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U S NAVY RESPONSE TO THE U S EPA REGION III COMMENTS REGARDING THE SITE 4  
AND YOUTH POND REMEDIAL INVESTIGATION REPORT FISC WILLIAMSBURG VA  
10/30/2014  
DEPARTMENT OF THE NAVY

# Response to Comments

## Site 4 and Youth Pond

### Remedial Investigation

Naval Weapons Station Yorktown Cheatham Annex  
Williamsburg, VA  
October 30, 2014

Comments received by email on September 19, 2014 from Gerald Hoover, Environmental Protection Agency, Region 3.

#### GENERAL COMMENTS

*EPA General Comment #1: Sediment contamination in Upstream Pond: EPA believes that there is sufficient data to conclude that there is potential ecological risk from PCBs in Upstream Pond and that remedial alternatives should be evaluated as part of the FS.*

Navy Response: While the Navy does not believe that the PCBs in Upstream Pond are the result of a release from site-specific source areas, since there are no known non-anthropogenic sources of PCBs, the Navy will evaluate remedial alternatives to address PCBs in Upstream Pond as part of the FS. Those sections where recommendations were made to conduct an FS were revised (in part due to the response to General Comment #2 below) to state the following:

A Feasibility Study (FS) should be performed to develop and evaluate remedial alternatives to address buried debris and potentially unacceptable human health or ecological risks associated with potentially site-related COCs in soil and groundwater at Site 4. In addition, while the RI findings indicate that the PCBs in Upstream Pond are not likely to be related to a Site 4 source, the FS should include remedial alternatives to address PCBs in Upstream Pond sediment and PAHs detected in the drainage channel directing stormwater runoff from the roof of CAD Building 12 and the adjacent paved areas to Site 4.

*EPA General Comment #2: It appears that soil sample SS06 is a hot spot for PAHs and pesticides. EPA recommends that the Navy further characterize this hot spot and propose remedial alternatives for addressing it in the FS.*

Navy Response: Soil sample SS06 is located in a small drainage channel that receives stormwater runoff from the expansive roof of CAD Building 12 and the adjacent paved surfaces and directs it to Site 4. In addition, this sample location is well outside of the Site 4 disposal areas and there is no evidence of any waste disposal activities at this location. Consequently, the detected PAH concentrations in this sample can be attributed to stormwater contact with well-known contributors to PAHs in urban runoff, namely the large roof of CAD Building 12 and the immediately adjacent asphalt-paved parking area, and not a CERCLA-regulated site release. Nevertheless, due to the very small size of this impacted area and since there are potential unacceptable risks from site-related constituents to be addressed at Site 4, the Navy will evaluate remedial alternatives for the limited vicinity of this sample location in the FS. Those sections where recommendations were made to conduct an FS were revised to state the following:

A Feasibility Study (FS) should be performed to develop and evaluate remedial alternatives to address buried debris and potentially unacceptable human health or ecological risks associated with potentially site-related COCs in soil and groundwater at Site 4. In addition, while the RI findings indicate that the PCBs in Upstream Pond are not likely to be related to a Site 4 source, the FS should include remedial alternatives to address PCBs in Upstream Pond sediment and PAHs detected in the

drainage channel directing stormwater runoff from the roof of CAD Building 12 and the adjacent paved areas to Site 4.

*EPA General Comment #3: EPA strongly suggests that the Navy consider addressing the waste and debris in the burial areas in the FS. Please evaluate if there are any VADEQ regulations or other State or Federal regulations that may apply.*

Navy Response: The Navy will consider addressing the waste and debris in the burial areas in the FS. The RI Report has been revised to include this information. In addition, the Navy has reviewed state and federal regulations that may apply to surface and buried debris at CERCLA sites including 9VAC20-81-45, Section B.2.f - "In addition to those exceptions found in 40 CFR 257.1(c), the open dump criteria shall not apply to sites that are undergoing remediation per the requirements of CERCLA or the RCRA Corrective Action Program and are doing so with the department's and/or the Environmental Protection Agency's oversight."

*EPA General Comment #4: Non-Site Contaminant Sources: EPA agrees that contaminated storm water runoff from non-site related sources are impacting the site. There are relatively simple/straight forward measures that are available to address this contaminated runoff issue. EPA would like the Navy to evaluate this issue further in the FS and consider potential alternatives as a protective measure to ensure site cleanup in the long-term.*

Navy Response: While there may be relatively simple/straight forward measures that are available to address potentially contaminated stormwater runoff from non-site related sources, these activities would need to be addressed under the Navy's Stormwater Compliance division and not the Environmental Restoration Program, since the impacts are not the result of a release regulated under CERCLA. No changes to the RI Report were made.

#### **DOCUMENT SPECIFIC COMMENTS**

*EPA Document Specific Comment #1: PAGE IV; In the first paragraph on this page (under the bullets), the text indicates that some of the CoCs identified in the BERA were not site-related and; therefore, will not be considered further. A few sentences explaining this determination (site-related vs. non site-related CoCs) should be added to this section of the report.*

Navy Response: The Executive Summary was revised to include more information explaining how site-related and non-site-related COCs were determined.

*EPA Document Specific Comment #2: APPENDIX K; Based on the data presented in the RAGS - Part D Table 3's for soil inside and outside the fenced areas, it appears that hotspots for arsenic and lead may be present. (Maximum respective concentrations of arsenic and lead were 350 mg/kg and 790 mg/kg, as compared to the exposure point concentrations used to determine potential risk, 40 mg/kg and 37 mg/kg.) These hotspots will not affect risk-based conclusions for arsenic, since arsenic in soil is a CoC that will be evaluated in the pending FS, but it could impact lead (under a residential exposure scenario), which has not been identified as a CoC. A discussion of these hotspots should be included in the report.*

Navy Response: The hot spot for arsenic (350 mg/kg in sample CAS04-SS13-1012, in surface soil outside the fenced area of site) is within a debris area and the debris areas will be evaluated for remedial alternatives in the FS. Additionally, as indicated in comment, the HHRA identified arsenic as a COC, and it will, therefore, be evaluated in the FS. The potential risks associated with exposure to arsenic are primarily associated with soil in the debris area. The concentrations of arsenic in surface soil samples closest to CAS04-SS13-1012 were 2.7 mg/kg and 3.4 mg/kg, both also within a debris area. The next-highest detected concentration of arsenic was 12.7 mg/kg, at location CAA03-SB09-1109, in subsurface soil outside the fenced area, but not within a debris area.

The hot spot for lead (793 mg/kg in sample CAA03-SS06-1109) is an isolated occurrence that was detected in surface soil within the fenced area. This is the only detected concentration of lead that exceeds the residential lead soil screening level of 400 mg/kg in this area. The lead concentration in the sample collected closest to CAA03-SS06-1109 was 13.6 mg/kg; moreover, it was "B" qualified. The next highest detection of lead, 129 mg/kg in sample CAS004-4HA05-00-1199, does not exceed the residential lead screening level of 400 mg/kg. The highest detected concentration of lead was also below the industrial soil lead RSL of 800 mg/kg. This sample was collected within the fenced area, and the only current receptors to surface soil within the fenced area are industrial workers. Therefore, no unacceptable risks associated with current exposure to lead would be expected. Additionally, as this "hot spot" sample was collected from within the developed, fenced area of the site, future use of this area would require considerable re-working and re-grading of the area and the soil, such that the soil would be mixed, resulting in the isolated, more-concentrated lead soil to be mixed with soil having much lower lead concentrations, producing a soil with lead concentrations more similar to the mean concentration used in the IEUBK model and that demonstrated no adverse effects with future child residential exposure to soil.

The following changes have been made to the text:

Section 5.4, Current and Future Industrial Worker, Appendix J, Section J.6.2.1, and Appendix J, Section 6.2.7, The Adult Lead Model bullet. The following sentence has been added: "The one potential lead hot spot in soil, at a concentration of 793 mg/kg in sample CAA03-SS06-1109, is below the industrial soil lead screening level of 800 mg/kg (USEPA, 2013); therefore, there would be no adverse effects associated with exposure to lead by industrial workers at this location."

Section 5.4, Current and Future Adult and Child Visitor/Recreational User, and Appendix J, Section J.6.2.5, "Lead was identified as a..." bullet. The following has been added: "There is one potential lead hot spot in soil, at a concentration of 793 mg/kg in sample CAA03-SS06-1109, above the residential soil lead screening level of 400 mg/kg (USEPA, 2013). This is the only detected concentration of lead above the residential soil screening level, and this sample is a surface soil sample from within the fenced, industrial area of the site. The next-highest detected lead concentration was 129 mg/kg. Although this one detected concentration exceeds the screening level, and recreational exposure to lead at this location alone could potentially result in unacceptable risks, it is unlikely a future recreator would actually be exposed to lead in soil at this concentration. As this sample was collected from within the developed, fenced area of the site, future use of this area would require considerable re-working and re-grading of the area and the soil, such that the soil would be mixed, resulting in the isolated, more-concentrated lead soil to be mixed with soil having much lower lead concentrations, producing a soil with lead concentrations more similar to the mean concentration used in the IEUBK model and that demonstrated no adverse effects for exposure to soil."

Section 5.4, Current and Future Maintenance Worker, and Appendix J, Section 6.2.8, "Lead was identified as a..." bullet. The following has been added: "The one potential lead hot spot in soil, at a concentration of 793 mg/kg in sample CAA03-SS06-1109, is below the industrial soil lead screening level of 800 mg/kg (USEPA, 2013); therefore, there would be no adverse effects associated with exposure to lead by maintenance workers at this location."

Section 5.4, Future Construction Worker, and Appendix J, Section 6.2.6, "Lead was identified as a..." bullet. The following has been added: "The one potential lead hot spot in soil, at a concentration of 793 mg/kg in sample CAA03-SS06-1109, is below the industrial soil lead screening level of 800 mg/kg (USEPA, 2013); therefore, there would be no adverse effects associated with exposure to lead by construction workers at this location."

Section 5.4, Future Resident (adult and child), and Appendix J, Section J.6.2.10, "Lead was identified as a..." bullet. The following has been added: "There is one potential lead hot spot in soil, at a concentration of 793 mg/kg in sample CAA03-SS06-1109, above the residential soil lead screening level of 400 mg/kg (USEPA, 2013). This is the only detected concentration of lead above the residential soil screening level, and this

sample is a surface soil sample from within the fenced, industrial area of the site. The next-highest detected lead concentration was 129 mg/kg. Although this one detected concentration exceeds the screening level, and residential exposure to lead at this location alone would most likely result in unacceptable risks, it is unlikely a future resident would actually be exposed to lead in soil at this concentration. As this sample was collected from within the developed, fenced area of the site, future use of this area would require considerable re-working and re-grading of the area and the soil, such that the soil would be mixed, resulting in the isolated, more-concentrated lead soil to be mixed with soil having much lower lead concentrations, producing a soil with lead concentrations more similar to the mean concentration used in the IEUBK model and that demonstrated no adverse effects with future child residential exposure to soil.”

*EPA Document Specific Comment #3: A couple of cross sections from north to south and west to east showing the monitoring wells details and lithology should be included in the report to better understand the nature and extent of contamination in groundwater.*

Navy Response: Cross sections from north to south and east to west showing monitoring well details and lithology were added to Section 3.

*EPA Document Specific Comment #4: The groundwater data from 2012 seems to be inconsistent with the groundwater data from 2009. There are not organics exceedances in 2012 contrasted with 2009 where few exceedances of organics were found. In 2012 the groundwater data was taken from permanent monitoring wells and the groundwater samples from 2009 were taken from temporary monitoring wells. A rationale about the use of the temporary wells versus the use of the permanent wells should be included in the report. Are the temporary wells installed in 2009 still useful for sampling or were abandoned?*

Navy Response: While not stated in the RI Report, the temporary monitoring wells installed in 2009 were installed using one-inch PVC casing with 0.010-inch machine-slotted screen surrounded by a pre-installed sand filter pack. Following installation, each temporary monitoring well was developed and purged prior to groundwater sampling (as is done with permanent monitoring wells). The monitoring well construction and development/purging process was conducted to ensure the temporary monitoring wells were as similar to permanent monitoring wells as possible, so that the groundwater was adequately characterized and the data collected could be used to adequately assess potential risk to human health and ecological receptors (this information was presented in the Site 4 RI UFP-SAP Response to Comment document dated June 26, 2012). In addition, the Site 4 RI UFP-SAP included information stating that the results of the RI groundwater sampling would be combined with the groundwater sampling data from the temporary wells evaluated in the SI to determine if there may be unacceptable risks to human health and the environment. The RI Report (specifically, Section 4.2.3) was revised to make it clear that the temporary monitoring wells have been abandoned.

*EPA Document Specific Comment #5: The highest concentration of organics were detected at temporary wells CAA03-GW05 and CAA03-GW04 in 2009. Is there any plan to convert CAA03-GW05 and CAA03-GW04 to permanent monitoring wells.*

Navy Response: There are no plans to convert CAA03-GW05 and CAA03-GW04 to permanent monitoring wells, as they have already been abandoned. However, it is likely that additional monitoring wells will need to be installed as part of future remedial design or remedial action activities. The Navy will consider installing permanent monitoring wells in the immediate vicinity of the CAA03-GW05 and CAA03-GW04 locations during future site activities. No changes to the RI Report were made.

*EPA Document Specific Comment #6: 1. Page L-23: Section L. 5.2 BERA Approach - The bullet describing background concentrations specifically refers to only inorganic constituents. Please explain why concentrations of organic chemicals at the sites are not also compared to background concentrations.*

Navy Response: For soil, background UTLs were only developed for inorganic constituents in the facility-wide background study. For surface water and sediment, background UTLs (developed for this evaluation

and the Penniman Lake evaluation based on data collected from Cheatham Pond; Appendix M) were developed for both inorganics and select organic constituents (e.g., PAHs and pesticides), which is now clarified in the RI. Background UTLs were not developed for fish and frog tissue; maximum reference concentrations (from Cheatham Pond) for tissue were directly compared to concentrations in site tissue samples for all constituent groups sampled.

*EPA Document Specific Comment #7: Page L-25: Section L.5.3.1.1 - Regarding Site 4 NW and the assessment of risk to plants and soil invertebrates, the maximum concentrations of acetone (640 ug/kg) was greater than the minimum ESV (173 ug/kg) for similar VOCs (acetone does not have a specific ESV). Therefore, acetone needs to be included as a COPC for further risk evaluation.*

Navy Response: Acetone is now included as a COPC for further risk evaluation for this spatial area.

*EPA Document Specific Comment #8: Page L-30: Section L5.4.1.2 Surface Sediment - Regarding the Upstream Pond, the text indicates that arsenic and beryllium were not retained. This conclusion is wrong. The information provided ("Arsenic exceeded ESVs, and beryllium did not have an ESV, but the maximum background UTL ratios were only 1.03 and 1.15, respectively, and there was only a single background UTL exceedance for each metal .... ") supports retaining these chemicals.*

Navy Response: The magnitude and frequency of background exceedance do not warrant retaining either of these constituents. However, they are now identified as COPCs for further risk evaluation for this spatial area, but will not be identified as COCs in the risk evaluation for the reasons stated in this section.

*EPA Document Specific Comment #9: Page L-36: Section L.5.4.2 Aquatic Food Web Exposures Regarding the Upstream Pond and Site 4 Streams, the conclusion is only PCBs were identified as COPCs for further risk evaluation. Please explain why endrin is not retained as a COPC.*

Navy Response: The text of this section was revised to indicate that endrin is a COPC for further risk evaluation for this spatial area. Endrin is already included in the risk evaluation discussion for this spatial area and pathway.

*EPA Document Specific Comment #10: Page L-41: Section L.5.5.2 - Regarding PCBs, the text refers to the use of EqP ESVs. Sediment quality guidelines should also be discussed.*

Navy Response: Screening level concentration ESVs was added to this discussion.