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U S NAVY RESPONSE TO REGULATOR COMMENTS TO RCRA FACILITY INVESTIGATION REPORT ADDENDUM AREA OF CONCERN 586 (AOC 586) ZONE E WITH TRANSMITTAL
CNC CHARLESTON SC
11/14/2002
CH2M HILL

AOC 586 Zone E
Response to Comment on RFI Report Addendum

CH2MHILL TRANSMITTAL

To: Jerry Stamps
South Carolina Department of Health
and Environmental Control
Bureau of Land and Waste
Management
2600 Bull Street
Columbia, SC 29201

From: Dean Williamson/CH2M-Jones

Date: November 14, 2002

Re: CH2M-Jones' Responses to Comments by SCDHEC regarding the *RFI Report Addendum, Area of Concern 586, Zone E, Charleston Naval Complex* (Revision 0)

Quantity	Description
4	CH2M-Jones' Responses to Comments by SCDHEC regarding the *RFI Report Addendum, Area of Concern 586, Zone E, Charleston Naval Complex* (Revision 0) – Originally Submitted on August 26, 2002

If material received is not as listed, please notify us at once

Remarks:

Copy To:

Paul Bergstrand/SCDHEC, w/att
Susan Byrd/SCDHEC, w/att
BCT Distribution List

Engineering Comments Prepared by Jerry Stamps

1. Section 5.1.2, Aroclor 1260.
   Aroclor 1260 was detected at sample E586SB001 at a concentration of 0.870 mg/kg. This sample exceeds the EPA Region III Industrial and Residential RBC of 0.740 mg/kg and 0.320 mg/kg, respectively. The following is a list of concerns relating to the elevated detection of Aroclor 1260:

   a. A UCL_{95} was calculated but according to the text, the UCL_{95} was determined to be higher than the maximum concentration; therefore, the Navy defaulted to the maximum concentration. This does not appear to be the case as the second paragraph goes on to compare the UCL_{95} based upon a bootstrap method to the industrial RBC. Please correct the inconsistency.

   b. Please see Susan Byrd's comment pertaining to the calculation of a UCL_{95} based upon such a limited data set.

   c. The Navy must collect additional soil samples to delineate the extent of the PCB contamination. The additional data should allow for the appropriate calculation a UCL_{95} to evaluate the risk posed by the existing contamination.

   d. The Department maintains that the use of the 1 mg/kg action level established under TSCA for high occupancy areas is only appropriate once the risk has been characterized. The Navy must evaluate the risk posed by the PCB detections. Once the risk has been characterized, the above referenced action level may used to make a risk management decision, as appropriate.

CH2M-Jones Response:

During review of this comment, CH2M-Jones noted that the value for the EPA Region III industrial RBC provided in Section 5.1.2 for Aroclor 1260 (0.74 mg/kg) is not the correct current EPA Region III industrial RBC. Inspection of the October 2000 EPA Region III RBC tables, as provided in the CNC Project Notebook, shows the actual industrial RBC for Aroclor 1260 is 2.9 mg/kg.

The value of 0.74 mg/kg, which was reported as the industrial RBC in the Revision 0 RFI Report Addendum for AOC 586 was incorrectly taken from Table 10.42.6.1 of the Revision 0 Zone E RFI Report (a copy of this table is provided in Appendix A of the Revision 0 RFI Report Addendum for AOC 586). This value was used by the Navy/EnSafe team as its COPC screening value for this chemical.

Using the correct industrial RBC of 2.9 mg/kg as the appropriate COPC screening criteria shows that all reported detections of Aroclor 1260 in soil at AOC 586 are below this value. Consequently, Aroclor 1260 is not considered a COPC or COC for the industrial land use scenario. The text of section 5.0 will be revised to reflect this information.

Response to Comment 1A: A clearer discussion of the UCL_{95} calculation will be provided.

Response to Comment 1B: A response to Susan Byrd's comment is also provided herewith.

Response to Comment 1C: The BCT has agreed that delineation of contaminants to industrial RBCs is all that is required in Zone E. Because there are no exceedances of the industrial RBC for Aroclor 1260, as explained above, no additional sampling is required.

Response to Comment 1D: We agree. This issue is relevant to discussions regarding whether Aroclor 1260 would be a COC for residential land use.

2. Section 6.8, Land Use Controls (LUCs).
This section states that no COCs have been identified at AOC 586. However, Aroclor 1260 should be maintained as a COPC since it exceeds the residential and industrial RBCs. LUCs may be applicable for AOC 586 contingent upon the results of the additional soil samples and resulting risk analysis.

CH2M-Jones Response:
As explained above, Aroclor 1260 would not be a COC for industrial land use because no samples exceeded the industrial RBC of 2.9 mg/kg. We agree that Aroclor 1260 could be considered a residential COC for surface soil, and that land use controls would be an effective remedy to preclude potential exposure in this industrial area of the CNC. However, we do not believe that the data suggest any additional characterization is needed at this site.

3. Section 7.0, Recommendations.
This section states that "...no COCs were identified for the unrestricted future land use scenario." The Department does not agree with this conclusion on the basis that Aroclor 1260 exceeds both the residential and industrial RBCs. Please see comment 1d pertaining to the appropriate use of the TSCA action level. Consequently, a No Further Action (NFA) is not appropriate for AOC 586 at this time.

CH2M-Jones Response:
There are several methods for calculating the exposure point concentration. Depending on the method used, Aroclor 1260 could or could not be considered a COC for unrestricted land use. Even if it is considered a COC for unrestricted land use, because all reported detections are below 1 mg/kg, a risk management decision could be made to consider it not to be a COC.

We do not object to the Department considering Aroclor 1260 a COC for surface soil for unrestricted land use and, under that scenario, are agreeable to changing the recommendation for this site to a recommendation for land use controls as a presumptive remedy. Because this area is in a highly industrialized portion of the CNC and zoned for future industrial land use, such an approach is consistent with previous BCT decisions about addressing Zone E sites.

Hydrogeology Comments Prepared by Paul Bergstrand

Specific Comments

1. Page 2-2, Section 2.2.
   This section states "Groundwater samples were collected at AOC 586 during four sampling events for inorganics and two sampling events for organics from shallow groundwater monitoring well E586GW001." While this is may be technically correct this section fails to point out that groundwater was only sampled once for VOCs and twice for SVOCs during the four sampling events at AOC 586. AOC 586 is described as a temporary powerhouse with a battery shop which was later used for industrial salvage. The Zone E RFI Workplan proposed four rounds of groundwater VOC and SVOC sampling and analysis. The proposed sampling would be appropriate for an industrial salvage site. Apparently a decision, however, was made to limit groundwater VOC analysis to only one sampling event and SVOC analysis to two events. The Final Comprehensive Project Management Plan, dated July 1996, outlines a process to document the reduction of analytical parameters. The documentation supporting the reduction of analytical parameters has not been provided.

   It should be noted that the Ensafe Draft RFI report did not provide any indication that groundwater analysis of VOCs and SVOCs had been limited or the documentation of the reduction of analytical parameters as described above. The documentation regarding the reduction of groundwater analytical parameters must be provided and discussed in the revised RFI Report.

   CH2M-Jones Response:
   An attempt will be made to provide a summary of how the decision to reduce the level of sampling as compared with that proposed in the work plan and provide that information to SCDHEC.

2. Appendix A, Figure A-1.
   This figure represents the shallow groundwater contour map from groundwater elevations taken in March 2002. The figure indicates the groundwater contours are drawn in feet below land surface. A telephone conversation with Mr. Tom Beisel on 4 October 2002 confirmed the groundwater contours were drawn in feet mean sea level. This figure should be corrected in a revised RFI Report.

   CH2M-Jones Response:
   The legend on the Figure A-1 will be revised to indicate "msl" rather than "bls."

Necessary Actions

This is a brief summary of necessary actions for the Navy to conclude the RFI Report Addendum. The numbers correspond the comments. The Department will reevaluate all information in the revised RFI Report.

1. The documentation regarding the reduction of groundwater analytical parameters must be provided and discussed in the revised RFI Report.

2. The figure representing the shallow groundwater contours must be drawn in feet mean sea level in the revised RFI Report.

CH2M-Jones Response:
See above responses.

Risk Assessment Comment Prepared by Susan Byrd

In Section 5.0, COPC/COC Refinement, Aroclor-1260 is eliminated as a COC based on the following reason: "detected concentrations of PCBs are below the industrial worker protection-based RBC, and well below the target action level of 1 mg/kg, although the detections slightly exceeded the residential land use based RBC." According to the Supplemental Guidance to RAGS (CCT, 1992), since only 4 soil samples were collected at AOC 586, the maximum concentration should be used for screening instead of the UCL_{95}. Therefore, the maximum concentration of 870 $\mu g/kg$ should be compared to the 320 $\mu g/kg$ residential RBC and the 740 $\mu g/kg$ industrial RBC. According to the Team Notebook, Aroclor-1260 should be retained as a COC since it exceeds both the residential and industrial RBCs. The text does not clearly indicate that the PCB contamination has been fully delineated. Due to the limited number of samples collected, it is possible that the highest concentration of Aroclor-1260 at AOC 586 has not been detected. The Department recommends a site visit to determine if the delineation of PCBs is adequate and if additional soil sampling is warranted.

CH2M-Jones Response:

We agree with the comment that the total sample size for the PCB analysis of four samples at AOC 586 is a little small to estimate the UCL_{95}, particularly using parametric methods described in the EPA 1992 guidance, as cited in the comment. However, EPA has developed more suitable non-parametric methods (EPA, 1997) since 1992, which are recommend for use with small sample populations as they are better estimators of mean for use as exposure point concentration. EPA also has developed a UCL_{95} calculation tool (software) called ProUCL, Version 2.1, that is available upon request, without cost, which estimates UCL_{95} using parametric and non-parametric methods.

As stated in the report, parametric methods resulted in defaulting to maximum as the UCL_{95} value. Using a non-parametric Bootstrap method (which generates additional numbers based on sample data entered) the estimated UCL_{95} is at 0.57 mg/kg, compared to a maximum of 0.87 mg/kg. The current EPA Region III industrial RBC for PCBs is 2.9 mg/kg (not 0.74 mg/kg as incorrectly used in the report), which was not exceeded in any of the four samples. Thus, the UCL_{95} estimates are valid, and the estimated values are above the residential RBC, but below industrial RBC and 1 mg/kg action level established for PCBs.

On this basis, we are agreeable to considering Aroclor 1260 a COC for unrestricted (i.e., residential) land use, but not for industrial land use. Thus, the extent has been defined to meet industrial land use conditions and no further sampling is recommended for this site.

Reference:
U.S. Environmental Protection Agency (Ashok Singh, Anita Singh and Max Englehardt). The Lognormal Distribution in Environmental Applications, EPA Technology Support Center Issue. EPA/600/R-97/006, December 1997.