is analyzed (TCLP tested) for off-site disposal.

p. 4-11, ¶4 In the first sentence insert "in a RCRA Subtitle C or D facility" after "prior to disposal."

Insert new third sentences: "The separated liquid will be treated, if necessary, before discharge back into the Bay."

In the current third sentence change "gravity draining in addition to stabilization" to "gravity draining. In addition, liquid remaining in the sediments will be stabilized."

At the end of the last sentence add: ", which will meet applicable waste handling standards."

p. 4-13, ¶1 Replace the second and third sentences with: "Since the wastes in the bay were disposed (without regulatory approval) by a generator of RCRA C waste, the contaminated marine sediments will need to be handled as RCRA C hazardous waste. However, the waste may be tested for hazardous characteristics under applicable federal and state standards. Any waste tested and determined not to be hazardous may be disposed in a RCRA Subtitle D solid waste landfill without pretreatment. Because the available data regarding contaminant concentrations at depth is limited, and sediments have not been sampled for all disposal parameters, a contingency has been included for treating part of the materials as hazardous waste."

In the third sentence change "Therefore, it is" to "It is."

p. 4-15, ¶1 Add a new last sentence: "Mitigation measures to address alteration of protected habitats may be required under federal and state standards."

p. 4-15, bullets Add "Testing for hazardous characteristics" and "Possible decontamination of contaminated debris."

p. 4-15, §4.2.4 The area to be covered in the Pre-Design Investigation (PDI) under Alternative 4 is 1,806,720 square feet as shown in Figure 4-3. Establishing a grid pattern of 200 feet in this area would result in a

minimum of 45 stations. However, the second paragraph of this section states that this approach would result in approximately 34 boring stations. The calculation for the number of boring stations should be reviewed and the text (and cost estimate in Appendix D) should be corrected.

Add "and bulking" after "Dewatering excavated sediments."

p. 4-17, ¶3 In the second sentence insert "tested for hazardous characteristics," after "transported to Pier 1,."

p. 4-17, ¶4 In the first sentence insert "in a RCRA Subtitle C or D facility" after "prior to disposal."

Insert new third sentences: "The separated liquid will be treated, if necessary, before discharge back into the Bay."

In the current third sentence change "gravity draining in addition to stabilization" to "gravity draining. In addition, liquid remaining in the sediments will be stabilized."

At the end of the current fourth sentence add: ", which will meet applicable waste handling standards."

p. 4-17, ¶5 &
p. 4-18, ¶1 Replace the second and third sentences with: "Since the wastes in the Bay were disposed (without regulatory approval) by a generator of RCRA C waste, the contaminated marine sediments will need to be handled as RCRA C hazardous waste. However, the waste may be tested for hazardous characteristics under applicable federal and state standards. Any waste tested and determined not to be hazardous may be disposed in a RCRA Subtitle D solid waste landfill without pretreatment. Because the available data regarding contaminant concentrations at depth is limited, and sediments have not been sampled for all disposal parameters, a contingency has been included for treating part of the materials as hazardous waste."

In the third sentence change "Therefore, it is" to "It is."

p. 4-17, §4.2.4 The reference to Table 2-4 on this page should be changed to Table 2-3. If Table 2-4 is the correct reference, it was missing from the document and was therefore not reviewed. Please clarify.

- p. 4-18, ¶4 Add a new last sentence: "Mitigation measures to address alteration of protected habitats may be required under federal and state standards."
- p. 4-19, ¶2 Remove the second sentence since Alternatives 1, 2 and 3B do not meet ARARs.
- p. 5-3, ¶1 In the second sentence insert "monitoring and" after "requiring sediment."
- p. 5-6, ¶5 In the first sentence change "Four" to "Five." Alternatives 3A and 3B should be analyzed separately.
- p. 5-8, ¶4 Replace the first sentence with: "Section 304 of the federal Clean Water Act and the Rhode Island Water Pollution Control standards are chemical-specific ARARs used to develop sediment PRGs. Since Alternative NS/ER-1 does not address sediment contamination the Alternative does not satisfy these ARARs (Table 5.1). In addition several non-promulgated criteria (TBCs) were used in developing sediment PRGs."

Remove the third sentence.
- p. 5-9, Table 5-1 Clean Water Act, Section 304 and state Water Pollution Control are promulgated and are therefore "Relevant and Appropriate" and under Action to be Taken. Change "The criteria cannot be directly applied to sediment" to "Since contaminated sediment would be left in place the no-action alternative does not meet these standards."
- p. 5-12, last ¶ In the first sentence change "by effectively" to "only indirectly through institutional controls by;" insert "and lobster" after "shellfish;" and change "Section 2, and that" to "Section 2. Shellfish and lobster."
- p. 5-13, ¶1 In the last sentence insert "and lobstering" after "shell fishing."
- p. 5-13, last ¶ Replace the sentence with "Section 304 of the federal Clean Water Act and the Rhode Island Water Pollution Control standards are chemical-specific ARARs used to develop sediment PRGs. Since Alternative 2 does not address sediment contamination the Alternative does not satisfy these ARARs (Table 5.1). In addition several non-promulgated criteria (TBCs) were used in developing sediment PRGs."
- p. 5-14, Table 5-4 Clean Water Act, Section 304 and state Water Pollution Control are promulgated and are therefore "Relevant and Appropriate" and under

Action to be Taken. Change "The criteria cannot be directly applied to sediment" to "Since contaminated sediment would be left in place the no-action alternative does not meet these standards."

p. 5-15, Table 5-5 Use attached revised Table 5-5.

p. 5-18, Table 5-6 Use attached revised Table 5-6.

p. 5-19, ¶1 In the first sentence change "could include wetlands," to "includes wetlands, flood plain,."

Change the second sentence to "Leaving waste in place fails to address federal requirements to protect wetland and flood plain resources. The actions of long-term monitoring, installing and maintaining buoys, and instituting an access..."

Replace the third sentence with: "Leaving waste in place violates federal and state action-specific hazardous waste provisions."

p. 5-19, ¶2 Delete the second sentence since these pertain to location-specific standards.

p. 5-20, ¶3 Add a new last sentence: "The current shell fishing ban would need to be extended to lobstering."

p. 5-21, §5.2.3 Split this discussion into separate discussions for Alternatives 3A and 3B. As an example, if the limited dredging removes all of the contamination from the shoreline area, than the shell fishing and lobstering ban would not be needed. However, under the hot-spot excavation the ban will need to be retained.

p. 5-21, ¶5 In the first sentence does the statement only refer to access restrictions to the shoreline? No fishing restriction has been proposed in the cove (via boat access).

p. 5-21, ¶6 In the first sentence insert "testing to determine its hazardous characteristics," after "removing some sediment."

p. 5-22, ¶3 Change the paragraph to: "Mitigation measures to address alteration of protected habitats in or adjacent to the Site may be required under federal and state standards. However, most of the effected areas are with a designated port and have been previously dredged or altered by port construction and maintenance."

- p. 5-23, bullet 1 Remove the last sentence since the risks will not be sufficiently reduced to be protective of the environment.

- p. 5-23, §5.2.3 In the second bullet on this page, it is stated that marine aquatic receptors could continue to be impacted by contaminant concentrations as high as 197 mg/kg copper (station 3) under Alternative 3B. The reference to station 3 should be corrected to station 2 because station 3 would be dredged under Alternative 3B.

- p. 5-23, last ¶ Replace the sentence with "Section 304 of the federal Clean Water Act and the Rhode Island Water Pollution Control standards are chemical-specific ARARs used to develop sediment PRGs. In addition several non-promulgated criteria (TBCs) were used in developing sediment PRGs."

- p. 5-24, Table 5-7 Action to Be Taken to Attain ARAR: Revise the text to read, "Alternative 3 reduces risks to human receptors, so these criteria are met." Delete "eliminates exposure" since this can not be achieved.

- Tables 5-8 & 5-11 While Section 2.1.2 (Page 2-3) mentions flood plain regulations as a location specific requirement that may be applied to the site, these regulations are not listed as ARARs in Tables 5-8 or 5-11. The determination should be made whether these regulations (*i.e.*, Executive Order 11988, RCRA Flood plain Restrictions for Hazardous Waste Facilities, RCRA Flood plain Restrictions for Solid Waste Disposal Facilities and Practices) are applicable or relevant and appropriate. Since, Alternatives 3A, 3B, and 4 consider the establishment of an on-base staging and treatment area for dredged sediments and wastewater (associated with dewatering of the dredged sediments), they are applicable for such an action.

- Table 5-7, 5-8 & 5-9 Make these tables apply to Alternative 3A only. Use the attached tables. Replace Tables 5-10, 5-11, and 5-12 with the attached tables for Alternative 3B.

- p. 5-31, ¶1 Replace with the following two paragraphs: "Alternative 3A will meet all federal and state location-specific ARARs. Alternative 3A will also meet all action-specific ARARs regulating monitoring and dredging, including hazardous waste and water discharge standards.

Alternative 3B does not meet federal and state location-specific ARARs regarding wetlands, flood plains and aquatic resources because contamination will be left in place that poses ecological risks.

Alternative 3B will meet all action-specific ARARs regulating monitoring and dredging, including hazardous waste and water discharge standards.

- p. 5-31, ¶4 In the first sentence, separate the discussion between the two Alternatives. In the second sentence, please clarify whether human health risks remain only in the undredged area.
- p. 5-32, ¶2 In the fifth sentence add at the end: ", however active mitigation measures may be required under federal and state standards."
- p. 5-32, ¶3 In the second sentence change "commercial fishing" to "commercial shell fishing and lobstering." No ban on fin fish fishing has been proposed
- p. 5-33, ¶4 Replace the paragraph with: "The State of Rhode Island generally requires dredging projects to be conducted between November 1 and January 15 to protect sensitive species. The Navy will investigate the use of aquatic habitats on Site by sensitive species to determine potential impacts from dredging during different times of the year. It is anticipated that the long-term benefits of conducting the remedial action during a single dredging period (estimated to last 6 months for Alternative 3A) will outweigh any short-term risks to sensitive species."
- p. 5-33, ¶6 In both the first and second sentences insert "hazardous and non-hazardous" before "material."
- Remove the last sentence since there are no local hazardous waste landfills to accept the hazardous material dredged under Alternative 3B.
- p. 5-34, §5.2.3 The Present Worth value for the 50% volume increase (listed as \$24,141,597) should be corrected to be consistent with Appendix E (\$24,141,957).
- p. 5-35, §5.2.3 The Present Worth for Alternative 3B (listed as \$2,017,889) should be corrected to be consistent with Appendix D (\$2,018,666). Additionally, the cost for the five year reviews should be \$21,500 (not \$21,550 as listed).
- p. 5-35, ¶2 In the first sentence insert "testing to determine its hazardous characteristics," after "removing sediment,."

- p. 5-35, ¶3 Change the paragraph to: "Mitigation measures to address alteration of protected habitats in or adjacent to the Site may be required under federal and state standards. However, most of the affected areas are within a designated port and have been previously dredged or altered by port construction and maintenance."
- p. 5-36, ¶2 Change the Table references to 5-13, 5-14, and 5-16. Change the second sentence to: "Section 304 of the federal Clean Water Act and the Rhode Island Water Pollution Control standards are chemical-specific ARARs used to develop sediment PRGs. In addition several non-promulgated criteria (TBCs) were used in developing sediment PRGs. The Alternative meets all chemical-specific ARARs."
- p. 5-36, ¶3 Replace the second through fourth sentences with: "Mitigation measures to address alteration of protected habitats in or adjacent to the Site may be required under federal and state standards. However most of the affected areas are within a designated port and have been previously dredged or altered by port construction and maintenance."

In the last sentence change Table 5-8 to Table 5-14.
- Table 5-10 Use the revised Table 5-10 for Alternative 3B provided in Attachment B.
- Tables 5-11 & 12 Use the revised Tables 5-11 and 5-12 for Alternative 3B provided in Attachment B.
- p. 5-37, Table 5-10 Change to Table 5-13. Clean Water Act, Section 304 and state Water Pollution Control are promulgated and are therefore "Relevant and Appropriate."
- pp. 5-38 to 43 Location-specific table should be renumbered 5-14 and action-specific table as 5-15. Use table text from revised Alternative 3A - Limited Dredging location- and action-specific tables, changing only the reference to the "Limited Dredging Alternative" in the Action to be Taken text for the federal flood plain Order.
- Table 5-11 The header on each of these pages refers to "Alternative 3." This should be corrected to "Alternative 4."
- p. 5-44, ¶5 In the third sentence add at the end: ", however active mitigation measures may be required under federal and state standards."

p. 5-45, ¶2 Replace the paragraph with: "The State of Rhode Island generally requires dredging projects to be conducted between November 1 and January 15 to protect sensitive species. The Navy will investigate the use of aquatic habitats on Site by sensitive species to determine potential impacts from dredging during different times of the year. It is anticipated that the long-term benefits of conducting the remedial action during a single dredging period (estimated to last 8 months) will outweigh any short-term risks to sensitive species."

p. 5-45, ¶5 Before "material" insert "hazardous and non-hazardous."

p. 5-46, Cost Table O&M may be required if habitat mitigation measures are required.

p. 5-46, ¶4 In the first sentence remove "and 3B."

p. 5-47, ¶1 Change the first full sentence to: "Alternative 3B would not be effective in reducing risk since it would only remove the sediments posing the highest risk to aquatic receptors and will not meet the RAO for protection of the environment, but meets the RAO for human health."

p. 5-47, ¶¶4&6 Replace with: "Alternatives 4 and 3A will meet chemical-specific standards by removing contaminated sediments that pose a risk for environmental receptors. Alternatives 3B, 2, and 1 do not meet these standards.

There are no location-specific or action-specific ARARs for the Alternative 1, No Action. Alternatives 4 and 3A meet all location-specific standards for the protection of wetlands, flood plains, aquatic habitats, coastal and historic resources, fish and wildlife, and endangered species. Alternatives 3B and 2 fail to meet habitat protection standards since contamination that poses a risk to environmental receptors will be left in place.

Alternative 2 meets action-specific ARARs for long-term monitoring and institutional controls. Alternative 3A and 3B meet action-specific standards for monitoring, institutional controls, and dredging and handling hazardous and non-hazardous waste. Alternative 4 meets action-specific ARARs for dredging and handling hazardous and non-hazardous waste."

p. 5-49, ¶3 In the second sentence insert "hazardous and non-hazardous" before "sediments that would be removed."

p. 5-50, §5.2.5 The table on this page is missing Net Present Worth ("NPW") costs for +50% volume for Alternatives 3A, 3B, and 4. These costs should be added to the table. Also, several discrepancies were noted on this table. For example, the NPW and NPW Sensitivity (-30% volume) costs for Alternative 3A are not consistent with the costs presented on page 5-34, Appendix D, or Appendix E. This table should be reviewed carefully and made consistent with the rest of the report.

p. 5-50, last ¶ Replace with: "The costs provided for Alternatives 3A, 3B and 4 assume no regulatory restrictions on periods of dredging activities. If dredging periods are limited, significant additional mobilization and demobilization costs would be incurred."

Appendix D, Alt 2 Under the estimated analytical costs of long-term monitoring (item #1) in Alternative 2, the 16 samples/year for biota chemistry, amphipod toxicity, and *arbacia* toxicity are not accurately costed (dollar sums appear to be for 10 samples/year) and the quantities are not consistent with the previously-stated assumptions.

Actions to evaluate subtidal wetlands are supposedly included in Alternative 2, the cost estimate included in Appendix D does not list any costs associated with wetlands. This discrepancy should be corrected.

Appendix D, Alt 3 Under Alternatives 3A, 3B, and 4, it is stated that the actual dewatering and wastewater treatment process will be determined based on a bench scale laboratory study using samples of site sediments. However, costs for this study have not been included in the cost estimates. Please correct.

Under Alternatives 3A, 3B, and 4, UV Peroxide is listed as an example treatment process for the fluids generated from dredged sediment dewatering. This example is not consistent with the text of the report (*see* page 3-27). Moreover, the effectiveness of UV Peroxide is questionable given the salinity and potential turbidity of the influent water. This discrepancy should be corrected and the costs associated with the wastewater treatment process should be verified.

Alternatives 3A, 3B, and 4 include the collection and analysis of confirmation samples (from dredged areas) for PCBs, metals, pesticides, and PAHs. Since there were no pesticides in the list of recommended PRGs, it is not clear why they are included for analysis. This issue should be clarified, or the text and cost estimate should be corrected.

Appendix E The Present Worth Analysis sheets are missing for Alternative 4 and should be included.

Appendix E While the volumes are correct in the cost spreadsheets, the calculation worksheets should be corrected to indicate "+50%" (not "+20%") and a volume of 50,340 cubic yards (for Page 1 of 3). The factor of 1.2 on each page should be corrected to 1.5.

ATTACHMENT B

**TABLE 5-5
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
FOR ALTERNATIVE 2: LIMITED ACTION - MONITORING
AND INSTITUTIONAL CONTROLS
FORMER ROBERT E. DERECKTOR SHIPYARD
NETC, NEWPORT, RHODE ISLAND
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FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Executive Order 11990 RE Protection of Wetlands	40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order	The potential for restoring and preserving wetlands so that their natural and beneficial values can be realized must be considered and incorporated into any plan or action wherever feasible. The Limited Action Alternative fails to address potential contamination and degradation of the wetlands on and adjacent to the Site.
Executive Order 11988 RE Floodplain Management	40 CFR Part 6, Appendix A	Applicable	The Order requires Federal agencies to evaluate the potential effects of actions it may take within a designated 100-year floodplain of a waterway to avoid adversely impacting floodplains wherever possible.	The potential for restoring and preserving floodplains so that their natural and beneficial values can be realized must be considered and incorporated into any plan or action wherever feasible. The Limited Action Alternative fails to address the continuing contamination of areas of 100 year coastal floodplain areas which occur on the Site.
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et seq</i> , 40 CFR 122.49	Applicable	This statute requires consultation with appropriate agencies to protect fish and wildlife when federal actions result in control or structural modification of a body of water or to critical habitat upon which endangered or threatened species depends.	Appropriate agencies will be consulted to find ways to minimize adverse effects to fish and wildlife from the presence of the landfill wastes.
Endangered Species Act	16 USC 1531 <i>et seq</i> , 50 CFR Part 200, 50 CFR Part 402	Applicable	If a location contains a federal endangered or threatened species or its critical habitat, must consult with either the U.S. Fish & Wildlife Service or the National Marine Fisheries Service.	The federally endangered loggerhead turtle (<i>Caretta caretta</i>) and federally threatened Kemp's ridley turtle (<i>Lepidochelys kempi</i>) occur in the waters of Narragansett Bay. Appropriate agencies will be consulted to find ways to minimize adverse effects to the listed species from the presence of the landfill wastes.

**TABLE 5-5
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
FOR ALTERNATIVE 2: LIMITED ACTION - MONITORING
AND INSTITUTIONAL CONTROLS
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Coastal Zone Management Act	16 USC Parts 1451 <i>et seq</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs	The entire Site is located in a coastal zone management area, therefore, applicable coastal zone management requirements need to be addressed.
Rivers and Harbors Act, Section 10	33 USC 403, 33 CFR 320-323	Applicable	Sets forth criteria for obstructions and alterations of navigable waters	Installation and maintenance of access restriction markers will be performed in compliance with the substantive environmental standards of these provisions
National Historic Preservation Act	16 USC 470 <i>et seq</i> , 26 CFR Part 800	Applicable	Requires action to take into account effects on properties included on or eligible for the National Register of Historic Places and minimizes harm to National Historic Landmarks	Historic vessels may be sunken in the area. Monitoring and access restriction activities will be carried out to minimize potential harm to historic sites

STATE OF RHODE ISLAND

Coastal Resources Management	RIGL 46-23-1 <i>et seq</i>	Applicable	Sets standards for management and protection of coastal resources	The entire Site is located in a coastal resource management area, therefore, applicable coastal resource management requirements need to be addressed.
Endangered Species Act	RIGL 20-37-1 <i>et seq</i>	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat	The state listed loggerhead turtle (<i>Caretta caretta</i>) and Kemp's ridley turtle (<i>Lepidochelys kempii</i>) occur in the waters of Narragansett Bay. Appropriate state agencies will be consulted to find ways to minimize adverse effects to the listed species from the presence of the landfill wastes

TABLE 5- 6
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
FOR ALTERNATIVE NS-2: LIMITED ACTION - MONITORING
AND INSTITUTIONAL CONTROLS
FORMER ROBERT E. DERECKTOR SHIPYARD
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FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Resource Conservation and Recovery Act (RCRA), Subtitle C - Standards for Hazardous Waste Facilities	42 USC 6291 <i>et seq</i> , 40 CFR Part 264	Applicable	RI is delegated to administer the federal Resource Conservation and Recovery Act (RCRA) statute through its state regulations. The standards of 40 CFR Part 264 are incorporated by reference.	Areas of sediments which constitute hazardous waste will be monitored and subject to limited institutional controls. Leaving wastes in place does not meet standards for protectiveness to human health and the environment.

STATE OF RHODE ISLAND

Hazardous Waste Management - Identification and Listing of Hazardous Wastes	RIGL 23-19 1, CRIR 12-030-003(3 25)	Applicable	RI is delegated to administer the federal Resource Conservation and Recovery Act (RCRA) statute through its state regulations. The standards of 40 CFR Part 261 regarding RCRA identification and listing are incorporated by reference.	The contaminated material disposed of by the hazardous waste generator meets standards to regulated as hazardous waste. Areas sediments which constitute hazardous waste will be monitored and subject to limited institutional controls. Leaving wastes in place does not meet standards for protectiveness to human health and the environment.
Hazardous Waste Management - Standards for Treatment, Storage, and Disposal Facilities	RIGL 23-19 1 <i>et seq</i> , CRIR 12-030-003(10.00)	Applicable	Outlines specifications and standards for design, operation, closure, and monitoring of performance for hazardous waste storage, treatment, and disposal facilities. The standards of 40 CFR Part 264 are incorporated by reference.	Monitoring and institutional controls, including sampling and installation of fencing within areas containing hazardous waste will comply with these standards.
Water Pollution Control - Water Quality	RIGL 42-16 <i>et seq</i> , CRIR 12-190-001	Applicable	Establishes water use classification and water quality criteria for waters of the state.	Monitoring and institutional control measures must not cause degradation of surface water quality in Narragansett Bay.

**TABLE 5-7
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3A: LIMITED DREDGING
FORMER ROBERT E. DERECKTOR SHIPYARD
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Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF).		To Be Considered	These are guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	To be used to compute the individual incremental cancer risk resulting from exposure to carcinogenic contaminants in site media
Reference Dose (RfD)		To Be Considered	Toxicity values for evaluating non-carcinogenic from exposures to contamination.	Used to characterize human health risks due to non-carcinogens in site media
Clean Water Act, Section 304	40 USC 1314, 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	AWQC will be utilized for the development of sediment cleanup goals.
STATE OF RHODE ISLAND				
Water Pollution Control	RIGL 46-12 <i>et seq.</i> ; ENVM 112-88.97-1	Relevant and Appropriate	Establishes water use classification and water quality criteria for waters of the state. Also establishes acute and chronic water quality criteria for the protection of aquatic life.	Standards will be utilized for the development of sediment cleanup goals.

**TABLE 5-8
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3A: LIMITED DREDGING,
FORMER ROBERT DERECKTOR SHIPYARD
NETC, NEWPORT, RHODE ISLAND
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FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Executive Order 11990 RE Protection of Wetlands	40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order	Restoration and preservation of the intertidal wetlands that will be altered by the dredging action will be conducted so that the wetlands' natural and beneficial values can be realized. Implementation of this Order will be considered and incorporated into any plan or action, wherever feasible.
Executive Order 11988 RE Floodplain Management	40 CFR Part 6, Appendix A	Applicable	The Order requires Federal agencies to evaluate the potential effects of actions it may take within a designated 100-year floodplain of a waterway to avoid adversely impacting floodplains wherever possible.	The potential for restoring and preserving floodplains so that their natural and beneficial values can be realized must be considered and incorporated into any plan or action wherever feasible. The Limited Dredging Alternative will be protective of coastal floodplain resources which occur on and adjacent to the Site.
Clean Water Act, Section 404	33 USC 1344, 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	This statute regulates the discharge of dredge and fill materials into Waters of the United States, including special aquatic sites - such as wetlands, intertidal habitats, and vegetated shallows. Such discharges are not allowed if practicable alternatives are available.	The dredging action and mitigation of aquatic habitats will be conducted under these standards. Alteration may be permitted if no practicable alternative that has less effect is available.
Rivers and Harbors Act, Section 10	33 USC 403, 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Excavation/dredging and habitat restoration will comply with the Act's environmental standards.
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et seq</i> , 40 CFR 122.49	Applicable	This statute requires consultation with appropriate agencies to protect fish and wildlife when federal actions result in control or structural modification of a body of water or to critical habitat upon which endangered or threatened species depends.	The appropriate agencies will be consulted to find ways to minimize adverse effects to fish and wildlife from the implementation of the proposed removal and restoration remedy.

**TABLE 5-8
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3A: LIMITED DREDGING,
FORMER ROBERT DERECKTOR SHIPYARD
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Endangered Species Act	16 USC 1531 <i>et seq</i> , 50 CFR Part 200, 50 CFR Part 402	Applicable	If a location contains a federal endangered or threatened species or its critical habitat, must consult with either the U S Fish & Wildlife Service or the National Marine Fisheries Service	The federally endangered loggerhead turtle (<i>Caretta caretta</i>) and federally threatened Kemp's ridley turtle (<i>Lepidochelys kempii</i>) occur in the waters of Narragansett Bay. Appropriate agencies will be consulted to find ways to minimize adverse effects to the listed species from the removal and restoration remedy.
Coastal Zone Management Act	16 USC Parts 1451 <i>et seq</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs	The entire Site is located in a coastal zone management area, therefore, applicable coastal zone management requirements need to be addressed.
National Historic Preservation Act	16 USC 470 <i>et seq</i> , 26 CFR Part 800	Applicable	Requires action to take into account effects on properties included on or eligible for the National Register of Historic Places and minimizes harm to National Historic Landmarks	Historic vessels may be sunken in the area. Excavation/dredging and restoration activities will be carried out to minimize potential harm to historic sites.

STATE OF RHODE ISLAND

Coastal Resources Management	RIGL 46-23-1 <i>et seq</i>	Applicable	Sets standards for management and protection of coastal resources	The entire Site is located in a coastal resource management area, therefore, applicable coastal resource management requirements need to be addressed.
Endangered Species Act	RIGL 20-37-1 <i>et seq</i>	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat	The state listed loggerhead turtle (<i>Caretta caretta</i>) and Kemp's ridley turtle (<i>Lepidochelys kempii</i>) occur in the waters of Narragansett Bay. Appropriate state agencies will be consulted to find ways to minimize adverse effects to the listed species from the implementation of the removal and restoration remedy.

**TABLE 5-9
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3A: LIMITED DREDGING,
FORMER ROBERT DERECKTOR SHIPYARD
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FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Resource Conservation and Recovery Act (RCRA), Subtitle C - Standards for Hazardous Waste Facilities	42 USC 6291 <i>et seq</i> , 40 CFR Part 264	Applicable	RI is delegated to administer the federal Resource Conservation and Recovery Act (RCRA) statute through its state regulations. The standards of 40 CFR Part 264 are incorporated by reference.	Hazardous waste will be permanently excavated/dredged from the site. Monitoring will assess whether hazardous wastes are present in discharges from the excavation/dredging and dewatering activities.
Clean Water Act (CWA), Section 402, National Pollutant Discharge Elimination System (NPDES)	33 USC 1342, 40 CFR 122-125, 131	Applicable	These standards govern discharge of water into surface waters. Regulated discharges must meet ambient water quality criteria (WQC).	Any drainage off the temporary debris/sediment storage area and any dewatering discharge will be treated by an on-site treatment plant and discharged into Narragansett Bay.
Clean Air Act (CAA), National Emission Standards for Hazardous Air Pollutants (NESHAPS)	42 USC 7411, 7412, 40 CFR Part 61	Applicable	NESHAPS are a set of emission standards for specific chemicals, including naphthalene, arsenic, cadmium, chromium, lead, mercury, nickel, PCBs, DDE, and hexachlorobenzene. Certain activities are regulated including site remediation.	Monitoring of air emissions from the dewatering facility will be used to assess compliance with these standards if threshold levels are reached. Operation and maintenance activities will be carried out in a manner which will minimize potential air releases.

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Hazardous Waste Management - Identification and Listing of Hazardous Wastes	RIGL 23-19 1 <i>et seq</i> , CRIR 12-030-003(3 25)	Applicable	RI is delegated to administer the federal Resource Conservation and Recovery Act (RCRA) statute through its state regulations. The standards of 40 CFR Part 261 regarding RCRA identification and listing are incorporated by reference.	Mixed hazardous and non-hazardous sediment will be analytically tested according to the requirements of this regulation. Sediments which are determined not to be hazardous may be handled and disposed of as solid waste. Treatment residues from the dewatering process will also be tested in accordance with these regulations.
Hazardous Waste Management - Standards for Treatment, Storage, and Disposal Facilities	RIGL 23-19 1 <i>et seq</i> , CRIR 12-030-003(10 00)	Applicable	Outlines specifications and standards for design, operation, closure, and monitoring of performance for hazardous waste storage, treatment, and disposal facilities. The standards of 40 CFR Part 264 are incorporated by reference.	Dewatering of mixed hazardous and non-hazardous material will be conducted in accordance with these requirements.

TABLE 5-9
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3A: LIMITED DREDGING,
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Clean Air Act - Fugitive Dust Control	RIGL 23-23 <i>et seq</i> , CRIR 12-31-05	Applicable	Requires that reasonable precaution be taken to prevent particulate matter from becoming airborne	Removal, processing, and temporary storage of debris and sediments during dewatering and before shipment would be implemented to prevent material from becoming airborne
Clean Air Act - Emissions Detrimental to Persons or Property	RIGL 23-23 <i>et seq</i> , CRIR 12-31-07	Applicable	Prohibits emissions of contaminants which may be injurious to humans, plant or animal life or cause damage to property or which reasonable interferes with the enjoyment of life and property	Removal, processing, and temporary storage of debris and sediments during dewatering and before shipment would be implemented to prevent emissions of contaminants. Monitoring of air emissions from the dewatering facility will be used to assess compliance with these standards if threshold levels are reached
Clean Air Act - Air Pollution Control	RIGL 23-23 <i>et seq</i> , CRIR 12-31-09	Applicable	Establishes guidelines for the construction, installation, or operation of potential air emission units. Establishes permissible emission rates for some contaminants	Site processing of debris and sediment and treatment of dewatering liquid will meet the substantive provisions of the standards if threshold levels are reached
Clean Air Act - Odors	RIGL 23-23 <i>et seq</i> , CRIR 12-31-17	Applicable	Prohibits the release of objectionable odors across property lines	Site processing of debris and sediment and treatment of dewatering liquid will meet the substantive provisions of the standards
Clean Air Act - Air Toxics	RIGL 23-23 <i>et seq</i> , CRIR 12-31-22	Applicable	Prohibits the emission of specified contaminants at rates which would result in ground level concentrations greater than acceptable ambient levels or acceptable ambient levels as set in the regulations	Monitoring of air emissions from the dewatering facility will be used to assess compliance with these standards if threshold levels are reached. Operation and maintenance activities will be carried out in a manner which will minimize potential air releases
Water Pollution Control - Water Quality	RIGL 42-16 <i>et seq</i> , CRIR 12-190-001	Applicable	Establishes water use classification and water quality criteria for waters of the state. Also establishes criteria for discharge to a water body	Any drainage off the temporary debris/sediment storage area and any dewatering discharge will be treated by an on-site treatment plant and discharged into Narragansett Bay
Water Pollution Control - Pollution Discharge Elimination Systems	RIGL 42-16 <i>et seq</i> , CRIR 12-190-003	Applicable	Contains applicable effluent monitoring requirements, and standards and special conditions for discharges	The substantive provisions of these standards will be satisfied through on-site treatment of all discharges prior to being released into the Bay

TABLE 5-10
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3B: HOT SPOT DREDGING
FORMER ROBERT E. DERECKTOR SHIPYARD
NETC, NEWPORT, RHODE ISLAND
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF).		To Be Considered	These are guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	To be used to compute the individual incremental cancer risk resulting from exposure to carcinogenic contaminants in site media.
Reference Dose (RfD)		To Be Considered	Toxicity values for evaluating non-carcinogenic from exposures to contamination	Used to characterize human health risks due to non-carcinogens in site media.
Clean Water Act, Section 304	40 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	AWQC will be utilized for the development of sediment cleanup goals. Since contaminated sediment would be left in place the no-action alternative does not meet these standards.
STATE OF RHODE ISLAND				
Water Pollution Control	RIGL 46-12 <i>et seq.</i> ; ENVM 112-88.97-1	Relevant and Appropriate	Establishes water use classification and water quality criteria for waters of the state Also establishes acute and chronic water quality criteria for the protection of aquatic life.	Standards will be utilized for the development of sediment cleanup goals. Since contaminated sediment would be left in place the no-action alternative does not meet these standards.

TABLE 5-11
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
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Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Executive Order 11990 RE Protection of Wetlands	40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order	Restoration and preservation of the intertidal wetlands that will be altered by the dredging action will be conducted so that the wetlands' natural and beneficial values can be realized. Since contaminated sediment would be left in place the hot spot alternative does not meet these standards.
Executive Order 11988 RE Floodplain Management	40 CFR Part 6, Appendix A	Applicable	The Order requires Federal agencies to evaluate the potential effects of actions it may take within a designated 100-year floodplain of a waterway to avoid adversely impacting floodplains wherever possible.	The potential for restoring and preserving floodplains so that their natural and beneficial values can be realized must be considered and incorporated into any plan or action wherever feasible. Since contaminated sediment would be left in place the hot spot alternative does not meet these standards.
Clean Water Act, Section 404	33 USC 1344, 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	This statute regulates the discharge of dredge and fill materials into Waters of the United States, including special aquatic sites - such as wetlands, intertidal habitats, and vegetated shallows. Such discharges are not allowed if practicable alternatives are available.	The dredging action and mitigation of aquatic habitats will be conducted under these standards. Alteration may be permitted if no practicable alternative that has less effect is available.
Rivers and Harbors Act, Section 10	33 USC 403, 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Excavation/dredging and habitat restoration will comply with the Act's environmental standards.
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et seq</i> , 40 CFR 122.49	Applicable	This statute requires consultation with appropriate agencies to protect fish and wildlife when federal actions result in control or structural modification of a body of water or to critical habitat upon which endangered or threatened species depends.	The appropriate agencies will be consulted to find ways to minimize adverse effects to fish and wildlife from the implementation of the proposed removal and restoration remedy.

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Endangered Species Act	16 USC 1531 <i>et seq</i> , 50 CFR Part 200, 50 CFR Part 402	Applicable	If a location contains a federal endangered or threatened species or its critical habitat, must consult with either the U S Fish & Wildlife Service or the National Marine Fisheries Service	The federally endangered loggerhead turtle (<i>Caretta caretta</i>) and federally threatened Kemp's ridley turtle (<i>Lepidochelys kempii</i>) occur in the waters of Narragansett Bay. Appropriate agencies will be consulted to find ways to minimize adverse effects to the listed species from the removal and restoration remedy.
Coastal Zone Management Act	16 USC Parts 1451 <i>et seq</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs	The entire Site is located in a coastal zone management area, therefore, applicable coastal zone management requirements need to be addressed.
National Historic Preservation Act	16 USC 470 <i>et seq</i> , 26 CFR Part 800	Applicable	Requires action to take into account effects on properties included on or eligible for the National Register of Historic Places and minimizes harm to National Historic Landmarks	Historic vessels may be sunken in the area. Excavation/dredging and restoration activities will be carried out to minimize potential harm to historic sites.

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Coastal Resources Management	RIGL 46-23-1 <i>et seq</i>	Applicable	Sets standards for management and protection of coastal resources	The entire Site is located in a coastal resource management area, therefore, applicable coastal resource management requirements need to be addressed. Since contaminated sediment would be left in place the hot spot alternative does not meet these standards.
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Endangered Species Act	RIGL 20-37-1 <i>et seq</i>	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat	The state listed loggerhead turtle (<i>Caretta caretta</i>) and Kemp's ridley turtle (<i>Lepidochelys kempii</i>) occur in the waters of Narragansett Bay. Appropriate state agencies will be consulted to find ways to minimize adverse effects to the listed species from the implementation of the removal and restoration remedy.
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TABLE 5-12
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
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Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Resource Conservation and Recovery Act (RCRA), Subtitle C - Standards for Hazardous Waste Facilities	42 USC 6291 <i>et seq</i> ; 40 CFR Part 264	Applicable	RI is delegated to administer the federal Resource Conservation and Recovery Act (RCRA) statute through its state regulations. The standards of 40 CFR Part 264 are incorporated by reference.	Hazardous waste will be permanently excavated/dredged from the site. Monitoring will assess whether hazardous wastes are present in discharges from the excavation/dredging and dewatering activities.
Clean Water Act (CWA), Section 402, National Pollutant Discharge Elimination System (NPDES)	33 USC 1342, 40 CFR 122-125, 131	Applicable	These standards govern discharge of water into surface waters. Regulated discharges must meet ambient water quality criteria (WQC).	Any drainage off the temporary debris/sediment storage area and any dewatering discharge will be treated by an on-site treatment plant and discharged into Narragansett Bay.
Clean Air Act (CAA), National Emission Standards for Hazardous Air Pollutants (NESHAPS)	42 USC 7411, 7412, 40 CFR Part 61	Applicable	NESHAPS are a set of emission standards for specific chemicals, including arsenic, cadmium, chromium, lead, and PCBs. Certain activities are regulated including site remediation.	Monitoring of air emissions from the dewatering facility will be used to assess compliance with these standards if threshold levels are reached. Operation and maintenance activities will be carried out in a manner which will minimize potential air releases.

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Hazardous Waste Management - Identification and Listing of Hazardous Wastes	RIGL 23-19 1 <i>et seq</i> , CRIR 12-030-003(3 25)	Applicable	RI is delegated to administer the federal Resource Conservation and Recovery Act (RCRA) statute through its state regulations. The standards of 40 CFR Part 261 regarding RCRA identification and listing are incorporated by reference.	Mixed hazardous and non-hazardous sediment will be analytically tested according to the requirements of this regulation. Sediments which are determined not to be hazardous may be handled and disposed of as solid waste. Treatment residues from the dewatering process will also be tested in accordance with these regulations.
Hazardous Waste Management - Standards for Treatment, Storage, and Disposal Facilities	RIGL 23-19 1 <i>et seq</i> , CRIR 12-030-003(10.00)	Applicable	Outlines specifications and standards for design, operation, closure, and monitoring of performance for hazardous waste storage, treatment, and disposal facilities, such as dewatering waste piles. The standards of 40 CFR Part 264 are incorporated by reference.	Dewatering of mixed hazardous and non-hazardous material will be conducted in accordance with these requirements.

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Clean Air Act - Fugitive Dust Control	RIGL 23-23 <i>et seq</i> , CRIR 12-31-05	Applicable	Requires that reasonable precaution be taken to prevent particulate matter from becoming airborne	Removal, processing, and temporary storage of debris and sediments during dewatering and before shipment would be implemented to prevent material from becoming airborne
Clean Air Act - Emissions Detrimental to Persons or Property	RIGL 23-23 <i>et seq</i> , CRIR 12-31-07	Applicable	Prohibits emissions of contaminants which may be injurious to humans, plant or animal life or cause damage to property or which reasonable interferes with the enjoyment of life and property	Removal, processing, and temporary storage of debris and sediments during dewatering and before shipment would be implemented to prevent emissions of contaminants. Monitoring of air emissions from the dewatering facility will be used to assess compliance with these standards if threshold levels are reached
Clean Air Act - Air Pollution Control	RIGL 23-23 <i>et seq</i> , CRIR 12-31-09	Applicable	Establishes guidelines for the construction, installation, or operation of potential air emission units. Establishes permissible emission rates for some contaminants	Site processing of debris and sediment and treatment of dewatering liquid will meet the substantive provisions of the standards if threshold levels are reached
Clean Air Act - Air Toxics	RIGL 23-23 <i>et seq</i> , CRIR 12-31-22	Applicable	Prohibits the emission of specified contaminants at rates which would result in ground level concentrations greater than acceptable ambient levels or acceptable ambient levels as set in the regulations	Monitoring of air emissions from the dewatering facility will be used to assess compliance with these standards if threshold levels are reached. Operation and maintenance activities will be carried out in a manner which will minimize potential air releases
Water Pollution Control - Water Quality	RIGL 42-16 <i>et seq</i> , CRIR 12-190-001	Applicable	Establishes water use classification and water quality criteria for waters of the state. Also establishes criteria for discharge to a water body	Any drainage off the temporary debris/sediment storage area and any dewatering discharge will be treated by an on-site treatment plant and discharged into Narragansett Bay
Water Pollution Control - Pollution Discharge Elimination Systems	RIGL 42-16 <i>et seq</i> , CRIR 12-190-003	Applicable	Contains applicable effluent monitoring requirements, and standards and special conditions for discharges	The substantive provisions of these standards will be satisfied through on-site treatment of all discharges prior to being released into the Bay