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NAVY CLEAN II

Date Received: 17 MARCH 2000
Project Manager: M. KIMES
LANTDIV OTO No. 33 Hill Task Order No. 33
bcc: PRGM F (orig): M.KIMES/PROJ F; R.HOFF;
JEDEL; Daily FILE
Subfile No.: 8

MAR 15 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 - EPA ID # PR2170027203

- 1) Corrective Measures Study (CMS) Workplan for SWMUs #6/AOC B;
- 2) Corrective Measures Study (CMS) Revised Final Report for SWMU #13 and SWMU #46/AOC C; and
- 3) Draft Corrective Measures Study (CMS) Final Report for SWMU #31/#32.

Dear Mr. Penny:

The United States Environmental Protection Agency (EPA) Region II has completed its review of the above documents transmitted on behalf of the Navy by Baker Environmental Inc., on January 7, 26, and 28, 2000 respectively, as well as Baker Environmental's letter of January 13, 2000 regarding the CMS Revised Final Report for SWMU #13 and SWMU #46/AOC C. EPA's comments are given below.

Corrective Measures Study (CMS) Workplan for SWMU #6/AOC B

The draft CMS workplan, submitted on January 7, 2000 by Baker Environmental on the Navy's behalf, was requested by EPA's November 5, 1999 letter. SWMU #6 consists of an abandoned partially subterranean bunker that was formerly used for storage of waste paints and other liquid wastes. AOC B consists of the open-air bricked floor of demolished building 25, and was formerly used for storage of waste oils and other wastes. The submitted workplan is completely

generic, and seems to assume that some form of land usage restriction, by itself, will constitute the selected remedy. It does not identify other remedial alternatives for evaluation, or describe how unacceptable risks from multiple potential exposure pathways (surface soil, groundwater, and ponded rainwater) will be prevented under both current and future exposure scenarios.

Since a total cancer risk of 2.0×10^{-4} was indicated for on-site workers in the November 24, 1998 revised Risk Assessment, land-usage restrictions alone may not be fully protective for on-site worker exposure at this site, unless coupled with some other risk reduction proposal. The CMS Final report must demonstrate that the selected remedy, whether land-usage restrictions alone, and/or some other measure (such as engineering controls, such as fencing) will prevent unacceptable residential exposure, as well as unacceptable exposure for on-site workers. If land usage restrictions alone are not fully protective, under both current and future land usage scenarios, the CMS must evaluate other risk reduction alternatives.

Even though the submitted workplan is deficient on the proposed alternatives to be evaluated, EPA will approve the January 7th CMS workplan for SWMU #6/AOC B, subject to the CMS Final report adequately addressing EPA's above concerns. Failure to do that could result in EPA requiring that the CMS be re-opened and that the Final Report be resubmitted. Pursuant to Schedule proposed in Section 4.0 of the submitted workplan, the draft CMS Final report, which must include recommendations for a remedy/corrective measure that is protective of human health under both current and future exposures, should be submitted within 7 weeks of your receipt of this letter.

Corrective Measures Study (CMS) Final Report for SWMU #13 and SWMU #46/AOC C.

This January 26, 2000 revised CMS Final Report for SWMU #13 (demolished pest control building) and SWMU #46/AOC C (both areas were used for non-serviceable transformer and other electrical equipment storage, and/or storage of PCB contaminated materials), as well as Baker Environmental's letter of January 13, 2000, were submitted to address comments given in my letter of December 10, 1999. EPA's comments were further discussed during the conference call held on January 6, 2000 between Mr. Tim Gordon of EPA, yourself, and contractors for EPA (Booz Allen) and the Navy (Baker Environmental and CH2MHILL).

EPA requested our contractor, Booz Allen, to review the revised CMS Final Report and Baker Environmental's letter of January 13, 2000. Although Booz Allen had several comments, which are discussed in the enclosed February 15, 2000 Technical Review, EPA does not consider them sufficiently significant to alter the overall acceptability of the revised Final CMS report. The most significant comments (#2, #3, and #4 of enclosed Technical Review) concern the preliminary remediation goal (PRG) for carcinogenic polynuclear aromatic hydrocarbons (PAHs) at SWMU 46/AOC and the resulting residual risk for PAHs and PCBs.

If the 10 mg/kg PRG for SWMU 46/AOC is the cumulative concentration of all carcinogenic PAHs, that PRG is acceptable, and the CMS Report is approved. Comments in the enclosed Technical Review may then be addressed as part of the corrective measures implementation (CMI) [design] plan, and/or the CMI final report. However, if the proposed 10 mg/kg PRG is

not the cumulative concentration of all carcinogenic PAHs, EPA requests the Navy to submit, within 25 days of your receipt of this letter, written clarification and justification of the recommended PRG for PAHs at SWMU 46/AOC C, as well as clarification of the resultant residual risks for both PAHs and PCBs.

Within 90 days of your receipt of this letter, or within 90 days following submission of written clarification of the recommended PRG for PAHs at SWMU 46/AOC C, if so required, please submit a CMI [design] plan for SWMU #13 and SWMU #46/AOC C for the remedies recommended in the CMS Final report. Following EPA's review and approval of the CMI [design] plans, if the Navy wishes, it may proceed with implementation of those remedies/corrective measures. However, as has been indicated on previous occasions, the remedies/corrective measures for SWMU #13 and SWMU #46/AOC C will not be considered fully approved until completion of public notice and public comment of those final remedies/corrective measure, either as part of a modification of the 1994 RCRA Permit, or issuance of the Draft renewed RCRA permit for Roosevelt Roads.

Corrective Measures Study (CMS) Final Report for SWMU #31/#32

The area investigated, which is located in the northwest portion of the Public Works Department (PWD) operation yard, encompasses an area of past waste accumulation behind Building #31 and spent battery accumulation areas at Building 2022. Based on three rounds of surface soil (0 - 1 foot below surface) sampling, dioxin/furans have identified as the only constituents of concern [investigations have never been implemented for subsurface soils]. The draft CMS Final Report submitted on January 28, 2000 by Baker Environmental on behalf of the Navy, recommends a No Action, with exposure controls, for the dioxin/furan containing soils.

The No Action, with exposure controls, recommendation is based on the Agency for Toxic Substances and Disease Registry's (ATSDR's) 1997 Interim Policy Guideline: Dioxin and Dioxin-Like Compounds in Soil. Pursuant to that guideline, where estimated levels of dioxin or dioxin-like compounds are present in soils at concentrations greater than 50 parts per trillion (ppt) toxicity equivalent (TEQ), but less than 1 part per billion (ppb) TEQ, a "weight-of-evidence approach" is recommended to evaluate the human health implications. Concentrations of individual dioxin/furan congeners in the surface soils at SWMU #31/#32 were determined to have TEQs exceeding 50 ppt [which is 0.05 ppb] at four sample locations, with the maximum TEQ being 350 ppt (0.35 ppb). However, none exceeded 1 ppb TEQ. Therefore, pursuant to ATSDR's Interim Policy, under the "weight-of-evidence approach", site-specific factors such as pathways, soil cover, demographics, etc. should be considered in determining the potential human health risks. Although the CMS concluded that no soil remediation is required; the CMS proposes capping an area of approximately 5,400 square feet of exposed soil with asphalt pavement to prevent human exposure.

EPA agrees. However, since the CMS' recommendation is based on no human exposure because of either existing pavement, or the capping of approximately 5,400 square feet of exposed soil with new asphalt pavement, and since the concentrations of dioxin/furans in the subsurface soils (deeper than 1 foot below surface) have never been determined [investigations have only been implemented for surface soils], EPA requests that the recommendations in the CMS be modified to specify that in addition, the final remedy for SWMU 31/32 will include a requirement that acceptable institutional controls be adapted to insure that:

- a) both the proposed new [5400 square foot] asphalt cap area, as well as the existing areas of asphalt pavement within the area outlined as CMS SWMU 31/32 area on Figure 4-1 of the submitted CMS report will be maintained, and
- b) the area will not be utilized for residential housing.

*concur
w/
Tim
per*

- ✓ In addition, Table 2-3 of the CMS should be revised to clearly indicate the source of the listed Toxicity Equivalency Factors. Within 30 days of your receipt of this letter, please submit either a revised Final CMS report for SWMU #31/#32, or a letter and attachment, reflecting the above described institutional controls and a revised Table 2-3.

In addition, as discussed previously, the No Action, with exposure control, remedy/corrective measure for SWMU #31/#32 will not be considered fully approved until public notice and public comment have been completed, either as part of a modification of the 1994 RCRA Permit, or issuance of the Draft renewed RCRA permit for Roosevelt Roads.

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

Enclosure

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

BOOZ ALLEN & HAMILTON INC.

8283 GREENSBORO DRIVE • McLEAN, VIRGINIA 22102-3838 • TELEPHONE: (703) 902-5000 • FAX: (703) 902-3333

February 15, 2000
B-09075-0139-0203
REPA2-0203-013

Mr. Anthony Kahaly
U.S. Environmental Protection Agency
290 Broadway
New York, NY 10007-1864

Subject: EPA Contract No. 68-W-99-021, Naval Station Roosevelt Roads, Work Assignment R02103, Task 04. Technical Review of the Revised Final Corrective Measures Study Final Report For SWMU 13 and SWMU 46/AOC C Areas.

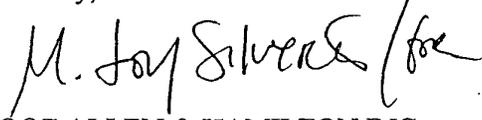
Dear Mr. Kahaly:

In response to Work Assignment R02103, Task 04, under EPA Contract No. 68-W-99-021, attached please find the technical review of the Revised Final Corrective Measures Study for SWMU 13 and SWMU 46/AOC C Areas (Final CMS Report). This technical review included the January 13, 2000, response to comments letter regarding the previous technical review of the CMS Report for SWMU 13 and SWMU 46/AOC C. The responses in this letter were found to be satisfactory; therefore, no comments regarding this letter have been included in the attached deliverable.

As instructed in the technical directive for the review of the Final CMS Report, we focused our review on Section 3.0 of the Report. In general, the proposed remediation goals are acceptable. However, a few errors and issues requiring clarification have been identified in the attached deliverable.

If you have any questions regarding this deliverable, please contact me at (919) 844-3513.

Sincerely,

Handwritten signature of M. Jay Silver in black ink, with a stylized flourish at the end.

BOOZ·ALLEN & HAMILTON INC.

Connie Crossley
Work Assignment Manager

Enclosure(s)

cc: Timothy Gordon, Work Assignment Manager
Ron Wiley, Contracting Officer (letter only)
BA&H PMT QA/QC Coordinator

TECHNICAL REVIEW

JANUARY 26, 2000
REVISED FINAL CORRECTIVE MEASURES STUDY FINAL REPORT
FOR SWMU 13 AND SWMU 46/AOC C AREAS
NAVAL STATION ROOSEVELT ROADS
CIEBA, PUERTO RICO

REPA2-0203-013
February 15, 2000

GENERAL COMMENTS

1. The Revised Final Corrective Measures Study Report for SWMU 13 and SWMU 46/AOC C Areas (Final CMS Report) identifies appropriate technical approaches and acceptable cleanup levels to address releases to sediment from SWMU 13, and releases to the surface and subsurface soil from SWMU 46/AOC C. In addition, the Final CMS Report provides adequate documentation, including relevant exposure parameters, toxicity criteria, and calculations, to support the calculation of the proposed soil and sediment cleanup levels. Furthermore, the Final CMS Report applies an appropriate combination of site-specific cleanup levels and institutional controls to ensure that the selected remedy is protective of human health. However, despite the overall acceptability of the Final CMS Report, a few deficiencies were identified in the calculation of cleanup goals and residual risks. These discrepancies do not alter the conclusions of the Final CMS Report or the proposed remedies for the site, but should be corrected for accuracy.

SPECIFIC COMMENTS

Section 3.4.2, Human Health Risk-Based Cleanup Levels, Tables 3-13 and 3-15

1. Table 3-13 and 3-15, and the cleanup level calculation spreadsheets in Appendix B, incorrectly list beta-chlordane as a constituent of concern (COC) at SWMU 13. According to Section 3.2.1, page 3-2, and Table A-2 of the Final CMS Report, the appropriate COC is gamma-chlordane. Since the carcinogenic and noncarcinogenic preliminary remediation goals (PRGs) for this chemical were calculated based on toxicity criteria for gamma-chlordane, the incorrect chemical name does not affect the calculation of these PRGs; nonetheless, the error should be noted and corrected.
2. Previous iterations of the Final CMS Report calculated an individual PRG for each carcinogenic polycyclic aromatic hydrocarbon (cPAH) identified as a COC at SWMU 46/AOC C. However, the Final CMS Report has been modified to provide a single PRG for "Total cPAHs." The text on Table 3-13 states, "total cPAHs [were] evaluated as

benzo(a)pyrene at a target risk of 1×10^{-5} to account for benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene.” It is unclear why this modification was made in the Final CMS Report. Additionally, it is unclear why a less conservative target risk value of 1×10^{-5} (as opposed to 1×10^{-6}) was used to calculate the PRG for total cPAHs. Finally, it is unclear how the proposed PRG value of 10 mg/kg for total cPAHs will be applied during confirmatory sampling and analysis. Specifically, it is unclear whether the proposed 10 mg/kg PRG for total cPAHs applies to the cumulative concentration of all cPAHs detected at SWMU 46/AOC C, or if it applies to the individual concentrations of each cPAH. If the 10 mg/kg PRG is for the cumulative concentration of cPAHs, this value (in combination with the proposed institutional controls for the site) would be protective of human receptors at SWMU 46/AOC C. The proposed methodology for applying this PRG at the site should be clarified.

Section 3.5, Selection of Remediation Levels, Page 3-9

3. The residual risk estimate presented in the Final CMS Report for military residents at SWMU 13 could not be verified. Page 3-9 states “a proposed cleanup goal for cPAHs of 10 mg/kg would result in a residual risk to military residents in excess of 1×10^{-4} .” However, using the exposure parameters provided in the Final CMS Report (including an exposure duration of four years for military residents), a proposed cleanup goal of 10 mg/kg for cumulative cPAHs would result in residual risks within USEPA’s target risk range for this receptor. Since the residual risk calculations for the military residents were not provided in the Final CMS Report, it is not possible to verify the source of this 1×10^{-4} value. Therefore, although the apparent error is conservative in nature, and does not affect the results of the Final CMS Report or the proposed remedy for SWMU 13, the residual risk estimate should be verified and corrected as necessary.
4. The residual risk estimate presented for military residents at SWMU 46/AOC C could not be verified. Page 3-9 states “selection of commercial/industrial worker risk-based remediation levels for SWMU 46/AOC C would produce residual risks of approximately 5×10^{-6} for military residents. The PCB cleanup goal of 25 mg/kg would result in additional risk of 2.5×10^{-5} .” However, using the exposure parameters provided in the Final CMS Report, it appears that the residual risk has been slightly underestimated for military child residents. Since the residual risk calculations for the military residents were not provided in the Final CMS Report, it is not possible to verify the source of these values. Therefore, although the apparent error does not affect the results of the Final CMS Report or the proposed remedy for SWMU 46/AOC C, the residual risk estimate should be verified and corrected as necessary.

Appendix B, Risk Assessment Calculations

5. The Final CMS Report calculates both carcinogenic and noncarcinogenic PRGs for military adult and child residents at Naval Station Roosevelt Roads, and correctly selects carcinogenic PRGs as the more conservative (i.e., lower) PRGs for this receptor. A review of the calculations presented in Appendix B shows that incorrect averaging times

(ATncs) were used to calculate the noncarcinogenic PRGs for both military adult and child residents, resulting in slightly elevated noncarcinogenic PRGs. However, this error in the calculation of noncarcinogenic PRGs does not impact the selection of carcinogenic PRGs as the more conservative PRGs for this receptor, and therefore does not affect the results of the Final CMS Report or the proposed remedies for SWMU 13 and SWMU 46/AOC C.

6. Although Table 3-11 of the Final CMS Report correctly indicates that an exposure duration (ED) of 25 years should be used to calculate PRGs for commercial/utility workers, a review of the calculations presented in Appendix B shows that a less conservative exposure duration of 20 years was actually used to calculate these PRGs. This error results in slightly elevated PRGs; however, the associated affects on the results of the Final CMS Report and the proposed remedies are not considered to be significant.