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RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT RESPONSE TO U S NAVY COMMENTS TO DRAFT DATA GAPS ASSESSMENT (DGA) REPORT SITES 12 AND 13 TANK FARMS 4 AND 5 WITH TRANSMITTAL NS NEWPORT RI
08/11/2011
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

11 August 2011

Mr. Roberto Pagtalunan
NAVFAC MIDLANT (Code OPTE3)
Environmental Restoration
Building Z-144, Room 109
9742 Maryland Avenue
Norfolk, VA 23511-3095

Re: Draft Data Gaps Assessment (DGA) Report
Sites 12 & 13, Tank Farms 4 & 5
Naval Station Newport, Newport, Rhode Island

Dear Mr. Pagtalunan,

The Office of Waste Management at the Rhode Island Department of Environmental Management has conducted a review of the Navy's Response dated June 9, 2011 to RIDEM's Comments on the *Draft Data Gaps Assessment (DGA) Report*, for Sites 12 & 13, Tank Farms 4 & 5, Naval Station Newport, located in Newport, RI. As a result of this review, this Office has generated the attached responses to comments.

We look forward to discussing these comments with you during the upcoming conference call on Thursday, August 18, 2011.

If you have any questions, in regards to this letter, please contact me at (401) 222-2797, extension 7020 or by e-mail at pamela.crump@dem.ri.gov.

Sincerely,

Pamela E. Crump, Sanitary Engineer
Office of Waste Management

cc: Matthew DeStefano, RIDEM
Richard Gottlieb, RIDEM
Gary Jablonski, RIDEM
Kymberlee Keckler, USEPA Region I
Deb Moore, NETC, Newport, RI
Steve Parker, Tetra Tech

DRAFT DATA GAPS ASSESSMENT REPORT
FOR SITES 12 (TANK FARM 4) AND 13 (TANK FARM 5)
CATEGORY 1 AREAS

1. **Page 1-1, Section 1.1 Purpose; Last Sentence.**

"...the purpose of this DGA report is to provide up-to-date, site-representative data to supplement the usable historical data that has been collected, and to use these data together to aid in determining risks to potential human and ecological receptors..."

The DGA Report does not include any "usable historical data". The human health and ecological risk assessments were based on the samples taken in 2010 (March-April) for the DGA Report. Please include any historical data from samples taken within the boundaries of Decision Units 4-1 and 5-1. If the Navy proposes not to include certain data points, please include a table with the results for the data points and an explanation why these particular data points were not used to evaluate risks. Please submit this information in the response to comments.

Response: Based on the evaluation of the new and old data, and the approach used to locate and distribute the sample stations, it was determined that the new data truly supersedes the old data. Furthermore, the previous data were determined to be unusable in the risk assessment.

During SAP development, it was agreed that groundwater, surface water and sediment data were too old to be reflective of the current conditions. In the response to EPA comments on the draft final SAP, Navy committed to further evaluating available data for use in the risk assessment. This further evaluation was performed. Looking at all the old data again, it was confirmed that the groundwater, surface water and sediment data would not be used in risk assessment because of its age. A re-evaluation of the old soil data revealed that these data were a) limited to specific analytes, and b) clustered within the removal action area, and c) not validated using Tier II data validation procedures.

In addition, the SAP was developed with decision unit boundaries determined during the DQO process, and the samples collected during the Data Gaps Assessment were laid out to provide representative data for that whole decision unit. Following approval of this methodology in the DQO process during SAP development, the USEPA and RIDEM requested adjustments to soil and sediment sample locations. These adjustments were made by the Navy. The adjustments resulted in moving sampling stations from a random grid to skewing the data by conducting more sampling in areas where potential or documented releases occurred, i.e. worst-case scenario locations. At the request of the regulators, many of these soil samples were again clustered around the previous excavation areas in Tank Farm 4, in locations of highest concentrations of constituents (as detected in the older data).

The Navy recognizes the intent of the reviewers comment is to make sure that the worst-case scenario data from each decision unit is included in the risk assessment. However, the process of selecting sample locations from worst-case scenario locations, rather than sampling on a grid, has already addressed the EPA's concern. The data collected in the Data Gaps Assessment represents data from areas expected to be impacted from the sources identified in each decision unit. For clarity, this evaluation will be added to the Data Gaps Assessment report.

In the response to EPA comments on the draft final SAP, Navy also agreed to present the supplemental site investigation data combined with the data gaps investigation data in this DGA report. Navy will include the older soil data in background sections of the draft final DGA report.

Evaluation of Response:

RIDEM understands that much of the older data may have been for areas located outside of the Decision Units. However, RIDEM believes that the data previously obtained within the boundaries of the two Decision Units is necessary in

evaluating known areas of contamination. In order for the State to accept the use of new data only, tables and figures must be provided showing any existing data from within the boundaries of Category 1 areas, and a detailed explanation of why this data is obsolete. Data cannot be thrown out because it is limited to specific analytes, clustered in certain areas, not Tier II validated, or does not have specific depths associated with it. Any existing data which may provide the locations of significant contamination should be included in a risk assessment. Also, RIDEM never agreed that groundwater, surface water and sediment data were too old to be used in the risk assessment process.

2. **Page 1-3, Section 1.3.2 Tank Farm 4 Decision Unit 1; 3rd Paragraph.**

This section deals with the removal actions that were conducted at Tank Farm 4. The report should note that the removal action at the western ruin was terminated due to lack of funds and that additional investigations were conducted to determine the nature and extent of contamination in the impacted area. The results of the investigations and any confirmatory results should be included in the report.

Response: At the time of the removal action, the environmental work was progressing under RIDEM's regulatory authority. The excavation was initiated by the Navy in order to quickly reduce the highest levels of contamination in the discharge area.

The closeout report (TtEC, 2007) references funding as the reason for the termination of the removal action. It is likely that funding did play a role at the time, however, it was not the primary reason for terminating/ suspending the removal. There were several lines of evidence that resulted in the Navy's conclusion to terminate/ suspend the removal action:

- **Analytical results suggested that the greatest mass of the contamination was successfully removed.**
- **Excavation was proceeding based upon using field methods that were resulting in excavation of a much larger area than had been anticipated.**
- **There was a concern that excavating such a large wetland area could negatively impact the functioning of the wetland.**

Considering all these factors, the Navy decided that excavation would be terminated/suspended to determine if continued excavation was the best method to handle the remaining impacted soil and sediment in the area.

In addition, while the Navy was considering what action would be performed, it became obvious that there was no information that indicated there was a risk to human health or the environment from the material that was being excavated. In accordance with CERCLA, the Navy and its stakeholders agreed to perform risk-based investigation and to determine if additional remediation of the area is necessary. This is the investigation that is being reported in this Data Gaps Assessment report.

The explanation provided above for the excavation and termination of DU 4-1 will be provided in an expanded Section 1.4.3, which will better describe the work documented in "Final Closeout Report for Sludge Disposal Trenches and Review Areas at Tank Farms 4 and 5" (TtEC, 2007), including the excavation work.

Evaluation of Response:

According to the Final Closeout Report for Sludge Disposal Trenches and Review Areas at Tank Farms 4 and 5, funding was the primary reason terminating the removal action. Please note this in this section.

3. **Page 1-4, Section 1.3.3 Tank Farm 5 Decision Unit 5-1.**

"DU 5-1 includes a former OWS area, and associated discharge pipe and discharge area."

Figure 1-3, as well as all other figures presented for Tank Farm 5, show the former oil/water separator and the oil/water separator discharge pipe. However, there is a significant distance between the OWS and the beginning of the pipe (as depicted the OWS is not connected to the discharge pipe). This should be shown as connected on all figures. Please modify accordingly.

Response: The figures will be updated to show the discharge pipe from the former OWS at Tank Farm 5 connected to the former OWS.

Evaluation of Response:

Comment has been addressed.

4. **Page 2-2, Section 2.1 Soil Boring Investigation; 2nd bullet, last sentence.**

Field modification records are in Appendix C not B. Please change the text accordingly.

Response: The text will be corrected.

Evaluation of Response:

Comment has been addressed.

5. **Page 4-1, Section 4.0 Nature and Extent of Contamination; 1st paragraph.**

"The detections are compared to regulatory criteria identified in worksheet (WS) 11 of the Sampling and Analysis Plan (TtNUS, 2010), updated to current regulatory criteria. Screening criteria used in the data evaluations of soil, sediment, and aqueous samples are presented in Table 4-1."

The regulatory criteria listed in Table 4-1 includes only EPA RSLs or MCLs. Worksheet #11 in the Sampling and Analysis Plan (SAP), Section 11.2.4, states that the regulatory criteria includes EPA RSLs, RIDEM criteria and appropriate ecological criteria. This criterion is listed in Appendix K of the SAP, where the most stringent values are listed as the Project Action Limits (PALs), and summarized in Worksheets 15a-15d in the SAP. The analytical results presented in Tables 4-2, 4-3, 4-6, 4-7, 4-9, 4-10, 4-11, 4-14, 4-15, and 4-17 should be compared to the PALs as stated in the SAP, not just the EPA RSLs and MCLs. Please revise these tables and the figures in Section 4.0 to include the more stringent of either EPA or RIDEM's criteria for the PALs.

Response: PALs established in the SAP are used primarily for developing the project quantitation limit (PQL) goal for the analytical laboratory. PALs are not defined as the most appropriate criteria with which to compare analytical results. Worksheet 11 of the SAP does not distinguish between criteria for comparison between Category 1, 2, and 3 decision units. To describe the nature and extent of contamination, the Navy selected EPA screening criteria which are presented in the Section 4 tables. The EPA criteria are the most appropriate standards to use for data comparison in Category 1 areas. Please note however, that in the risk assessments the RIDEM screening levels were used in conjunction with the EPA screening levels to screen for contaminants of potential concern (COPC) (Reference Tables 6-3 through 6-19).

Evaluation of Response:

Pursuant to CERCLA (section 300.430) and the FFA, the State Site Remediation Regulations are ARARs which shall be fully integrated with the site characterization activities of the remedial investigations and developed and modified throughout the RI/FS phase of the project.

6. **Page 4-4, Section 4.1.1 Nature and Extent of Contamination in Soil (DU 4-1); 2nd paragraph, last sentence.**

"Metals and PAHs were selected for presentation on these figures if they exceeded residential RSLs in more than 3 samples in a group."

Any exceedances should be presented on the figures for this section. Please revise the figures for Section 4.0 to include all exceedances for metals and PAHs.

Response: There is minimal added value in presenting every exceedance on the figures. The presentation of the data in the report is more than adequate.

Evaluation of Response:

RIDEM does not concur with this response. Please include all exceedances on the figures.

7. **Page 6-3, Section 6.1.1 Data Usability; Whole Section.**

"Much of the data from previous investigations are not considered usable for risk assessment because the data are: 1) for samples collected approximately 20 years ago, and/or 2) for samples that were collected to represent soils that have been disturbed or no longer exist because of the various excavation activities that have been conducted to close out the tank farms. Therefore, the data are not reflective of current conditions and were not used in this risk assessment."

Investigations and removal actions were conducted from late 2004 to mid-2006; as such, the data should not be classified as being collected 20 years ago. In regards to the removal actions, confirmatory samples should be employed as this would represent what was left in place. Investigation samples would also represent what is currently at the site. Please modify the report to include this data. In regards to data collected prior to 2000, please refer to comment #1.

Response: The text in this section will be revised as described in response to comment No. 1.

Evaluation of Response:

Please refer to response for comment #1.

8. **Page 6-39, Section 6.4.2 Interpretation of Risk Assessment Results; Paragraph 2.**

The report notes that the HHRA in terms of evaluation and the need for remediation will be compared to the USEPA target risk range of 1×10^{-4} to 1×10^{-6}. Please add the following text to this section of the report: *"The RIDEM acceptable risk range, under State Regulations, is 1×10^{-6} for individual contaminants and 1×10^{-5} for cumulative exposure."*

Response: The suggested text will be added to the end of the second paragraph in Section 6.4.2.

Evaluation of Response:

Comment has been addressed.

9. **Page 6-39, Section 6.4.3 Results of the Risk Characterization; Last Paragraph, 1st Sentence.**

".....and hypothetical future child and adult resident...."

Please modify the above sentence as follows: *"...and hypothetical future child and adult resident (note under State regulations the recreational exposure scenario is equivalent to the residential exposure scenario) ..."*

Response: Review of the state regulations does not reveal this requirement in explicit terms. The text will be revised as follows: "Potential cancer risks and hazard indices were calculated for current/future construction workers, industrial workers, adolescent trespassers, child and adult recreational users, and hypothetical future child and adult residents under the RME and CTE scenarios and are summarized in Tables 6-32 through 6-35 and Figures 6-2 through 6-9. *It is noted that RIDEM considers the unrestricted recreational use of property equivalent to the residential exposure scenario".*

Evaluation of Response:

The Navy has included the RIDEM requested language in previous reports (i.e. NUSC Draft Final SRI, p. 4-6). Please include the language as suggested by RIDEM above.

10. Page 6-53, Section 6.6 Soil Risks; Table.

This section contains a table delineating which exposure scenarios exceed the USEPA Risk Range. Please add to this table the RIDEM's risk range when more stringent than EPA's.

Response: The table will be revised as follows:

Area	Medium	ILCR Exceeds USEPA's Target Risk Range of 10^{-4} to 10^{-6}	ILCR Exceeds RIDEM's Cumulative Risk Level of 10^{-5}
Tank Farm 4	Surface Soil	Hypothetical Child Residents Hypothetical Adult Residents Hypothetical Lifelong Residents	Industrial Workers Adolescent Trespassers Child Recreational Users Adult Recreational Users Lifelong Recreational Users Hypothetical Child Residents Hypothetical Adult Residents Hypothetical Lifelong Residents
	All Soil	Hypothetical Child Residents Hypothetical Adult Residents Hypothetical Lifelong Residents	Industrial Workers Child Recreational Users Lifelong Recreational Users Hypothetical Child Residents Hypothetical Adult Residents Hypothetical Lifelong Residents
Tank Farm 5	Surface Soil	ILCRs within Target Risk Range	Industrial Workers Hypothetical Child Residents Hypothetical Adult Residents Hypothetical Lifelong Residents
	All Soil	ILCRs within Target Risk Range	Industrial Workers Hypothetical Child Residents Hypothetical Adult Residents Hypothetical Lifelong Residents

Evaluation of Response:

Comment has been addressed.

11. Page 7-22, Section 7.4.1 Soil Invertebrates; Whole Section.

The report notes that a number of SVOCs and pesticides which exceeded screening values were not retained as they did not exceed Dutch intervention values. The Dutch intervention values are not PRGs for the site. The report also notes that certain SVOC exceedances were limited to one area and as such the COC would not be carried forth in the process. Exceedances in one location are an indication of an impacted area. Please retain all COCs that have SVOC exceedances of the screening values and that are located in one area for the BERA.

Response: The Navy agrees that the Dutch Intervention values are not PRGs for the site and did not use them as such. They were used in a lines of evidence approach to determine the likelihood that adverse effect to ecological receptors were occurring because in most cases the maximum detected concentrations were not much greater than the Dutch Target Values, but were much lower than the Dutch Intervention Values. The Intervention Values were updated in 2009 so the report will be updated to reflect those changes. The Intervention Values are numbers, above which, indicate that the soil is impacted and in need of remediation. At this site, most concentrations only slightly exceed the target values but are much lower than the Intervention Values, supporting the argument that significant impacts to ecological receptors from those chemicals are not likely. Therefore, those chemicals do not need further evaluation past Step 3a of the BERA.

The Navy could not identify the portion of the text that indicated that certain SVOC exceedances were limited to one area and as such the COC would not be carried forth in the process. The report indicated that several PAHs only exceeded the invertebrate screening level at one location, but they were retained as COPCs at that location.

Evaluation of Response

The Navy agrees that the Dutch Intervention Values are not PRGs for the site. Despite this the Navy has stated that they will use the values in the lines of evidence approach for the site. The Dutch Intervention Values are simply screening values similar to the other values which were used in the assessment. As such, they hold no more weight than the other values. Therefore, as standard practice, any contaminants which exceed any of the screening criteria will be retained and carried forth through the process. Please modify the report accordingly.

12. Page 7-28, Section 7.4.2 Terrestrial Plants; Whole Section.

The endpoint for terrestrial plants is limited to surface soils. Plant roots are not limited to the surface soils zone; therefore, this comparison should be made to surface and subsurface soils. Please modify the report to reflect this requirement.

Response: Although plant roots may extend into the subsurface soil from some plants, risk to plants from chemicals in the subsurface soil is not commonly conducted in ERAs. Some of the sensitive endpoints for plants such as seedling emergence, plant growth, will occur while the plants are young and still exposed to the surface soil. Therefore, the majority of risk to plants will be accounted for in the evaluation of surface soil.

Evaluation of Response

The Navy agrees that plant roots extend into the subsurface; however, it is noted that for some of the endpoints the screening criteria are based upon seedling emergence. It is acceptable to only consider surface soils for those contaminants whose endpoints are solely based upon seedling emergence (please provide a list of contaminants and the appropriate documentation for the sole use of seedling emergence). In regards to the other contaminants, please modify the report to include subsurface soil exposure.

13. Page 7-28, Section 7.4.2 Terrestrial Plants; Whole Section.

The report notes that screening levels are not available for 16 SVOCs. The report then goes on to cite two surrogate values that could be used, and states that the observed concentration did not exceed the NOEC of 4,400 ppm. The report does not note whether the observed concentrations exceed the lower surrogate value from Mitchell. Please clarify this in the report, and in accordance with the nature of a screening ERA, please include all SVOCs which exceed the Mitchell screening value. Finally, in regards to the other SVOCs (other then the cited 16), it is not clear whether there are screening values for these contaminants. Please clarify and if screening values are present, please include them in a table and discuss the results in this section of the report.

Response: Some of the soil concentrations were greater than the 30 mg/kg value from Mitchell. The value of 30 mg/kg is for anthracene. All of the other values cited in the Eco SSL document for anthracene were much greater than 30 mg/kg. In addition, the Canadian SQG document for PAHs was recently updated in 2010, and has additional toxicity data for some other PAHs which further support the fact that PAHs are not likely to impact plants. This additional information will be added to the report. The other SVOCs are presented on Table 7.1 of the report and the screening levels, if present, are provided. Appendix I presents the sources of the screening values.

Evaluation of Response:

Please provide the above information in the response to comments.

14. Page 7-28, Section 7.4.2 Terrestrial Plants; Whole Section.

The report acknowledges that the concentrations of a number of inorganics exceed the benchmarks; however, these COCs are proposed to be eliminated due to the belief that the benchmark is too conservative or the concentrations are not significantly above the benchmark, the site is heavily vegetated, or the pH of the soil will limit bioavailability (pH is 6.1).

Typically, contaminants which exceed a screening benchmark are retained for the BERA (unless it can be shown that the value used in a screening benchmark is in error). Please modify the report to include contaminants which exceed the benchmarks.

In terms of the significance of the exceedance, this is addressed through hazard quotients in which the sum of the exceedances is used to determine overall risk. This is carried out in the BERA and therefore the report must be modified to include contaminants which exceed the screening values.

The lack of stressed vegetation is not a criterion by which contaminants of concern may be eliminated. Please remove these statements from this and other sections of the report.

Finally, the limited pH data collected at the site indicates that the site is only slightly acidic, which may or may not have a significant impact on bioavailability. The magnitude of this impact is normally addressed under a BERA. Please do not use these criteria to eliminate COCs and eliminate the statement concerning pH from this and other sections of the report (the report may note that the impact of pH will be evaluated in the BERA).

Response: The reviewer is correct that chemicals with concentrations that exceed the screening level are retained for the BERA. The Step 3a (refinement) is technically the first step of the BERA, as indicated in section 7.1 of the report. The USEPA ERA Guidance Document allows an evaluation of potential bioavailability when refining the list of COPCs in Step 3. Therefore, using soil pH to determine relative bioavailability to determine whether a chemical can be eliminated as a COPC is acceptable in the Step 3a refinement.

The sum of the exceedances is typically not calculated to determine overall risk in ERAs. Usually, the risks from chemicals in soil are evaluated on a chemical by chemical basis, except in the case of PCBs and certain pesticides. The hazard quotients (ecological effects quotients) are already presented on the COPC selection tables in the ERA.

The lack of stressed vegetation is another line of evidence that was used to determine whether the chemicals were potentially impacting plants. Although the Navy agrees that there may be subtle impacts to plants that are not readily apparent during a typical site walk, the lack of stressed vegetation is an indication that the plant community is not being significantly impacted.

Evaluation of Response:

The Navy proposes to use pH to eliminate COCs due to bioavailability. It is known that acidic conditions increase the bioavailability for metals (the pH of 6.1 is on the acidic range). While the limited data suggests that the soil is acidic which in general translates into increased bioavailability, the magnitude of the pH affect will not be the same for all contaminants, speciation of contaminants, and soil type. As additional information will have to be collected, this limiting step should be conducted during the BERA. Therefore please retain all COCs which exceed benchmarks in the report.

The Navy has stated that the lack of stressed vegetation is an indication that the plant community is not being significantly impacted. Significant impacts in terms of growth reproduction, etc may not be evident based upon the stressed vegetation criteria. Further, pollution tolerant species may thrive in an impacted area. Therefore, the Navy should remove the statement that the lack of stressed vegetation is indicative that the plant community is not being significantly impacted. In order to make this statement one would have to know the pollution tolerance of the individual plant species at a site.

15. Page 7-33, Section 7.4.3 Sediment Invertebrates; Whole Section.

A number of COCs that were found above TECs were eliminated due to the fact that they did not exceed PECs, or the exceedances of the PECs were not significant. PECs are not the cleanup objective for the site. Therefore, all contaminants which exceed TECs, but were eliminated for the cited rationale, must be retained in the BERA. In regards to SVOCs, it is not appropriate to ignore the individual analytes and treat them as total SVOCs. Please modify the report accordingly to include individual SVOCs.

Response: The Navy agrees that PECs are not cleanup objectives at the site. As discussed in The Navy's response to Comment No. 14, the Step 3a (refinement) is the first part of the BERA so it is appropriate to compare sediment concentrations to the PEC in that step to refine the list of COPCs. Typically, chemicals with concentrations that are lower than PECs (or other higher effects levels) are generally eliminated as COPCs in Step 3a.

On the COPC tables, the individual PAH constituents are compared to their chemical-specific TECs. However, in the Step 3a (refinement), it is appropriate to compare the total PAH results to the TEC and PEC for total PAHs. In fact, at this site it is conservative because several of the chemicals that were detected at concentrations less than their screening levels and were not even COPCs were included in the calculation of total PAHs.

Evaluation of Response:

The Navy agrees that PECs are not PRGs for the site; however, in the refinement process, contaminants which are below PECs are eliminated as COCs. In essence, the PEC becomes the limiting criteria by which COCS are selected. It is not standard practice to eliminate COCs in the refinement process because they are below PECs. PRGs have been developed for site COCs which are below PECs. Therefore, please modify the report to include all contaminants which exceed TECs.

In regards to PAHs, the Navy has stated that it is appropriate to use cumulative PAHs in lieu of individual PAHs in the refinement step. While it is acceptable to use total PAHs as an additional criterion in the process, it is not appropriate to replace total PAHs for individual PAH criteria. Therefore, please retain all PAHs which exceed the individual PAH criteria.

16. Page 8-1, Section 8.1 Objectives.

As discussed in Comment #1, Section 1.1 of this report states:

"...the purpose of this DGA report is to provide up-to-date, site-representative data to supplement the usable historical data that has been collected, and to use these data together to aid in determining risks to potential human and ecological receptors..."

However, this section states that the purpose of the report was to collect " up-to-date" data and use this data for the human health and ecological risk assessments. The purpose of this report should have been to provide additional data to fill in the gaps of the existing usable data collected previously, such as the data collected from late 2004 to mid-2006 during a series of investigations and removal actions, which was documented in a closeout report (2007) and the Technical Memorandum for Data Summary and Plan for Risk Assessment, Tank Farms 4 and 5 (TtNUS, 2008). This data is not more than 10 years old. Please include any "usable" historical data in the DGA report and use this data together with the new data from 2010 to evaluate risks from the designated units, or explain why this historical data should not be used in the risk assessments.

Response: Please refer to the response to comment No. 1.

Evaluation of Response:

Please refer to the response to comment #1.

17. Page 8-3, Section 8.5 Nature and Extent of Contamination; Whole Section.

As stated previously in Comment #5, the concentrations of contaminants should have been compared to the PALs as determined in the approved Sampling and Analysis Plan (TtNUS, 2010). The PALs are the more stringent of the EPA RSLs/MCLs, RIDEM criteria or appropriate ecological criteria. This report uses only EPA RSLs and MCLs. Please revise the report (including all tables and figures) to include RIDEM's criteria when more stringent than EPA's, as approved in the Sampling and Analysis Plan.

Response: Tables 6-3 through 6-19 include the comparison of data to RIDEM criteria. Regarding PALs, please refer to the response to comment No. 5.

Evaluation of Response:

Please refer to the response for comment #5.

18. Page 8-3, Section 8.5.1, Nature and Extent of Contamination for DU 4-1; 1st paragraph, 2nd sentence.

"The distribution of PAHs and metals shows no real pattern that would point to an uncontrolled source area."

Please remove the above statement from the report as elevated levels were observed in locations of potential sources.

Response: The statement will be struck from the cited section.

Evaluation of Response:

Comment has been addressed.

19. Page 8-5, Section 8.7 Human Health Risk Assessment; Whole Section.

As mentioned in Comment #8, this report uses the USEPA target risk range of 1×10^{-4} to 1×10^{-6}. The RIDEM acceptable risk range is 1×10^{-6} for individual contaminants and 1×10^{-5} for cumulative exposure. Please add RIDEM's risk ranges to the document.

Response: Please refer to the response to comment 8, above.

Evaluation of Response:

Comment has been addressed.

20. **Page 8-7, Section 8.8 Ecological Risk Assessment; Whole Section.**

It appears to RIDEM that a BERA is necessary based on the data presented in this report. As discussed in Comment #'s 11-15, a number of contaminants were eliminated from the screening process which should have been retained for further evaluation. Please modify the report as stated in the previous comments.

Response: See responses to comments 11-15. The data do not indicate the need to conduct a full baseline ecological risk assessment at these sites.

Evaluation of Response:

See responses to comments 11-15.

21. **Table 2-1, Soil Sample Analysis Summary; Page 3 of 5.**

The Sample ID numbers for TF4-SB935 are mislabeled as SB934. Please correct.

Response: The table will be checked and corrected as necessary.

Evaluation of Response:

Comment has been addressed.

22. **Table 2-1, Soil Sample Analysis Summary; Page 3 of 5.**

The Sample ID number for TF4-SB939 for the 8-10 ft interval is mislabeled as SB939-0204. Please correct.

Response: The table will be checked and corrected as necessary.

Evaluation of Response:

Comment has been addressed.

23. **Table 2-1, Soil Sample Analysis Summary; Page 4 of 5.**

The Sample ID number for TF5-SB966 taken at the interval of 6-8 ft is labeled as TF5-SB966-0810. Please correct.

Response: The table will be checked and corrected as necessary.

Evaluation of Response:

Comment has been addressed.

24. **Figure 2-1, DU 4-1.**

Please modify Figure 2-1 to depict the discharge pipes being connected to Ruin 1 and show the drainage swales, as well as the storm water system including the manholes.

Response: Navy acknowledges the pipes connected to the OWS. The source data for the figures have been reviewed. The Ruin 1 location and the discharge pipe location are based upon data and figures presented in the Removal Action Completion Report (TtEC, 2007). Imprecisions in the historical mapping is not correctable at this point in time. Also, the locations of the drainage swales and storm water system including manholes are not relevant to this report. Coordinates of these items are not readily available and they do not need to be added to the site figures.

Evaluation of Response:

The Navy acknowledges that the figures are in error, however notes that the information was obtained from a previous report and it is not correctable at this time. The request was simply to connect the discharge lines to the OWS. There were a number of reports produced for the site as well as historic engineering plans which depict the locations of the discharge pipes. As such it seems that the necessary modifications are correctable. In terms of the locations of the storm drains, manholes and drainage swales, this information was deemed important enough for the Navy to use in the selection of sample locations and potential sources of contamination. Therefore, please depict this information in the report on Figure 2-1.

25. Figure 2-2, DU 5-1.

Please modify Figure 2-2 to depict the discharge pipes being connected to the oil/water separator, and show both discharge pipes from the oil/water separator.

Response: There was only one discharge pipe originating from the former oil/water separator. Figure 2-2 will be modified to show the former discharge pipe connected to the former oil/ water separator.

Evaluation of Response:

Previously during the investigation of this Site, the Navy brought to the regulators attention the fact that the discharge pipe location and discharge point changed over time (the Navy produced historical plans and photos). This information was to be used to guide the collection of sediment samples in the wetlands. It is recommended that the Navy review its plans and modify the figures as requested. Please see the attached engineering plans.

26. Appendix A, Figure 7, Category 2 Areas of Concern and Assignment of Decision Units; TF 4 Tank 41.

The discharge line from Tank 41 requires investigation and closure. As determined in the Supplemental Site Investigation, the discharge line was leaking and may possibly still be a source of contamination. Please modify Figure 7 to include this information.

Response: The discharge line from Tank 41 to the area of the former Ruin 2 was not found to be leaking during the Supplemental Site Investigation. In fact a steady stream of water was observed coming from this line directly into Ruin 2, and this water was initially suspected of being potable water due to the clarity of the water. Odors, sheens, etc. were not observed.

The closeout report (TtEC, 2007) indicates that observations of the water and a review of data from a nearby monitoring well indicated that there is no contamination from the pipeline. During the removal actions conducted for this site, the Navy issued an e-mail (8/26/05) stating the position that, based upon the previous investigation at this location, no further work is necessary for the pipe. Following this e-mail, the closeout report was issued (TtEC, 2007), the technical memorandum for risk assessment was issued (TtNUS, 2007) and the UFP SAP for data gaps investigation was issued (TtNUS, 2010), following significant input from RIDEM. Neither the closeout report, the technical memorandum for risk assessment, nor the UFP SAP for data gaps assessment contemplates additional investigation of the line between Tank 41 and Ruin 2. Furthermore, both the technical memorandum for risk assessment and the UFP SAP unequivocally state that Tank 41 does not need additional investigation.

In conclusion, Navy has re-evaluated its 2005 position that this pipeline does not require further investigation. Navy has again determined that there is no evidence of a release from this pipeline and does not plan for additional assessment around this pipeline.

Evaluation of Response:

RIDEM Regulations require investigation of any potential sources of contamination, and the National Contingency Plan defines a release as "also means threat of release". The discharge line from Tank 41 to Ruin 2 remains an area for further investigation. Please include this area in Figure 7 as previously requested.

27. Appendix A, Figure 8, Category 3 Areas and Assignment of Decision Units.

Elevated lead concentrations were found along the fence lines at both Tank Farms 4 and 5. Please add the fence lines as an Area of Concern in Figure 8.

Response: The Navy does not believe that the lead found in soil samples collected near the fenceline during prior investigations meets the definition of a release.

Evaluation of Response:

According to the Draft Final Closeout Report for Sludge Disposal Trenches and Review Areas at Tank Farms 4 and 5 (p. 7-10), "All 5 samples (TF4-Fence1 – TF4-Fence5) contained lead at concentrations that exceeded the RIDEM lead criteria of 150 ppm. Lead concentrations in the samples collected ranged from 259 ppm-934 ppm." Therefore, the fence lines remain an issue to be resolved.