



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2

290 BROADWAY

NEW YORK, NY 10007-1866

DEC 10 1999

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Mr. Christopher T. Penny
Remedial Project Manager
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 - SWMU #13 (former Pest Control Shop) and SWMU #46 (Pole Storage Yard)/AOC C (Transformer Storage Pad) Area revised draft Final Corrective Measures Study (CMS) report, EPA ID # PR2170027203

Dear Mr. Penny:

The United States Environmental Protection Agency (EPA) Region II has completed its review of the September 30, 1999 draft Final Corrective Measures Study (CMS) Final Report for SWMU 13 and SWMU 46/AOC C, transmitted on October 8, 1999 by Baker Environmental on your behalf. EPA still has several concerns with the CMS Report, based on a review of the CMS by our contractor Booz Allen & Hamilton. Therefore, the CMS Final Report for SWMU 13 and SWMU 46/AOC C is not approved. The concerns noted by Booz Allen & Hamilton are discussed in more detail in the enclosed Technical Review, dated November 16, 1999.

If you wish, EPA can arrange to have a conference call involving our contractor, Booz Allen & Hamilton, and yourself, and your contractor, to discuss Booz Allen & Hamilton's November 16th Technical Review comments. Please advise Mr. Tim Gordon of my staff within 10 days of your receipt of this letter if you wish to request such a conference call.

Within 30 days of your receipt of this letter, or within 21 days of the conference call described above, if such is held, please submit either a revised CMS Final Report, or an addendum to the September 30th CMS Final Report, addressing the comments given in the enclosed Technical Review.

Also, enclosed is the Technical Review prepared by our contractor Booz Allen & Hamilton on the October 26, 1999 draft work plan for Pilot Tests to Evaluate Enhancement of Product Recovery at Tow Way Fuel Farm. This Technical Review was previously E-mailed to you by Mr. Tim Gordon, on December 6, 1999, and you were advised to address the comments in Booz Allen & Hamilton's Technical Review in the final work plan, when developed by your contractor.

Please telephone Mr. Tim Gordon 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. encl.
Ms. Madeline Rivera, NAVSTA Roosevelt Roads, w. encl.
Mr. Mark Kimes, Baker Environmental, w. encl. ✓
Mr. John Tomik, CH2M Hill, w. encl.
Ms. Connie Crossley, Booz Allen, w/o encl.

TECHNICAL REVIEW OF**NAVAL STATION ROOSEVELT ROADS****OCTOBER 8, 1999****RESPONSE TO****EPA COMMENTS DATED****JULY 27, 1999****REPA2-0203-007****EPA COMMENTS**

1. The response is partially adequate. NSSR has provided the requested exposure parameter values and calculations used in the exposure evaluations; however, several deficiencies were identified in this added information. Specific comments pertaining to the exposure parameter values and calculations used in the CMS are provided in the attached technical review of the CMS report.
2. The response is partially adequate. NSSR appropriately included an evaluation of longer-term workers (i.e., commercial/utility workers) in the CMS report. However, it remains unclear why the proposed cleanup levels at SWMU 46/AOC C are based on a transient receptor population (i.e., construction workers) and are not based on the commercial/utility worker population. Although the revised CMS states that construction workers are the more likely receptors under current conditions, there is no documentation provided to support this statement. In order to support the selection of cleanup levels based on construction workers, the CMS must demonstrate that institutional controls such as restrictive land use are protective of commercial/industrial workers under current conditions, as well as other potential receptor populations under future land use conditions.
3. The response is adequate.
4. The response is adequate.
5. The response is adequate.

BOOZ-ALLEN & HAMILTON COMMENTS

GENERAL COMMENTS

1. The response is partially adequate (see EPA Comment No. 1 above).
2. The response is partially adequate. NSSR has modified the CMS to include sufficient documentation that institutional controls at the site will be protective of residential exposures. However, the CMS does not provide adequate documentation that institutional controls at the site are protective of commercial/utility worker exposures. The CMS should be modified to demonstrate that institutional controls such as restrictive land use are protective of commercial/industrial workers under current conditions, as well as other potential receptor populations under future land use conditions.

3. The response is adequate.

4. The response is adequate.

SPECIFIC COMMENTS

1. The response is partially adequate. NSSR provided the exposure parameter values and calculations utilized in the exposure evaluations; however, several deficiencies were identified in this added information. In addition, NSSR failed to include a discussion of the factors influencing dermal absorption of chemicals in soil and sediment, including the use of adjustment factors to modify oral toxicity criteria. Specific comments pertaining to the exposure parameter values, calculations, and adjustment factors used in the CMS are provided in the attached technical review of the CMS report.
2. The response is adequate.
3. The response is adequate.
- 4 (a). The response is adequate.
- 4 (b). The response is partially adequate (see EPA Comment Nos. 1 and 2 above).
- 4 (c). The response is partially adequate. NSSR has modified the CMS to provide sufficient documentation that institutional controls at the site will be protective of residential exposures. However, the CMS does not provide adequate documentation that institutional controls at the site are protective of commercial/utility worker exposures (see Booz-Allen General Comment No. 2).

**TECHNICAL REVIEW OF
CORRECTIVE MEASURES STUDY FINAL REPORT
SWMU 13 AND SWMU 46/AOC C
NAVAL STATION ROOSEVELT ROADS
CIEBA, PUERTO RICO
SEPTEMBER 30,1999**

REPA2-0203-007

GENERAL COMMENTS

1. For the purposes of reviewing the Corrective Measures Study (CMS) Final Report, it is assumed that previous reviews of the baseline human health risk assessment are appropriate, and that the CMS Final Report is an extension of a defensible risk assessment. It is also assumed that the risk assessment results presented in the CMS (including the total cumulative risk values for each receptor and the chemicals of concern [COCs] identified as contributing 90 percent of the total risk for each medium), accurately reflect the results and conclusions presented in the baseline risk assessment.
2. The CMS contains several deficiencies with the calculation of risk-based cleanup levels for soil and sediment at SWMU 13 and SWMU 46/AOC C. These deficiencies include, but are not limited to, the use of incorrect toxicity criteria, incorrect exposure parameters, and undocumented absolute oral absorption factors. The risk-based cleanup levels for all receptors and media should be re-calculated based on the specific comments presented below.
3. As discussed in the review of the 10/8/99 response to EPA's 7/27/99 comments, the CMS identifies appropriate technical approaches to address releases to sediment in SWMU 13 and releases to the surface and subsurface soil in SWMU 46/AOC C. For SWMU 13, various industrial and residential risk-based cleanup levels are calculated for sediment. Furthermore, the proposed corrective action measure involving the complete removal of sediments from the concrete-lined drainage is ultimately protective of both industrial and hypothetical residential receptors. For SWMU 46/AOC C, the proposed corrective action measure includes remediating polynuclear-aromatic hydrocarbons (PAH)-impacted soils to a level protective of construction workers, remediating poly-chlorinated biphenyls (PCB)-impacted soils based on a cleanup goal of 25 mg/kg in accordance with the final PCB disposal rule (40 CFR Parts 750 & 761), and

establishing institutional controls to prevent property use other than low occupancy. These goals are based, however, on a construction worker. It is not clear why the construction worker rather than the commercial/utility worker is considered the more likely current human receptor and upon which the remediation goals are based. Without supporting documentation, it would be more appropriate to select a more frequent receptor population such as commercial/utility worker, for which the risk-based cleanup levels are consistently lower than for the transient construction worker populations. However, if adequate documentation supports the selection of risk-based cleanup concentrations protective of construction workers, than institutional controls must be implemented to ensure the protection of other current receptors and potential future receptor populations.

SPECIFIC COMMENTS

Section 3.2.2 SWMU 46/AOC C, page 3-3

1. As discussed in Section 2.2.2.2, pages 2-5 and 2-6 of the CMS, benzo(a)anthracene was detected in soil at SWMU 46/AOC C at concentrations above residential risk-based concentrations (RBCs). However, in Section 3.2.2, page 3-3, benzo(a)anthracene appears to have been eliminated from further consideration. Please provide supporting rationale for the elimination of this constituent or include it for evaluation as a COC.

Section 3.4.2 Human Health Risk-Based Cleanup Levels, page 3-5

2. This section presents the methodology used to calculate site specific risk-based cleanup levels, but fails to discuss the oral toxicity criteria and adjusted toxicity criteria used in the CMS calculations. Section 3.4.2 of the CMS should be modified as follows:
 - a) Modify the text to indicate that the chronic oral toxicity criteria used in the CMS were obtained from the most recent version of USEPA's Integrated Risk Information System (IRIS) database.
 - b) Modify the text to indicate that oral toxicity criteria were adjusted for use in assessing the dermal route of exposure. Discuss the methodology used to adjust the oral toxicity criteria, including the selection of an absolute oral absorption factor for each chemical, and use of this factor to increase the chemical's oral cancer slope factor or to decrease the chemical's oral reference dose.

Chemical-specific absolute oral absorption factors may be obtained from the Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profile documents. In cases where chemical-specific factors are not available, a default factor of one (1.0) is typically used in risk assessments. Modify the text, tables, and all risk-based cleanup level calculations to reflect the use of the following absolute oral absorption factors in the CMS, or provide references and rationale to support the use of alternative factors. (Also see Specific Comment 3 regarding the evaluation of PAHs via the dermal route of exposure.)

COC: Absolute Oral Absorption Factor; Source

Benzo(a)pyrene; Not Applicable
Benzo(b)fluoranthene; Not Applicable
a-Chlordane; 0.8; ATSDR, 1991
gamma-Chlordane; 0.8; ATSDR, 1991
DDD; 0.7; ATSDR, 1994
DDE; 0.7; ATSDR, 1994
DDT; 0.7; ATSDR, 1994
Dieldrin; 1.0; ATSDR, 1991
Indeno(1,2,3-cd)pyrene; Not Applicable
PCB-1260; 1.0; ATSDR, 1995

3. As discussed in Section 3.4.2, page 3-6, risk-based cleanup levels for all selected contaminants are calculated based on the incidental ingestion and dermal absorption routes of exposure. According to USEPA's Risk Assessment Guidance for Superfund (RAGS), Volume I, 1989, it is not appropriate to quantitatively evaluate carcinogenic PAHs via the dermal route of exposure since select carcinogenic PAHs act locally (e.g., induce skin tumors), are metabolized in the subcutaneous skin layer, and are not systemically absorbed. Recalculate the risk-based cleanup levels for the carcinogenic PAHs (i.e., benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene) using only the incidental ingestion route of exposure.
4. Modify Table 3-2, in Section 3.4.2, to show that a soil ingestion rate of 50 mg/day was used to calculate the risk-based cleanup levels for commercial/utility workers. Table 3-2 currently shows an incorrect soil ingestion rate of 100 mg/day, while the correct ingestion rate of 50 mg/day was used in the CMS calculations in Appendix A for this receptor.

Appendix A, Cleanup Level Calculations

5. On the cleanup level calculation spreadsheets in Appendix A, b-chlordane is

incorrectly listed as a COC at SWMU 13. According to Section 2.2.2.1, page 2-4, the appropriate COC is gamma-chlordane. Modify the tables in Appendix A accordingly.

6. An incorrect oral slope factor of $1.6E+00$ (mg/kg-day)⁻¹ was used to calculate risk-based cleanup goals for dieldrin at SWMU 13. According to the USEPA's IRIS database, the correct oral slope factor for dieldrin is $1.6E+1$ (mg/kg-day)⁻¹. Recalculate the proposed cleanup levels for dieldrin accordingly.
7. For the Military Residential Child receptor, an incorrect averaging time for noncarcinogens (ATnc) of 2,190 days was used to calculate the risk-based cleanup levels. Based on an exposure duration of four years, multiplied by 365 days per year, the correct ATnc for this receptor is 1,460 days. Recalculate the proposed cleanup levels for the Military Residential Child using the appropriate ATnc.
8. For the Military Residential Adult receptor, an incorrect ATnc of 8,760 days was used to calculate the risk-based cleanup levels. Based on an exposure duration of four years, multiplied by 365 days per year, the correct ATnc for this receptor is 1,460 days. Recalculate the proposed cleanup levels for the Military Residential Adult using the appropriate ATnc.