



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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JAN 20 2000

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Christopher T. Penny
Navy Technical Representative
Installation Restoration Section (South)
Environmental Program Branch
Environmental Division
Atlantic Division (LANTDIV), Code 182
Naval Facilities Engineering Command
1510 Gilbert Street
Norfolk, VA 23511-2699

Re: Naval Station Roosevelt Roads - 1) Corrective Measures Studies (CMS) Workplan for SWMUs #1 (Army Cremator Disposal Site and #2 (Langley Drive Disposal Area); 2) CMS Workplan for SWMU #45 (Areas outside of former power plant); 3) Draft TCE Investigation Report for Tow Way Fuel Farm; and 4) Draft RFI Final Report for SWMU #30 (Former Incinerator Area); EPA ID # PR2170027203

Dear Mr. Penny:

The United States Environmental Protection Agency (EPA) Region II has completed its review of the above four documents transmitted on behalf of the Navy by Baker Environmental Inc., on October 29, 1999 and December 10, 1999. EPA has the following comments on those documents:

CMS Workplan for SWMUs #1 and #2 (Army Cremator and Langley Drive Disposal Areas)

EPA requested our contractor, Booz Allen & Hamilton (BAH) to review the CMS workplan, transmitted by Baker Environmental's letter of October 29, 1999. The CMS workplan proposes performing a screening level ecological risk assessment; however, the workplan provides only a general conceptual approach, and lacks sufficient detail to make it approvable as submitted. BAH's comments on what is needed to make the workplan approvable are given in the enclosed Technical Review. If you wish to have a conference call with EPA and BAH to discuss those comments, please telephone Mr. Tim Gordon of my staff, within 10 days of your receipt of this letter to make such a request. Within 30 days of your receipt of this letter, or within 21 days of the above conference call, if so requested, please submit a revised CMS workplan for SWMUs #1 and #2 addressing the comments given in the enclosed Technical Review.

CMS Workplan for SWMU #45 (Areas outside of former power plant)

As with SWMU #1 and #2, the CMS workplan for SWMU #45, which was transmitted by Baker Environmental's letter of October 29, 1999, provides only a general conceptual approach to implementing an ecological risk assessment, and lacks sufficient detail to make it approvable as submitted. EPA also requested BAH to review this CMS workplan. BAH's comments on the SWMU #45 workplan are similar to those discussed above for SWMU #1 and #2, and are given in the enclosed Technical Review. As discussed previously, if you wish to have a conference call with EPA and BAH to discuss those comments, please telephone Mr. Tim Gordon of my staff, within 10 days of your receipt of this letter to make such a request. Within 30 days of your receipt of this letter, or within 21 days of the above conference call, if so requested, please submit a revised CMS workplan for SWMU #45 addressing the comments given in the enclosed Technical Review.

Draft TCE Investigation Report for Tow Way Fuel Farm

EPA has reviewed this report, transmitted by Baker Environmental on December 10, 1999. The report is a supplemental investigation report to delineate the nature and extent of a dissolved plume of several chlorinated organic constituents, which were detected in the groundwater in April 1998, following completion of the RFI investigations and final report for SWMUs #7 & #8 at Tow Way Fuel Farm.

EPA's review found that in Sections 6.4.3 and 6.5, the total non-cancer hazard index (HI) is indicated to be 1.2; yet Table 6-5 lists the total HI as 1.8. Please submit revised pages and or Tables to correct the conflicting text.

Also, as indicated in Section 6.4 of the report, the total cancer risk estimates associated with the volatile hazardous constituents trichloroethene (TCE), 1, 1-Dichloroethene (DCE), and chloromethane dissolved in the groundwater slightly exceed the risk level of 1.0×10^{-6} , and the cumulative HI for non-cancer risks slightly exceeds one. Therefore, a slight health risk is indicated for construction worker exposures to contaminated groundwater as a result of excavation to the water table.

Also, no evaluation of ecological risks was conducted, even though the dissolved TCE plume is in proximity to the likely area of groundwater discharge to the surface waters of Ensenada Honda.

Nevertheless, EPA concurs with the recommendation, given in Section 7.2 of the report, that a more detailed evaluation will be performed in the CMS for Tow Way Fuel Farm. That evaluation must include an acceptable ecological risk assessment for the dissolved TCE, DCE, and chloromethane as part of the CMS final report currently being developed for Tow Way Fuel Farm, and the CMS must address the slight human health risks indicated for dissolved TCE,

DCE, and chloromethane. Subject to the Navy submitting revised pages and or Tables to correct the erroneous text regarding the cumulative total HI, as discussed above, and completion of an acceptable ecological risk assessment as discussed above, EPA approves the TCE investigation report.

Draft RFI Final Report for SWMU #30 (Former Incinerator Area)

EPA has reviewed this report, transmitted by Baker Environmental on December 10, 1999, and has several comments. Since the Tier II screening process cited in Section 6.3 was based on a method given in a 1999 personal correspondence from Ms. Gina Ferreira of EPA's Superfund Program, please submit a copy of the cited personal correspondence, which will then be included as an Appendix to the RFI report. Furthermore, since, as indicated in Section 6.4, the Tier II screening for two inorganic hazardous constituents (antimony and zinc) dissolved in the groundwater resulted in HI's (for non-cancer risk) exceeding 1.0, a potential human health risk is indicated. Therefore, EPA's approval of the no further action required (NFAR) recommendation for this SWMU, given in Section 8.2 of the report, is contingent on groundwater underlying or downgradient of the SWMU not being used in the future as a drinking water source. Furthermore, this approval is tentative, pending completion of public comment of this decision, which will be incorporated in a Draft Permit.

If such usage does occur in the future, EPA reserves its right to re-open its approval of the NFAR status for SWMU #30, and if warranted, require further action at that time to protect human health. EPA's approval of the NFAR status is also contingent on the Tier II screening method given in the cited 1999 personal correspondence, being acceptable for usage in RCRA corrective action final decisions. Based on this contingent approval of the NFAR status for SWMU #30, the RFI is now completed.

Conclusions

Within 21 days of your receipt of this letter, please submit the revised pages and/or Tables requested above with regard to the TCE Report for Tow Way Fuel Farm and the letter on the Tier II screening method utilized in the RFI Final Report for SWMU #30. Furthermore, please submit revised CMS workplans for SWMUs #1 & #2 and for SWMU #45, addressing the comments given in the two enclosed BAH Technical Reviews, within 30 days of your receipt of this letter, or within 21 days of the conference calls discussed above (if it is requested by the Navy).

Please telephone Mr. Tim Gordon, of my staff, at (212) 637- 4167 if you have questions regarding any of the above.

Sincerely yours,



Nicoletta DiForte
Chief, Caribbean Section
RCRA Programs Branch

Enclosures (2)

cc: Mr. Israel Torres, Attn. Ms. Luz Muriel-Diaz, PREQB, w/encls.
Ms. Madeline Rivera, NAVSTA Roosevelt Roads, w/encls.
Mr. Paul Rakowski, LANTDIV, w/o encls.
Mr. Mark Kimes, Baker Environmental, w/encls.
Mr. John Tomik, CH2M Hill, w/encls.
Ms. Connie Crossley, Booz Allen, w/o encl.

TECHNICAL REVIEW

**CORRECTIVE MEASURES STUDIES (CMS)
WORK PLAN FOR
SWMU 1 (ARMY CREMATOR DISPOSAL SITE)
AND
SWMU 2 (LANGLEY DRIVE DISPOSAL AREA)
OCTOBER 29, 1999**

**NAVAL STATION ROOSEVELT ROADS
CEIBA, PUERTO RICO**

REPA2-0203-010

January 7, 2000

GENERAL COMMENTS

1. The maximum contaminant levels referenced in the Work Plan may not be protective of ecological receptors. Ecological risks should be considered in the development of corrective measures standards by incorporating standards that are determined to be protective of ecological receptors during the ecological risk assessment process.
2. The Work Plan only provides a very general conceptual approach to a screening level risk assessment. Furthermore existing contaminant data are not summarized in the Work Plan. When complete, the results of the screening level risk assessment should be reported in detail, and include summary tables of contaminant concentrations, the identified toxicity benchmarks, and the results of all risk calculations.
3. The Work Plan states (p. 3-1) that "potential ecological risks have not been evaluated in detail." The Work Plan should summarize the results of any previous ecological screening of contaminants. The Work Plan should also address how the results of any preliminary screening will be used in planning the ecological evaluation proposed in the Work Plan.

SPECIFIC COMMENTS

3.2.1.1 Screening Level Problem Formulation

1. The Work Plan does not provide an ecological conceptual site model (CSM), but rather proposes CSM development as part of the screening level risk assessment (p. 3-2). The Work Plan should include a preliminary CSM, which can be

refined following additional evaluation of exposure pathways and ecological receptors during the screening level assessment. A preliminary CSM will help focus the assessment and facilitate the proposed habitat evaluation.

2. The Work Plan proposes to use only existing data to screen for ecological risks (p. 3-3). The Work Plan should state that potential risks to ecological receptors will also be considered in areas that have not been sampled. The results of the screening level risk assessment should include an evaluation of potential source and release areas and contaminant gradients in soil, sediment, groundwater, and surface water.
3. The Work Plan proposes a qualitative habitat assessment that may be used in determining if the risk assessment process may end (p. 3-3). Any habitat assessments used to conclude an absence of ecological risks should be rigorous enough to detect a 20% difference in population parameters between assessment and reference areas. The results of the screening level risk assessment should specify which criteria were used to match the habitat characteristics of reference and assessment areas, and provide the results of statistical comparisons of population parameters.
4. The Work Plan provides only general statements regarding the identification of ecological receptors. The Work Plan should state that the evaluation of ecological receptors will include seasonal visitors (e.g., migrant species) in addition to resident species. The Work Plan should also state that the potential occurrence of and use by special status species in the vicinity of the site will be evaluated.

3.2.1.2 Screening Level Ecological Effects Evaluation

5. The Work Plan states that screening thresholds will consist of media-specific toxicological benchmarks (p. 3-4). The screening level effects evaluation should also consider food chain exposures to predator species, including larger fish species, mammals, and birds. The Work Plan should state that toxicity benchmarks for wildlife (e.g., Sample et al., 1996) will be compared to either measured or estimated contaminant concentrations in prey items.

3.2.1.3 Screening Level Exposure Estimate

6. The description of food chain modeling (p. 3-5) is vague and does not include incidental sediment ingestion as a potential exposure pathway. Sediment exposures should be considered in the evaluation of contaminant exposure. Food chain modeling should consider the use of literature values of bioaccumulation

factors for estimating contaminants in prey items (e.g., Sample et al., 1998, 1999).

7. The Work Plan proposes that contaminants in groundwater will be screened, but surface water contaminants will not be screened because of the absence of data (p. 3-5). The Work Plan should clarify how the groundwater data will be used in place of surface water, and what assumptions will be used to screen for risks in surface water.

3.2.1.4 Screening Level Risk Calculation

8. The Work Plan does not address how risk calculations will be performed if multiple toxicity benchmarks are available for a specific contaminant, or what procedures will be followed if benchmarks are not available for a specific contaminant (p. 3-6). The Work Plan should state that the lowest available toxicity benchmark will be used unless site specific considerations dictate the use of less protective benchmarks. The Work Plan should also state that contaminants will not be screened out in the absence of available toxicity benchmarks, unless sufficient justification is provided to exclude it as a contaminant of potential ecological concern (COPEC).
9. The Work Plan does not consider the toxicity of chemical mixtures (p. 3-6). The Work Plan should state that a hazard index (HI) will be computed for chemicals with the same mechanism of toxic action. Chemicals not included in an HI should be justified based on their mechanism of action.

References

Sample, BE, DM Opresko and GW Suter II. 1996. Toxicological Benchmarks for Wildlife: 1996 revision. Oak Ridge National Laboratory. ES/ER/TM-86/R3.

Sample, BE, GW Suter, JJ Beauchamp, and RA Efroymsen. 1999. Literature-Derived Bioaccumulation Models for Earthworms: Development and Validation. Environ. Toxicol. Chem. 18:2110-2120.

Sample, BE, JJ Beauchamp, RA Efroymsen and GW Suter. 1998. Development and Validation of Bioaccumulation Models for Small Mammals. ES/ER/TM-219. US Department of Energy.

TECHNICAL REVIEW

**CORRECTIVE MEASURES STUDY WORK PLAN
SWMU 45 - AREAS OUTSIDE OF BUILDING 38
THE FORMER POWER PLANT
OCTOBER 29, 1999**

**NAVAL STATION ROOSEVELT ROADS
CEIBA, PUERTO RICO**

REPA2-0203-011

January 7, 2000

GENERAL COMMENTS

1. The maximum contaminant levels referenced in the Work Plan may not be protective of ecological receptors. Ecological risks should be considered in the development of corrective measures standards by incorporating standards that are determined to be protective of ecological receptors during the ecological risk assessment process.”
2. The Work Plan only provides a very general conceptual approach to a screening level risk assessment. Furthermore, existing contaminant data are not summarized in the Work Plan. When complete, the results of the screening level risk assessment should be reported in detail, and include summary tables of contaminant concentrations, the appropriate toxicity benchmarks, and the results of all risk calculations.
3. The Work Plan states (p. 3-1) that “potential ecological risks have not been evaluated in detail.” The Work Plan should summarize the results of any previous ecological screening of contaminants. The Work Plan should also address how the results of any preliminary screening will be used in planning the ecological evaluation proposed in the Work Plan.

SPECIFIC COMMENTS

3.2.1.1 Screening Level Problem Formulation

1. The Work Plan does not provide an ecological conceptual site model (CSM), but rather proposes CSM development as part of the screening level risk assessment (p. 3-2). The Work Plan should include a preliminary CSM, which can be refined following additional evaluation of exposure pathways and ecological receptors during the screening level assessment. A preliminary CSM will help facilitate the planning of the assessment, and focus the proposed habitat evaluation.
2. The Work Plan proposes to use only existing data to screen for ecological risks (p. 3-3). The Work Plan should state that potential risks to ecological receptors will also be considered in areas that have not been sampled. One particular concern, is that nearly all samples depicted in Figure 1-2 are located in Puerca Bay and adjacent to Building 38 and the cooling water tunnel. The results of the screening level risk assessment should include an evaluation of additional potential source and release areas, and the contaminant gradients in soil, sediment, groundwater, and surface water. The Work Plan should state that the potential for contaminant migration from source areas (e.g., contaminated soils and sediment) to other areas (e.g., downgradient locations that may not have been sampled) will be considered in the screening level assessment.
3. The Work Plan proposes a qualitative habitat assessment that will be used to determine if the risk assessment process may end (p. 3-3). Any habitat assessments used to conclude an absence of ecological risks should be rigorous enough to detect a 20% difference in population parameters between assessment and reference areas. The results of the screening level risk assessment should specify which criteria were used to match the habitat characteristics of reference and assessment areas, and provide the results of statistical comparisons of population parameters.
4. The Work Plan provides only general statements regarding the identification of ecological receptors (p. 3-4). The Work Plan should state that the evaluation of ecological receptors will include seasonal visitors (e.g., migrant species) in addition to resident species. The Work Plan should also state that the potential occurrence of and use by special status species in the vicinity of the site will be evaluated.

3.2.1.2 Screening Level Ecological Effects Evaluation

5. The Work Plan states that screening thresholds will consist of media-specific toxicological benchmarks (p. 3-4). The screening level effects evaluation should also consider food chain exposures to predator species, including larger fish species, mammals, and birds. The Work Plan should state that toxicity benchmarks for wildlife (e.g., Sample et al., 1996) will be compared to either measured or estimated contaminant concentrations in prey items.

3.2.1.3 Screening Level Exposure Estimate

6. The Work Plan proposes that contaminants in groundwater will be screened, but surface water contaminants will not be screened (p. 3-4). The Work Plan should clarify how the groundwater data will be used in place of surface water, and what assumptions will be used to screen for risks in surface water. Of particular concern is the absence of surface water data for Puerca Bay.
7. The description of food chain modeling (p. 3-5) is vague and does not include incidental sediment ingestion as a potential exposure pathway. Sediment exposures should be considered in the evaluation of contaminant exposure. Food chain modeling should consider the use of literature values of bioaccumulation factors for estimating contaminants in prey items (e.g., Sample et al., 1998, 1999).
8. The Work Plan states that screening level risk estimates for one or more complete exposure pathways may not be feasible (p. 3-5). The Work Plan should state that these exposure pathways will be evaluated in Phase 2 of the ecological risk assessment, or additional data will be collected as a component of the screening level assessment.

3.2.1.4 Screening Level Risk Calculation

9. The Work Plan does not address how risk calculations will be performed if multiple toxicity benchmarks are available for a specific contaminant, or what procedures will be followed if benchmarks are not available for a specific contaminant (p. 3-6). The Work Plan should state that the lowest available toxicity benchmark will be used unless site specific considerations dictate the use of less protective benchmarks. The Work Plan should also state that contaminants will not be screened out in the absence of available toxicity benchmarks, unless sufficient justification is provided to exclude it as a contaminant of potential ecological concern (COPEC).
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