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U S NAVY RESPONSE TO REGULATOR COMMENTS TO DRAFT FEASIBILITY STUDY DU5-1 SITE 13 TANK FARM 5 WITH TRANSMITTAL NAVSTA NEWPORT RI
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March 2, 2012

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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

Reference: CLEAN Contract No. N62470-08-D-1001
Contract Task Order WE61

Subject: Responses to Comments for the Draft Feasibility Study
DU5-1; Site 13 (Tank Farm 5),
Naval Station Newport, Newport Rhode Island

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 document cited above. The Navy received comments from the Environmental Protection Agency (EPA) and the Rhode Island Department of Environmental Management (RIDEM) on December 22, 2011 and December 13, 2011, respectively. Electronic copies of this submittal will be provided by electronic mail.

As a result of the delay from the recent Formal Dispute Resolution, the Navy's timetable for the draft final Data Gaps Assessment (DGA) Report for Sites 12 (Tank Farm 4) and 13 (Tank Farm 5) was impacted as well as the timetable for the draft FSs for Sites 12 and 13. The Navy sent a letter dated February 2, 2012, requesting a 30 day extension to respond to comments on the draft FSs for Sites 12 and 13. For Site 13, the Navy's review and response period concludes March 4, 2012.

Per FFA section 7.6(e)(3), upon receipt of the Navy's responses to comments, the parties have 45 days to discuss responses and resolve issues before the Navy issues a draft final FS on or before April 9, 2012. The Navy proposes a conference call for the week of March 19, 2012 to discuss the responses and resolve issues. Please advise Mr. Roberto Pagtalunan at (757) 341-2010 of your availability during that week for this call.

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

Very truly yours,

Stephen S. Parker, LSP
Project Manager

Enclosures

c: D. Barclift, NAVFAC (w/encl.)
S. Bird, NAVFAC (w/encl.)
G. Glenn, Tetra Tech (w/o encl.)
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P. Steinberg, Mabbett Associates (2- w/encl.)
D. Seiken, Tetra Tech (w/encl.)
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File 112G02689-8.0 (w/encl.), 3.1 (w/o encl.)

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ATTACHMENT A-1
RESPONSE TO COMMENTS FROM USEPA
Draft Feasibility Study
DU 5-1 at Site 13, Tank Farm 5, NAVSTA Newport
Comments Dated December 22, 2011

General Comments:

1. *Please delete the references throughout the FS to Tank Farm 4 other than those pertinent to the Data Gaps Report discussions.*

Response: Concur; such references will be removed where appropriate.

2. *With respect to groundwater, the FS states that the presence of contaminants of concern (COCs) in groundwater above preliminary remediation goals (PRGs) can be attributed to natural sources of inorganics and the geochemical conditions in the aquifer rather than Navy operations. EPA questions whether other historical releases at Tank Farm 5 have altered the geochemistry in the DU 5-1 area such that the contaminants have been mobilized to the groundwater. Additional evaluation and discussion of this possibility is warranted before eliminating in situ treatment technologies that are capable of changing (or restoring) the geochemistry of the aquifer within DU 5-1.*

Response: Given that the groundwater concentrations are limited to three metals, and these only slightly exceed the PRGs. Releases or activities at the site could, in theory, created reducing conditions that might result in elevated metals in groundwater. However, no plume actually has been identified and because a plume has not been defined on which to focus treatment, the screening process in Section 3 correctly excludes treatment of groundwater with low concentrations of metals.

3. *The FS states that there is no defined source or plume, but that is not supported by the available data that indicate that the wells containing inorganic contaminants in excess of PRGs are all located at the oil-water separator (OWS) or along its discharge pipe. There are no monitoring wells present elsewhere to refute the contention that the source of the inorganic concentrations in groundwater are because of a release from the OWS and/or its discharge line. Please revise the FS to acknowledge this.*

Response: Constituents exceeding RSLs as shown in the DGA are centralized in the area of the former oil water separator and the discharge line. However, this is a function of the fact that the data comes from these areas. Further evidence of the lack of plume is the fact that groundwater exceedances are limited to three metals, and these only slightly exceed the PRGs. Furthermore, the risk from groundwater is limited to residential use of groundwater. So the FS includes alternatives to address this risk, but there is no defined plume to try and address with a treatment or capture system.

Specific Comments

Page	Comment
1. p. ES-1, ¶1	*Please specify that Site 13 is Operable Unit 2.*
	Response: Concur, this will be added to the cited section.
2. p. ES-2	*Regarding bullet 4 on manganese in soil, EPA disagrees with the rationale used to eliminate manganese as the COC in soil and the elimination of soil as a medium of concern. Since the sampling location showing exceeding risks from manganese has detection at level exceeding background manganese, it shows that manganese soil elevation is not from background. The background soil comparison study in Appendix F of the July 2011 Data Gaps Assessment Report for Tank Farm 4 and Tank Farm 5 mentioned that manganese concentrations found at Tank Farm 5 in both surface and subsurface soils are greater than manganese background concentrations. Therefore, manganese cannot be eliminated based on background.* *Furthermore, soil cannot be eliminated as a media of concern because contaminant levels exceed unrestricted use risk levels. Therefore, remedial action needs to address the unrestricted use risk (in addition to the limited commercial/industrial risk).*

Response: Soil should not be added as a media of concern for residential use. Risk measured using the CTE analysis did not exceed the EPA cancer or non-cancer risk thresholds for any receptor. Under the RME analysis, risks exceeded the EPA thresholds for residential use and construction worker exposure to manganese in soil. Additionally, only through the presence of arsenic, does the RME cumulative risk exceed the EPA Cancer Risk threshold (Table 6-34). There is no indication that these constituents that pose this marginal risk are related to the CERCLA releases at the site.

Acceptability of CTE risk is documented in EPA's 1995 document, "GUIDANCE FOR RISK CHARACTERIZATION." This EPA document discusses the importance of having more than one exposure scenario quantitatively assessed:

> "Agency risk assessments will be expected to address or provide descriptions of individual risk that include the central tendency and high end portions of the risk distribution..."
>
> "In order to describe the range of risks, both high end and central tendency descriptors are used to convey the variability in risk levels experienced by different individuals in the population."

It is acceptable at this step to use risk management to consider use of the CTE risk instead of the RME, to consider background conditions, and conclude that a remedy to reduce or prevent exposure to a background condition is not appropriate.

3. p. ES-2, ¶3	*a) Remedial alternatives need to be developed for soil.*
Response:	Please refer to the response to specific comment 2 above.

b) Unless groundwater cleanup standards will be achieved under GW2 neither of the groundwater alternatives is protective or meets ARARs. Additional remedial actions that will achieve groundwater cleanup standards need to be evaluated in this FS.

Response: Please refer to the response to general comment 2 above. In addition, please refer to the response to comment 40(a) below. There is no defined plume that can be addressed with additional remedial actions.

4. p. 1-1, ¶1 *In the second sentence replace "by the U.S. Environmental Protection Agency (EPA)" with "in the Federal Facility Agreement (FFA) among the Navy, the U.S. Environmental Protection Agency (EPA), and the State of Rhode Island"*

Response: The comment is made in regards to defining the site as OU2 in the FFA. The operable unit (OU) term is not used in the FFA. As such the text is correct as stated.

5. p. 1-1, ¶2 *In the last sentence change "a Federal Facility Agreement (FFA)" to "FFA".*

Response: Based on the response to the previous comment, this editorial change would not be made.

6.p. 1-2, ¶3 *Add to the end of the last sentence: ", as part of the Implementability and Short-Term Effectiveness criteria.*

Response: Navy will add ", as part of the implementability criteria" to the end of the last sentence.

7. p. 1-7, §1.4.2 *Specify that the "removal actions" were done under CERCLA authority.*

Response: Concur. This is consistent with the "Final Closeout Report for Sludge Disposal Trenches and Review Areas" report (TtEC, 2007).

8. p. 1-12, §1.8, ¶2 *Please note that benzo(a)pyrene was detected in sediment above the EPA Regional Screening Level (RSL) for industrial soil in 8 of the 12 samples collected.*

Response: Detail such as this is not critical to the document, but the information will be added based on the request.

9. p. 1-14, ¶5 *Please state whether any groundwater contaminants exceed non-zero MCLGs, federal risk-based standards, or more stringent state groundwater standards.*

Response: This section is a fate and transport section and this detail is not pertinent to this section of the document. Further discussion is provided in Section 2.2 of the FS report, as appropriate.

10. p. 1-17, §1.10 *For soil risks from arsenic, please remove discussion on CTE risks. EPA does not accept using CTE risks to eliminate COCs. PRGs should be calculated for residential and commercial/industrial exposure to soil contaminants.*

Response: Please refer to the response to specific comment 2 above.

11. p. 1-18, §1.10 *a) The second paragraph indicates that arsenic concentrations are below background for one soil type, but exceed background for another soil type. While EPA recognizes the uncertainty, consider addressing risks related to arsenic or provide supporting information to demonstrate the soil type at the site is consistent with the background soil type with the higher arsenic concentration. Risk Management is not the basis for eliminating COCs.*

Response: Please refer to the response to specific comment 2 above.

b) In the third paragraph, COCs for contaminants that exceed unrestricted risk levels need to be identified.

Response: As described in Tables 6-34 (RME risk) and 6-35 (CTE risk) from the data gaps assessment report, the constituents that pose risk for soil are manganese, benzo(a)pyrene, and arsenic. This will be clarified in the cited section and the tables cited will be included in an appendix of the FS report.

c) The statement in the fourth paragraph that there is uncertainty in the basis of the cancer risk for arsenic because measured concentrations of arsenic are below the MCL should be instead described as an "inconsistency." Specify whether arsenic is below any MCLG, federal risk-based standard or more stringent State groundwater standard.

Response: In regards to the measure concentrations below an MCL can be identified as an inconsistency. Arsenic was not detected at concentrations in groundwater above MCLs, non-zero MCLGs or more stringent state groundwater standards. This will be added to the cited section, and in Section 2.2 where this information is more pertinent.

12. p. 1-19 *a) Since unrestricted risk levels were not evaluated, please recognize that a risk assessment will likely be required to rescind any LUCs.*

Response: The comment is noted.

b) For sediment risks, please discuss that ILCRs for child and adult recreational users exceed 1E-5 owing to arsenic and benzo(a)pyrene. Risk management discussion is needed for these scenarios.

Response: Concur. Risk management discussion will be added to note the calculation of risk for the RME and CTE.

13. p. 1-20, §1.11 *a) Please delete any discussion that relates only to Tank Farm 4.*

Response: Concur, erroneous text will be deleted.

b) In the fourth paragraph (item 2), explain in greater detail why the Navy does not believe that soil contamination above background is not related to its activities.

Response: The discussion point is in regards to metals in soil and sediment, and it will be clarified that other non-point sources as well as natural variability of metals content in soil and soil chemistry could provide metals concentrations above calculated background values, and not only the burning of sludge at the site might have contributed to metals in soil present.

14. p. 2-4, ¶1 *Remove the last two sentences because Oil standards are not ARARs and the Air Quality Regulations are Action-specific standards.*

Response: Concur, the revision will be made.

15. p. 2-4 ¶2 *Groundwater must meet federal MCLs, MCLGs, federal risk-based standards, and more stringent State groundwater standards. In the last sentence change "MCLs" to*

"federal drinking water standards."

Response: The paragraph will be revised to state that federal drinking water standards are pertinent to the site.

16. p. 2-5, ¶2 *In the last sentence insert ", MCLGs or more stringent State groundwater standards" after "federal MCLs."*

Response: Concur, the revision will be made, except to note non-zero MCLGs (see above).

17. p. 2-5, §2.2.1 *a) Identify soil as a media of concern for unrestricted residential use.*

Response: Please refer to the response to specific comment no. 2 above.

b) Address how the soil may be a media of concern for recreational use.

Response: Please refer to the response to specific comment no. 2 above.

c) *The second bullet discusses risks from use of groundwater as a "potable water source," but the human health risk assessment text on page 1-18 uses the term "domestic use." This implies that the groundwater poses a risk from other activities other than just drinking. Explain.*

Response The two terms were used interchangeably without discretion. The intent of both is to reflect the risk assessment which quantifies risk from "residential use of groundwater", and this language will replace both cited passages.

18. p. 2-6, §2.2.2 *a) The last sentence of the third paragraph states "Recreational PRGs were not calculated specifically for the site because residential PRGs were calculated and are presumed to be more stringent (conservative) than those that would be calculated for a recreational receptor." Residential PRGs, however, were not calculated for soil (see p. 1-17), but only for exposure to groundwater. Residential PRGs need to be developed, at a minimum to address defining the boundaries of any LUCs that may be established.*

Response: Please refer to the response to specific comment no. 2 above.

b) *Although the text notes that the site is not residential and that there are no plans to develop it for residential use, unrestricted recreational use needs to meet residential standards. The FS calculates soil PRGs for the construction worker only, and not for a resident. A recreational user would not be exposed to groundwater, and therefore the residential PRGs that were calculated based on potential future use of the groundwater as water supply do not apply to a recreational user. The construction worker's exposure to soil cannot be used as a surrogate for a recreational user because the construction worker is assumed to be exposed to site soil for only six months. Recreational users will be exposed over longer time periods. Table 3 in Appendix B includes exposure input parameters for both a child and adult recreational user. These inputs should be used to develop recreational PRGs for soil. These PRGs should be compared to the construction worker surface soil PRG and the lowest PRG should be selected for the remedial action.*

Response: Please refer to the response to specific comment no. 2 above.

c*) The first sentence under Soil PRGs references the three cancer risk levels evaluated in the calculation of soil PRGs. However, there is only one soil COC, manganese, which is not a carcinogen. PRGs were not calculated for cancer risk for*

soil. Please revise to indicate that the PRG was set using an HQ of 1.

Response: Concur. The first paragraph under Soil PRGs will be revised to reflect that the PRG for Manganese in soil was calculated based on the non cancer HQ of 1.

19. p. 2-7, §2.2.2, ¶2 *In the third sentence replace "GA/NA, or suitable for public or private drinking water use but not attainable" with "potable under federal drinking water standards."*

Response: Concur, this revision will be made.

20. p. 2-7, §2.2.2, ¶3 *Please clarify the discussion under Groundwater PRGs because the PRG for arsenic is the MCL and that it is not a PRG selected based on a 1E-06 cancer risk level.*

Response: The discussion will be revised to reflect that if an MCL is provided for the constituent, the MCL will be selected as the PRG.

21. p. 2-8, ¶2 *Groundwater PRGs may also be based on MCLGs or more stringent State groundwater standards.*

Response: Groundwater PRGs may also be selected as non-zero MCLGs or more stringent state groundwater standards.

22. p. 2-8, ¶3 *a) In the third sentence, the leachability criteria at a CERCLA site is based on the federal, not state, groundwater classification.*

Response: For CERCLA actions, the Direct Exposure Criteria and leachability criteria will be applied depending on the federal classification of the underlying groundwater. However, for this site, soil is not a media of concern so the discussion will be removed.

b) Regarding the last sentence, once a determination of CERCLA risk is identified all exceedances of residential and commercial/industrial DEC and Leachability Standards must be identified and addressed.

Response: Soil is not selected as a media of concern, and therefore there is no need to conduct this evaluation or to develop soil PRGs.

23. p. 2-8, ¶4 *Replace this paragraph with text that describes the groundwater ARARS used to develop PRGs as "federal MCLs, MCLGs, federal risk-based standards, and more stringent state groundwater standards for unrestricted groundwater use.*

Response: The subject discussion will be removed from the ARAR section, however, no additional text will be added because it is already discussed in Section 2.1.4.1.

24. p. 2-8, §2.2.4, ¶1 *Replace the last sentence with: "Under CERCLA, there is no authority to clean-up contaminated media below background levels that are approved by EPA and consistent with EPA guidance. When approved background contaminant levels are higher, the PRG is established at the background level.*

Response: Concur, this change will be made.

25. p. 2-10, §2.2.5.1 *a) The reasonable maximum estimates (RME) of exposure for both current and potential land use conditions are developed in the risk assessment with the RME developed for future use of the site providing the basis for the development of protective exposure levels. In order to ensure that the selected remedy is protective of all individuals and environmental receptors that may be exposed at a site, EPA*

believes it is important to include all reasonably expected exposures in its risk assessment and use the RME risk results for selecting protective remedies.

Response: Please refer to the response to specific comment no. 2, above.

b) Identify soil PRGs for unrestricted residential use and confirm that soils do not exceed State leachability criteria for unrestricted groundwater use.

Response: Please refer to the response to comment 2, above. Regarding leachability criteria, refer to the response to comment 22 above.

26. p. 2-10, §2.2.5.2 *a) In addition to MCLs, please evaluate whether any groundwater contaminant exceeds non-zero MCLGs, federal risk-based standards, or more stringent State groundwater standards.*

Response: Concur, this revision will be made. Groundwater concentrations measured at the site do not exceed these standards.

b) As stated above in the comment for §2.2.5.1, RME risks must be used to evaluate protective remedies for exposures to cobalt, iron, and manganese in groundwater.

Response: PRGs are developed for the groundwater based on RME risk, and the PRGs are presented in Table 2-6. The risk management discussion is presented to assure that the reader has the risk information, the data, and the risk-based PRGs in the proper context. Both CTE and RME risks are important and should be considered in understanding the cleanup criteria. The PRG development is appropriate, and no revision is proposed based on this comment.

27. p. 2-10, §2.2.5.2 *The last paragraph states "Iron in groundwater samples is likely due to turbidity and colloids." More correctly, the iron in groundwater is likely due to presence of soluble iron salts. These salts cause turbidity and there also may be some flocculation of iron and manganese salts in water samples that oxidize when they are brought to the surface in contact with the atmosphere. Please correct.*

Response: This information will be added to the text as suggested.

28. p. 2-12, ¶2 *Manganese risk in groundwater needs to meet federal Health Advisory standards. If there are exceedances of risk-based standards then manganese needs to be addressed by the remedial alternatives (unless concentrations are below background levels).*

Response: The manganese health advisory is a "TBC" advisory, and will be considered in development of the PRGs. The health advisory will be added to Table 2-6.

29. p. 2-12, §2.6 *Please identify what level of recreational use will be allowed on the Site, since "restricted" use may allow PRGs to be established based on industrial/commercial levels, but "unrestricted" use requires PRGs to be established based on residential levels. Furthermore, PRGs need to be established for residential, as well as commercial/industrial levels if they will serve as the basis for establishing LUCs to address potential future use.*

Response: Please refer to the response to specific comment no. 2, above.

30. p. 2-13, §2.3.1 *a) If no remedial action objective (RAO) is necessary for soil then there should be no alternatives necessary for soil. Conversely, if the Navy believes that remedial action is necessary to address a site-related release impacting soil then there must be an*

RAO for soil. Please revise the FS accordingly.

Response: Please refer to the response to specific comment no. 2, above. Soil is not selected as a media of concern and there is no need to include an RAO for soil.

b) As commented previously, if there is soil risk for unrestricted use, exceedances of State leachability standards to potable groundwater or soil risk to recreational use of the Site, soil RAOs are necessary.

Response: Please refer to the response to specific comments no. 2 and 30 above.

31. p. 2-13, §2.3.2 *a) In addition to MCLs and more stringent State groundwater standards, non-zero MCLGs and federal risk-based standards need to be considered.*

Response: The Navy concurs that non-zero MCLGs will be considered and added to Table 2-6.

b) *The RAO for groundwater needs to be changed to: "Achieve federal and more stringent State drinking water standards. Until drinking water standards are achieved prevent groundwater use."*

Response: The RAO for Groundwater will be revised to the following: "Prevent exposure to groundwater that contains chemicals that exceed PRGs (Table 2-6).

32. p. 2-13, §2.4 *The volume of contaminated media calculated may need to be increased based on comments herein. For instance, the volume of soil that exceeds unrestricted use risk standards and the volume of groundwater that exceeds federal drinking water standards, federal risk-based standards, and more stringent state groundwater standards (unless background levels are higher) need to be calculated.*

Response: The Navy agrees to estimate an assumed quantity of groundwater based on the size of the Decision Unit since there is no plume that can be defined. This will be limited to risk-based PRGs since groundwater at the site does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards.

33. p. 3-1, §3.1 *As noted previously, this section may need to address soil, as well as groundwater.*

Response: Please refer to the response to specific comment no. 2, above.

34. p. 3-5, §3.3 *Table 3-1 lists the process options that were eliminated and Table 3-2 lists the process options that were retained for further evaluation. However, Section 3.3 mistakenly evaluates process options that were eliminated, including containment and removal options. Please delete the discussion of those options that were previously eliminated.*

Response: There is some confusion regarding the term "eliminated" and process by which RPOs are eliminated. Table 3-1 is an initial screening step which eliminates some technologies that would not apply for the site. Section 3.3 provides a further analysis of the technologies and RPOs that are retained as part of table 3-1. This secondary evaluation concludes that some of those do not make the final cut for selection as elements of remedial alternatives. Only those technologies that are not eliminated in both the initial screening in Table 3-1 and the detailed evaluation in text section 3.3 are presented in Table 3-2 and included in Remedial Alteratives. This process will be better clarified in the introductory paragraph of Section 3 and Subsection 3.3.

35. p. 3-5, §3.3.1 *The cost of statutorily required Five-Year Reviews need to be included in the discussion of the cost of the No Action Alternative.*

Response: This was discussed on 12/1/11 with regards to the FS at Gould Island. During that call, it was agreed that the text would be revised to cite that there would be a nominal cost to address the site in the facility five year review under the no action alternative, but an actual dollar amount would not be cited. The Navy will use the same approach in this document.

36. p. 3-6, ¶2 *Add a new last sentence: "The LUC RD drafted by the Navy is approved by EPA and the State and is enforceable under the FFA."*

Response: Concur, this statement will be added.

37. p. 3-6, ¶3 *In the second sentence after "ROD," add "and the FFA."*

Response: Concur, this will be added.

38. p. 3-6, ¶4 *In the fifth sentence, insert "the ROD and" before "the five-year."*

Response: The sentence will be revised as follows: "In accordance with the ROD, LUCs would be monitored and enforced as long as contaminants are present..."

39. p. 3-9, §3.3.2 *The conclusion for Monitored Natural Attenuation states that it is not retained because it is not expected to be a reliable solution for inorganic contaminants. Based on this assessment, MNA should have been eliminated, listed in Table 3-1, and not discussed in this evaluation of retained options. Please correct the text and table.*

Response: Please refer to the response to comment 34 above.

40. p. 3-11, §3.3.5 *a) Carry forward RPO's that will achieve drinking water standards at the Site.*

Response: Site groundwater does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards. The Navy has carried forward RPOs that meet the RAOs stated for the site. Refer also to the response to comment 31(b) above.

b) If it is Navy's intent to retain MNA for further evaluation as Table 3-1 suggests, then the discussion of MNA in Section 3.3.2 needs to be revised and Section 3.3.5 should be revised to clarify why MNA has not been retained as a representative process option.

Response: Please refer to the response to comment 34 above. MNA is retained from the intial screening (Table 3-1), and dismissed in the detailed analysis (text Section 3.3).

41. p. 3-14, ¶1 *Develop and present alternatives that will achieve drinking water standards on the Site.*

Response: Site groundwater does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards. The Navy has carried forward RPOs that meet the RAOs stated for the site. Refer also to the response to comment 31(b) above.

42. p. 4-1, §4.0 *This entire chapter needs to be revised to add a protective and ARAR compliant alternative that will meet groundwater cleanup standards.*

Response: Site groundwater does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards. The Navy has carried forward RPOs that meet the RAOs stated for the site. Refer also to the response to comment 31(b) above.

43. p. 4-1, §4.1.1 *The cost of statutorily required Five-Year Reviews need to be included in the discussion of the cost of the No Action Alternative.*

Response: This was discussed on 12/1/11 with regards to the FS at Gould Island. During that call, it was agreed that the text would be revised to cite that there would be a nominal cost to address the site in the facility five year review under the no action alternative, but an actual dollar amount would not be cited. The Navy will use the same approach in this document.

44. p. 4-2, §4.1.2, ¶¶ 1 &2While the assumption of annual monitoring from four monitoring wells is sufficient for the development of a cost estimate for the Feasibility Study, the actual number of wells and frequency of sampling will be established in the Long-Term Monitoring Plan.

Response: Concur, this will be clarified.

45. p. 4-2, §4.1.2, ¶3 *This paragraph implies that groundwater is expected to achieve PRGs over time. If that is the case, this would be a MNA alternative. The time required to achieve drinking water standards needs to be identified.*

Response: The statement will be revised as follows: "LUCs would be implemented to control exposure to COCs in groundwater and protect human health."

46. p. 4-2, §4.1.2, ¶4 *If off-site LUCs are required to prevent migration of contaminated groundwater, this needs to be clearly identified in the FS and the Proposed Plan so that abutters are made aware of the potential restrictions that may be required on their property. The text should discuss what form of LUC for off-site properties may be required (e.g., federal purchase of an easement to restrict groundwater use).*

Response: Because groundwater at the site does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards, there is no need for down-gradient (offsite) LUCs.

47. p. 4-3, §4.3.1 *As previously noted, Five-Year Reviews are included in No Action Alternatives.*

Response: This was discussed on 12/1/11 with regards to the FS at Gould Island. During that call, it was agreed that the text would be revised to cite that there would be a nominal cost to address the site in the facility five year review under the no action alternative, but an actual dollar amount would not be cited. The Navy will use the same approach in this document.

48. p. 4-4, §4.2.1, ¶1 *Under Compliance with ARARs, the tables referenced should be Tables 4-3 through 4-5. Change the second sentence to: "The alternative does not achieve chemical-specific ARARs and risk-based standards derived from chemical-specific TBCs."*

Response: Regarding the table references, the typos will be corrected. The second sentence will be revised as follows: "Although the site groundwater conditions already meet MCLs, non-zero MCLGs, and more stringent state groundwater standards, risk based PRGs are not met."

49. p. 4-4, ¶2 *Remove the first two sentences.*

Response: The sentences are correct, however, they are not necessary, and will be removed.

50. p. 4-4, ¶4 *As previously noted, Five-Year Reviews are included in No Action Alternatives.*

Response: It was agreed on 12/1/11 for Site 17 that the text would be revised to cite that there would be a nominal cost to address the site in the facility five year review under the no action alternative, but an actual dollar amount would not be cited. The Navy will use the same approach in this document.

51. p. 4-5, Table *Add Five-Year Review costs to the No Action Alternative.*

Response: It was agreed on 12/1/11 for Site 17 that the text would be revised to cite that there would be a nominal cost to address the site in the facility five year review under the no action alternative, but an actual dollar amount would not be cited. The Navy will use the same approach in this document.

52. p. 4-5, §4.2.2 *a) In the first paragraph, the alternative is not protective unless the alternative can achieve drinking water standards.*

Response: The text is correct as stated. The site groundwater conditions meet MCLs, non-zero MCLGs, and more stringent state groundwater standards.

b) Under Compliance with ARARs, the tables referenced should be Tables 4-6 through 4-8. Unless the alternative can achieve drinking water ARARs, the alternative does not meet the criterion.

Response: Regarding the table references, the typos will be corrected. The site groundwater conditions meet MCLs, non-zero MCLGs, and more stringent state groundwater standards. This alternative will also meet risk-based PRGs by eliminating the exposure.

c) Under Compliance with ARARs, the third paragraph states that Alternative GW2 complies with all location-specific ARARs, but Table 4-7 indicates there are no location-specific ARARs for Alternative GW2. Please correct.

Response: The latter statement is correct, and the passage will be revised accordingly.

d) Unless the alternative can achieve drinking water standards, the alternative is not effective or permanent.

Response: The site groundwater conditions meet MCLs, non-zero MCLGs, and more stringent state groundwater standards. This alternative will also meet risk-based PRGs by eliminating the exposure. The statements will be revised to note that the alternative is effective, but not permanent, without permanent application of the LUC.

53. p. 4-6, §4.3 *It is not possible to fully compare the alternatives until the outstanding issues identified herein are addressed. Most significantly, neither of the presented alternatives are protective or meet ARARs, so alternatives that meet the NCP criteria through achieving drinking water standards needs to be developed and analyzed.*

Response: The site groundwater conditions meet MCLs, non-zero MCLGs, and more stringent state groundwater standards. This alternative will also meet risk-based PRGs by eliminating the exposure. Additional alternatives are not identified as explained in Section 3 of the report.

54. p. 4-8, Table *a) Add Five-Year Review cost to the No Action Alternative.*

Response: Please refer to the response to SC2, above.

b) A Section 5.0 will be needed for soils unless the soils do not pose a risk from unrestricted use.

Response: Please refer to the response to SC2, above.

55. Table 2-1 *See Attached B with edits to the Table text.*

Response: See Attachment A2 for responses to ARAR Table comments provided in PDF on 12/6/11

Add to federal standards:

~~Health Advisories~~Drinking Water Health Advisory for Manganese, 2004 (EPA Office of Drinking Water)	*To be Considered*	*Health Advisories are estimates of risk from consumption of contaminated drinking water. They consider non-carcinogenic effects only. To be considered for contaminants in groundwater that may be used for drinking water where the standard is more conservative than either federal or state statutory or regulatory standards. The Health Advisory standard for manganese is 0.3 ppm.*	*Health advisory for manganese~~ies~~ will be used to evaluate the non-carcinogenic risk resulting from exposure to certain compounds.*

Response: Concur in part. The Manganese-specific health advisory will be added as a TBC, and will also be included in Table 2-6.

56. Table 2-2 *a) See Attachment B to EPA's December 6, 2011 letter with edits to the Table text.*

Response: See Attachment A2 for responses to ARAR Table comments provided in PDF on 12/6/11

Add to federal standards:

Floodplain Management and Protection of Wetlands, 44 C.F.R. Part 9	*Relevant and Appropriate*	*FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands.*	*Remedial alternatives conducted within the ~~500~~100-year coastal storm floodplain or within federal jurisdictional wetlands and aquatic habitats will be implemented in compliance with these standards. Public comment will be solicited in the Proposed Plan.~~The Navy will solicit public comment as part of the proposed plan on the measures taken through the remedial action to protect floodplain and wetland/aquatic habitat resources.~~*

Response: The activities and very low level of contamination do not meet the definition of "critical actions". Therefore, the 100-year floodplain should be used instead of the 500-year floodplain.

b) Add additional State standards:

Coastal Resources Management Rhode Island General Laws (RIGL46-23-1 *et seq.)*	Applicable	Sets standards for management and protection of coastal resources.	The site is located within a coastal zone management area; therefore, applicable coastal zone management requirements need to be addressed.

Response: Although a very small part of the site is in the Coastal Management Area (within 200 feet of the shoreline features), none of the activities will disturb the coastal management area. Per the CRMC figures, the wetlands are in RIDEM jurisdiction. Thus, this is not applicable.

c) If the remedial activity will be within State jurisdictional wetlands or within a 50 foot buffer zone to the wetlands, add:

~~Rhode Island Freshwater Wetlands~~Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act (RIGL 2-1-18 *et seq.*)	Applicable	Defines and establishes provisions for the protection of Rhode Island jurisdictional wetlands (including ~~a 50 foot buffer zone to wetland resource areas~~the area of land within 50 feet of the edge of the wetland). Actions required to prevent the undesirable drainage, excavation, filling, alteration, encroachment or any other form of disturbance or destruction to a wetland.	~~The site is located within a coastal zone management area; therefore, applicable coastal zone management requirements need to be addressed~~Part of the site is a freshwater wetland area and applicable freshwater wetland requirements will be met during the remedial action.

Response: The regulation will be included as revised above. The last column is revised to delete references to coastal zone and just refer to the fresh water wetlands, as the site is not within a coastal zone.

57 a. Table 2-3 *See Attachment B to EPA's December 6, 2011 with edits to the Table text.*

Response: See Attachment A2 for responses to ARAR Table comments provided in PDF on 12/6/11

Add to federal standards:

A) *CWA National Recommended Water Quality Criteria (NRWQC), 40 CFR §122.44)*	*Applicable*	*Federal NRWQC are health-based and ecologically based criteria developed for carcinogenic and non-carcinogenic compounds.*	*Water quality standards used to develop surface water quality monitoring standards for soil remedial alternatives at the Site.*
B) *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites, OSWER Directive 9200.4-17P (April 21, 1999)*	*To be Considered*	*EPA guidance regarding the use of monitored natural attenuation for the cleanup of contaminated soil and groundwater. In particular, a reasonable time frame is defined as achieving cleanup standards though monitored attenuation would be comparable to what could be achieved through active restoration.*	*The monitored natural attenuation component of any groundwater alternative will only meet these standards if natural attenuation will attain all groundwater cleanup standards within a reasonable time frame.*
C) *EPA Groundwater Protection Strategy (August 1984; NCP Preamble, Vol. 55, No. 46, March 8, 1990, 40 C.F.R. Part 300, p. 8733); Guidelines for Ground-Water Classification (November 1986)*	*To Be Considered*	*The Groundwater Protection Strategy provides a common reference for preserving clean groundwater and protecting the public health against the effects of past contamination. Guidelines for consistency in groundwater protection programs focus on the highest beneficial use of a groundwater aquifer.*	*Guidance standards will be met since groundwater ~~alternatives will be required to achieve~~meets federal drinking water standards, ~~federal risk-based~~non-zero MCLGs ~~standards, or~~and more stringent state groundwater standards, and risk based standards will be met through application of the LUC.*

Responses:

A) This should not be included since there is no soil remedial alternative provided, and it appears that it was added to address soil remedial alternatives.

B) This should not be included because MNA is not a component of the remedy.

C) This can be included, but with the modification on the Action to Be Taken" column shown in redline.

Tank Farm 5 (EPA)

57b. Add to State standards:

A) *Water Pollution Control – Pollutant Discharge Elimination System (PDES) Regulations of Rhode Island Pollutant Discharge Elimination System*	*Applicable*	*Contains applicable effluent monitoring requirements, and standards and special conditions for discharges.*	*Discharge of water from remedial activities (including dewatering soil) to surface waters will meet these standards.*
B) *Standards for Storm Water Management and Sediment Reduction Regulations of Rhode Island Pollutant Discharge Elimination System, Rules 15.01(g) and (i) and 31*	*Applicable*	*Identifies storm water management and sediment control requirements for remedial actions or corrective measures involving land-disturbance activities.*	*Storm water controls for areas of construction/maintenance will be implemented and maintained to meet these standards.*
C) *Drilling of Drinking Water Wells; Rules and Regulations Governing the Enforcement of Chapter 46-13.2 Relating to the Drilling of Drinking Water Wells (RIGL 46-13.2 et seq.) Rule 7.01*	*Applicable*	*Prohibits installing drinking water wells ~~in contaminated aquifers~~near pollution sources. ~~Establishes standards for decommissioning monitoring wells (Rule 9.03).~~*	*Under these standards drinking water wells are prohibited ~~within areas of contamination until groundwater cleanup standards are achieved~~near pollution sources. ~~and monitoring wells used will be properly decommissioned when no longer needed.~~*
D) *Well Standards State of Rhode Island Rules and Regulations for Groundwater Quality – Appendix 1~~I~~*	*Applicable*	*Identifies the standards and specification that must be followed for the installation or abandonment of monitoring wells.*	*Applies to the abandonment of existing monitoring wells.*

Responses:

A) This should not be included since there is no discharge of water associated with any of the remedies.

B) The area of disturbance is much less than one acre, so storm water regulations are not pertinent. However, the RI Erosion and Sediment Control manual will be cited.

C) Concur with the first part (Drinking water wells. The second part should not be included since Monitoring wells are covered in the Groundwater Quality Regulation (D).

D) This can be included though through a font issue, the Appendix is number 1.

58. Table 2-4 *a) Identify soil PRGs for any contaminants that exceed unrestricted use standards.*

Response: Please refer to the response to SC2. Soil is not selected as a media of concern.

b) Since risks from manganese were found from exposure to subsurface soil via inhalation for construction worker, a PRG is needed for subsurface soil. Manganese is detected in subsurface soil at levels exceeding the selected PRG of 1030 mg/kg for subsurface soil, which is also background subsurface soil. EPA disagrees that there is an issue with the maximum manganese detected in surface soil below the PRG since manganese risk from surface soil is acceptable and it is irrelevant to compare levels in surface soil to the subsurface soil PRG.

Response: Please refer to the response to SC2. Soil is not selected as a media of concern.

59. Table 2-5 *Identify soil PRGs for any contaminants that exceed unrestricted use standards.*

Response: Please refer to the response to SC2. Soil is not selected as a media of concern.

60. Table 2-6 & 2-7 *Identify groundwater PRGs for any contaminants that exceed federal MCLs, non-zero MCLGs, federal risk-base standards, or more stringent State groundwater standards (unless the contaminant levels are less than background).*

Response: Non-zero MCLGs will be added to this table. State standards are already included and federal risk-based standards are already included.

61. Table 2-8 *Please delete the key at the bottom of the table as it is not relevant to the information presented.*

Response: Concur. This change will be made.

62. Table 3-1 *a) Carry through the process options that can achieve drinking water standards.*

Response: Site groundwater does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards. The Navy has carried forward RPOs that meet the RAOs stated for the site. Refer also to the response to comment 31(b) above.

b) On page 2 of 6, the Hydraulic Barrier process option is shown as "eliminated" but was retained in the evaluation of process options and discussed in Section 3.3.3. Please correct.

Response: The text describes hydraulic containment, not hydraulic barriers. There is no discrepancy, and no change will be made.

c) The Extraction Wells process option is shown as "eliminated" but was retained in the evaluation of process options and discussed in Section 3.3.4. Please correct.

Response: The table will be revised to include evaluation of extraction wells as an RPO.

63. Table 3-2 *Carry through the process options that can achieve drinking water standards.*

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Response: Site groundwater does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards. The Navy has carried forward RPOs that meet the RAOs stated for the site. Refer also to the response to comment 31(b) above.

Include tables for soil.

Response: Please refer to the response to SC2. Soil is not selected as a media of concern.

64. Table 4-1 *a) Include alternatives that can achieve drinking water standards.*

Response: Please refer to the response to Comment 40.

b) *The No Action alternative includes statutorily required Five-Year Reviews.*

Response: Refer to the response to Comment 47.

Table 4-2. c) *As noted previously, it is not possible to fully compare the alternatives until the outstanding issues identified herein are addressed (e.g., none of the alternatives presented meet NCP criteria)*.

Response: Site groundwater does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards. The Navy has carried forward RPOs that meet the RAOs stated for the site. Refer also to the response to comment 31(b) above.

d) *Page 1 of 2: Alternative 2 does not meet the Protectiveness, ARARs, or Effectiveness criteria.*

Response: Site groundwater does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards. The Navy has carried forward RPOs that meet the RAOs stated for the site. Refer also to the response to comment 31(b) above.

e) *There is no reduction of toxicity, mobility, or volume through active treatment, therefore Alternative 2 should be rated as "None" for all four line items in this category. Please correct.*

Response: Concur, this will be revised.

65. Table 4-2 *Page 2 of 2: It is not evident that Alternative 2 can ever meet the RAO of achieving drinking water standards. Please revise the table accordingly*

Response: Site groundwater already meets drinking water standards because it does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards. The Navy has carried forward RPOs that meet the RAOs stated for the site. The LUC will address the risk based PRGs that are below these standards. Refer also to the response to comment 31(b) above.

66. Table 4-3 *Please include all of the federal drinking water standards (MCLGs), federal risk-based standards (health advisories) and more stringent State groundwater standards (RI groundwater remediation standards) identified in Table 2-1. The No Action alternative does not meet any of these standards.*

Response: Table 4-3 will be revised to be consistent with Table 2-1, revised as described in this response summary.

67. Table 4-6 *a) Please include all of the federal drinking water standards (MCLGs), federal risk-based standards (health advisories) and more stringent State groundwater standards (RI groundwater remediation standards) identified in Table 2-1.*

Response Table 4-6 will be revised to be consistent with Table 2-1, revised as described in this response summary.

b) The "Action to be Taken" text for the Safe Drinking Water Act and RI Remediation Regulations states that drinking water standards will be met over time, but the text states that MNR cannot achieve groundwater cleanup standards. If true, the LUC-only alternative is neither protective nor meets ARARs so the text for all of the citations should state that Alternative 2 does not meet any of these standards.

Response: Table 4-6 will be revised to be consistent with Table 2-1, revised as described in this response summary.

68. Table 4-7 *Add the location-specific ARARs identified in the comments to Table 2-2 (installation, sampling and O&M of monitoring wells in or adjacent to wetlands/floodplain, as well as federal and State coastal zone standards).*

Response: Table 4-7 will be revised to be consistent with Table 2-2, revised as described in this response summary.

69. Table 4-8 *Add federal and State Action-specific ARARs identified in Table 2-3 that pertain to the LUC-only alternative (monitoring and LUCs).*

Add ARARS tables for alternatives that will achieve drinking water standards.

Add ARARS tables for soil alternatives (if soil poses a risk for unrestricted use).

Response: Table 4-8 will be revised to be consistent with Table 2-3, revised as described in this response summary.

70. App. B, Table 1 *Delete this table because it is for Tank Farm 4.*

Response: Appendix B was prepared for both Tank Farms 4 and 5 because the risk assessment was prepared for both Tank Farms 4 and 5. The information provided in that document is clearly separated and labeled, as pertinent to each site, and revision is not required.

71. App. B, Table 6-38 *Change this to Table 1 and renumber the remaining tables as appropriate.*

Response: Please refer to the response to comment 70 above.

72. App. B, Tables 3 to 7 *Delete the reference to Tank Farm 4.*

Response: Please refer to the response to comment 70 above.

73. App. B, Tables 4 to7 *These tables should include the toxicity data that were used to calculate PRGs for iron and cobalt, as well as arsenic and manganese.*

Response: Iron and cobalt will be added to these tables.

74. App. B, Table 8 *Please delete this table as it is not relevant for Tank Farm 5.*

Response: Please refer to the response to comment 70 above.

75. App. B, Table 11 *Delete this table as it is for Tank Farm 4.*

Response: Please refer to the response to comment 70 above.

76. App. B, Attachment A Please delete references to Tank Farm 4 and ensure that the exposure concentrations used are pertinent only to Tank Farm 5. Delete references to chemicals that are not relevant to Tank Farm 5.

Response: Please refer to the response to comment 70 above.

77. App. B, Attachment B Delete any calculations and references to chemicals that are not relevant to Tank Farm 5.

Response: Please refer to the response to comment 70 above.

78. App. B, Attachment C Delete any calculations and references to chemicals that are not relevant to Tank Farm 5.

Response: Please refer to the response to comment 70 above.

79. Appendix C *For the No Action alternative, because unrestricted use of groundwater is not allowed, Five-Year Reviews are required.*

Response: It was agreed on 12/1/11 for Site 17 that the text would be revised to cite that there would be a nominal cost to address the site in the facility five year review under the no action alternative, but an actual dollar amount would not be cited. The Navy will use the same approach in this document.

ATTACHMENT A-2
RESPONSE TO COMMENTS FROM USEPA ON PDF OF SECTION 2 ARAR TABLES
Draft Feasibility Study
DU 5-1 at Site 13, Tank Farm 5, NAVSTA Newport
Comments Dated December 22, 2011

Tables 2-1 through 2-3 have been revised to be consistent with the Section 4 tables and the December 6, 2011 comment letter from the EPA. Several of the comments were editorial and were incorporated. The tables also included several regulations that have been deleted because they are not pertinent to the site or any of the alternatives, as noted below.

Table 2-1

The following regulations were deleted:

Approaches for Addressing Dioxins in Soil at CERCLA and RCRA Sites

Rhode Island Oil Contaminated Soil Policy

Rhode Island Air Quality Regulations, RIGL 23-23

Table 2-2

The following regulations were deleted:

Floodplain Management 40 CFR 6.302(b) Appendix A

Protection of Wetlands 40 CFR Part 6.302(a), Appendix A

Clean Water Act – Section 404(b)(1)

Fish and Wildlife Coordination Act (16 USC 661)

Table 2-3

The following regulations were deleted:

National Pollution Discharge Elimination System (NPDES) (40 C.F.R. §§ 122-125, 131)

National Emission Standards for Hazardous Air Pollutants (NESHAPs)

Rhode Island Water Quality Regulations

Rhode Island Clean Air Act - Air Toxics

Rhode Island Clean Air Act Air – Visible Emissions

ATTACHMENT B-1
RESPONSE TO COMMENTS FROM RIDEM
Draft Feasibility Study
DU 5-1 at Site 13, Tank Farm 5, NAVSTA Newport
Comments Dated December 13, 2011

1. *Page ES-1, Executive Summary; 5th paragraph, 2nd sentence.*

"The screening ecological risk assessment (ERA)(Tetra Tech, 2011a) did not identify the potential for ecological risks to the terrestrial and aquatic receptors exposed to chemicals associated with DU4-1."

Please replace DU4-1 with DU5-1.

Response: Concur, the typo will be corrected.

As you are aware, RIDEM had several concerns with the methods used in this screening ecological risk assessment, and requested that the Navy complete the full baseline ecological risk assessment for both Tank Farms 4 & 5. These concerns are currently under discussion. As such, the submitted comments do not address ecological concerns or ecological areas which may require remediation. Comments on these potential areas of concern will be submitted at a later date.

Response: The Navy does not agree that a baseline ecological risk assessment is appropriate for this site as was discussed during the RPM meeting held November 16, 2011, and the USEPA is supportive of the Navy's position on this matter. However, all parties have agreed to hold a separate discussion on this subject, and the results of that discussion will be documented separately.

2. *Page ES-2, Executive Summary; 2nd paragraph, 2nd sentence.*

"Analytical results from current soil and groundwater samples were compared with these remediation goals."

Please note that all existing data for this site, including older data obtained prior to the Data Gaps Assessment, must be included in this Feasibility Study to ensure that all areas that may require remediation, land use controls, etc. are being addressed. The remedial alternatives proposed in this Feasibility Study are solely based on the data obtained during the Data Gaps Assessment. Please revise this FS to include all historical investigations.

Response: As provided on page 5 of the March 2010 Final Sampling and Analysis Plan, much of the data from previous investigations were not considered usable for a risk assessment. The Team agreed to collect new data to be reflective of current conditions at this site. However, to address more recent concerns about the usability of historic data, a separate comparison of old data (pre-2010) has been provided to the reviewers in response to comments associated with the draft final data gaps assessment report. Further discussion will be held in regards to that comparison, and resolutions will be documented separately.

3. Page ES-2, Executive Summary; 5th bullet, last sentence.

"…soil was eliminated as a media of concern for the site."

Please be advised that all areas exceeding RIDEM's Residential Direct Exposure and Leachability Criteria, including TPH, must be identified and remedial alternatives must be proposed in this FS. Concentrations above residential criteria are proposed to be left in place; therefore, soil must not be eliminated as a media of concern for the site. Please revise this FS to include an evaluation of remedial alternatives for soil.

Response: Soil should not be added as a media of concern for DU5-1. Risk measured using the CTE analysis did not exceed the EPA cancer or non-cancer risk thresholds for any receptor. Under the RME analysis, risks exceeded the EPA thresholds for residential use and construction worker exposure to manganese in soil. Additionally, only through the presence of arsenic, does the RME cumulative risk exceed the EPA Cancer Risk threshold (Table 6-34). There is no indication that these constituents that pose this marginal risk are related to the CERCLA releases at the site.

It is acceptable at this step to use risk management to consider use of the CTE risk instead of the RME, consider background conditions, and conclude that a remedy to reduce or prevent exposure to a background condition is not appropriate.

Regarding TPH, petroleum is not a CERCLA hazardous substance, pollutant or contaminant. CERCLA cleanups address "hazardous substances, pollutants or contaminants," which have definitions that explicitly exclude petroleum [CERCLA sec 101(14) & 101(3)]. RIDEM Remediation Regulation DECs may be CERCLA ARARs only if they pertain to CERCLA "hazardous substances, pollutants or contaminants" being addressed by the CERCLA cleanup. [CERCLA sec 121(d)]. Other state regulated contaminants, such as TPH, would be addressed outside CERCLA

If TPH is "co-located" with a CERCLA release that requires remedial action, the Navy may choose to address the TPH contamination concurrent with the CERCLA action. However, the action to address the TPH would follow state Petroleum remediation requirements, and would be accomplished outside the CERCLA process.

If TPH is "co-mingled" with a CERCLA hazardous substance, pollutant or contaminant that requires remedial action, the Navy will address the TPH contamination and the CERCLA contaminants together in a single cleanup. However, risk from the petroleum will be assessed on its individual hydrocarbons constituents (i.e. polycyclic aromatic hydrocarbons). The Navy would include state Petroleum remediation criteria as PRGs for the implemented action. They would not be ARARs for the CERCLA cleanup.

4. Page ES-2, Executive Summary; 3rd paragraph, 3rd sentence.

"…due to the low concentrations of COCs present, only two remedial alternatives were developed for detailed analysis."

This report limits groundwater alternatives to monitoring, containment and removal with only monitoring being retained. Other groundwater treatment alternatives, such as in situ treatment technologies, should also be evaluated. This technology is a viable option for restoring the geochemistry of the aquifer in areas where historical releases have occurred within the tank farm. Please modify the report accordingly.

Response: Site groundwater does not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards. The Navy has carried forward RPOs that meet RAOs stated for the site.

Treatment technologies are evaluated in Section 3 and screened out based on the lack of a groundwater plume that can be captured and managed. Only three metals are identified as risk based PRGs, and these only slightly exceed the PRGs. Releases or activities at the site could, in theory, created reducing conditions that might result in elevated metals in groundwater. However, no plume actually has been identified and because a plume has not been defined on which to focus treatment, the screening process in Section 3 correctly excludes treatment of groundwater with low concentrations of metals.

5. Page 1-1, Introduction; 4th paragraph, last sentence.

"It is this DGA report that provides the basis of this FS."

Please see comment #2.

Response: Please refer to the response to comment 3 above. Soil is not identified as a media of concern.

6. Page 1-2, Objectives and Approach; 1st paragraph, last sentence.

"The Site COCs, identified in the DGA report include manganese in soil, and arsenic, cobalt, iron and manganese in groundwater."

Once an unacceptable CERCLA risk is identified at a site, the remedial alternatives presented in the FS must meet ARARs, including RIDEM's Remediation Regulations. Please ensure that this FS addresses all contaminants exceeding RIDEM's Residential Direct Exposure, Leachability and Groundwater Criteria, including contaminants that were not originally risk-drivers (COCs). Please develop remedial alternatives to address all of these exceedances at this Site.

Response: Decisions as to whether risk is present at the site have been made using the EPA cancer risk range as stated in CERCLA and the following EPA guidance documents:

USEPA, 1991. Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions. Washington DC. OSWER Directive 9355.0-30

In accordance with these documents, if total site risk exceeds the ILCR range of 10-4 to 10-6, a remedial action is likely warranted, depending on site-specific conditions. As stated in the EPA guidance document:

"Where the cumulative carcinogenic site risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10-4 and the non-carcinogenic hazard quotient is less than 1, action generally is not warranted unless there are adverse environmental impacts."

Upon identification of risk based COCs, additional CERCLA hazardous substances, pollutants or contaminants, while not posing unacceptable risk, will be included as COCs if detected at concentrations exceeding RIDEM DECs or leachability standards. In the FS, these criteria will be used in the development of PRGs for all COCs.

7. Page 1-4, Section 1.4, Tank Farm 5 Background Information; last paragraph.

"…confirmation sampling for CERCLA contaminants was not conducted during this removal action."

This statement is not correct. Please replace with *"Limited confirmation sampling for CERCLA contaminants was conducted during this removal action."*

Response: The statement will be corrected as described above. For clarity, the following will be added to the end of the suggested sentence "however; analytical results were not sufficient for performing a risk assessment."

8. Page 1-6, Section 1.4.1, 2004-2007; 1st sentence.

"In October 2004, the Navy began field work on a Site Investigation and removal action to fully characterize the entire Site."

Please remove the underlined text from the above statement as the Navy did not fully characterize the entire Site and did not propose to do so during this investigation.

Response: The statement will be struck. There were three purposes of the investigation/ removal action:

1) to resolve conflicting information about the practice of burying sludge on site
2) investigate/ remediate process piping and adjacent soil that had not been previously evaluated, and
3) investigate/ remediate review areas (TtEC 6/19/07).

This will be clarified.

9. Page 1-6, Section 1.4.1, 2004-2007; Bullet.

Please include a more thorough discussion of the investigation and removal action performed at the former burn chamber/OWS, including a description of the size of the area backfilled in which only limited confirmation samples were taken.

Response: A more thorough description will be provided, taken from available documentation from previously published reports.

10. *Page 1-12, Section 1.8, Nature and Extent of Contamination; whole section.*

RIDEM does not concur with the background comparison in this report. Please be advised that RIDEM, to date, has not accepted the "Basewide Background Study Report". Contaminants cannot be screened out based on background if there is not an EPA and RIDEM approved background study. The background study must meet the requirements of RIDEM's Remediation Regulations. It is suggested that a site-specific background study be conducted for these sites.

Response: The NAVSTA Newport Basewide Background Study was developed and completed following USEPA guidance (*EPA/540/R-01/003. OSWER 9285.7-41) and the* Navy Policy on the Use of Background Chemical Levels (January 2004). The NAVSTA Newport Basewide Background Study was finalized after review and comment in 2008, and RIDEM offered no comments and did not dispute it at that time. This document is being used, where applicable, to evaluate background soil conditions at the IR sites at NAVSTA Newport. Please also see the response to Comment #16 below.

11. *Page 1-14, Section 1.8, Nature and Extent of Contamination; 3rd & 4th paragraphs.*

Regarding the RSLs for tap water, please state in this section whether they are based on federal MCLGs, federal risk-based standards or RIDEM groundwater standards.

Response: RSLs are screening values published by EPA that are risk based values. They are based on toxicological literature, and not based on regulatory criteria. This will be clarified in the revised document.

12. Page 1-14, Section 1.9, Fate and Transport Characteristics of Site Contaminants; 1st paragraph.

Please indicate if lead was detected in surface or subsurface soil at levels exceeding federal RSLs or RIDEM RDEC or Leachability Criteria. Be advised that RIDEM lead standards (Res.-150 mg/kg, I/C-500 mg/kg) are more stringent than EPA's (Res.-400mg/kg, I/C-800 mg/kg).

Response: Lead does not exceed RIDEM RDEC: The maximum concentration detected in the data gaps assessment was 33 mg/kg at DU5-1.

13. *Page 1-14, Section 1.9, Fate and Transport Characteristics of Site Contaminants; 2nd paragraph.*

Please include a comparison of detected groundwater concentrations to RIDEM Groundwater Criteria in this paragraph.

Response: All groundwater concentrations measured are below state groundwater criteria. This comparison is provided in Table 6-15 of the Data Gaps Report.

14. *Page 1-17, Section 1.10, Soil Risks; 2nd paragraph.*

"…PRGs were not calculated for residential or industrial exposure to soil".

Refer to comments 3 & 6. Please develop PRGs for soil for contaminants exceeding RIDEM's Residential Direct Exposure, Leachability and Groundwater Criteria, including contaminants that were not originally risk-drivers (COCs), and revise this FS accordingly.

Response: Selection of the PRGs is conducted in Section 2 of the FS report. The last sentence on page 1-17 cited above is erroneous and will be struck. Please refer also to the response to comment 3, above.

15. *Page 1-17, Section 1.10, Soil Risks; whole section.*

Please ensure that any exposure routes, contaminants or areas that exceed RIDEM's risk levels of 10^{-6} for individual risk and 10^{-5} for cumulative risk are retained in this FS.

Response: Please refer to the response to comment 6 above.

16. Page 1-18, Section 1.10, Soil Risks; 2nd paragraph.

"It was found that the arsenic concentrations at the Site are within the background concentrations of one of the soil types represented, and above the background concentrations of the other. This uncertainty suggests risk management be applied before directing remedial actions to address this constituent."

Please be advised that RIDEM did not approve the Basewide Background Study. Please provide a figure, in the response to comments, showing the soil types on and adjacent to Tank Farm 5, as this will have a bearing on which portions of the background study can be used to determine background.

Response: The NAVSTA Newport Basewide Background Study was developed and completed following USEPA guidance (*EPA/540/R-01/003. OSWER 9285.7-41) and the* Navy Policy on the Use of Background Chemical Levels (January 2004). The NAVSTA Newport Basewide Background Study was finalized after review and comment in 2008, and RIDEM offered no comments and did not dispute it at that time. This document is being used, where applicable, to evaluate background soil conditions at the IR sites at NAVSTA Newport.

Based on this background report, the requested maps have been prepared for the revised data gaps assessment report and are attached (Attachment B-3. A write up regarding the evaluation of soil types will be provided in that report and summarized in the revised FS. Soil conservation service (SCS) maps were used to determine the soil types at the decision units. The portions of DU5-1 that is mapped by SCS as containing UD (fill) were correlated to actual soil types by evaluation of the surrounding soil types and the historical and current landforms.

17. *Page 1-18, Section 1.10, Groundwater Risks; whole section.*

Please ensure that any exposure routes, contaminants or areas that exceed RIDEM's risk levels of 10^{-6} for individual risk and 10^{-5} for cumulative risk are retained in this FS.

Response: Please refer to the response to comment 6 above.

18. *Page 1-19, Section 1.10, Sediment/Surface Water Risks; whole section.*

This section notes that the concentrations in these media are within EPA risk range. Please be advised that while a contaminant may fall within the 10^{-4}–10^{-6} EPA risk range, remedial action may still be required. Please report the associated site risk values for each exposure media. This section should also note whether the concentration for contaminants in these or any other media falls with RIDEM's risk range.

Response: Please refer to the response to comment 6 above.

19. *Page 1-19, Section 1.11, Ecological Risk Assessment; whole section.*

Please see comment #1.

Response: The data do not merit a full baseline ecological risk assessment. Please refer to the response to comment 1 above.

20. *Page 1-20, Section 1.11, Ecological Risk Assessment; 3rd paragraph.*

This paragraph discusses soil boring SB-934 which is located on Tank Farm 4, not 5. Please remove this paragraph or revise as necessary.

Response: Concur, the paragraph will be revised to reflect the data from the DU5-1 area only.

21. *Page 2-3, Section 2.1.4, Identification of Applicable or Relevant and Appropriate Requirements; whole section.*

Please ensure that all of the State ARARs listed on the attached table are included in the list of ARARs in Tables 2-1, 2-2 and 2-3 of this Feasibility Study.

Response: The Navy has reviewed the ARARs table provided by RIDEM. We have incorporated some of RIDEM's suggested ARARs (some with edits). We have not incorporated the others because (1) they are not pertinent (i.e., neither "applicable" nor "relevant & appropriate") to this cleanup, or (2) they are much too broadly cited in their current form to qualify as an ARAR, as more fully discussed below.

ARARs consist of two sets of requirements, those that are “applicable” and those that are “relevant and appropriate.” CERCLA Section 121(d)(2) specifies that remedial actions shall attain any standard, requirement, criteria, or limitation under federal environmental law or any more stringent promulgated standard, requirement, criteria or limitation under state environmental or facility siting law that is legally "applicable" to the hazardous substance (or pollutant or contaminant) concerned or is "relevant and appropriate" under the circumstances of the release.

In short, ARARs are enforceable substantive standards, requirements, criteria or limitations <u>taken from</u> federal or state environmental statutes and regulations that guide in the selection of cleanup levels and implementation of the CERCLA response action.

In the state ARARs table provided by RIDEM for Tank Farm 5, for many proposed ARARs the state has listed entire regulations or entire sections of its regulations. Navy’s position is that in many cases these citations are too broad to serve as ARARs. In accordance with the requirements of CERCLA and the

National Contingency Plan (NCP), a state must identify specific provisions within its regulations that are both (1) more stringent than federal requirements and (2) are either applicable or relevant and appropriate to the actual circumstances at the Tank Farm 5 site. According to EPA in the preamble to the 1990 revisions to the NCP:

> [T]he language of CERCLA Section 121 (d)(2)(A) makes clear, and Program expediency necessitates, that the specific requirements that are applicable or relevant and appropriate to a particular site be identified. It is *not sufficient* to provide a general "laundry" list of statutes and regulations that might be ARARs for a particular site. The state, and EPA if it is the support agency, must instead provide a list of requirements with specific citations to the section of law identified as a potential ARAR, and a brief explanation of why that requirement is considered to be applicable or relevant and appropriate to the site. [Emphasis added]

The NCP requires that when identifying a requirement as an ARAR, the lead and support agencies "shall identify their specific requirements" and shall include a citation to the statute or regulation from which the requirement is derived. [40 C.F.R. §300.400(g)(5), emphasis added]. Typically, the regulation is not "the specific requirement" – rather, a requirement is found within a regulation.

For example, the state includes in its table the "Rhode Island Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations)." Under the Media column, RIDEM asserts that this "ARAR" is pertinent for hazardous materials, soil, groundwater, surface water, and sediments. It purports to offer the entire regulation as the enforceable ARAR for all these media in this cleanup, without further explanation. There is much within this regulation that is either not pertinent to this cleanup or is inapplicable in a CERCLA context. It is Navy's position that, if pertinent to this cleanup, ARARs based on requirements contained in this regulation should be enumerated specifically, focusing on identified standards, requirements, criteria, or limitations within the regulation that have relevance to this cleanup.

In light of the above, rather than citing to RIDEMs various regulations in full, it is the Navy's position that RIDEM needs to identify more specific citations to exact regulatory provisions within state regulations which represent either applicable or relevant and appropriate (1) state versions of a federally-delegated/authorized environmental requirement, or (2) more stringent standards, requirements, criteria or limitations promulgated under state environmental or facility siting laws. Doing so comports with the requirements of the FFA, CERCLA § 121 (d)(2)(A)(ii) , the NCP, and OSWER Directive 9234.2-O5/FS, *CERCLA Compliance with Other Laws Manual (CERCLA Compliance with State Requirements).* All parties

agreed to identify ARARs in accordance with these requirements at the conclusion of the recent dispute resolution.
Specific comments to the RIDEM Suggested ARAR Table are embedded on Attachment B-2.

22. *Page 2-4, Section 2.1.4.1, Soil; 1st paragraph, 2nd sentence.*

Please be advised that the State of Rhode Island Oil Contaminated Soil Policy (RIDEM, 1991) must be listed in the ARAR Tables and retained in this FS.

Response: See the responses to Comments 3 and 21. This is not an ARAR under CERCLA.

23. *Page 2-4, Section 2.1.4.1, Groundwater; 1st paragraph.*

Please be advised that groundwater must also meet any more stringent State groundwater standards.

Response: Concur, this statement will be added.

24. *Page 2-5, Section 2.2, Development of Preliminary Remediation Goals (PRGs); 2nd paragraph.*

"The screening level ERA did not identify unacceptable risks to ecological receptors; therefore, COC-selection and PRG-development were based on human health risks only."

Please see comment #1.

Response: The data do not merit a full baseline ecological risk assessment. Please refer to the response to comment 1.

25. *Page 2-6, Section 2.2.2, Derivation of Human Health Risk-Based Preliminary Remediation Goals; 3rd paragraph.*

Please be advised that under RIDEM's Remediation Regulations, recreational standards are the same as residential standards, except in certain circumstances. Please refer to the definition of "Recreational Facility for Public Use" in Section 3.62 of the revised regulations (Nov 2011).

Response: Comment noted.

26. *Page 2-8, Section 2.2.3, Applicable or Relevant and Appropriate Requirements and To-Be-Considered Guidance for PRGs; 2nd paragraph.*

Please be advised that this Site's groundwater classification is GA/NA; therefore, RIDEM's GA Leachability Criteria shall be included as ARARs for this Site.

Response: Comment noted. This is already stated in the third sentence of the second paragraph of Section 2.2.3.

27. *Page 2-8, Section 2.2.3, Applicable or Relevant and Appropriate Requirements and To-Be-Considered Guidance for PRGs; 3rd paragraph.*

Please be advised that the State's groundwater standards must be retained as ARARs for this Site. Please retain this paragraph in this FS.

Response: The discussion presented in this paragraph will be revised to state that ARARs for groundwater include MCLs, non-zero MCLGs, and more stringent state groundwater standards.

28. *Page 2-8, Section 2.2.4, Background Concentrations; whole section.*

RIDEM does not concur with the background comparison in this report. Please be advised that RIDEM, to date, has not accepted the "Basewide Background Study Report".

Response: The NAVSTA Newport Basewide Background Study was developed and completed following USEPA guidance (*EPA/540/R-01/003. OSWER 9285.7-41) and the* Navy Policy on the Use of Background Chemical Levels (January 2004). The NAVSTA Newport Basewide Background Study was finalized in 2008. This document was not disputed and is being used, where applicable, to evaluate background soil conditions at the IR sites at NAVSTA Newport.

29. Page 2-10, Section 2.2.5.2, Risk Management for Groundwater, Cobalt

"…cobalt in groundwater may be ubiquitous in the area since a source has not been identified, is likely a result of naturally occurring cobalt in the bedrock and bedrock derived soil".

Cobalt concentrations in groundwater could be present due to the use of No. 6 Fuel Oil at these tank farms. Please state this in this section of the FS.

Response: The lack of PAHs in the location indicates a lack of fuel contamination to which the cobalt could be attributed. Furthermore, concentrations of cobalt in groundwater is low (0.4 ug/L to 19 ug/L ug/L), and is typical of cobalt concentrations in groundwater in populated areas which is cited at 1 to 10 ug/L by the World Health Organization (WHO, CICAD 69, 2006). There is no evidence that cobalt is present as a result of the storage of no. 6 oil at the site. The only revision proposed to this section is to add the WHO reference provided above to give the reader perspective on the concentrations of cobalt detected in groundwater at the site.

30. *Page 2-12, Section 2.2.5.2, Risk Management for Groundwater; 2nd paragraph.*

Concentrations of manganese detected at this Site present an unacceptable risk, as the CTE risk to the child resident is HQ=2.3 via future potable use of groundwater. The Navy must develop remedial alternatives to address manganese in groundwater in this FS.

Response: An RAO is included for Groundwater due to the presence of constituents above risk-based PRGs, which include manganese. Remedial alternatives are developed to address this risk accordingly. No changes are required based on this comment.

31. *Page 2-13, Section 2.3.1, Remedial Action Objectives for Soil; 1st paragraph.*

"…the HI associated with inhalation of subsurface soil by future construction workers exceeds 1."

Please develop a remedial action objective (RAO) to protect construction workers from exposure to manganese in soil dust and include this RAO in this FS.

Response: Soil is not retained as a media of concern for the site. Please refer to the response to comment no. 3, above.

For construction workers, the RME HI is 3, and CTE HI is <1. Both the RME and CTE risk use an EPC=1,053 mg/kg for manganese, which is a 95% UCL of the available data. The Background values for manganese range from 85 – 1,520 mg/kg.

32. *Page 2-15, Section 2.3.1, Remedial Action Objectives for Soil; 2nd paragraph.*

"Currently, industrial use with restricted recreational use is expected to be the most likely future land use for this site."

Please be advised that industrial/commercial use of the Site will require restrictions enforceable by RIDEM, including an ELUR, which must be clearly defined in the ROD. If an ELUR is placed on the Site, all surface soil that does not meet industrial/commercial criteria will need to be addressed by a remedial alternative(s) that may involve capping, removal, treatment, etc. Regarding recreational use, please see Section 3.62, "Recreational Facility for Public Use" of the RIDEM Remediation Regulations (revised Nov 2011).

Response: If necessary, the Navy will implement land use controls under CERCLA to restrict specific exposure scenarios for which the site conditions pose unacceptable risk. Specifically, land use controls may be implemented as part of the remedial action to prevent residential use of the site.

Note that Navy is unable to impose an ELUR on Federally owned property. Federal agencies are not authorized to record deed restrictions, restrictive covenants, etc. on the deeds to federal property that are still in active federal use. Only GSA has the authority to take such an action, as such restrictions are considered a "disposal" of an interest in federal property. Instead, Navy captures all necessary engineering controls and institutional controls ("land use controls")

in a Land Use Control Remedial Design (LUC RD), which is an enforceable primary document under the FFA. If federal property including this site is proposed for transfer out of federal control in the future, and if restrictions are considered still necessary at that time, Navy will coordinate appropriate deed restriction language with RIDEM and EPA as part of the transfer documentation.

33. *Page 2-13, Section 2.4, Estimation of Areas and Volumes; whole section.*

Remedial alternatives must be developed for soil in this FS and shall include alternatives for addressing all soil at the Site exceeding residential and commercial/industrial criteria. Therefore, the Navy must calculate the volumes of soil for all areas that exceed PRGs and present this in this section of this FS.

Response: Please refer to the response to comment no. 3. Soil is not selected as a media of concern for the site.

34. *Page 3-5, Section 3.3, Evaluation of Retained Groundwater Process Options and Technologies*

Please insert a new section which evaluates soil process options and technologies. How will the Navy address soil proposed to be left in place with concentrations exceeding residential criteria? Please evaluate these options include soil alternatives which consider capping, covering and/or treatment of soils in areas exceeding EPA and/or RIDEM criteria.

Response: Please refer to the response to comment no. 3. Soil is not selected as a media of concern for the site.

35. *Page 3-6, Section 3.3.2, Land Use Controls; 4th paragraph.*

The Land Use Control Remedial Design (LUC RD) must be approved by EPA and RIDEM and is enforceable under the FFA. Please add this language to this paragraph in this FS.

Response: The report will be revised to state: "The LUC RD drafted by the Navy is approved by EPA and the State and is enforceable under the FFA."

36. *Page 4-2, Section 4.1.2, Component 1: Monitoring; whole section.*

This section includes a discussion of monitored natural attenuation of metals in groundwater. RIDEM concurs with the Navy's conclusion that MNA is not applicable for metals. It is recommended that alternatives to address the source of the metals, such as actions to change the oxidation state of the soils, etc be evaluated.

Response: Please refer to the response to comment no. 3. Soil is not selected as a media of concern for the site.

37. *Page 4-2, Section 4.1.2, Component 1: Monitoring; 3rd paragraph.*

Please be advised that long-term monitoring may include the establishment of new wells based on the requirements of the long-term monitoring plan.

Response: A statement will be added that existing or new wells will be utilized for LTM.

38. *Tables 2-1, 2-2 & 2-3, Potential ARARs and TBCs*

Please ensure that all of the State ARARs listed on the attached table are included in the list of ARARs in Tables 2-1, 2-2 and 2-3 of this Feasibility Study.

Response: Please refer to the response to comment 21 above

39. *Table 2-4, Preliminary Remediation Goals – Soil*

Preliminary Remediation Goals shall be developed for all contaminants exceeding RIDEM's Residential Direct Exposure and Leachability Criteria. Please revise this table accordingly and revise this FS as necessary.

Response: Please refer to the response to comment no. 3. Soil is not selected as a media of concern for the site.

40. *Table 2-6, Preliminary Remediation Goals – Groundwater*

Please ensure that the state's groundwater and drinking water standards are included in this table for the development of PRGs. Please note that the revised Remediation Regulations (November 2011) include a GA Groundwater Objective for arsenic of 0.01 mg/l.

Response: Table 2-6 will be revised to include the new standard published in the revised Remediation Regulations (November 2011).

41. *Table 2-8, Background Concentrations – Soil*

Please list the source of this data, the "Basewide Background Study Report (2008)", on this table.

Response: Concur, the source reference will be added.

42. *Figures*

Please develop PRGs for soil and include figures showing exceedances of PRGs in this FS.

Response: Please refer to the response to comment no. 3. Soil is not selected as a media of concern for the site

ATTACHMENT B-2
RIDEM ARAR Table – Tank Farm 5
RESPONSE TO COMMENTS FROM RIDEM
Draft Feasibility Study
DU 5-1 at Site 13, Tank Farm 5, NAVSTA Newport
Comments Dated December 13, 2011

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Air Quality	Air Pollution Control Regulations, RI Dept. of Health, Division of Air Pollution Control, effective 8/2/67, amended 7/19/07 - regulation No. 1 - Visible Emissions.	No contaminant emissions will be allowed for periods of more than three minutes in any one hour which is greater or equal to 20% opacity. Disagree. Not pertinent to any of the remedial alternatives.	Action Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Pollution Control Regulation 5 – Fugitive Dust, RIDEM, 7/19/07	Reflects that reasonable precautions be taken to prevent particulate matter from becoming airborne. Disagree. Not pertinent to any of the remedial alternatives.	Action Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Pollution Control Regulation 7 – Emissions Detrimental to Persons or Property, RIDEM, 7/19/07	Prohibits emissions of contaminants which may be injurious to human, plant, or animal life or cause damage to property or which unreasonably interferes with the enjoyment of life and property. Disagree. Not pertinent to any of the remedial alternatives.	Action ~~and Chemical~~ Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Pollution Control Regulation 15 – Control of Organic Solvent Emissions, RIDEM, 7/19/07	Limits the amount of organic solvents emitted to the atmosphere Disagree. Applies to facilities with 50 to 100 tons per year of potential emissions. The Tank Farm site does not have this potential. Not applicable, and not pertinent to any of the remedial alternatives or circumstances of the site.	Action ~~and Chemical~~ Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Toxics Guidelines, RIDEM, 4/04.	Companion to Air Pollution Control Regulation No. 22 Disagree. This is not a promulgated regulation, so it is not an ARAR. Cleanup of Tank Farm would emit significantly less air toxics than the quantities for which this publication was designed. Not pertinent to any of the remedial alternatives or circumstances of the site.	Action ~~and Chemical~~ Specific	RIGL Section 23-23, as amended 1992

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Air Quality	Rhode Island Guidelines for Air Quality Modeling for Air Toxics Substances, RIDEM, 9/04	Companion to Air Pollution Control Regulations Nos. 9 and 22 Disagree. The potential level of releases does not warrant modeling. This is not a promulgated regulation, so it is not an ARAR. Not pertinent to any of the remedial alternatives or circumstances of the site.	Action ~~and Chemical~~ Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Pollution Control Regulation 17 - Odors. 7/19/07	Prohibits the release of objectionable odors across property lines. Disagree. COCs are inorganics and non-volatiles and no odors are anticipated during remediation. Additionally, this regulation cannot be an ARAR, as it does not appear to be a legally enforceable "standard". Per the regulation determination of whether an odor is "objectionable" is to be made by "a staff member of the Department [who] shall determine by personal observation if an odor is objectionable…."	Action ~~and Location~~ Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Pollution Control Regulation 22 – Air Toxics, RIDEM, 7/19/07	This regulation prohibits the emissions of specified contaminants at rates which would result in ground level concentrations greater than acceptable ambient levels in the regulation. Disagree. The regulation addresses emissions at much greater rates than would be expected at the site. Not pertinent to any of the remedial alternatives or circumstances of the site.	Action ~~and Chemical~~ Specific	RIGL Section 23-23, as amended 1992
Drinking Water	Public Drinking Water Laws, Protection of Public Drinking Water	Applicable to remedial alternatives that affect public drinking water supplies. Disagree. Neither applicable nor relevant and appropriate. No public water supplies are affected.	Chemical ~~and Location~~ Specific	RIGL 46-14

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Groundwater	Rules and Regulations for Groundwater Quality, RIDEM, ~~5/15/06~~7/26/10	Incorporated RI Groundwater Standards. Intends to protect and restore quality of groundwater resources for use as drinking water and other beneficial uses, to assure protect of public health and welfare and the environment These rules set numerical criteria for contaminants in certain aquifers classified as potential drinking water sources (such as the aquifer at the Site), and require that such groundwater be maintained at a quality that does not have any reasonable potential to cause a violation of surface water quality standards. Disagree. Groundwater quality is addressed in the Remediation Regulations. Additional groundwater quality regulations do not need to be cited.	Action, Chemical and Location Specific	RIGL 46-12, 46-13.1, 23-18.9, 23-19.1, 42-17.6, and 42-17.1, 1956 as amended
Groundwater	Rules and Regulations for Groundwater Quality, RIDEM, ~~5/15/06~~7/26/10, Appendix 1	These rules prescribe design requirements for construction of monitoring wells, how monitoring shall be undertaken, and how wells shall be abandoned once monitoring is complete. Agree that Appendix 1 may be relevant and appropriate. These monitoring well installation and abandonment portions of these regulations will be included. Refer to Action-specific ARAR tables.	Action Specific	RIGL 46-12, 46-13.1, 23-18.9, 23-19.1, 42-17.6, and 42-17.1, 1956 as amended
Groundwater	Underground Injection Control Program Rules and Regulations, RIDEM, 6/10/84	Applicable for any remedial or removal action where subsurface discharge or underground injection of treated or untreated groundwater may occur. Disagree. Not pertinent to any of the remedial alternatives.	Action ~~and Location~~ Specific	RIGL 46-12, 42-35, 42-17.3, 23-19.1, as of August 1983

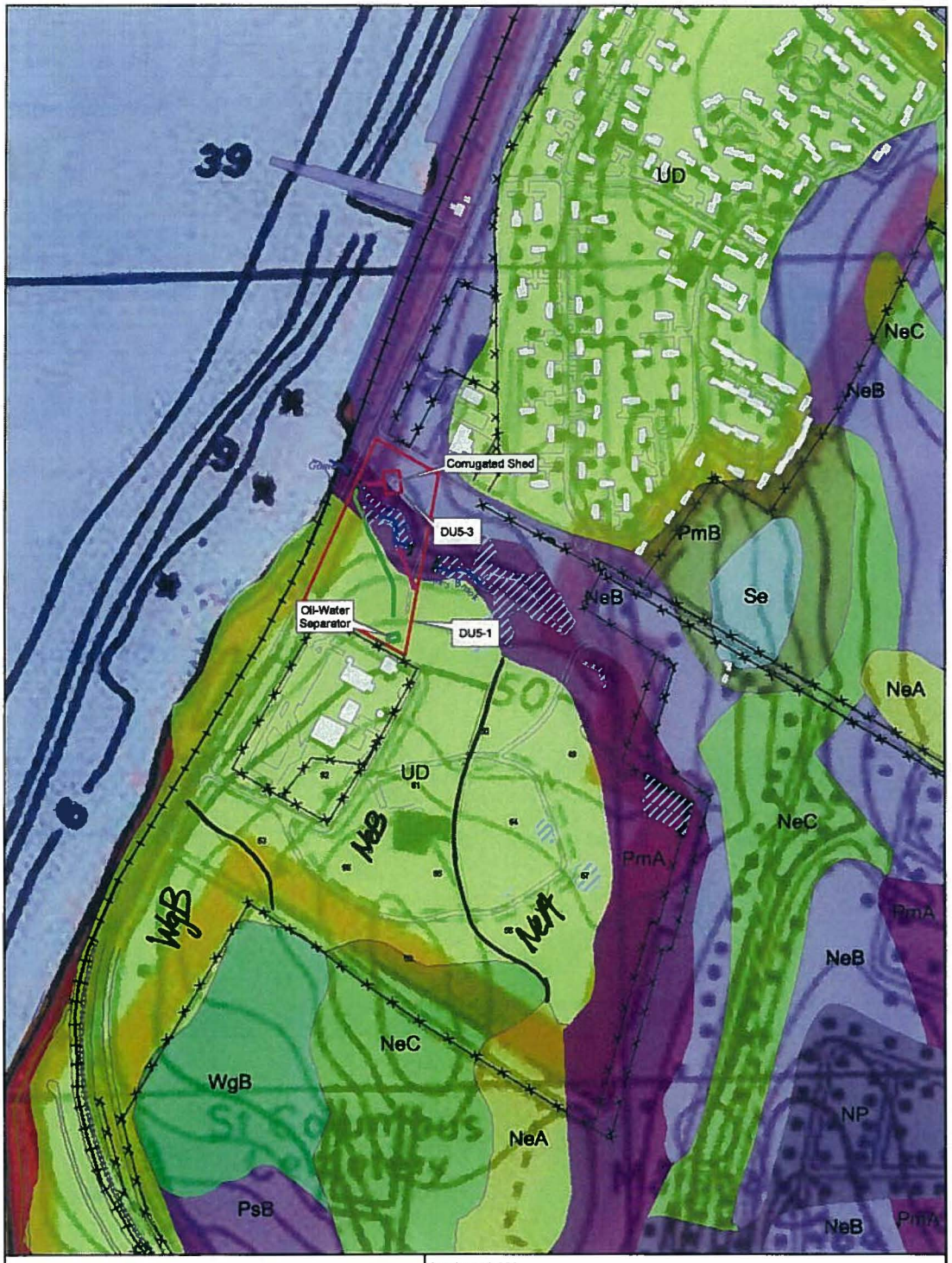
Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Hazardous Waste	Rhode Island Rules and regulations for Hazardous Waste Management Sections 1 through 5, RIDEM ~~3/4/07~~6/7/10	These rules apply to generators, transporters and treatment/storage facilities dealing with hazardous wastes. The statutes require disposal of solid waste and hazardous waste at licensed facilities. Outlines requirement for general waste analyses, security procedures, inspections, safety, etc.. Sets design, construction, and operational requirements for hazardous waste containers and tanks, and closure requirements for hazardous waste facilities. Agree in part. This is a broad citation, and pertinent parts will be cited as noted below. Only portions of the regulations that are appropriate for on-site activities, such as hazardous waste identification and generator requirements should be cited as ARARs used (5.2, 5.3, 5.4, and 5.8). Other portions of the regulations only apply to off-site activities and will not be included, as they are neither applicable nor relevant and appropriate. Refer to Action-specific ARAR tables.	Action, ~~Chemical and Location~~ Specific	RIGL 23-19.1-10, 23-19.14-18, 42-17.1-2, 42-35, RIDEM 1956 as amended
Hazardous Waste	Rhode Island Rules and Regulations for Hazardous Waste Management, Section 8, RIDEM ~~3/4/07~~6/7/10.	Outlines operational requirements for all hazardous waste treatment, storage, and disposal facilities Disagree. The provisions of this regulation are not pertinent to any of the remedial alternatives or circumstances of the site. The site is not a TSDF. None of the on-site remedial activities would be regulated by these requirements for a permitted facility.	Action and Location Specific	RIGL 23-19.1-10, 23-19.14-18, 42-17.1-2, 42-35, RIDEM 1956 as amended
Hazardous Waste	Rhode Island Rules and Regulations for Hazardous Waste Management, Section 9, RIDEM ~~3/4/07~~6/7/10.	Outlines requirement for general waste analyses, security procedures, inspections, safety, etc.. Sets design, construction, and operational requirements for hazardous waste containers and tanks, and closure requirements for hazardous waste facilities. Disagree. The provisions of this regulation are not pertinent to any of the remedial alternatives or circumstances of the site. The site is not a TSDF. None of the on-site remedial activities would be regulated by these requirements for TSDFs.	Action and Location Specific	RIGL 23-19.1-10, 23-19.14-18, 42-17.1-2, 42-35, RIDEM 1956 as amended

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Hazardous Waste	Rhode Island Rules and Regulations for Hazardous Waste Management, Section 10, RIDEM ~~3/4/07~~6/7/10.	Outlines design, operational, and closure requirements for new hazardous waste landfills. Disagree. The provisions of this regulation are not pertinent to any of the remedial alternatives or circumstances of the site. None of the on-site remedial activities would be regulated by these requirements for hazardous waste landfills.	Action and Location Specific	RIGL 23-19.1-10, 23-19.14-18, 42-17.1-2, 42-35, RIDEM 1956 as amended
Hazardous Waste	Rhode Island Rules and Regulations for Hazardous Waste Management, Section 11, RIDEM ~~3/4/07~~6/7/10.	Outlines design, operational, and closure requirements for incineration facilities Disagree. The provisions of this regulation are not pertinent to any of the remedial alternatives or circumstances of the site. None of the on-site remedial activities would be regulated by these requirements for incinerators.	Action and Location Specific	RIGL 23-19.1, 23-19.14, 42-17.1-2, 46-12, 46-13.1, RIDEM 1956 as amended
Hazardous Waste	Rhode Island Rules and Regulations for Hazardous Waste Management, RIDEM 3/4/07, Sections 12 and 13.	Requires minimal standards for solid waste landfill capping. Specifies type and depth of cap barrier layers and engineering standards. Includes measures to protect against odors and dust. Disagree. The provisions of this regulation (as described) do not appear to be pertinent to any of the remedial alternatives or circumstances of the site. Please provide updated citation; Sections 12 and 13 of Rules and Regulations for Hazardous Waste Management are currently "reserved" (6/7/10).	Action and Location Specific	RIGL 2-1, 2-22, 2-23, 5-51, 23-18.8, 23-19, 23-19.1, 23-23, 23-63, RIDEM 1956 as amended
Hazardous Materials, Soil, Groundwater, Surface water, Sediments	RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations), as amended November 2011.	Applicable for removal actions involving reporting, investigation, and remediation of contaminated sites. These rules establish criteria for cleanup of contamination caused by a release of hazardous material. Disagree that the entire state remediation regulation should be cited as an ARAR. Specific standards, requirements, criteria or limitations within this regulation which pertain to the contaminants at issue for this cleanup may be relevant and appropriate ARARs. These more precise chemical-specific ARARs (8.03 A and B) need to be identified and included. Refer to Chemical-specific ARAR tables.	~~Action,~~ Chemical ~~and Location~~ Specific	RIGL 23-19.1-11.1, 23-19.14-18, 42-17.1-2, 42-35, 46-12-3 and 46-12-5, as amended

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Solid Waste	Rhode Island Rules and Regulations for Solid Waste Management, RIDEM Solid Waste Regulation No. 1, 10/25/05	Applicable for the minimization of environmental hazards associated with operation of solid waste facilities, including management and disposal of dredged material Disagree, not pertinent to any of the remedial alternatives or circumstances of the site. None of the on-site remedial activities would be regulated by these requirements for solid waste disposal facilities.	Action, Chemical and Location Specific	RIGL 23-19.1-11.1, 23-19.14-18, 42-17.1-2, 42-35, 46-12-3 and 46-12-5, as amended
Solid Waste	Rhode Island Rules and Regulations for Solid Waste Management, RIDEM Solid Waste Regulation No. 2, 10/25/05.	Applicable for the construction of final covers and leachate collection systems; and Applicable for all monitoring plans that result from on-site remedial actions. Disagree, not pertinent to any of the remedial alternatives or circumstances of the site. None of the on-site remedial activities would be regulated by these requirements for solid waste disposal facilities.	Action, Chemical and Location Specific	RIGL 2-1, 2-22, 2-23, 5-51, 23-18.8, 23-19, 23-19.1, 23-23, 23-63, RIDEM 1956 as amended
Solid Waste	Rhode Island Rules and Regulations for Solid Waste Management, RIDEM Solid Waste Regulation No. 4, 10/25/05.	Outlines requirements for on-site waste incineration. Disagree, not pertinent to any of the remedial alternatives or circumstances of the site. None of the on-site remedial activities would be regulated by these requirements for solid waste incinerators.	Action, Chemical and Location Specific	RIGL 2-1, 2-22, 2-23, 5-51, 23-18.8, 23-19, 23-19.1, 23-23, 23-63, RIDEM 1956 as amended
Surface Water	Rhode Island Water Quality Regulations, RIDEM, 7/11/06.	Incorporated RI Ambient Water Quality Standards. Classifies water use and defines water quality goals to protect public health and welfare, enhance the quality of state water, and serve the purpose of the CWA. These rules set ambient water quality criteria (AWQCs) applicable to surface waters in Rhode Island. These AWQCs may include numeric limits for chronic exposures to aquatic life, acute exposures to aquatic life, human consumption of water and aquatic organisms, and human consumption of aquatic organisms only. They also forbid activities or discharges that would cause a violation of these criteria. Disagree, not pertinent to any of the remedial alternatives or circumstances of the site. No surface water impacts have been observed and no surface water sampling is proposed.	Action, Chemical ~~and Location~~ Specific	RIGL 46-13.1, May 1992

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Surface Water	Regulations for Rhode Island Pollutant Discharge elimination System (RIPDES), RIDEM, 2/25/03.	Applicable for discharges to surface waters and to protect waters from discharges of pollutants Disagree, not pertinent to any of the remedial alternatives or circumstances of the site. No surface water discharge is proposed and no disturbed areas for storm water discharges.	Action, ~~Chemical and Location~~ Specific	RIGL 46-13.1, May 1992
Surface Water and Groundwater	Oil Pollution Control Regulations, RIDEM, 1/3/91	Establishes guidelines for the prevention of discharge, escape or release of oil into the waters of the State and to preserve and protect the quality of the waters of the State, consistent with the purposes of the Clean Water Act Disagree. The provisions of this regulation are neither applicable nor relevant and appropriate to the circumstances of this cleanup. Oil (petroleum) is not a CERCLA hazardous substance, pollutant or contaminant. Petroleum cleanup must be dealt with outside the CERCLA process.	Action and Location Specific	RIGL 46-12, 42-17.1 and 42-35, 1956 as amended
Waste Water	Rhode Island Pretreatment Regulations, RIDEM, 7/16/84	Applicable for any remedial or removal action where treated or untreated liquids are discharged to a Publicly Owned Treatment Works (POTW) facility Disagree, Not pertinent to any of the remedial alternatives or circumstances of the site. No discharge to a POTW is proposed.	Action, Chemical and Location Specific	RIGL 46-13.1, May 1992
Wetlands	Rules and Regulations governing the enforcement of the Freshwater Wetlands Act, RIDEM, 4/23/98; and amendments thereto 9/19/01.	Applicable to actions required to prevent the undesirable drainage, excavation, filling, alteration, encroachment, or any other form of disturbance or destruction to a wetland. These rules require that all wetlands and wetland functions be protected to the maximum extent possible, including by preventing pollutants, sediment, direct discharges of stormwater runoff, or any material foreign to a wetland or hazardous to life from entering any wetland. The rules also require that hazardous material remediations fully protect, replace, restore and/or mitigate harm to any affected wetlands Disagree. Activities will not affect fresh water wetlands. Not pertinent to any of the remedial alternatives or circumstances of the site.	~~Action and~~ Location Specific	RIGL 2-1-18 et seq., as amended 1994

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Wetlands	Regulations Adopted by the Department of Natural Resources Governing the Enforcement of Chapter 197 of the Public Laws of 1974	These rules should be considered should remedial activities impact any freshwater wetlands or associated buffer zones Please provide clarification. Cannot locate these regulations to provide comment on their appropriateness.	~~Action~~ Location Specific ~~and Location~~	RIGL 2-1-20.1, 42-35-1, 2-1-18, September 197418 et seq., as amended 1994
Wetlands	Regulations Adopted by the Department of Natural Resources Governing the Enforcement of Chapter 213 of the Public Laws of 1974	These rules should be considered should remedial activities impact any freshwater wetlands or associated buffer zones Please provide clarification. Cannot locate these regulations to provide comment on their appropriateness.	Action Location ~~Specific and Location~~	RIGL 2-1-20.1, 42-35-1, 2-1-18, September 197418 et seq., as amended 1994
Wetlands	Coastal Resources Management Council Regulations	Sets standards for management and protection of coastal resources. Disagree, not pertinent to any of the remedial alternatives or circumstances of the site. Small part of DU5 is within the Coastal Zone, but no activities will disturb coastal araes. Wetlands are in the RIDEM jurisdiction.	~~Action and~~ Location Specific	RIGL 46-23-1 *et seq*
Other	Rhode Island Hazardous Substance Community Right-to-Know Act, RIGL 23-24.4	Establishes rules for public right to know concerning hazardous waste storage, discharge, emissions and transportation. Applicable if remedial action involves the off-site disposal or on-site treatment of hazardous substances. Disagree, not pertinent to any of the remedial alternatives or circumstances of the site. CERCLA provides for informing the public of the cleanup. This is not an environmental or a facility siting regulation.	Action, Chemical and Location Specific	RIGL, Title 23, Chapter 24.4 Public Right to Know Requirements as amended in 1989.
Other	Rhode Island Endangered and Threatened Species Act	To be considered if remedial alternative affects any plants or animals of special concern Disagree, not pertinent to any of the remedial alternatives or circumstances of the site. There are no endangered or threatened species at the site.	Location Specific	RIGL 20-37



LEGEND

Decision Unit Boundary

Ruin 1 Straight Discharge Area

Discharge Pipe

Wetland

Railroad Tracks

Building

Fence

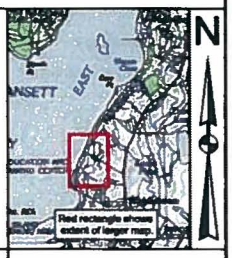
CHEMICAL RESULT >100 times SL
CHEMICAL RESULT > 50 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > 1 time SL

For soil and sediment, the screening level (SL) is the EPA RSL for residential soil.

For groundwater and surface water, the screening level (SL) is the minimum of the EPA tapwater RSL and MCL.

0 50 100 200 300
Feet

FIGURE #-#
EXCEEDANCES OF SCREENING LEVELS IN MATRIX AT DECISION UNIT #-#
TANK FARM # 5
NAVSTA NEWPORT, RHODE ISLAND



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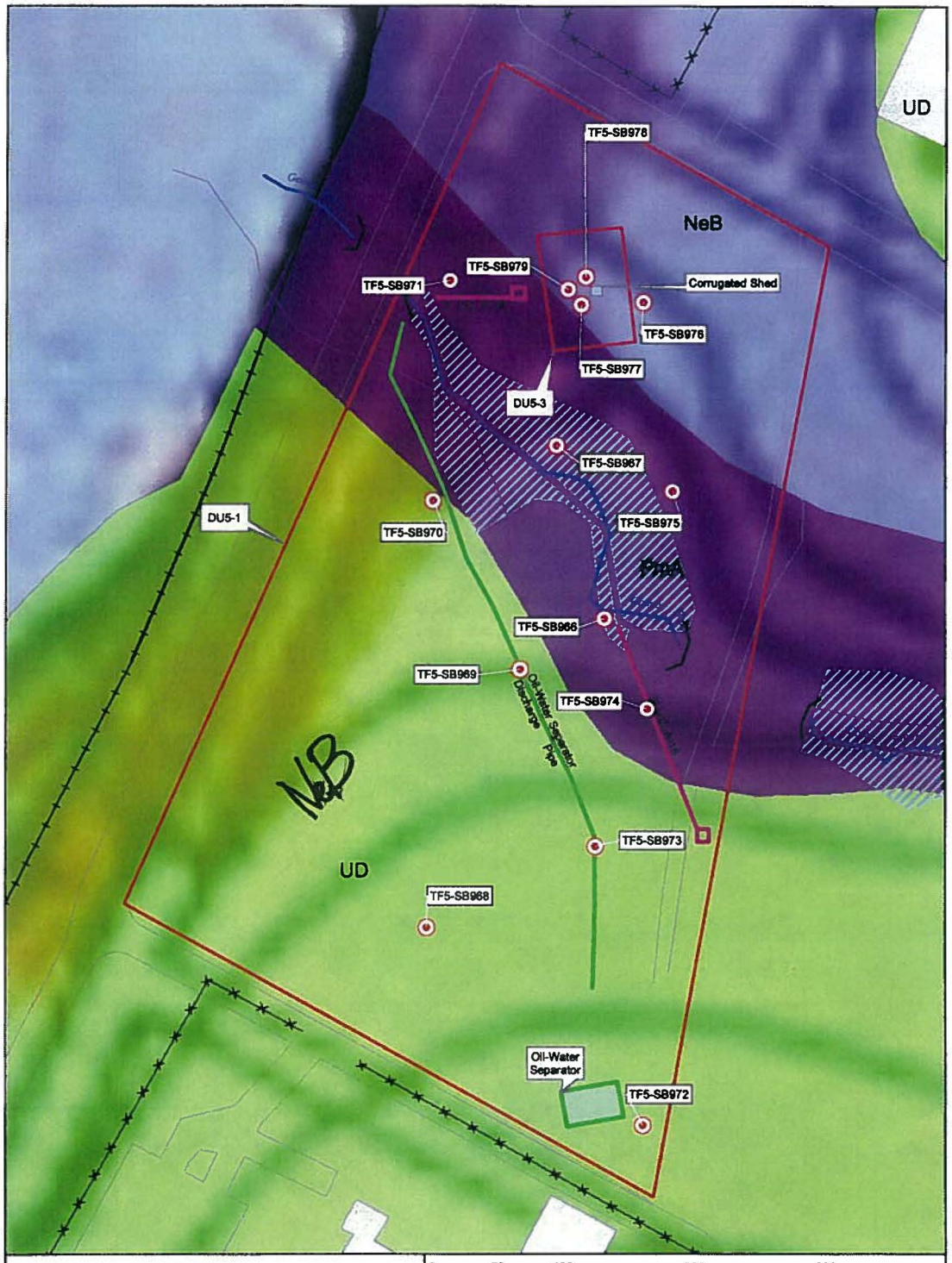
Author: GJG

TETRA TECH NUS, INC.



LEGEND

2010 Soil Sample Location

Decision Unit Boundary

Ruin 1 Straight Discharge Area

Discharge Pipe

Wetland

Railroad Tracks

Building

Fence

CHEMICAL RESULT >100 times SL
CHEMICAL RESULT > 50 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > 1 time SL

For soil and sediment, the screening level (SL) is the EPA RSL for residential soil.

For groundwater and surface water, the screening level (SL) is the minimum of the EPA tapwater RSL and MCL.

0 50 100 200 300 Feet

FIGURE #-#
EXCEEDANCES OF SCREENING LEVELS IN MATRIX AT DECISION UNIT #-#
TANK FARM # 5
NAVSTA NEWPORT, RHODE ISLAND

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Date: 9/17/2010
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Author: GJG

TETRA TECH NUS, INC.