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LETTER AND COMMENTS FROM U S EPA REGION I REGARDING DRAFT FEASIBILITY STUDY FORMER DERECKTOR SHIPYARD MARINE SEDIMENT OPERABLE UNIT 5 (OU 5)
NS NEWPORT RI
5/8/2014
U S EPA REGION I

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I
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Newport/Site 19/ 005

May 8, 2013

Mr. Dominic O'Connor
Remedial Project Manager
Environmental Restoration
NAVFAC MIDLANT OPNEEV
Bldg. Z-144
9742 Maryland Avenue
Norfolk, VA 23511-3095

Re: Draft Feasibility Study for the Former Derecktor Shipyard Marine Sediment, Operable Unit 5

Dear Mr. O'Connor:

Thank you for the opportunity to review the *Draft Feasibility Study for Site 19, Former Derecktor Shipyard* dated March 2013 (FS). The FS presents the development and evaluation of remedial alternatives to mitigate unacceptable human health and ecological risk associated with chemicals of concern in off-shore sediment and porewater. EPA also reviewed the SWAC and VWAC calculation spreadsheets provided to us on April 22, 2013. Detailed comments are provided in Attachment A.

EPA agreed to consider the proposal to focus remediation on grid cells that exceed any PRG and to remediate those cells so that their surface-weighted average concentration (SWAC) and their volume-weighted average concentration (VWAC) would achieve the PRGs. Achieving the goal of having the SWACs and VWACs satisfy the PRGs to a depth of four feet would allow unrestricted use of the site. If this condition is not satisfied with reasonable certainty, restrictions and monitoring will be required throughout the site to provide a protective remedy.

Review of the pre-construction drawings in Appendix B indicates that the original depth to the sediment surface beneath Pier 2 at its eastern end was as shallow as 11 feet. In the area of grid cell G29 the depth ranged from 11 to 17 feet and in the area of G25 it ranged from 17 to 26 feet. These data together with the sounding data from the sediment sampling event suggest that the thickness of accumulated contaminated sediment beneath Pier 2 at its eastern end may be much less than currently modeled. Furthermore, the original dredging at the eastern end of Pier 2 created a 2:1 slope along its sides beneath the footprint of the pier leaving a shelf only 100 feet wide at the eastern end increasing to 150 feet at the western end of grid cell G25. This information needs to be considered when estimating the amount of contaminated sediment under the eastern end of Pier 2 that needs to be managed. Further investigation of grid cells G25 and G29 could reveal that the scope and estimated costs for the alternatives would be significantly less.

The silty nature of the sediment under the eastern end of Pier 2 and the poor recovery for those core samples suggests that attempting to cover this material with a granular material would likely result in significant mixing of the sediment and the cover material. The existing sediment will not easily support the cover material and will sink into it. To produce an effective cover of the desired thickness is likely to require significantly more cover material than estimated in this FS and therefore cost

significantly more. Furthermore, the original 2:1 dredge slope along the sides of Pier 2 in this area will further complicate the effective capping of sediment in grid cells G25 and G29.

The silty nature of the sediment throughout the site, as evidenced by the sampling cores, suggests that the sediment bed is fragile and subject to disturbance from storm events and some vessel traffic. Although an attempt to evaluate the stability of the sediment was made in 2011, the conditions throughout the evaluation period were calm and therefore the stability of the sediment in disruptive conditions remains untested. Unless sediment contamination concentrations are reduced to less than the PRGs based SWACs and VWACs, the reliability of the remedy remains questionable and future failure needs to be described and costed for all alternatives that will leave contamination in place.

While evaluation of remedies to account for sediment to a depth of four feet should be retained, some consideration of the effectiveness of the remedies in achieving the PRGs in the top two feet of sediment should also be evaluated. Only the most extreme situations would likely cause sediment bed disruption below the top two feet thereby changing contaminant concentrations in that zone. Consequently, proposed alternatives should be evaluated to determine the VWACs for contaminants of concern within the top two feet of sediment and only those that satisfy the PRGs in that situation should be considered for implementation. If this condition is satisfied, even if the top two feet of sediment were completely mixed the impact on potential receptors would not exceed the PRGs.

The evaluation of the sediment contamination to assess the scope of the required remedial alternatives is based solely on chemical data collected in 2011. Chemical and toxicological data previously collected has not been directly included in the evaluation conducted for this FS nor has information related to the nature and location of historical activities been considered and discussed. Although the 2011 sampling event was comprehensive it should be recognized that only small portion of the site has actually been sampled. While the 2011 sampling results allow us to focus on areas that should be remediated, the results do not delineate those areas to any reasonable certainty. Further refinement of the areas subject to remediation should be implemented in a pre-design investigation. Because of the disruptive nature of dredging and capping in a silty sediment environment, confirmation sampling after remedial activities must be conducted.

As EPA discussed with you on January 3, 2013, it is not clear that backfilling should be required for every area that is dredged. Rather than adding backfill to lower the surface- or volume-weighted averages when no contamination is present beneath the surface sediment layer, consider removing additional contaminated sediment from other locations at the site to achieve the lower averages instead. At dredged locations where no backfill is applied, the exposed sediment surface would be evaluated as surface sediment. The resources that would be used for backfilling cells where no contamination exists beneath the dredged depth could be used to offset the cost of additional dredging and disposal resulting in a more permanent remediation. We should meet to discuss options to achieve the remedial goals.

In its May 23, 2013 letter on the draft *Supplemental Sediment Investigation Report*, EPA reiterated its request to select human health risk-based PRG for benzo(a)pyrene based on hazard quotient of 1, not 10, to meet the requirements of the NCP. The tables on pages 1-26 and 2-6 of the 2013 Draft FS erroneously reflect PRG based on hazard quotient of 10.

Since the marine human health risk assessment was finalized in 1998, there have been new guidances and studies that support risk assessment methodologies. The ingestion rates of shellfish for recreational fishermen and subsistence fishermen used in the HHRA are obsolete and likely underestimate site risks. The 1998 HHRA used the same ingestion rate for both child and adult recreational fishermen.

The 2011 EPA Exposure Factors Handbook recommends higher ingestion rates based on new studies that could result in higher risks. The FS should be corrected.

The FS states that stormwater discharges are a main source of sediment contamination. The Navy needs to prevent recontamination of sediment from stormwater discharges. This will likely require investigation and cleaning of the stormwater drainage system and periodic future maintenance of the system to ensure a successful remedy. Please incorporate this into the scope and discussion of the proposed remedies or otherwise describe how this will occur.

EPA will require the Navy to address sediments beneath both piers when the service life of the piers expires. It is expected that the service life of these piers will not extend beyond the thirty-year cost evaluation period included for this FS. Further, the Navy needs to identify how the asbestos covered steam lines near the piers will be addressed, so that they do not pose a threat of release of asbestos. There should not be any release of asbestos in the event of a 100-year storm event. This FS does not adequately address the asbestos that has been released into Site sediments or that exists on the steam lines.

In evaluating the alternatives, please identify which alternative it believes is the Least Environmentally Damaging Practicable Alternative under the federal Clean Water Act. Include the justification for the determination in the text.

As stated in EPA's letters dated July 16, 2010 and May 23, 2012 on the *Supplemental Sediment Investigation Report*, EPA does not believe that natural recovery is occurring at Derecktor Shipyard. EPA pointed out numerous areas of uncertainty within the Navy's report and concluded that insufficient data exist to demonstrate that burial processes are occurring. EPA is therefore concerned that the FS includes an alternative, namely Alternative 2 (ENR), that relies on burial processes to be effective over the long-term. EPA does not support Alternative 2 because we do not believe that it would be protective of either human health or the environment.

I look forward to working with you and the Rhode Island Department of Environmental Management to select a final remedy for Derecktor Shipyard. Please contact me at (617) 918-1385 to arrange a time to discuss the comments herein.

Sincerely,

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Pam Crump, RIDEM, Providence, RI
Darlene Ward, NETC, Newport, RI
David Peterson, USEPA, Boston, MA
Bart Hoskins, USEPA, Boston, MA
Ken Finkelstein, NOAA, Boston, MA
Ken Munney, USFWS, Concord, NH
Steven Parker, Tetra Tech-NUS, Wilmington, MA

ATTACHMENT A

Page	Comment
p. ES-2	Discuss the release of asbestos from the pier in the Conclusions section.
p. ES-4	The phrase "that cause its PRG to be exceeded" is not clear. Please see 40 C.F.R. §300.430(e)(2)(i) for guidance on developing proper remedial action objectives (RAO). Add another Human Health RAO for soil to "Prevent inhalation exposure to any asbestos-contaminated sediments." Also add another Ecological RAO to restore the sediment as suitable habitat for the indigenous species.
p. ES-5, ¶1	Please note that the State criterion is met after reviewing state comments on the FS and Proposed Plan, but the Public criterion is only based on reviewing public comments on the Proposed Plan.
p. ES-5, Alt. 2	If placement of the thin layer cap will not immediately achieve sediment PRGs, state how long it will take to achieve the required standards and describe the associated uncertainty. The remedy needs to achieve RAOs and prevent release of deeper contaminated sediments in a 100-year storm event. Describe how traffic by large ships would be "partially restricted." Would shellfishing restrictions also be required to address the human consumption RAO? Would restrictions on dredging and pier maintenance/removal be required?
p. ES-6, Alt. 3	Describe the components of the engineered cap. The cap must prevent release of subsurface contaminants in the event of a 100-year storm event.
p. ES-6, Alt. 4	If the backfill in the open water areas is a permanent cover over deeper contaminated sediments, it will require adding the cover as a component of the alternative with long-term maintenance, monitoring, and LUCs. The cover needs to prevent release of contaminants in a 100-year storm event.
p. ES-6, Alt. 5	Explain whether the backfill is required to meet PRGs or if is it a habitat mitigation measure.
p. 1-1, ¶2	Identify the boundary between the two Derecktor OUs.
p. 1-1, ¶3	Discuss the investigation of asbestos from the piers into the sediments.
p. 1-2, §1.0, ¶2	Please revise the last sentence to read: "… are separate operable units, the On-shore portions of the site will be addressed separately from this FS."
p. 1-6, ¶2	Differentiate which changes were in the Off-Shore OU versus to On-shore OU and explain their relevance to this FS.
p. 1-7	Describe the deterioration of the steam lines in the pier, the release of asbestos into the harbor, and any subsequent measures taken to address the threat of additional releases.

p. 1-9, ¶1 Replace the last sentence with: "Groundwater on the base is federally regulated as a drinking water source, although it is currently not used for that purpose. On-shore groundwater will be addressed as part of the On-shore OU."

p. 1-11, §1.3.5 Discuss the asbestos covered steam line system near the piers.

p. 1-32, §1.4.7 The FS states that asbestos is discussed further in Section 2, but there is no further discussion on asbestos. Please describe the asbestos sampling and results in the FS. Also address whether the steam line system poses a threat of release of asbestos into the harbor and, if so, how it will be addressed as part of this remedial action.

p. 1-33, § 1.6 As part of the Conceptual Site Model, discuss that there may be future risks from exposure to asbestos in sediments removed from under the piers.

p. 2-5, §2.2.1 Please clarify the third paragraph where it states that site sediment conditions are indirectly associated with unacceptable risks to humans from ingestion of shellfish that have accumulated chemicals from the site sediment.

Discuss that asbestos identified in Site sediments and located in the pier steam lines poses a potential future human health risk if the asbestos becomes airborne (*i.e.*, releases from dried sediments removed by dredging activities or pier removal).

p. 2-6, §2.2.2 Please make the ratio approach used to compare COC sediment concentrations with threshold effects values to develop the PRGs more transparent in the FS. Show the equations, exposure assumptions, and toxicity values used to develop the PRGs.

Develop a PRG for asbestos.

p. 2-7, §2.2.2 Please explain the statement in the third paragraph that implementation of the *Supplemental Guidance for* Assessing *Susceptibility from Early-Life Exposure to Carcinogens* would increase young child cancer risks by up to a factor of 10. This should be more transparent to be used for qualitatively evaluating child cancer risks from mutagenic carcinogens.

p. 2-8, §2.2.4 Please clarify the SWACs and VWACs of the COCs further.

p. 2-9, §2.3 The phrase "that cause its PRG to be exceeded" is not clear. Please see 40 C.F.R. §300.430(e)(2)(i) for guidance on developing proper RAOs. Add another Human Health RAO to prevent inhalation exposure to any asbestos-contaminated sediments and an Ecological RAO to restore the sediment as suitable habitat for the indigenous species.

p. 2-9, §2.4, ¶1 The text states that only 2011 sample results were used to establish areas requiring cleanup. This is not sufficient and consideration of areas identified in earlier sampling events that had PRG exceedances, toxic effects, and other evidence of contamination needs to be included, discussed, and compared to the 2011 locations.

p. 3-3, ¶1 Note that the cap would need to prevent a release of contaminants in the event of a 100-year storm event.

p. 3-3, §3.1.4, ¶2 State that the sediment under the piers would have to be dredged/managed under relevant asbestos standards, to prevent any airborne release of asbestos.

p. 3-6, §3.3.2.1 While LUCs to prevent access are discussed, there is no discussion about how the Navy will restrict activities that might disturb a sediment remedy (*i.e.*, how would the Navy restrict dredging, pier maintenance/removal, berthing and any other activities that could interfere with the CERCLA remedy). How would these restrictions be transferred if the property is transferred (*e.g.*, coordination with the Coast Guard to amend 33 C.F.R. §334.81 or promulgation of a navigational restriction regulation to prevent disturbance of any sediment remedy that leaves contamination in place).

p. 3-10, §3.3.3.1 Thin Layer Cover: The relative consistency of the bathymetric survey results over the past 50 to 60 years, as discussed in this FS, indicates that there is no reliable evidence of a significant natural depositional process occurring that would appreciably supplement a thin layer cover over time. A thin layer cover is not a Containment remedy as it is a means to dilute surface contaminant levels to below PRGs.

p. 3-11, §3.3.3.2 Subaqueous Cover System: It is not clear that this option would preserve the marine habitat if it would create a barrier preventing the marine organisms that normally inhabit this area from using it. Preservation or reconstruction of suitable habitat needs to be a requirement for remediation. The subaqueous cover needs prevent release of contaminants in the case of a 100-year storm event.

p. 3-12, §3.3.3.2 Discuss whether backfilling of dredged areas is considered a subaqueous cover. If the backfill is required to contain underlying contaminants it needs to prevent release of any contamination in a 100-year storm event.

p. 3-19, §3.3.5.2 Sediment removed from under the pier for off-site disposal needs to be tested for asbestos before disposal.

p. 3-20, §3.3.5.3 Sediment under the piers needs to be tested for asbestos as part of materials processing. Any asbestos contaminated sediments should be segregated and handled according the applicable standards.

Supplement this section with a discussion of gravity filtration (*i.e.*, Geotubes, and in-line chemical treatment of hydraulically-dredged sediment to enhance dewatering).

p. 3-23, §3.3.7 In the table, state that Access Restrictions could prevent human exposure from consumption of site-contaminated seafood).

p. 3-24, Table EPA does not consider a thin layer cap to be a containment remedy.

Treatment also includes treatment of dewatering liquid before discharge or disposal.

p. 3-25, §3.5 How will the potential future release of asbestos from the abandoned steam line system under the piers be incorporated into these alternatives?

p. 3-26, §3.5 Alternative 3 also includes long-term maintenance of the engineered cover.

Alternative 4, as described in the Executive Summary, also includes backfilling the dredged areas. If backfilling is required to isolate any contamination, then EPA considers the back fill to be an engineered cover that needs to be added as a component of the alternative (along with long-term cover maintenance).

Assuming the goal of the excavation in Alternative 5 is to remove all sediment contamination so there no longer is a CERCLA risk, the purpose for backfilling (other than potentially habitat restoration) is not clear. Also, please correct Alternative 5 to read: "… through SWAC and VWAC Calculations to remove all sediment contamination exceeding PRGs…."

p. 4-1, §4.0 See comments made concerning each alternative noted for §3.5.

p. 4-2, §4.0, ¶1 The scope of the long-term monitoring program for Alternative 4 is not adequate. This alternative creates a cover by backfilling over contaminated sediment left in place and just as a comprehensive long-term monitoring program is required for Alternatives 2 and 3. It is also required for Alternative 4. Revise the scope of this alternative to include the same long-term monitoring program elements required by Alternative 2 and 3.

Similarly, the scope of the LUCs proposed for Alternative 4 is not adequate. Because this alternative covers sediment in place throughout much of the site, LUCs identical to Alternatives 2 and 3 are required to limit activity of deep draft vessels and access by recreational and commercial fishing vessels.

p. 4-2, §4.1, ¶1 In the first sentence add at the end: "and potential future human risk from asbestos."

p. 4-3, §4.1, ¶1 Please include the complete calculations performed to compute the baseline surface weighted and volume weighted average concentrations presented.

p. 4-3, §4.1.2 The Navy has not demonstrated that this alternative will meet RAOs, since it is uncertain whether the alternative relies natural deposition to keep the sediment surface from becoming recontaminated over time. If RAOs are not achieved immediately, estimate how long it will take to achieve cleanup standards. If the goal is to have the thin layer applied be sufficient to achieve RAOs immediately, then the cover would need to be able to prevent release of deeper contaminated sediments under the conditions of a 100-year storm event.

p. 4-4, §4.1.2 Please include the complete calculations performed to compute the surface weighted average concentrations presented.

EPA notes that the SWAC values presented are based on a one-foot cover although the construction goal of this alternative is to establish a minimum six-inch cover over targeted areas. Therefore, the values presented here may not be achieved by this alternative as proposed. Unless the design requires a minimum 12-inch cover throughout the site and this is confirmed with a bathymetric survey, the SWAC values presented will not reflect the site conditions after this alternative is implemented. Reliance on additional deposition to augment the thin cover at some

future date is uncertain. Furthermore, it appears that any disruption of the cover that impacts a substantial portion of the site, such as a storm event, could easily cause failure of this alternative.

p. 4-4, §4.1.2 Institutional Controls need to be developed to restrict use, maintenance, and eventual demolition of the piers and to prevent exposure to asbestos in the pier and underlying sediment. Also, provisions need to be made to maintain ICs in the event of property transfer. The ability to revise the existing arrangement that allows fishing in Coddington Cove needs to be evaluated further if this alternative were proposed.

p. 4-4, §4.1.2, ¶3 EPA expects the thin cover would be sand or an organic substrate rather than gravel so that the existing habitat would not be significantly altered by this alternative.

p. 4-5, §4.1.2, ¶2 EPA does not concur that the institutional controls (ICs) could be limited only to the Pier 2 areas because fishing could occur throughout the site and vessels could access either pier. The ICs that limit vessel movement and restrict fishing must be implemented broadly over any areas with contaminated sediment.

p. 4-5, §4.1.2, ¶3 Reliance on future deposition of sediment to significantly enhance the planned thin cover is uncertain. The depositional rate at the site has not been defined and appears to be rather slow from available data.

Page 4-3 states that a 6 to 12 inch cover will be installed, but the thickness is said to be 12 inches here. Obtaining a 12 inch cover will require specifying a thicker cover to allow for inconsistency in the application in deep water. Please clarify.

p. 4-5, §4.1.2, ¶5 While one sampling event per year may be reasonable to monitor the status of the cap, it is not sufficient in the event of a significant storm that may require a supplemental check depending on the severity of the storm. A 25-year storm may warrant a supplemental sampling event to determine if such a storm is deemed to be problematic. Although the details of the monitoring program can be developed later, the Navy needs to account for the impacts of storms in its costing, for both monitoring and maintenance/repair of the cap.

p. 4-5, §4.1.2, ¶6 The adequacy of bathymetric inspections every five years would need to be evaluated based on the results of the sampling events and the occurrence of major storms, either of which could trigger the need for a supplemental bathymetric inspection. Please revise the FS discussion accordingly.

p. 4-6, §4.1.3 The same comments made relative to Section 4.1.2 are also applicable to Section 4.1.3. Also, the Navy's VWACs calculations take credit for a two-foot cover but the text states that a one to two foot cover will be installed. Please correct the text.

p. 4-8, §4.1.4, ¶1 Please explain if the backfill is intended to serve as an engineered cover over deeper contaminated sediment. Any engineered cover needs to be described as a component of the alternative, along with long-term maintenance, monitoring and LUCs to protect the cover.

p. 4-9, §4.1.4, ¶1 The text indicates an engineered barrier will be constructed beneath Pier 2. Sample

cores indicate a significant amount of shell debris beneath Pier 2 in the areas to be capped under this alternative, indicating that this is may be prime habitat for shellfish. All remedial alternatives should restore the habitat for beneficial use.

p. 4-9, §4.1.4, ¶3 EPA's assessment of the VWACs does not match the Navy's. Results in both benzo(a)pyrene and total HMW PAHs failing to achieve the PRGs and lead barely achieves the PRG. Further clarification of the calculations will be warranted to resolve the differences. If the VWACs are not satisfied, Alternative 4 will need to include long-term monitoring and LUCs akin to those for Alternatives 2 and 3.

p. 4-10, §4.1.4, ¶2 If the backfill serve as an engineered cover, LUCs will be needed to protect the covered areas.

p. 4-10, §4.1.4, ¶3 The text states that a 1-2 foot engineered barrier/cap would be installed under this alternative. Please determine whether a 2-foot cap is sufficient to prevent release of underlying contaminants in the case of a 100-year storm event. Because of the difficulty of installing cap material under water at depth and under a pier, allowance needs to be provided to the contractor to over fill to ensure the minimum required cap thickness is achieved. The Navy's VWACs assume a two foot thick cap. Therefore to obtain a minimum of two feet thickness, a greater cap thickness should be specified. Please revise the description to reconcile the VWACs calculations with the proposed cap design.

In additional to bathymetric surveys, will and post-dredge contaminant surveys be conducted to document the levels of contamination left in place?

p. 4-11, §4.1.4, ¶4 Will the area of the *in situ* cap under the pier include the area where asbestos was identified?

p. 4-13, §4.1.5, ¶4 If backfill is necessary to meet PRGs, then contamination will be left in place below the excavation layer. It is therefore unclear why this is presented as a alternative that does not require long-term monitoring, LUCs and five-year reviews.

p. 4-14, §4.1.5 Sediments under the pier need to be sampled for asbestos and managed based on relevant asbestos standards if they contain asbestos.

p. 4-18, §4.3.1 Non-CERCLA LUCs do not satisfy the criterion.

p. 4-20, §4.3.2, ¶1 As stated in previous letters, EPA does not believe that the investigations conducted at the site support the assumption that an appropriate natural cap will develop over time. Therefore, this alternative is not reliable. Furthermore, the silty surface sediment throughout the site will make placement of cap material almost impossible without significant disturbance of the silt and substantial mixing of contaminated sediment with the cover material. The resulting cap will have much less ecological benefit because of this mixing. The calculated SWACs for this alternative are questionable. This alternative is not protective of human health or the environment.

p. 4-21, §4.3.2, ¶3 Since there is estimate of how long it will take for Alternative 2 to achieve PRGs and because a thin layer cap would likely not prevent a release of contamination in a 100-year storm event, EPA does not believe that this alternative meets ARARs.

p. 4-21, §4.3.2, ¶6 While the PCB contaminated sediment is regulated under TSCA, it is not at levels that would require disposal in a TSCA-compliant landfill.

p. 4-21, §4.3.2, ¶7 EPA does not believe that Alternative 2 meets the Long-term Effectiveness and Permanence criterion.

p. 4-24, §4.3.2, ¶1 The cost estimate does not include any costs for maintenance and repair of the cap, which are expected to be significant, and the cost of monitoring is understated and not consistent with EPA guidance. Please adjust the costs to include the appropriate maintenance, repair, and monitoring costs.

p. 4-24, §4.3.3, ¶1 The silty surface sediment will make placement of cap material almost impossible without significant disturbance of the silt and substantial mixing of contaminated sediment with the cover material. The resulting cap will have less ecological benefit than predicted because of the mixing of contaminated sediment and cap material. The calculated SWACs overestimate the protectiveness of this alternative, although the magnitude cannot be readily quantified.

p. 4-25, §4.3.3, ¶1 This alternative will meet ARARs if the cap and be designed, installed, and maintained to survive a 100-year storm event without a release of contaminants.

p. 4-26, §4.3.3, ¶2 EPA expects the habitat at the site to be restored to simulate existing conditions. Use of armoring or capping material designed to prevent erosion will not be acceptable and should not be used. Reestablishment of habitat by natural deposition over such material is not expected to occur and should not be part of any proposed remedy.

p. 4-27, §4.3.3, ¶5 The cost estimate should include costs for maintenance and repair of the cap, which are expected to be significant. The cost of monitoring is understated and not consistent with EPA guidance. Please adjust the costs to include the appropriate maintenance, repair, and monitoring costs.

p. 4-27, §4.3.4 The analysis of Alternative 4 needs to be revised based on EPA's previous comments. In particular, the proposed backfill appears to be serving as an engineered cover, so additional components need to be evaluated, including the engineered cover (backfill) and associated long-term maintenance, monitoring, and LUC requirements.

p. 4-28, §4.3.4, ¶3 LUCs will also be required for backfilled areas throughout the site because these are also capped areas and this alternative does not satisfy the PRGs based on VWACs. Please revise the description of this alternative accordingly and also adjust the cost estimate to account for this requirement.

p. 4-28, §4.3.4 Regarding the last paragraph, all areas that are dredged and backfilled, but where contaminated sediment is left in place beneath the one foot backfill will also be subject to long-term monitoring because they also are capped areas and this alternative does not satisfy the PRGs based on VWACs. Please revise the description of this alternative accordingly and also adjust the cost estimate to account for this requirement.

p. 4-30, §4.3.4, ¶1 The stability of a cap placed beneath Pier 2 needs to be evaluated to determine if it is practical. A significant slope already exists from the sediment under the pier to the sediment surrounding the pier.

p. 4-31, §4.3.4, ¶4 While EPA supports the Navy's decision to work with the State, under CERCLA, the Navy should not state that dredging windows increase costs or make implementability more challenging.

p. 4-32, §4.3.5 See EPA's previous comments regarding whether the alternative, as proposed will leave contamination in place. If so, the analysis needs to include long-term monitoring, maintenance, LUCs and five-year reviews. Dredging under the piers also needs to address asbestos.

p. 4-33, §4.3.5, ¶5 While the PCB contaminated sediment is regulated under TSCA, it is not at levels that would require disposal at a TSCA-compliant landfill. The sediment under the pier needs be handled under relevant asbestos standards.

p. 4-34, §4.3.5, ¶6 The discussion mentions anticipated debris beneath the pier and risk of compromising the structural integrity of the pier. Because of the limited amount of accumulated sediment under the eastern end of Pier 2, it is not likely that significant debris exists or that removal of a limited volume of silty sediment would compromise the structural integrity of the pier. Consequently, the difficulties of dredging beneath the pier are grossly overstated. EPA acknowledges that dredging beneath the pier will be more expensive than open water dredging, but the volume of sediment to be managed may be much less than anticipated in this FS.

p. 4-35, §4.3.5, ¶1 Although the Navy may consider State dredging windows as part of remedial design, the FS should not imply that dredging windows increase costs or make implementability more challenging.

p. 4-35, §4.4 Incorporate all of the previous comments about these alternatives and the analysis of each alternative under the NCP criteria. In particular, 1) Alternative 2 may not achieve either the Protectiveness or ARARs criteria, 2) Any alternative that leaves contamination in place needs to be protective in a 100-year storm event, and 3) Backfilling under Alternatives 4 and 5 may constitute the use of engineered covers that require long-term maintenance, monitoring, LUC and five-year reviews.

p. 4-35, §4.4, ¶2 A more balanced discussion of the comparison of alternatives is required. EPA believes the greatest negative for Alternative 5 is the cost, not the implementability, and as noted earlier, the cost needs to be reassessed. The FS should note the challenges and practicality of installing an effective and protective cap beneath Pier 2 for Alternative 4.

p. 4-36, §4.4, ¶¶2&3 Contrary to the discussion, EPA believes that it is likely that placing a cap over the silty sediment under Pier 2 would generate greater sediment resuspension than hydraulic dredging of that sediment. The problems in constructing an effective cap over silty sediment need to be more fully developed in the FS.

p. 4-37, §4.4, ¶1 Please correct the text to reflect the fact that Alternative 3 does not achieve PRGs based on VWAC calculations.

Alternative 4 does not achieve the PRG for benzo(a)pyrene, it exceeds the PRG by almost 50% and it does not achieve the PRG for total HWM PAHs, or does not achieve it with reasonable certainty, depending on how the cap is simulated in the calculations. Furthermore, this alternative relies on only one foot of backfill in areas where contaminated sediment is left in place so disruption of that backfill cap could expose receptors to contaminated sediment concentrations in excess of those calculated. This is problematic given that the VWACs area not satisfied for Alternative 4. Finally, achieving a clean two-foot cap over silty sediment under a pier will be difficult to achieve so the modeled SWACs and VWACs for Alternative 4 do not reflect reality. A modification of Alternative 4 could be viable if it were to achieve the PRGs for VWACs with reasonable certainty.

Table ES-1 — Incorporate previous comments regarding the sediment alternatives, including a statement that Alternative 2 does not meet either the Protectiveness or ARARs criteria.

Table 1-5, p. 8 — Please correct the color shading for benzo(a)pyrene in three places: change orange to yellow. Also, change the lead shading for N24 from orange to red because 5*168=840<842J.

Please check the data entry for sample DSY-SD-J24. There are duplicate entries for the 0-1 foot sample. Please indicate if another sample interval should have been presented and whether this duplication created an error in the SWAC and VWAC calculations. EPA also notes that only the 0-1 foot interval was presented in the data table for the Supplemental Sediment Investigation Report.

Table 2-1 — Please cite EPA's non-cancer guidance.

The text notes on page 4-19 (and repeats the statement for the other alternatives): "Alternative 1 fails to meet sediment PRGs that have been derived, in part, from federal and state water quality chemical specific ARARs." The water quality standards should be cited in this table.

List any other sediment guidances used to develop the ecological PRGs.

Table 2-2, p. 3 — Remove the State Endangered Species Act since the Atlantic Sturgeon is not listed and the Short-nosed Sturgeon is only listed as a historically occurring species.

Table 2-3, p. 2 — Cite 33 C.F.R. §334.81 separately.

Corps of Engineers, Danger Zone and Restricted Areas: Narragansett Bay, East Passage, Coddington Cove, Naval Station Newport, Naval Restricted Area, Newport, Rhode Island	33 C.F.R. §334.81	Applicable	All persons, swimmers, vessels and other craft, except those vessels authorized by the Navy or Coast Guard and local or state law enforcement vessels, are prohibited from	Enforceable basis for preventing unauthorized vessels and fisherman from entering the area where sediment caps/covers are installed or where there is a risk from consumption of

			entering the restricted area without specific permission from the Commanding Officer.	contaminated seafood.

Add the following asbestos standards:

Clean Air Act (CAA), National Emission Standards for Hazardous Air Pollutants (NESHAPS); National Emission Standards for Asbestos	42 U.S.C. §§7411, 7412; 40 C.F.R. Part 61, Subpart M	Applicable	Establish standards for demolition of facilities containing asbestos, managing existing asbestos, and for disposal of asbestos contaminated waste.	Any maintenance or demolition of the piers where asbestos is present must be conducted in accordance with these standards. Existing asbestos on the steam pipes must be managed to prevent release to the environment.
Clean Air Act (CAA), National Emission Standards for Hazardous Air Pollutants (NESHAPS), Standards for Inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations	42 U.S.C. §§7411, 7412; 40 C.F.R. §61.151	Relevant and Appropriate	NESHAPS standards for preventing air releases from inactive asbestos disposal sites, including cover standards, dust suppression, and land use controls.	For areas of sediments under the piers where asbestos is present, that will be capped/covered substantive requirements of these standards and land use controls will be established to address health and safety requirements to maintain the cover and to address any potential asbestos exposure if the cover is disturbed.
Framework for Investigating Asbestos-Contaminated Superfund Sites	OSWER Directive #9200.0-68 (Sept. 2008)	To Be Considered	Guidance on investigating and characterizing the potential human exposure from asbestos contamination at Superfund sites.	Guidance will be used to establish procedures for sampling for asbestos either for delineating the area of contamination or if areas of covered sediment are disturbed in the future.

In describing the dewatering process for the dredging alternatives, the text mentions potentially discharging treated water to a POTW. Therefore, federal and State pre-treatment standards should be included in the Action-specific Tables both here and in the alternative-specific tables.

Table 3-1 Modify the table text based on text comments, above.

Table 4-1 Incorporate comments from Table 2-1.

Table 4-4 Incorporate comments from Table 2-1. It is unclear whether this alternative will achieve chemical-specific standards.

Table 4-5 Incorporate comments from Table 2-2. The Navy needs to identify the Least Environmentally Damaging Practicable Alternative under the Clean Water Act.

As noted in the text comments, it is unclear whether this alternative will meet the location-specific standards for protecting aquatic resources (*i.e.,* wetlands, aquatic habitat, endangered species habitat).

Table 4-6 Incorporate comments from Table 2-3 (add asbestos standards). It is unclear whether this alternative will meet the action-specific standards listed.

In the Sediment Remediation Guidance, Action to be Taken text state how long it will take for the alternative to meet all RAOs.

Table 4-7 Incorporate comments from Table 2-1.

Table 4-8 Incorporate comments from Table 2-2. Identify the Least Environmentally Damaging Practicable Alternative under the Clean Water Act.

Table 4-9 Incorporate comments from Table 2-3 (add the asbestos standards).

In the TSCA Action to be Taken column, replace "ENR cover layer" with "*in situ* cap, LUCs, and monitoring."

Alt. 4 ARARs Tables Revise the analysis in the tables to discuss standards for the backfill, which is serving as an engineered cover. See ARARs descriptions for Alternative 3's *in situ* cap.

Table 4-10 Incorporate comments from Table 2-1.

Table 4-11 Incorporate comments from Table 2-2. Identify the Least Environmentally Damaging Practicable Alternative under the Clean Water Act.

Table 4-12 Incorporate comments from Table 2-3 (add the asbestos standards).

In the TSCA Action to be Taken column, replace "ENR cover layer" with "dredging, engineered cover, LUCs, and monitoring."

For the Coast Guard Anchorage, Action to be Taken text, LUCs will be required through the area, both around the pier cover area and where there is backfill/cover.

State Water Quality regulations apply to cover operations, as well as to dredging.

Alt. 5 ARARs	The tables need to address whether contaminated sediment will remain under the backfill that will require additional measures (long-term maintenance/monitoring of the backfill cover, LUCs, five-year reviews.
Table 4-13	Incorporate comments from Table 2-1.
Table 4-14	Incorporate comments from Table 2-2. Identify the Least Environmentally Damaging Practicable Alternative under the Clean Water Act.
Table 4-15	Incorporate comments from Table 2-3 (add asbestos standards) and identify the Least Environmentally Damaging Practicable Alternative under the Clean Water Act.
Table 4-16	Incorporate previous text comments regarding the sediment alternatives. EPA does not believe that Alternative 2 would be protective of human health or the environment.
Figure 4-4	This figure indicates that grid cell Y30 would be dredged from 0 to 2 feet in depth. It appears that dredging two feet at Y30 contributes less to lowering the VWAC concentrations than other choices. Other cells with greater concentrations would provide a greater benefit. Please either correct the figure or explain why this cell was selected. Cells Y25, Y26, or Y28 all appear to be better choices for a two foot dredging area.
Figure 1-11B	After correcting the color shading errors in Table 1-5, also correct the associated colored symbols on this figure for N28, N30, and Q29, changing them from orange to yellow and for N24 changing orange to red.
Appendix D-7	Please provide a complete presentation of the calculations made to arrive at the targeted remediation areas proposed.
Appendix E	Table E1-2.2: Please change "Annual Site Inspection Cap Inspection" to "Annual LUC Inspection." Make the same change for all other annual cost tables where appropriate. Table E1-4.1: In Line Item 4.5 Backfill, change Unit to CY. Table E1-4.2: The monitoring costs assumed for Alternative 4 grossly underestimate the monitoring that will be required because of leaving contaminated sediment at multiple locations throughout the site. In addition, bathymetric surveys will be required for all locations where contaminated sediment has been left in place, including dredged areas that are backfilled without removing all contaminated sediment. This comment applies to annual cost tables for Alternatives 2 and 3. Site-wide long-term monitoring, including bathymetry surveys, cap maintenance and repair, and LUCs will be required for alternatives that do not satisfy the PRGs based on VWACs. The costs as presented are not representative of the true costs. Please revise the costs to include these items.

Comments on the April 22, 2013 Spreadsheets

Incorrect data were entered for J30 for the 2-4 foot depth interval (J28 data has been used.)

J24 lists two sample intervals, but only one sample interval is presented in Table 1-5 and in the *Supplemental Sediment Investigation Report*. Please clarify where the second sample interval data originates.

The Navy inconsistently adjusted the area of grid cells that abut the shore line. Why?

The row AA grid cells beneath Pier 1 should only represent sediment beneath Pier 1. These cell boundaries should not extend beyond the pier (see Figures 4-1 through 4-4). Is sediment under the piers considered differently from sediment not under the piers?

The size of the row AD cells should not be reduced in area by offsetting them from the pier. These cells should be the full 40,000 ft2 except possibly where intrusion of row AB cells occurs unless row AB samples were collected under the pier (see Figures 4-1 through 4-4).

Sheet VWAC Alt 4:

- The sample interval for G29 was 1.5 ft. The SS assumes a contribution from only one foot. Contaminant mass and volume should be corrected.

Sheet VWAC Alt 5:

- For Y30 only the top one foot is dredged whereas the Alternative 5 figure in the Draft FS shows a two foot dredge depth at Y-30.