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LETTER OF TRANSMITTAL AND U S NAVY RESPONSES TO U S EPA REGION I AND  
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT COMMENTS ON  
DRAFT RECORD OF DECISION DU 4-1 AT SITE 12 TANK FARM 4 NS NEWPORT RI  
8/13/2013  
TETRA TECH



C-NAVY-08-13-5255W

August 13, 2013

Ms. Kimberlee Keckler  
United States Environmental Protection Agency Region 1  
5 Post Office Square, Suite 100  
Boston, Massachusetts 02109-3912

Ms. Pamela Crump  
Office of Waste Management  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

SUBJECT: Response to comments to the Draft Record of Decision,  
DU 4-1 at Site 12 (Tank Farm 4), Naval Station Newport, Newport RI

Dear Ms. Keckler and Ms. Crump:

On behalf of Mr. Roberto Pagtalunan, US Navy NAVFAC, I am providing to you responses to your comments on the Draft Record of Decision (ROD) for the site referenced above. Electronic copies of this submittal have been provided by electronic mail on August 13, 2013. These materials are provided concurrently to streamline the review process to assist our common goal of completing the Record of Decision for this site by September 2013.

The Draft Final ROD is in preparation and will be issued within the week, we would advise that any final comments be withheld until that submittal is made.

If you have any questions regarding the attachments, please do not hesitate to contact me at 978-474-8434.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Stephen S. Parker', written over a horizontal line.

Stephen S. Parker, LSP  
Project Manager

Enclosures

cc: S. Bird, NAVFAC (w/encl.)  
G. Glenn, Tetra Tech (w/o encl.)  
W. Johnson, NAVFAC (w/encl.)  
R. Pagtalunan, NAVFAC (w/encl.)  
P. Steinberg, Mabbett Associates (2- w/encl.)  
D. Moore, NAVSTA (w/encl.)  
Data Manager, RDM file (w/encl.)  
File 112G02689-8.0 (w/encl.), 3.1 (w/o encl.)

**NAVY RESPONSES TO COMMENTS  
DRAFT RECORD OF DECISION  
DU 4-1 at Site 12, Tank Farm 4  
NAVAL STATION NEWPORT, RHODE ISLAND  
COMMENTS DATED JULY 3, 2013 (EPA)**

The U.S. Navy (Navy) is pleased to provide the US Environmental Protection Agency (USEPA) with responses to the July 3, 2013 comments on the Draft Record of Decision (ROD) for DU 4-1 at Site 12, Tank Farm 4, which is part of Naval Station (NAVSTA) Newport in Newport, Rhode Island. Comments are presented first (*italics font*), followed by the Navy's responses.

1. *Cover; Please also identify the site as Operable Unit 11.*

**Response:** The cover page will also identify the site as Operable Unit 11

2. *p. 1, §1.1; The Figure should be basewide, or at least show Tank Farm 4.*

**Response:** The aerial photograph, which is not a figure, is provided for illustrative purposes and will remain. Figure 2-1 illustrates the base and site location.

3. *p. 1, §1.3; In the third sentence change "constituents" to "contaminants" and list them.*

*Insert a new fourth sentence: "No unacceptable human health risk was identified from site sediment or surface water."*

**Response:** The suggested revisions will be made.

4. *p. 1, §1.3; In the first component text, insert "/soil contaminants" after "waste."*

*In the text for the first component, state the goal of the soil removal (e.g., to remove all soil exceeding commercial/industrial use standards) and discuss the basis for determining whether to remove soil from the two additional areas.*

*At the end of the second component, add: "in approximately \_\_\_ years."*

**Response:** The Navy assumes that the EPA meant Section 1.4 in this comment. The changes will be made as suggested. The descriptions will be held to a minimum since this is a summary section.

5. *p. 2, §1.4; Please explain what it meant by "to ensure that subsurface soils are not disturbed without appropriate safety precautions?" Will subsurface soils exceeding commercial/industrial standards remain on Site and require LUCs to restrict commercial/industrial exposure? What cover thickness needs to be maintained over the contaminated subsurface soils to meet regulatory requirements? The cover layer is an engineering control that needs to be monitored and maintained as a component of the remedy.*

**Response:** The proposed remedy does not specify a cover system. Please note that although there are individual locations where I/C cleanup goals for arsenic and manganese are exceeded in the subsurface soil, the 95% UCLs for these metals in subsurface soil after completion of alternative SO3 will be below PRGs, as demonstrated in the FS.



For clarification, the cited text will be revised to state: "..., to ensure that subsurface soils containing constituents at concentrations that are above cleanup goals are not disturbed without appropriate safety precautions and that backfill over the contaminated soil is maintained to prevent exposure, and to prohibit groundwater use...."

6. p. 2, §1.5;

a) In the first sentence of the third paragraph replace "are relevant and appropriate" with "pertain." While the FEMA floodplain and wetland regulations are relevant and appropriate, Section 404 of the federal Clean Water Act is "Applicable."

b) At the end of the second sentence add: ", to the extent practicable."

c) In the third sentence after "(target areas), which" insert ", after restoration to native wetland conditions."

d) At the end of the paragraph, add: "To the extent that the installation, monitoring, and maintenance of wells used for the groundwater component of the remedy may impact federal jurisdictional wetlands and floodplain, alteration of protected resource areas will be minimized, to the extent practicable, and mitigation will be implemented, as required."

**Response:** Revisions marked as a) b) and d) will be made. The revision marked as c) will be made, though at the end of the sentence.

7. p. 7, Table 2-1; Discuss the investigation that identified lead-contaminated soil along the fence line and describe the removal action that will be implemented (either pre- or post-ROD) to address the lead contamination as part of maintenance operations.

**Response:** Within the line on this table for "2004-2007", text will be added in the activities column to note that lead was found in soil at the fence (not part of DU 4-1) and is being addressed by a maintenance action and not under this ROD).

8. p. 7, Table 2-1; Please correct the first sentence in the text for the Feasibility Study because as written it is misleading and inaccurate based on earlier investigations. Other contaminants are assumed to be present at other areas of Tank Farm 4 upgradient of DU 4-1 based on earlier investigations, but recent confirmation has not been attempted. During the Remedial Investigation the groundwater upgradient of DU 4-1 exhibited significant concentrations of various metals that potentially will impact DU 4-1. Further investigation is necessary to better evaluate the success of the selected remedy.

**Response:** The text will be revised to state: "The FS was conducted for DU 4-1, the target only area of TF4 where CERCLA contaminants were confirmed to be present."

9. p. 8, §2.4, ¶3; The second implies that no further action is required in the remaining portions of Tank Farm 4. The metals plume identified during the Remedial Investigation has not been addressed or investigated further to document the current conditions. That plume needs to be mentioned in this document as a potential factor in the success of the selected remedy for DU 4-1.

**Response:** It is not clear what part of the text this comment is referring to. The text is correct that the remainder of Tank Farm 4 is being addressed through RIDEM UST regulations. Under



this section this information is complete and accurate.

10. p. 9, §2.5.1, ¶2; *Please elaborate on the last sentence to discuss the metals plume identified during the Remedial Investigation that is a potential factor in the success of the selected remedy for DU 4-1.*

**Response:** The last sentence of the subject paragraph already identifies the possible source of metals in groundwater being a result of the tanks and tank locations.

11. p. 9, ¶1; *Identify whether any 100 year floodplain is present (either coastal or associated with Norman's Brook).*

**Response:** The last sentence of the first paragraph will be adjusted to describe the presence of the 100 year floodplain associated with Normans Brook.

12. p. 12, ¶6; *For the two additional areas, explain whether the basis for taking additional remedial action is exceedances of the identified COCs for the rest of the Site or a broader range of contaminants.*

**Response:** The cited paragraph will be expanded to describe that the actions to be taken will be based on the presence of solid waste (solid waste found will be removed) and the presence of COCs above remediation goals (soils with COCs above remediation goals will be removed) in these target areas.

13. p. 13, §2.5.2.3; *Replace the last sentence with: "Based on this evaluation sediment was not identified as a media of concern."*

**Response:** The suggested revision will be made.

14. p. 13, §2.5.2.4; *Replace the last sentence with: "Based on this evaluation surface water was not identified as a media of concern."*

**Response:** The suggested revision will be made.

15. p. 14, §2.7; *Please note whether the maintenance work will remove all of the lead contaminated soil along the fence line to residential use levels.*

**Response:** The introductory portion of Section 2.7 will be appended to state that lead has been found in soil associated with the boundary fence around Tank Farm 4 and that a separate maintenance action will be conducted to address the fence and the associated soil.

16. p. 14, §2.6, ¶4; *Please correct the incomplete second sentence beginning "used will remain."*

**Response:** The subject sentence fragment will be struck.



17. p. 20, §2.8; Please note that EPA is drafting model ROD groundwater language and will likely require that the ROD use the model language. EPA will provide the model language shortly.

**Response:** The Navy will review such language when it becomes available.

18. p. 20, §2.8, ¶2; The third RAO is too general and not attainable. This RAO should refer to a generic concentration that would create unacceptable risk in groundwater or wetlands/waterways.

Add another RAO to prevent contaminated groundwater from impacting wetlands and waterways at concentrations that would create unacceptable risk to potential receptors. This is necessary because groundwater is artesian in some areas of the site.

**Response:** The third soil RAO was added in the February 2013 redline FS at the request of EPA (Comment no. 10, EPA letter dated 9/24/12). RAOs are stated in the Final FS which is part of the public record and should be consistent. Further additions of RAOs at this point would preclude public notice or comment and are not recommended.

19. p. 21, ¶3; Remove "RIDEM Direct exposure criteria were used to identify COCs for soil in accordance with prior dispute resolutions" from the last sentence. The dispute only clarified existing CERCLA requirements.

**Response:** The outcome of the dispute resolution was that RIDEM DEC's are also used to identify COCs. The statement is correct and should remain. EPA should further discuss with RIDEM.

20. p. 21, ¶4; Remove " , although not associated with unacceptable risk," from the last sentence. The RI ARAR standards are within the CERCLA risk range where a determination can be made that an actionable risk is present.

**Response:** The Navy proposes to revise the statement as follows: "PRGs were established for contaminants that were detected at the site at concentrations associated with unacceptable risk and also for CERCLA hazards substances, pollutants or contaminants that, although not associated with risk exceeding EPA thresholds, were detected at concentrations exceeding RIDEM's soil DEC's and or Leachability Criteria."

21. p. 21, ¶7; In the first sentence, change: "In accordance with the dispute resolutions dated January 12, 2012 and April 20, 2012, detected" to "Detected" and in the second sentence change: "In accordance with these agreements, the" to "The."

**Response:** Upon identification of risk based remediation goals, in accordance with the Dispute Resolution Agreements of January 12, 2012 and April 20, 2012, while not posing unacceptable risk, detected concentrations that exceeded RIDEM's associated DEC's were also identified as candidate ARAR-based remediation goals. In accordance with these agreements, the lower of the candidate PRGs that are not below background are selected for at the site. Therefore, it is preferable to leave the statements as is. Otherwise frequent questions will arise as to the reason for selection of some of these cleanup goals.



22. p. 22, ¶13; *In the last sentence, change “PRGs” to “RGs.”*

**Response:** The suggested revision will be made.

23. p. 23, Table 2-5; *Please clarify table note e and its relevance to manganese. Should note e refer to arsenic in soil to 15 mg/kg? Also, RIDEM regulations Section 12.04 is only relevant if arsenic is the only contaminant of concern. Therefore, note e is not applicable to manganese and should be removed from the table.*

**Response:** Table footnote “e” will be appended to the entry for arsenic, not manganese. The reference to Section 12.04 of the RIDEM regulations will be struck, as it is provided in error.

24. p. 23, Table 2-5; *Please note whether the maintenance work will remove all of the lead contaminated soil along the fence line to residential use levels.*

**Response:** The table will be appended with a new note to state that lead has been found in soil associated with the boundary fence around Tank Farm 4 and that a separate maintenance action will be conducted to address the fence and the associated soil.

25. Table 2-5; *Please remove “Cancer Risk (a) = 10<sup>-6</sup>” and “RIDEM DEC” before “adjusted for background” in the “Basis for Selection” columns for both surface soil and subsurface soil. The selected cleanup goals are background levels and not risk-based or RIDEM DEC.*

**Response:** The suggested change will be made.

26. p. 24, Table 2-6; *This table should use the MCL of 10 µg/L as the cleanup level for arsenic, as identified in table note a, rather than NA. Please make this change and delete NA.*

**Response:** The suggested change will be made.

27. p. 25, §2.9; *Please change “Table 2-6” to “Table 2-7” in the first paragraph.*

**Response:** The suggested change will be made.

28. p. 26, Table 2-7; *Regarding the first paragraph of Alternative SO3, please clarify how soil containing PAH concentrations up to ten times the cleanup goals can be left in place. The purpose of soil cleanup goals is to establish the contaminant concentration above which soil must be remediated. In an effort to streamline the text, the intended meaning has been compromised. Please clarify the alternative description as appropriate.*

*The description of Alternative SO3 is not consistent with Table 2-5 that states that the cleanup goal for arsenic is 19 mg/kg in surface soil and 24 mg/Kg in subsurface soil and further that arsenic will be*



*removed to 15 mg/kg at SB 943 (see note e in Table 2-5). Please clarify the intent.*

**Response:** The first paragraph on the cited section ("Details" column) of Table 2-7 states that soil containing PAH concentrations up to 10x the cleanup goals will be excavated, and does not state that they will be left in place. The third and fourth lines of this table cell will be revised to state: "...containing arsenic concentrations above 19 mg/kg at SB943 would be excavated."

29. p. 26, Table 2-7; *In the third row under Details, please correct the last sentence to refer to RGs rather than PRGs.*

**Response:** The comment is anticipated to be in regards to the third line of Table 2-8, and the suggested change will be made.

30. p. 26, Table 2-7; *The LUC requirements for SO2 and SO3 are different. SO2 would require LUCs to prevent exposure to soil exceeding commercial industrial standards, while SO3 would remove those soils so that the LUCs would only restrict residential and unrestricted recreational use.*

**Response:** The suggested clarifications will be made, and this section will be revised.

31. p. 26, last ¶; *It does not appear that SO2 would attain RAOs as it does not comply with ARARs requirements to either cover or remove soil posing a commercial/industrial contact threat.*

**Response:** It is not a necessity to cover or remove soil posing a risk of exposure to the commercial / industrial receptor; the necessity is to prevent the exposure from occurring, which can be accomplished using other engineering controls, in the case of SO2 – a fence. It is recognized that this is a less effective method, but one that can be implemented. Regardless, the comment is moot since the Navy has no interest in pursuing this remedy for DU 4-1 due to practicality, and no change is recommended based on this comment.

32. p. 27, Table 2-8; *For GW2, the MNA description must identify how long it will take the groundwater to achieve cleanup standards.*

**Response:** The anticipated durations for overburden (45 years) and bedrock (26 years) groundwater MNA will be included from the final FS.

33. p. 27, §2.9.2; *Please change "Table 2-7" to "Table 2-8" in the first paragraph.*

**Response:** The suggested change will be made.

34. p. 28, §2.10; *Please change "Table 2-8 and Table 2-9" to "Table 2-9 and Table 2-10" in the first paragraph.*

**Response:** The suggested change will be made.



35. p. 28, §2.10.1; Please change "Table 2-8" to "Table 2-9" in the first paragraph.

**Response:** The suggested change will be made.

36. p. 29, Table 2-9; The Community Acceptance criterion needs to be identified (not TBD).

**Response:** The community acceptance criterion will be identified after the comment period is closed and the responsiveness summary is completed.

37. p. 29, §2.10.1.1; In the ARARs criterion text, include the determination, as described in the Proposed Plan, that SO3 is the Least Environmentally Damaging Practicable Alternative under the federal Clean Water Act.

**Response:** The suggested change will be made using language from the proposed plan.

39. p. 30, §2.10.1.3; Please revise the paragraph on Community Acceptance.

**Response:** The changes will be made after completion of the responsiveness summary.

40. p. 30, §2.10.1.3, ¶2; Please add the numbers where XX has been used as a placeholder.

**Response:** The changes will be made after completion of the responsiveness summary.

41. p. 31, §2.10.2; Please change "Table 2-9" to "Table 2-10" in the first paragraph.

**Response:** The suggested change will be made.

42. p. 31, Table 2-10;

a) Table 2-8 states that it will take approximately 24 years to assess whether treatment has permanently achieved cleanup levels. Table 2-10 says "4 or more" years. The two tables should agree and the correct time should be explained in Section 2.10.2.1.

b) Why are alternatives GW2 and GW3 identified as only "partially" meeting the Long-term Effectiveness and Permanence criterion?

c) The Community Acceptance criterion needs to be identified (not TBD).

**Response:**

a) Table 2-8 provides for 24 years of monitoring, though it is not known how long the treatment would require. This will be clarified in the last portion of Table 2-8 and the text of Section 2.10.2.1. Table 2-10 will not be revised.

b) Alternative 3 is given a "partially meets" designation since there is uncertainty as to the rebound of metals after treatment is completed. Alternative 2 is given the same designation due to the time required to reach the cleanup goal.



c) The changes will be made after completion of the responsiveness summary.

43. p. 33, §2.10.2.3; *Please revise the paragraph on Community Acceptance.*

**Response:** The changes will be made after completion of the responsiveness summary.

44. p. 33, §2.10.2.3, ¶2; *Please add the numbers where XX has been used as a placeholder.*

**Response:** The changes will be made after completion of the responsiveness summary.

45. p. 34, §2.12.1; *In the last paragraph include the determination, as described in the Proposed Plan, that both the soil and groundwater components of the selected remedy are the Least Environmentally Damaging Practicable Alternative under the federal Clean Water Act. Also note that the Navy solicited public comment on its determination and received no negative comments (if correct).*

**Response:** There is already a reference to that component of the remedy in the location requested (after the bullets in Section 2.12.1). Public comments will be addressed in the 'Responsiveness Summary' section.

46. p. 34, §2.12.2.1; *In the second bullet, remove "and."*

**Response:** The suggested change will be made.

46. p. 35, ¶2; *For the two additional areas describe what will be the basis for taking additional remedial action - exceedances of the identified COCs for the rest of the Site or a broader range of contaminants? For the debris berm, how will "solid waste" be defined? The CERCLA action is only based on the presence of contaminants co-mingled with the debris that pose a CERCLA risk.*

**Response:** The actions to be taken will be based on the presence of solid waste (solid waste found will be removed) and the presence of COCs above remediation goals (soils with COCs above remediation goals will be removed) in these target areas. This will be clarified.

47. p. 35, §2.12.2.1, ¶5; *The site boundary cannot be a termination point for the excavation if contamination is found at the boundary because the site is defined as the limit of contamination. Please correct this statement.*

**Response:** The suggested change will be made.

48. p. 35, bullet 2; *Describe what will happen to any soil exceeding commercial standards below two feet. The remedy needs to include maintaining a two foot cover of clean fill over the subsurface contamination with long-term maintenance and monitoring. The LUCs to prevent residential use need to be modified to identify the areas of the cover that need to be maintained to prevent exposure to commercial workers to the areas of subsurface contamination.*



**Response:** The proposed remedy does not specify a cover system. Please note that although there are individual locations where I/C cleanup goals for arsenic and manganese are exceeded in the subsurface soil, the 95% UCLs for these metals in subsurface soil after completion of alternative SO3 will be below PRGs, as demonstrated in the FS. The land use control to prevent intrusive use of the ground (first bullet presented in full on Page 38) also provides protection to address subsurface soil intrusion, and will be clarified to state: The LUC will be maintained to prevent uncontrolled intrusion into subsurface soils exceeding industrial commercial cleanup goals as demonstrated by Table 2-5 of the FS.

49. p. 36, ¶2; *Revise the second sentence, based on the previous comment. LUCs need to clearly define where two feet of cover needs to be maintained and must prevent disturbance to the subsurface soils under the cover areas.*

**Response:** Please see the response to comment 48, above. There will be one LUC boundary and will encompass the entire decision unit.

50. p. 37, §2.12.2.3; *As noted above, the LUCs need to clearly define where areas of two feet of cover needs to be maintained over subsurface contaminated soil that exceed industrial/commercial standards and must prevent disturbance to the subsurface soils under the cover areas.*

**Response:** Please see the response to comment 48, above. There will be one LUC boundary and will encompass the entire decision unit.

51. p. 37, §2.12.2.2, ¶1; *Please replace the last sentence with: "Although arsenic concentrations at the site have not exceeded the MCL, arsenic in groundwater contributes to risk to the residential receptor. Therefore, the MCL is retained as a de facto cleanup concentration for arsenic. Furthermore, arsenic has historically been detected in upgradient groundwater at concentrations greater than 20 times the MCL."*

**Response:** The first two sentences of the suggested revision will be made. The last is immaterial, and groundwater monitoring will be performed to assure arsenic does not exceed the MCL at the site.

52. p. 37, §2.12.2.2, ¶3; *Please replace the last two sentences with: "It is also assumed that groundwater monitoring stations will be established to document 1) whether the groundwater conditions at Tank Farm 4 remain favorable for MNA, 2) that a trend indicating the success of MNA is established and ensured, and 3) that MNA remains the most viable groundwater remediation alternative for DU 4-1. Based on results and trends documented in the Five-Year Review Report, the monitoring frequency could be modified, the monitoring network could be adjusted or expanded, or the continued implementation of MNA could be reconsidered."*

**Response:** The suggested change will be made.

53. p. 37, §2.12.2.2, ¶4; *Please edit the last sentence to include arsenic and other metals historically detected in Tank Farm 4 groundwater upgradient of DU 4-1 at concentrations exceeding their MCL or action level.*

**Response:** Arsenic will be added to the list per the response to comment 51 above. The other



revisions will not be made. If there is further investigation or other new information encountered that indicates that the portions of the Tank Farm upgradient of DU 4-1 need to be addressed in the ROD, there would need to be a ROD amendment or ESD to include it.

54. p. 38, §2.10.2; Please change "Table 2-10" to "Table 2-11" in the first paragraph.

**Response:** The suggested revision will be made where the table is referenced.

55. p. 38, §2.12.2.3, ¶1; Add another performance objective for the LUCs as follows: "Prevent residential or unrestricted recreational use of the site."

**Response:** The suggested revision will be made.

56. p. 39, Table 2-11; a) In the third row under Comments, please insert the word "surface" before the word "soils" and insert the word "industrial" before the word "cleanup."

b) Change the second row under Risk to "Use of Groundwater." Edit the RAO and Comments columns to refer to residential use of groundwater.

c) Add another RAO to prevent contaminated groundwater from impacting wetlands and waterways at concentrations that would create unacceptable risk to potential receptors. This is necessary because groundwater is artesian in some areas of the site.

**Response:**

- a) The suggested changes will be made.
- b) The RAOs and the descriptive language is consistent with the remainder of the document The table entries should remain.
- c) RAOs are provided as stated in the Final FS and should remain consistent.

57. p. 39, Table 2-11; For the soil comments, also add that two feet of clean cover will be maintained and subject to LUCs over areas of subsurface contamination that exceed commercial/industrial risk standards.

**Response:** Please see the response to comment 48 above: the revised text presented in the response to Comment 48 will be included in the Second line of Table 2-11, as associated with the second soil RAO.

58. p. 39, §2.13; In the second bullet also state: "The Navy has determined that the Selected Remedy is the Least Environmentally Damaging Practicable Alternative in compliance with the federal Clean Water Act."

**Response:** The suggested change will be made.



59. p. 40, §2.13; *In the second bullet, change the text to: "The Selected Remedy does not include treatment."*

**Response:** The suggested change will be made.

60. p. 41, §3.0; *EPA expects to review this section once it is drafted.*

**Response:** Comment noted.

61. *Figure 2-6; The figure should show all the areas where a two foot clean cover over subsurface contamination exceeding commercial/industrial standards needs to be maintained.*

**Response:** Please refer to the response to Comment 48 above. There will be one LUC boundary, as shown on the figure cited.

62. *Figure 2-7; While this figure is acceptable for the ROD, please be aware that upgradient monitoring wells will be required to document the groundwater conditions that will impact DU 4-1 over the life of the remedy and to assess whether MNA is a practical long-term solution.*

**Response:** Comment noted.

63. *Table E-1; For the Action to be Taken text for each citation, insert ", maintenance of a two foot cover over subsurface soil exceeding commercial/industrial standards," after "Target area removal."*

**Response:** Please refer to the response to comment 48 above. The action of maintenance of a two foot cover is not a component of the remedy and it should not be cited in this manner. The LUC will assure there is no uncontrolled intrusion into the subsurface soil.



64. Table E-2;

a) Change the Action to be Taken text for federal Clean Water Act, Section 404 to: "The Selected Remedy may involve discharge of dredged material and/or excavation. Soil remediation or other remedial actions that include dredging or filling wetlands will meet these requirements, including mitigation of altered wetland/aquatic resources as required. The Navy has determined that this alternative is the Least Environmentally Damaging Practicable Alternative to protect wetland resources because it provides the best balance of addressing contaminated soil within and adjacent to wetlands and waterways with minimizing both temporary and permanent alteration of wetlands and aquatic habitats on site. The Navy solicited public comment on its determination in the Proposed Plan and received no negative public comments."

**Response:** The requested change will be made as is consistent with the Site 8 ROD and the Proposed Plan.

b) Change the RI Freshwater Wetland Act citation to:

<p>Fresh Water Wetlands Act; DEM Rules And Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act (December 2010)</p>	<p>RIGL 2-1, Sections 2-1-18 through 2-1-20.2; Rules 4.00 and 5.00</p>	<p>Applicable</p>	<p>Rules and regulations governing the administration and enforcement of the Fresh Water Wetlands Act. Defines and establishes provisions for the protection of swamps, marshes and other fresh water wetlands in the state. Actions are required to prevent the undesirable drainage, excavation, filling, alteration, encroachment or any other form of disturbance or destruction of a wetland. Also establishes standards for land within 50 feet of the edge of state-regulated wetlands.</p>	<p>Any excavation and backfill/cover activities will be conducted to minimize the disturbance of state jurisdictional wetland and perimeter wetland.</p>
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**Response:** The Navy does not object to the suggested changes and will concur if RIDEM does not object.

65. a) Table E-3; Add federal ARARs:

<p>Safe Drinking Water Act; National primary drinking water regulations – Maximum Contaminant Levels (MCLs)</p>	<p>42 U.S.C. §300f et seq.; 40 C.F.R. Part 141, Subparts B and G</p>	<p>Relevant and Appropriate</p>	<p>Establishes MCLs for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate standards for aquifers and surface water bodies that are potential drinking water sources.</p>	<p>The MCLs will be used as groundwater monitoring standards for soil contamination left in place.</p>
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<p><i>Safe Drinking Water Act; National primary drinking water regulations – Maximum Contaminant Levels Goals (MCLGs)</i></p>	<p><i>42 U.S.C. §300f et seq.; 40 C.F.R. Part 141, Subpart F</i></p>	<p><i>Relevant and Appropriate</i></p>	<p><i>Establishes maximum contaminant level goals (MCLGs) for public water supplies. MCLGs are health goals for drinking water sources. These unenforceable health goals are available for a number of organic and inorganic compounds.</i></p>	<p><i>The MCLGs will be used as groundwater monitoring standards for soil contamination left in place.</i></p>
<p><i>Health Advisories (EPA Office of Drinking Water)</i></p>		<p><i>To Be Considered</i></p>	<p><i>Health Advisories are estimates of risk from consumption of contaminated drinking water and consider non-carcinogenic effects only. To be considered for contaminants in groundwater that may be used for drinking water. The risk-based standard for manganese is 0.3 mg/L</i></p>	<p><i>The Health Advisory standards will be used as groundwater monitoring standards for soil contamination left in place.</i></p>
<p><b>Response:</b> The three ARAR Citations above are included in the Site 8 ROD for soil, because the remedy for that site included an asphalt cover system, which resulted in the establishment of a waste management area for the site to contain and prevent exposure to COCs in the underlying soil. This is not the case for Site 12. Additionally, these are already included in the groundwater remedy for this site which is appropriate. The Navy does not believe that these ARARs are appropriate for soil at this site.</p>				
<p><i>CWA National Recommended Water Quality Criteria (NRWQC)</i></p>	<p><i>40 C.F.R. §122.44</i></p>	<p><i>Applicable</i></p>	<p><i>Federal NRWQC are health-based and ecologically based criteria developed for carcinogenic and non-carcinogenic compounds.</i></p>	<p><i>Water quality standards will be used to develop monitoring standards for remedial work within and adjacent to wetlands/ waterways.</i></p>
<p><i>Clean Water Act – National Pollutant Discharge Elimination System (NPDES)</i></p>	<p><i>40 C.F.R. Parts 122 and 125</i></p>	<p><i>Applicable</i></p>	<p><i>Standards for discharge to surface waters.</i></p>	<p><i>If work within or adjacent to wetlands requires treating of water before discharge to surface waters, these standards will be met.</i></p>
<p><b>Response:</b> EPA requested these be included during review of the Draft FS, and although the Navy agreed, the changes were inadvertently omitted. These entries will be included to address unforeseen discharge (heavy rain during excavation, etc.) NRWQC were included in Table 2-3 but not carried forward to Section 4 tables in the FS. As such, these will be included. Refer to TF4 Issues Summary May 4, 2012.</p>				



<p><i>Management of Undesirable Plants on Federal Lands</i></p>	<p><i>7 U.S.C. §2814</i></p>	<p><i>Relevant and Appropriate</i></p>	<p><i>Requires federal agencies to establish integrated management systems to control or contain undesirable plant species on federal lands.</i></p>	<p><i>Measures will be taken to control invasive plants within all remediated areas. An invasive species control plan will be developed as part of the long-term O&amp;M for this site. The responsibility of control will be transitioned to NAVSTA after the remedy is in place, and a base-wide program for controlling undesirable plants is developed.</i></p>
<p><b>Response:</b> This will be added, though the fifth column will state "Measures will be taken to control invasive plants during the remedial response. An invasive species control plan will be developed and included in the remedial action work plan. The long term maintenance will be transitioned to NAVSTA after the remedy is in place for inclusion in the base-wide program for controlling undesirable plants."</p>				

65 b) *The citation for the State Rules and Regulations for Groundwater Quality should be changed to: "RIGL Ch. 46-12, Section 46-12-2; Ch. 46-13.1, Ch. 23-18.9, Sec. 23-18-9.1; Appendix 1"*

**Response:** This text will be included, as consistent with the Site 8 ROD

65 c) *Add State ARARs:*

<p><i>Drilling of Drinking Water Wells; Rules and Regulations Governing the Enforcement of Chapter 46-13.2 Relating to the Drilling of Drinking Water Wells</i></p>	<p><i>RIGL 46-13.2 et seq.</i></p>	<p><i>Applicable</i></p>	<p><i>Prohibits installing drinking water wells in contaminated aquifers. Establishes standards for decommissioning monitoring wells (Rule 9.03).</i></p>	<p><i>Under these standards drinking water wells are prohibited within areas where contaminated soil will be left under a cover. Monitoring wells used will be properly decommissioned when no longer needed.</i></p>
<p><i>Rules and Regulations for Dredging and Management of Dredge Materials</i></p>	<p><i>DEM-OWR-DR-0203</i></p>	<p><i>Applicable</i></p>	<p><i>Addresses dredging/excavation activities in wetlands.</i></p>	<p><i>Any dredging/ excavation of wetland soils and backfilling with cover material that is required while implementing the remedy must comply with these regulations.</i></p>



**Response:** Drinking water wells are not part of the remedy, and there are none present at the site. Decommissioning of wells is addressed in the citation revised per comment 65b above.

Dredging is not part of the remedy. The cited regulations pertain specifically to marine dredging. However, section 3 of the regulations cited states: If the project involves a significant alteration to freshwater wetlands, then Section 9.3.4 applies. Section 9.3.4 states that if a significant alteration is needed to freshwater wetlands, the party would need a separate application to alter freshwater wetlands. This was in the Site 08 ROD because that action included dredging a pond. Activity at this site is not anticipated to involve a "significant alteration to freshwater wetlands" though minor excavation/ backfill is anticipated for bordering wetland soils. As such, it is not recommended that these be added at this time.

65 d) Add State ARARs regarding the potential removal of solid waste from the berm area:

Rhode Island Solid Waste Regulations – Closure	DEM OWMSW0401, 1.7.14(b)	Relevant and Appropriate	Regulation requires implementation of an approved closure plan.	If the remedial action includes removal of solid waste from the Site, the area will be closed under these standards.
Rhode Island Solid Waste Regulations – Dust Control	DEM OWMSW0401, 1.7.10	Relevant and Appropriate	Requires dust control.	Dust will be controlled at the site during removal of solid waste.
Rhode Island Solid Waste Regulations – Sedimentation and Erosion Control	DEM OWMSW0401, 2.1.04	Relevant and Appropriate	Requires development of a "Sedimentation and Erosion Control Plan."	Sedimentation and erosion controls will be implemented as part of the removal of solid waste.

**Response:** It appears that the request to include these ARARs is based on the assumption that the berm, which is a potential target removal area, contains debris which will be characterized as solid waste and managed as such during removal (though this is unknown at this point).

Regarding 1.7.14(b), there is no closure plan needed because the action is to remove a pile of debris (if it is present), and not to close a waste management area. The requirements cited in 1.7.10 and 2.1.04 would normally be components of a remedial action work plan and in the interest of compromise, they will be included as presented.

66. Table E-5; Change the RI Freshwater Wetland Act citation to:

Fresh Water Wetlands Act; DEM Rules and Regulations Governing the	RIGL 2-1, Sections 2-1-18 through 2-1-20.2; Rules	Applicable	Rules and regulations governing the administration and enforcement of the Fresh Water Wetlands Act. Defines and establishes	Any installation or maintenance of monitoring wells will be conducted to minimize the
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<i>Administration and Enforcement of the Fresh Water Wetlands Act (December 2010)</i>	<i>4.00 and 5.00</i>		<i>provisions for the protection of swamps, marshes and other fresh water wetlands in the state. Actions are required to prevent the undesirable drainage, excavation, filling, alteration, encroachment or any other form of disturbance or destruction of a wetland. Also establishes standards for land within 50 feet of the edge of state-regulated wetlands.</i>	<i>disturbance of state jurisdictional wetland and perimeter wetland.</i>
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**Response:** Please see the response to Comment 64 b) above.

67. *Table E-6;*

a) *Change the citation for the State Rules and Regulations for Groundwater Quality to: "RIGL Ch. 46-12, Section 46-12-2; Ch. 46-13.1, Ch. 23-18.9, Sec. 23-18-9.1; Appendix 1"*

b) *Remove the two State Clean Air Act citations that refer to the storage of soil.*

**Response:**

a) Please refer to the response to comment 65 b) above.

b) The suggested change will be made.



**NAVY RESPONSES TO COMMENTS  
DRAFT RECORD OF DECISION  
DU 4-1 at Site 12, Tank Farm 4  
NAVAL STATION NEWPORT, RHODE ISLAND  
COMMENTS DATED JULY 12, 2013, RIDEM**

The U.S. Navy (Navy) is pleased to provide the Rhode Island Department of Environmental Management (RIDEM) with responses to the July 12, 2013 comments from on the Draft Record of Decision (ROD) for DU 4-1 at Site 12, Tank Farm 4, which is part of Naval Station (NAVSTA) Newport in Newport, Rhode Island. Comments are presented first (*italics font*), followed by the Navy's responses.

1. *P. 8 Section 2.4, Scope and Rold of Operable Unit; 3<sup>rd</sup> paragraph*

*Petroleum Contamination in the remaining portions of TF4 has been addressed...*

*Please revise the above statement to indicate that petroleum contamination in the remaining portions of TF4 has been partially addressed. Please indicate in this paragraph that further investigation of the remainder of Tank Farm 4 will be required under the State program*

**Response:** The AOCs that were identified as Category 2 (petroleum) for Tank Farm 4 have been addressed through development of a CAP and associated LTM. It is the Navy's understanding that there are some Category 3 areas that are still to be discussed with the agencies. As such the statement is correct and a revision is not necessary.

2. *P. 10, Section 2.5.2, Nature and Extent and Fate and Transport of Contamination*

*The second sentence of the first paragraph stated "surface water and sediment were evaluated and the contaminants were not found within these media". However in the paragraph after the bullets, the text states "contaminants in surface water and sediment do not require remediation". These statements are inconsistent. Please revise the first paragraph to indicate that contaminants were detected in surface water and sediment at DU 4-1.*

**Response:** The second sentence of the first paragraph will be revised to state that low concentrations of organic contaminants and metals were found within these media.

3. *p.11, Section 2.5.2.1, Nature and Extent of Contamination in Soil.*

*Please revise this section to reflect that soil results were also compared to RIDEM criteria for selection of contaminants of potential concern (COPCs). According to the Data Gaps Assessment (DGA), the RIDEM criteria included Residential Direct Exposure Criteria (RDECs) and leachability Criteria (classification GA) . Additionally, please remove the sentence in the first paragraph of this section regarding comparison of groundwater sample results to state/federal drinking water standards, since this is addressed in the next section.*

**Response:** According to Section 4.1.1 of the DGA, the nature and extent of contamination evaluation was conducted with regards to comparison to only the EPA RSLs. It is correct that the COPCs identified for the HHRA were selected based on RIDEM DEC's and Leachability Criteria. Therefore, the first paragraph of Section 2.5.2.1 will be revised to state that the



nature and extent of contamination evaluation was performed through comparison to EPA RSLs, and the references to COPCs will be struck from this paragraph. The sentence regarding groundwater will also be struck as suggested.

4. *P. 13, Section 2.5.2.2, Nature and Extent of Contamination in Groundwater.*

*Please revise this section of reflect that groundwater results were also compared to RIDEM criteria and USEPA screening levels for the selection of COPCs. According to the DGA, the RIDEM criteria included GA groundwater objectives. Additionally, the DGA indicates that USEPA Groundwater Screening Levels for Evaluating the Vapor Intrusion into Indoor Air from Groundwater and Soils were used for COPC selection.*

**Response:** According to Section 4.1.2 of the DGA, the nature and extent of contamination evaluation was conducted with regards to comparison to only the EPA RSLs. It is correct that the COPCs identified for the HHRA were selected based on RIDEM GA groundwater criteria. Therefore, the first paragraph of Section 2.5.2.1 will be revised to state that the nature and extent of contamination evaluation was performed through comparison to EPA RSLs, and the references to COPCs will be struck from this subsection.

5. *P. 15, Section 2.7.1.1, Identification of COPC; 1<sup>st</sup> paragraph.*

*"RIDEM criteria included direct exposure criteria (DECs) for residential soil and GA groundwater objectives".*

Please include RIDEMs GA Leachability Criteria in the above statement.

**Response:** The suggested revisions will be made.

6. *P. 17, Section 2.7.1.4, Risk Characterization; 4<sup>th</sup> paragraph.*

*The cited lower end of the risk range of "0 for inhalation of groundwater vapors for hypothetical child, adult, and lifelong residents" is misleading. The only instance where this would occur is when no carcinogenicity values are available for COPCs (Either due to lack of a toxicity value or that the COPC is not classified as carcinogenic) within the indoor air (groundwater) medium. Please indicate this in the text or revise the sentence to reflect the minimum calculated cancer risk.*

**Response:** The risk value is identified as "0" because the low end range is identified in the risk assessment tables as "--" in the DGA. However, the passage is simply cited as a range, and the Navy suggests the following revision: "Total risk estimates calculated for all applicable exposure routes range from  $2 \times 10^{-9}$  for inhalation for soil vapors for the hypothetical child resident to  $9 \times 10^{-4}$  for ingestion of surface soil by hypothetical lifelong residents."

7. *P. 19, Section 2.7.1.5, Summary of Human Health Risk; 1<sup>st</sup> and 4<sup>th</sup> bullets.*

*Please remove the statements in these bullets that arsenic is present at concentrations less than background. The Arsenic concentration in surface soil at SB943 is 59.5 mg/kg.*



**Response:** The statements will be struck from bullets 3 and 6. Note that the 95% UCL concentration for the site is below the 95% UPL background concentrations despite the detection at location SB-943.

8. *P. 19, Section 2.7.1.5, Summary of Human Health Risk; Table 2-4.*

*For the child, adult, and lifelong residential groundwater exposure, the total cancer risk and total non-cancer hazard indices are inconsistent with the risk numbers presented in Table 6-36 of the DGA. Please verify all risk values for consistency between the DGA and the ROD. Furthermore, the total non-cancer hazard index for the lifelong resident should indicate "not applicable" instead of "<1" because non cancer hazards were not evaluated for the lifelong resident in the DGA.*

**Response:** The ILCR citations are consistent: For Child/Resident exposure to groundwater Table - 36 of the DGA shows 7E-5, and the ROD shows <1E-4; for adult resident exposure to groundwater, the DGA shows 9E-5 and the ROD shows <1E-4; and for lifelong resident exposure to groundwater, the DGA and the ROD both show 2E-4.

The non-cancer HI for lifelong residents will be changed to NA and a footnote will be provided to explain that non cancer HI values are not calculated for lifetime residents.

9. *P. 21, Section 2.8, Remedial Action Objectives; 4<sup>th</sup> paragraph*

*Please remove "although not associated with unacceptable risk" from the last sentence.*

**Response:** The Navy proposes to revise the statement as follows: "PRGs were established for contaminants that were detected at the site at concentrations associated with unacceptable risk and also for CERCLA hazards substances, pollutants or contaminants that, although not associated with risk exceeding EPA thresholds, were detected at concentrations exceeding RIDEM's soil DEC's and or Leachability Criteria."

10. *P. 23, Section 2.8, Remedial Action Objectives; Table 2-5*

*Please remove footnote (e) from the residential and industrial use subsurface soil cleanup levels for manganese and include it next to the industrial use subsurface soil cleanup level for arsenic. Also, please remove "Section 12.04" from footnote (e)*

**Response:** The requested revisions will be made.

11. *P. 24, Section 2.8, Remedial Action Objectives; Table 2-6*

*Page 21 of Section 2.8 states that "remediation Goals (RGs) were determined based on the lowest value between the ARAR-based and risk-based PRGs", taking into consideration background concentrations. However, the RG for arsenic in groundwater as indicated on Table 2-6 and Table C-14 is based on the MCL, with the only explanation that site concentrations do not exceed the MCL. The selection of the RG is thus inconsistent with the approach stated in the text and unjustified. Please provide justification in this ROD for why the arsenic RG is treated differently from the RGs calculated for the other COCs.*



**Response:** For COCs with MCLs, the MCL (or a similarly enforceable state standard) is assumed to be protective of the receptor, and therefore the MCL (or state standard) is used in place of the risk – based PRG. This will be clarified in the cited section.

12. P. 25, Section 2.9.1, *Soil Alternatives*; 1<sup>st</sup> paragraph

Please correct the table references throughout Section 2 in this ROD.

**Response:** Table references will be checked and corrected as needed.

13. P. 28, Section 2.10.1, *Comparative Analysis of Soil Alternatives*; Table 2-9.

*Within the row “Time to Achieve Cleanup Goals”, please change the timeframe to <2 years for Alternatives SO2 and SO3, for consistency with the text on page 20. Also, please check for consistency among the costs presented in both this table and the one for groundwater (Table 2-10), the alternatives summary tables (Table 207 and 208 and accompanying narrative.*

**Response:** The costs and the times cited will be checked and corrected as necessary.

14. P. 30 & 33 Sections 2.10.1.3 and 2.10.2.3, *Modifying Criteria, Community Acceptance*.

Please update the placeholders indicated with an “XX” or “XXX”.

**Response:** The requested revisions will be made.

15. P. 34, Section 2.12.1, *Rationale for Selected Remedy*; 2<sup>nd</sup> bullet.

“The available site data indicate that MNA will be successful over time...”

Please reword this section similar to page 9 of the Proposed Plan, which states:

“Data typically required for an MNA remedy, showing a decreasing trend in contaminant concentrations, has not been collected for this Site; however, MNA could be successful over time, based on the evaluation of biodegradation parameters for this Site.”

Please also discuss in this section, similar to the proposed plan, that the Navy will seek a change to the remedial action for groundwater at this Site if MNA proves to be ineffective.

**Response:** The suggested revisions will be made.

16. P. 37, Section 2.12.2.2, *Monitored Natural Attenuation*; last paragraph.

*Please revise the last sentence as follows: “Each monitoring event will include measurement of MNA parameters including, at a minimum but not limited to, dissolved oxygen, oxidation reduction potential...” Additional MNA parameters that are not listed here (i.e., total organic carbon, ammonia, dissolved gasses (methane, ethane, ethane), orthophosphate, etc.) will likely be required as part of the MNA program, which will be determined during the development and review of the MNA Sampling and Analysis Plan (SAP).*

**Response:** The suggested text will be included as appropriate.



17. P. 41, Section 3.1, Stakeholder Comments and Lead Agency Responses, Table 3-1.

*Please update as necessary.*

**Response:** The suggested change will be made.

18. Appendix C, Table C-6, Non-Cancer Toxicity Data – Oral/Dermal.

*The oral reference doses (RfD for 2,3,7,8-TCDD and thallium have been updated by the USEPA and are more conservative than those provided in Table C-6. The RfD for 2,3,7,8 – TCDD was changed in IRIS in February 2012 to 7 E-10 mg/kg/day. For thallium, there is a current PPRTV value of 1 E-5 mg/kg/day. Please discuss whether these changes in toxicity values would affect the selection to exclude these constituents as COPCs.*

**Response:** With Regards to TCDD, the updated RfD was addressed in the final FS: The hazard indices for dioxins/furans presented in the HHRA were calculated using an oral reference dose of 1E-9 mg/kg/day, which was obtained from the Agency for Toxic Substances and Disease Registry (ASTDR). In February 2012 USEPA published a new value oral reference dose in the Integrated Risk Information System (IRIS). The new oral reference dose of 7E-10 mg/kg/day is slightly more toxic than the value used in the HHRA. The new reference dose for dioxins/furans was used to recalculate hazard indices and the results do not change the conclusion of the HHRA. The hazard indices calculated using the new oral reference dose are orders of magnitude less than the acceptable level of 1.

With regards to thallium, The RfD for thallium for thallium is a PPRTV appendix value. This value was derived for only for screening purposes. The toxicological profile for thallium states:

“For the reasons noted in the main document, it is inappropriate to derive a subchronic or chronic p-RfD for thallium. However, information is available which, although insufficient to support derivation of a provisional toxicity value, under current guidelines, may be of limited use to risk assessors. In such cases, the Superfund Health Risk Technical Support Center summarizes available information in an appendix and develops a screening value. Users of screening toxicity values in an appendix to a PPRTV assessment should understand that there is considerably more uncertainty associated with the derivation of a supplemental screening toxicity value than for a value presented in the body of the assessment.”

Navy policy is not to calculate risks using screening toxicity values and chemicals with screening toxicity values should not be retained as chemicals of concern. This approach is consistent with other situations where RfDs are changed to screening values.

