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LETTER AND U S NAVY RESPONSE TO REGULATOR COMMENTS ON DRAFT
PRELIMINARY ASSESSMENT/SITE INVESTIGATION REPORT SITE 14 MCRD PARRIS
ISLAND SC
9/7/2012
NAVFAC SOUTHEAST

**RESPONSES TO SCDHEC COMMENTS DATED SEPTEMBER 7, 2012
DRAFT SITE 14 PRELIMINARY ASSESSMENT/SITE INVESTIGATION REPORT
MCRD PARRIS ISLAND
REPORT DATED JULY 2012**

Comments Prepared by Meredith Amick

1. **Comment:** Please provide a table with data for each Process Area Outfall (PAO) compared to (a column for each) 2x mean Non Process Area Outfall (NPAO), minimum NPAO, maximum NPAO, and appropriate screening value (HH and Eco) for each analyte. Please shade analytes that exceed the 2x mean NPAO as well as the appropriate screening value.

Response: This information has been compiled and is presented in Tables 6-7 through 6-10.

2. **Comment:** Figure 2-2 lists Site 22 along with Site 45. This should be Site 32.

Response: Figure 2-2 has been revised to address this comment.

3. **Comment:** Page 4-2 Section 4.1.2
This section reads, "SWMU 32 (Site 45) included managed perchloroethylene...". Please note SWMU 32 and Site/SWMU 45 are two different SWMUs. Although it is the Department understanding that they are being addressed simultaneously, SWMU 32 is the Laundry SAA and SWMU 45 is the Dry Cleaning Facility.

Response: This section has been revised. The revised text states:

"Sites that were identified in the RFA but not listed in the IAS that have potential associated outfall impacts were Site 27- Equipment Parade Deck, ~~SWMU 32 (Laundry SAA (Site 45))~~, **Site 45 - Former Morale Welfare and Recreation Dry Cleaning Facility (includes Site 32 - Laundry Satellite Accumulation Area)**, and Site 39 - Electrolyte Basin. Out of service storage tanks and damaged asphalt were noted at Site 27 at the time of the RFA. It was suspected at the time that fuel component contamination was present although no sign of release was evident. ~~SWMU 32~~ Site 45 included managed perchloroethylene during time of operation."

4. **Comment:** Table 4-1
There appear to be discrepancies between the Site 14 SI SAP and the Site 14 SI Report as to which storm sewer outfalls were to be sampled. Please clarify/correct the discrepancies below:
 - Outfall 356 and 6173 were listed as "Proposed for Sampling" in the SAP and are listed as "No" under the "Proposed for Sampling" in the report.
 - Outfall 903, 923, and 608 DNF were listed as "No" under "Proposed for Sampling" in the SAP; however, in the Report they are listed as sampled.

Response:

- Appendix A of the Site 14 Storm Sewer Outfalls Investigation Work Plan (Tetra Tech, August 2011) includes a table presenting the proposed sampling rationale for all of the outfalls at Parris Island. In this table, Outfall 356 is mistakenly listed as "Sampling/Not Sampling - Yes". However, the description of the outfall states it was not identified in the field. It is not presented on any of the figures, and it is not presented in Worksheet #17 of the Work Plan, which lists all of the proposed sampling locations. Table 4-1 of the PA/SI Report lists this Outfall as not proposed for sampling. This outfall was not sampled during the field event.

Outfall 6137 is also listed as proposed for sampling in Appendix A of the Site 14 Storm Sewer Outfalls Investigation Work Plan; however, it is not listed as a proposed sampling location in Worksheet #17 of the Work Plan. This location is a culvert that formerly discharged storm water from the Site 27 area. These types of culverts were excluded from the sampling plan and the table in Appendix A should have described it as such. It was not sampled during the Site 14 PA/SI field activities.

- Outfalls 903 and 923 are located adjacent to one another and once again were listed as “Sampling/Not Sampling- No” in Appendix A of the Work Plan; however, they were listed as proposed sampling location in Worksheet #17 of the Work Plan and in Table 4-1 of the PA/SI Report. Outfalls 903 and 923 were sampled during the PA/SI field activities and are considered Non-Process Area Outfalls. Outfall 608 DNF was listed as “Sampling/Not Sampling- No” in Appendix A of the Work Plan; however, it was included in Worksheet #17 of the Work Plan as a Process Area Outfall and it was sampled during the Site 14 PA/SI field activities.

5. **Comment:** Table 4-1

- Outfall 6173 is listed on both page 2 and 4. Additionally 2 different rationales are presented for not sampling. Please clarify.
- Page 5 lists Site 54 as “Horse Island Debris Area”. SWMU 53 is the Horse Island Debris Area. SWMU 54 is the Old Waste Water Treatment Plant. Please correct the discrepancy.

Response:

- The Outfall 6173 presented on page 4 of Table 4-1 was removed. The rationale that was presented on page 2 is correct. The correct information for Outfall 6173 is currently on page 3 of the revised Table 4-1.
- Outfall 555 drains Site 54, the Old Waste Water Treatment Plant. This correction was made to Table 4-1.

6. **Comment:** Table 4-3

Outfall 881 is listed as not found during a site visit; however, it was sampled. Please clarify and correct this table.

Response: The Outfall was not identified during the first field reconnaissance. It was identified during the second field reconnaissance in July 2010. This table has been revised to state that Outfall 881 was identified during the Site Visit.

7. **Comment:** Page 6-3 Section 6.1.2 Sediment

- Please provide a better rationale to support the argument that Outfall 305 is truly a “Non Process Area” if it is considered an “Outlier”.
- It is assumed that the NPAO “pesticide outfall” that is considered an “Outlier” is Outfall 605. The values of pesticides detected in sediment are significant. Please discuss operations in the building that Outfall 605 drains, and if warranted provide further reasoning for still being a “Non Process Area Outfall.”

Response: The decision to pull Outfall 305 from the data set was based on statistical testing and professional judgment. The decision making was completed in an effort to develop a conservative background data set. The chemicals that were measured above criteria at the NPAOs are typical of anthropogenic influence and based on the characteristics of the outfalls themselves, the concentrations are within a range that does not trigger further investigation. Outfall 305 includes certain characteristics, such as a 2.5 foot diameter, a backflow preventer, and a location that is

conducive to build up of sediment and dead marsh grass. Outfall 305 drains several large basins that include parking lots and a road that is heavily travelled. The range of PAH concentrations measured at this outfall is not surprising and is representative of anthropogenic influences. Because of its characteristics and because it does not drain a CERCLA site, it is not considered a PAO.

Outfall 605 is located along the northern border of the facility in a marshy area. It drains a basin that includes the medical center located in Building 605 and several large grassy areas. The pesticides that were measured in this location are likely the result of base-wide use and accumulation of sediment in this location. No further investigation of this outfall as a PAO is warranted.

8. **Comment:** If screening to industrial levels is used for decision making, Land Use Controls will be required.

Response: This is understood. The industrial levels were provided for context and not final decision making for any of the outfalls or sites.

9. **Comment:** Figure 6-1 through 6-4
Please discuss why NPAOs are compared to screening criteria as this was not the approach discussed in the Site 14 SAP.

Response: The NPAOs were compared to screening values to confirm the conceptual site model in that there are exceedances of criteria in areas of anthropogenic influence (as compared to a pristine area). It is important to document this so it is clear that the NPAO data set is an appropriate background data set because the data quality objectives for that data set were achieved.

10. **Comment:** Figure 6-3
Please discuss/explain the potential origin of the zinc exceedance in the 1-3 ft interval in the NPAO 758.

Response: The origin of the zinc exceedance could be hypothesized a number of ways. This sampling location is adjacent to an area of debris (in the wooded area to the southwest). It is also not far from a range that is currently active. Because it is in the 1-3 foot interval it may have also resulted from something that was pushed up onto the marsh sands during tidal fluctuations and buried in the sediment long ago.

11. **Comment:** Figure 6-5
This map is labeled "PAO Ecological Screening of Metals in Sediment and Storm Water". However, the two left most tag boxes reference pesticides. Please correct the discrepancy.

Response: Figure 6-5 was revised to correct the discrepancy.

12. **Comment:** Figure 6-6
- This map is labeled "PAO Ecological Screening of Pesticides and PCBs in Sediment and Storm Water." Data for some metals is listed on this map. Please correct the discrepancy.
 - Please discuss the discrepancies between the Point 1 and Point 1 dup and the Point 2 and Point 2 dup at outfall 405 (both the sample values and why the dup was not sampled for all constituents).

Response: Figure 6-6 was revised to correct the error in metals reporting. The differences in measured concentrations are not considered discrepancies, but typical variance in measured concentrations. The dup was collected from the 0-1 foot interval and was analyzed for all

constituents. The tags only present exceedances of criteria and background. A dup was not collected from the 1-3 foot interval at that location.

13. Comment: Figure 6-9

Please clarify why further investigation of pesticides at Outfall 106 is not recommended.

Response: As discussed and indicated in Sections 7.6.2.3 and 8.1, sediment concentrations of gamma-BHC and DDT-related compounds at Outfall 106 were similar to sediment concentrations of these pesticides at NPAO outfalls. These pesticides were historically widely used throughout the installation and region and in accordance with the SAP for the Site 14 SI further investigation is not needed for analytes whose concentrations are similar to “reference” values.

14. Comment: Figure 6-12

Please discuss the discrepancies at Outfall 881 at Point 1 and Point 1 dup (both the sample values and why the dup was not sampled for all constituents). Also discuss the pesticides exceedances at Outfall 881 and why further investigation is not recommended.

Response: The differences in measured concentrations are not considered discrepancies, but typical variance in measured concentrations. The dup was collected from the 0-1 foot interval and was analyzed for all constituents. The tags only present exceedances of criteria and background. A dup was not collected from the 1-3 foot interval at that location. The pesticide exceedances at this outfall will be addressed during the development of the LTM plan for Site 45 if one is required by the decision document.

15. Comment: Section 7.3

There is a significant discussion about acetone in this section. The following statement is made, “In addition, acetone concentrations in storm water samples from NPAOs tended to be higher than in samples from PAOs.” Additionally it is discussed that acetone is found in approximately 1/3 of both PAOs and NPAOs. Please screen acetone as all other constituents, refer to comment #1. Additionally if acetone is found in the blank, the EPA guidance of 10 times the blank rule can be used to screen.

Response: The discussion was presented in order to clarify why there were so many acetone detections in sediment samples and to present the argument that the acetone results not be used for final decision making for each outfall. Acetone is screened as all other constituents and is presented in Tables 6-7 through 6-10 in the revised report. Acetone was not detected in any of the trip blanks.

16. Comment: Section 7.4

Please clarify why sample concentrations are being compared to PELs. Additionally clarify if this comparison will affect the analyte list for future sampling. (For example at Outfall 358 vanadium, a potentially site related constituent, is above human health and ecological screening; however, it is not above its PEL. Additionally it appears that vanadium is not recommended for further analysis at Outfall 358.) This may affect other sections of the report.

Response: The Probable Effects Level (PEL) is the concentration above which adverse effects are probable. Although concentrations that fall between the TEL and the PEL might pose risks of adverse effects, concentrations above the PEL certainly indicate a higher probability of adverse effects. Many years of anthropogenic activities in the vicinity of MCRD Parris Island have contributed chemical compounds to the environment at the base and throughout the water bodies into which the outfalls drain. With this in mind, using PEL values can be useful to help determine (with other considerations) the analytes that require further investigation, especially for chemicals such as vanadium. Major sources of environmental contamination of vanadium result from the combustion of fossil fuels, the

burning of coal wastes, the disposal of coal waste and fly ash, and releases from metallurgical works and smelters. An appropriate risk management decision for the Partnering Team to make would be that vanadium at the concentrations detected thus far will not be further evaluated in additional investigations.

17. Comment: Section 7.6.2.3

Please clarify the definition of “statistical analysis”. (i.e., 2x mean, or does this include the later discussed Slippage and Quantile tests) This term is used in most outfall discussions in this section. Additionally this section is confusing as one sentence says constituent “ABC” is considered a COPC; however, the next sentence states, “ABC” shouldn’t be considered a COPC.

Response: The statistical analysis refers to the statistical evaluation as it is described in the introduction to Section 7, specifically in section 7.6.2. It includes an interpretation of the graphical displays and the results of the hypothesis tests. This statistical analysis was completed to provide another line of evidence for the conclusions that were drawn and presented in Section 8 of the report. The conclusions drawn in Section 8 begin first with a comparison of the PAO results to the NPAO data set and screening values. Those analytes with exceedances were then evaluated from an ecological perspective to determine if any of the exceedances would truly be selected as COPCs. Following that conclusion the statistical evaluation conclusions were used to determine if the COPCs were “statistically similar” to the NPAO data. The statistical evaluation was used as another line of evidence to decide if the identified contaminants were specific to a particular analyte, or if they are similar to the NPAO distribution of contaminants.

18. Comment: Section 8.1 Page 8-4 Outfall 592

For the Department to determine if PAHs and pesticides are site related, please better explain the CSM for Site 39. Additionally please provide rationale for the presence of PAHs and pesticides at this Outfall.

Response: Site 39, the electrolyte basin, was reportedly used to refurbish batteries. A PA/SI will be performed at this Site and the data collected during this investigation will be used to evaluate the site.

19. Comment: Section 8.1 Page 8-5 Outfall 881

This section states, “Arsenic in sediment and surface water...”. Please note this should say storm water not surface water.

Response: The text was revised to address the error.

20. Comment: Section 8.2

- Please note that although constituents found in storm water and sediment may not be related to Sites 39 and 48, this does not mean that no further investigation is required for Sites 39 and 48 at the potential source area in the future.
- It should not be stated that “No site investigations are recommended at this time.” Most of the sites listed are in the investigation stage of the CERCLA process and this should be noted.
- Please clarify what is meant by “an upgradient investigation of the outfall piping...”(i.e further outfall investigation under Site 14 or further site investigations for Site 46 and 47). Please note that Sites 46 and 47 source areas may be required to be investigated in the future.
- Please clarify if the additional investigation of Site 54 will be conducted as part of Site 14 or as an RI at Site 54.
- Please note that in the future the potential pathway and up gradient source areas discussed in this section will need to be investigated under CERCLA even though the document states, “No site investigations are recommended at this time.”

- Please note the Department recommends doing further Site 14 investigation under an Expanded SI. If the Expanded SI recommends further investigation of outfalls, the Department believes that the outfalls should then be tied to their related Site(s) and follow the CERCLA process under that Site number.

Response: The Navy has decided to conduct Preliminary Assessments/Site Inspections (PA/SI) at Sites listed in the FFA that have not yet been investigated. Those sites include 39, 46, 47, 48, and 49. During the PA/SI for these sites, potential source areas will be investigated. Based on the results of the Site 14 PA/SI, a Remedial Investigation (RI) will be completed at Site 54. RIs have already been conducted at Sites 5, 9, 16, 27, 55, 32, and 45. Data collected at the outfalls draining these sites will be used by the Partnering Team when developing Long Term Monitoring (LTM) Plans for these Sites, if LTM is required by the decision document. No new data will be collected as part of a Site 14 investigation. Table 8-1 has been revised to update the recommendations and to include the phase of investigation per CERCLA site.

21. **Comment:** The investigation at Site 54 should include discussion of the origin of the TCE and VC at Outfall 555. (i.e. How did TCE get into Site 54 the Old Waste Water Treatment Plant?)

Response: Comment noted. The origin of the TCE and VC at Outfall 555 will be discussed in the RI Work Plan and the subsequent RI report.

Comments Prepared by Kent Krieg

1. **Comment:** 2.3 Site Description, pg 2-3 and Figure 2-3 – Conceptual Site Model
The conceptual site model does not address the potential groundwater migration into the storm water system. An example of this potential pathway would be the reported groundwater contamination associated with Site 45 migration to Outfall 881. Please update the text and figure to account for this potential pathway

Response: The text on page 2-3 of the PA/SI report states “Additionally, some outfalls may flow only during storm events, while other outfalls may discharge water continuously as a result of groundwater infiltration.” The Navy recognizes this issue and has taken the following step to address it. The Site 45 Proposed Plan includes an RAO for the control of contaminated groundwater to the storm water system. Remedial alternatives to achieve this RAO were evaluated in the Site 45 FS Addendum. Figure 2-3 was updated to indicate the potential for groundwater to infiltrate into the storm water system.

Comments from *Draft Final Site 14 Investigation Plan Approval* dated August 31, 2011

1. **Comment:** Outfall 356 is not labeled on Figure 17-1

Response: Outfall 356 could not be identified during field reconnaissance. This outfall was likely buried in the rubble on the shoreline. This outfall was not included in the sampling program of the PA/SI at Site 14 and, therefore, it was not labeled in any figures.

2. **Comment:** Outfall 6173 is listed twice in the table but left off Figure 17-1

Response: Outfall 6173 was not included in the sampling program of the PA/SI; therefore it was not included in the figures of the PA/SI. Outfall 6173 was identified as a culvert that runs underneath the road that was in place prior to construction of the Motor T Facility. The duplicate entry for this outfall was removed from Table 4-1 of the PA/SI.

3. **Comment:** Outfall 610 is currently listed as NPAO. The Department believes that this outfall is a PAO due to its drainage of Site 52 – as stated in Table 10-1. Additionally, per the SMP and Table 10-1, Site 52 is a CERCLA site listed as *Old Weapons Cleaning Area*. Please remove the 'Possible' text from Figures 10-1 and 17-1.

Response: The location of Site 52 is still in question. Based on review of the storm water line drawings it is believed that if Site 52 is in fact located where it is presented in Figure 5-1 of the PA/SI Report. The discharge point is likely to the south of that location. Outfall 610 was inadvertently left in Table 4-2 and will be removed in the Draft Final PA/SI Report. Analytical results from Outfall 610 storm water and sediment sampling were consistent with other NPAO outfalls.

4. **Comment:** Outfall 608DNF is listed as not being sampled, but the rationale states it will be sampled.

Response: Outfall 608DNF was sampled as a PAO outfall and included in the Figures and Tables.

5. **Comment:** OWS 17 and 19 lists OWS 1873 as a possible source although OWS 1873 does not exist

Response: Inconsistencies with OWSs in Tables and Figures have been addressed and are presented in the Draft Final PA/SI Report.