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U S NAVY RESPONSE TO U S EPA AND WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION COMMENTS ON DRAFT UNIFORM FEDERAL POLICY SAMPLING AND ANALYSIS PLAN SITE 1 OPERABLE UNIT 4 (OU 4) PRE-CONFIRMATION SOIL SAMPLING ALLEGANY BALLISTICS LABORATORY ROCKET CENTER WV
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CH2M HILL

EPA and WVDEP Comments and Navy Responses to the

Draft Uniform Federal Policy Sampling and Analysis Plan Site1 (OU-4) Pre-Confirmation Soil Sampling

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Comments on the *Draft Uniform Federal Policy Sampling and Analysis Plan Site 1 (OU-4) Pre-Confirmation Soil Sampling* are included in the text below. Each comment is followed by the Navy's reply shown in **bold** text. The USEPA comments comprise the following:

Comments submitted by Sarah Kloss, EPA RPM

General Comments

1. The term "pre-confirmation soil sampling" suggests that a remedy has been chosen at this site even though we are in the FS stage. The title should be change to reflect that we are delineating remedial areas. While remedial areas that are well defined pre-excavation, will likely not require confirmation sampling, language that suggests we have agreed that confirmation sampling will not be required is also pre-decisional. Until we have a ROD in place documenting the selected remedy for the site we should remove references to excavation and remedial design agreements.

   Navy Response: The document title has been revised to '*Uniform Federal Policy Sampling and Analysis Plan for Site 1 (OU-4) Delineation Soil Sampling*'. The text summarizing the discussions regarding the need for pre-confirmation sampling has been revised to clarify its intent. The potential for pre-confirmation sampling is pre-decisional and no official agreement can be made until a ROD is signed. References to pre-confirmation, excavation, and remedial design agreements have been removed from the document.

2. Surface samples: Since the surface soil at this site has potentially been subject to erosion and other activities that may skew sampling results (suggesting contaminants are no longer present when they are present at slightly deeper depths), areas should be defined at least to depth of 1.5-2 feet even if the near surface samples are less than the SRG.

   Navy Response: The sampling approach has been revised for those Tier 1 and Tier 2 sampling locations in which only one uppermost sample was to be collected at the surface (0 to 1 ft bgs). A deeper soil sample from 2-3 ft bgs will be collected and analyzed for the Subarea specific risk drivers for these locations to ensure the potential erosional effects are addressed. This is reflected in modification to ABG Subarea 1, ABG Subarea 3, and OABG Subarea 1, which now have two uppermost samples to be collected at their Tier 1 and Tier 2 locations. Worksheet 17 Step 1 and Step 3 have been revised to account for this revision.

Specific Comments

1. Executive Summary, Investigation History: The second to last sentence states that the lateral extent of each subarea is based on the "removal of sample locations indicated in the site remedial goals technical memorandum." The hypothetical removal of sample locations in order to achieve a sitewide remedial goal may have defined the starting point for these subareas, but it really doesn't define the assumed laterally extent of contamination. Please explain how the assumed lateral starting boundaries of the areas are defined.

   Navy Response: The text in the Executive Summary, Investigation History section text has been revised to state, "The assumed lateral extent of each Subarea is based

on current data and historical knowledge of the site. In order to estimate the assumed lateral extent, an interpolation of site data was made that included: (1) the removal and retention of sample locations indicated in the site remediation goals technical memorandum, (2) scaled buffer area drawn around the removed sample locations based on chemical concentrations and transport potential of the constituents in that area, (3) comparison to the nearest sample(s) if any, and (4) where applicable, the known historical disposal locations, such as the former burn pad and disposal pits. The actual lateral and vertical extent of the Subareas is the focus of this sampling effort, as described in the following section." In addition, Figures 3 and 4 have been revised to include the samples that were used in the interpolation for completeness.

2. Executive Summary, Project Description: This section states that a primary risk driver is defined as a contaminant of concern (COC) that exceeds the "95% UCL current condition". This definition should be revised. A specific contaminant doesn't exceed the UCL "condition" at a given location, but rather the concentration at that location elevates the area-wide UCL such that the mean concentration likely exceeds the cleanup goal (the UCL is calculating the upper confidence limit on the mean.) The text should reflect that the primary risk drivers for each area were the COCs with concentrations that significantly drove the site-wide UCL to exceed the cleanup goal or exceeded a threshold of five times the SRG. Also, please omit the phrase "exceeds the UCL condition" from the SAP.

   Navy Response: The Executive Summary, Project Description has been revised to state, "A primary risk driver is defined as a COC whose concentration exceeds the site remediation goal (SRG) with respect to the 95% UCL calculation and exceeds 5 times the SRG, or does not exceed the SRG with respect to the 95% UCL calculation but exceeds 5 times the SRG. The primary risk drivers exhibit the highest SRG ratios (greater than 5.0) and drive the site-wide 95% UCL to exceed the SRG and need for remedial action at the site. A secondary risk driver is defined as a COC whose concentration exceeds the SRG with respect to the 95% UCL calculation but does not exceed 5 times the SRG. The secondary risk drivers exhibit lower SRG ratios (ranging from 1.0 to 5.0) and support the need for remedial action at the site." The language regarding 'UCL current condition' has been removed from the document and revised as stated above.

3. Executive Summary, Project Description: As with the primary risk drivers, the "secondary risk driver" should be defined more clearly. The secondary risk drivers are contaminants that are not primary risk drivers, but still exceed the SRG.

   Navy Response: See response to Specific Comment 2.

4. Worksheet 9-1: This worksheet contains a list of consensus decisions. The term "consensus" suggests that we went through a formalized process to draft these statements, when they are actually summaries based on meeting minutes. Unless we go through the formalized consensus statement writing process, there shouldn't be

consensus statements listed in these documents. Also, the conclusions about confirmation samples are again pre-decisional. Same applies for Section 9-2.

Navy Response: The term 'Consensus Decisions' has been revised to 'Resolution' in Worksheets 9-1 and 9-2. References to pre-confirmation, excavation, and remedial design agreements have been removed from the document.

5. Worksheet 10, Page 40: The last sentence of the second paragraph states that COCs are present in "central area soils". This contradicts previous statements that the central OABG is not contaminated. Please further describe what is meant by this statement.

   Navy Response: COCs have been detected in the Central OABG near the edges and slightly within the boundaries of the area. However, the contamination is likely associated with the disposal activities that occurred within the adjacent West OABG and East OABG areas. The text has been revised to state, "The bulk of the surface and subsurface debris was shown to be buried in the West and East areas of the OABG. The Central area showed no surface or subsurface debris based on visual observations and test pits completed in this area. However, chemical contamination is present in the West, Central, and East OABG soils. Elevated concentrations of COCs have been reported from soil samples collected near the edges and within the boundaries of the Central OABG; however the contamination is likely associated with the disposal activities that occurred within the adjacent West OABG and East OABG areas." In addition, the description of the Central OABG in the Outside Active Burning Ground section of Worksheet 10 has been revised to state, "The Central OABG lies along the river between the West OABG and East OABG. This area showed no evidence of debris or disposal activities through visual observation or subsurface soil sampling."

6. Worksheet 10, Page 41: The first paragraph describes how certain initial COCs were eliminated from further consideration because they did not exceed the SRG on a site-wide basis or alternatively five times the SRG at individual locations. It's unclear why these constituents were considered COCs in the first place. Also, "toxicity equivalents" is included as one of these COCs. Please clarify what this is referring to.

   Navy Response: COCs were selected as those chemicals contributing to the potential unacceptable risk to current and/or future human health and ecological receptors and to the potential unacceptable risk from soil-to-groundwater leaching. The COC list, as presented in Tables 2 and 3, does not change. However, as part of development of the SRGs, the 95% UCL of the sitewide concentrations was completed. Constituents were then eliminated from further consideration because the 95 percent UCL of the sitewide soil concentration was below the SRG and the maximum concentration of individual sample results were less than five times the SRG. The constituents remaining from this evaluation were coined risk drivers and are a subset of the original COC list. The interchangeable use of the terms 'COC' and 'risk driver' is incorrect and has been revised throughout the Nature and Extent of Contamination section in Worksheet 10 as necessary. In

addition, Tables 2 and 3 have been revised to reflect the proper terminology as stated above.

The term 'toxicity equivalents' refers to 2,3,7,8-tetrachlorodibenzo-p-dioxin toxic equivalency quotient. The text has been revised accordingly.

7. Worksheet 14, Page 56, Waste Management: Is "sit-generated trash" a typo for "site-generated trash"?

   Navy Response: The typo has been revised to 'site-generated trash' as suggested.

8. Worksheet 15-3, Page 59: What is the logic for only reporting specific metals rather than the list of metals?

   Navy Response: The COCs for the ABG and OABG were defined and agreed upon in the SRG Memorandum. This list of COCs was further refined within each Subarea (i.e., risk drivers) based on chemical concentrations exceeding the SRG. An evaluation was completed for each Subarea to confirm all COC metals, not just the risk drivers, were sampled within each area under previous investigations. It was verified that the COC metals were sampled in each Subarea during previous investigations. The concentrations do not exceed the SRGs which supports the rationale for not collecting samples for these constituents as part of the delineation efforts.

   The soil samples will be analyzed solely for the Subarea specific risk drivers. Although this does include the analysis of various metals, it does not include the full TAL metal list or the full COC metal list. All data reported to CH2M HILL by the laboratory will be provided to the Navy and regulatory agencies.

9. Worksheet 15-4, Page 60: The acronym "NC" is not defined.

   Navy Response: The acronym 'NC' stands for 'no criteria available'. The acronym has been added to the notes section of Worksheets 15-2, 15-3, and 15-4.

10. Worksheet 16: This schedule needs to be updated.

    Navy Response: Schedule has been updated in Worksheet 16.

11. Worksheet 17, Tier 2, Page 63: This section states that the Tier 2 sampling locations will be at the assumed boundaries for each subarea. Except for previously agreed assumed boundaries (former earthen burn pads, FDPs), it is not clear how subarea boundaries were assumed. They are not based on "clean" samples. Please explain.

    Navy Response: See response to Specific Comment 1. The following text has been added to the first paragraph of Worksheet 17, "The assumed lateral extent of each Subarea is based on current data and historical knowledge of the site. In order to

estimate the assumed lateral extent, an interpolation of site data was made that included: (1) the removal and retention of sample locations indicated in the site remediation goals technical memorandum, (2) scaled buffer area drawn around the removed sample locations based on chemical concentrations and transport potential of the constituents in that area, (3) comparison to the nearest sample(s) if any, and (4) where applicable, the known historical disposal locations, such as the former burn pad and disposal pits."

12. Worksheet 17, Tier 3, Page 63: Please explain how the placement of the 10 ft equidistant pair will be chosen. Also, please change the "partnering team" to "the Navy and regulatory agencies."

    Navy Response: The proposed placement of the 10-foot equidistant pair of Tier 3 samples are shows on Figures 6 through 24. The goal of the Tier 3 sample locations is to straddle the Tier 2 sample in an effort to delineate the Subarea.

    The term 'partnering team' has been revised to 'Navy and regulatory agencies' throughout Worksheet 17.

13. Worksheet 17, Step 3, Caveat, Page 65: It's not clear what is meant by "uppermost samples" with reference to Tier 2. Also, please clarify how the pre-determined sampling parameters are defined.

    Navy Response: Although uppermost samples are designated for various reasons (which are explained in Worksheet 17), all uppermost samples will be analyzed for all of the Subarea specific risk drivers regardless of known depth of contamination, results of shallower sample, etc. The definition of uppermost sample has been added to Tier 1 and Tier 2 sections in Worksheet 17.

    The predetermined sampling parameters comprise of all of the Subarea specific risk drivers. The definition of predetermined sampling parameters has been added to Tier 1 and Tier 2 sections in Worksheet 17.

14. Worksheet 17, Step 4, Evaluation of Tier 2, Page 65: Please clarify that the next Tier 2 sampling interval will be analyzed if either of those conditions are met, i.e, the corresponding Tier 1 sample fails or the shallower Tier 2 sample fails.

    Navy Response: The text has been revised to state, "In addition, if the deepest sample collected from Tier 1 or Tier 2 exhibits concentrations of analytes that exceed the SRGs, and the groundwater table has not been encountered, a deeper sample will be collected and analyzed."

15. Worksheet 17, Step 4, Evaluation of Tier 2, Page 65: For areas greater than 625 square feet, the text should note that the average will be "estimated" rather than "calculated."

    Navy Response: The term "calculate" has been revised to "estimated" in Step 4.

Editorial Comments

1. Executive Summary, Project Description: The last sentence about risk drivers in paragraph 1 is repeated twice.

   Navy Response: The duplication of the text has been removed in both the Executive Summary and Worksheet 10.

Comments submitted by Catherine Guynn, WVDEP RPM

General Comments

1. The title of the document, *Pre-Confirmation Soil Sampling*, and the references throughout the document should be changed (i.e., Pre-Remediation Sampling, Soil Characterization Sampling, Pre-Project Sampling, etc.) to reflect the proposed sampling is for defining the vertical and lateral boundaries of the target remediation areas. The use of confirmation sampling in the title and throughout the document can be interpreted to mean the final remedial goals have been met even before the remediation starts and before a final remedy is selected.

   Navy Response: The document title has been revised to '*Uniform Federal Policy Sampling and Analysis Plan for Site 1 (OU-4) Delineation Soil Sampling*'. The text summarizing the discussions regarding the need for pre-confirmation sampling has been revised to clarify its intent. The potential for pre-confirmation sampling is pre-decisional and no official agreement can be made until a ROD is signed. References to pre-confirmation, excavation, and remedial design agreements have been removed from the document.

2. The statements, "*The Navy, in partnership with EPA and WVDEP, agrees that if soil removal is a component of the final remedy, and the dimensions of the target remediation areas have been defined before removal, sampling data will be used as post-removal confirmation data. Therefore, a subsequent post-confirmation sampling effort will not be warranted*", on page 6, third paragraph, first and second sentences and page 45, first paragraph, last two sentences. These statements should not be in the SAP and should probably be deferred for another discussion or until a future phase of the remedial process.

   Navy Response: References to pre-confirmation, excavation, and remedial design agreements have been removed from the document. However, the discussions regarding the potential for the samples to be used as post-confirmation data during the scoping sessions (Worksheet 9) has not been deleted. The text has been revised to clarify the original intent and document the Team discussions during that time.

3. Change Charlie Armstead to Catherine Guynn on page 3, Worksheet #1; page 19, Worksheet #3; page 23, Worksheet #5; and, page 29, Worksheet #7.

   Navy Response: Charlie Armstead has been revised to Catherine Guynn throughout the document. In addition, the field team leader and members are now know and have been added.