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DISAPPROVAL OF THE REVISED OU 5 REMEDIAL INVESTIGATION REPORT

12/15/94

USEPA DOE-FN
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COMMENTS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

DEC 1 5 1994

Mr. Jack R. Craig
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

HRE-8J

RE: Disapproval of the Revised OU 5 Remedial Investigation Report

Dear Mr. Craig:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the revised Operable Unit (OU) 5 Remedial Investigation (RI) Report. Although the revised RI Report addresses the majority of U.S. EPA's comments there remain unresolved issues, particularly in the area of risk assessment.

Therefore, U.S. EPA hereby disapproves the revised OU 5 RI report pending incorporation of responses to the attached comments into the document. The United States Department of Energy must provide responses to the attached comments and revised pages within thirty (30) days receipt of this letter. Considering the fact that this Report is a primary document as defined in the 1991 Amended Consent Agreement, U.S. EPA recommends a meeting to discuss the remaining issues/comments as soon as possible.

Please contact me at (312) 886-0992 if you have any questions.

Sincerely,

James A. Saric, Remedial Project Manager
Technical Enforcement Section #1
RCRA Enforcement Branch

Enclosure

cc: Tom Schneider, OEPA-SWDO
Jack Baublitz, U.S. DOE-HDQ
Don Ofte, FERMCO
Jim Theising, FERMCO
Paul Clay, FERMCO

ANTICIPATE ACTION RESPONSE TO A-0125 (3432)

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TECHNICAL REVIEW COMMENTS
ON THE OPERABLE UNIT 5 DRAFT FINAL
REMEDIAL INVESTIGATION REPORT REVISION 1

COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.5.4.2 Page #: 2-40 Line #: 8
Original Specific Comment #: 5
Comment: The U.S. Department of Energy responded that the text will read, "The 1.5- to 2.0-foot-deep. . .", while the revised text instead states, "The 1.25- to 2.0-foot-deep...". The text should be revised to be consistent with the response to the comment.

APPENDIX A

Commenting Organization: U.S. EPA Commentor: Saric
Section #: A.1.0 Page #: NA Line #: NA
Original Specific Comment #: 44
Comment: The response states that the legend to Figure A.1-4 will be modified to explain that bedrock "separates and demarcates the Great Miami Buried Valley Aquifer from the upland area." Instead, the legend has been revised to read, "Separates Demarcates the ...." The legend should be revised to read as the original response stated.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: A.2.4 Page #: NA Line #: NA
Original Specific Comment #: 72
Comment: In response to original comment # 49, the text in lines 15 and 16 on page A.2-15 was revised to read, "Polychlorinated biphenyl [PCB] compounds and dioxins/furans were also selected as chemicals of potential concern [CPCs] for human health risk assessment." However, PCBs are not listed in the in-text tables for selected CPCs presented on pages A.2-12 through A.2-14. The report should be revised to incorporate PCBs in one of the in-text tables identified above.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: A.3.0 Page #: NA Line #: NA
Original Specific Comment #: 96
Comment: Original comment #98 indicated that Table A.3-1 and Figure A.3-2 presented inconsistent information. Specifically, Table A.3-1 indicates that the baseline risk assessment will evaluate exposure via direct radiation as a result of recreational activities. In contrast, Figure A.3-2 indicates that such exposure will not be evaluated because a preliminary screening indicates that the contribution to

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total exposure from this exposure pathway is negligible. Table A.3-1 and Figure A.3-2 should be revised to eliminate this discrepancy.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: A.3.0 Page #: NA Line #: NA
Original Specific Comment #: 97
Comment: Original comment #99 indicated that the distances presented in Figure A.3-6 were incorrect. While some of the distances appear to have been corrected, others remain incorrect. Specifically, Elda Elementary School is labeled as being 1 mile from the center of the Fernald Environmental Management Project (FEMP). However, the symbol that indicates the location for the school is farther than 1 mile from the center of the FEMP. Figure A.3-6 should be closely reviewed and the distances should be corrected as needed.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: A.3.3.2 Page #: A.3-38 Line #: 1 through 10
Original Specific Comment #: 123
Comment: Original comment #77 indicated that Tables A.3-9 through A.3-12 did not contain radon modeling results for the grazing areas as suggested in the text. The response was to add footnote "a" to the in-text table. The footnote would indicate that while radon levels for the grazing areas were not specifically presented in Tables A.3-9 through A.3-12, the grazing areas were within other risk evaluation areas for which radon data are available. This response is insufficient. Footnote "a" should be revised to refer directly to the tables that present radon levels for the grazing areas.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: A.3.3.3 Page #: NA Line #: NA
Original Specific Comment #: 124
Comment: In response to original comment #78 a footnote was to be added to Table A.3-13 indicating that no acceptable remedial investigation (RI) monitoring well data are available for the "Northeast of the FEMP" location. However, this footnote was not added. Table A.3-13 should be revised to include an appropriate footnote.

Commenting Organization: U.S. EPA Commentor: Saric
Section # B.1.2 Page #: B.1-12 Line #: 16
Original General Comment #: 224 (U.S. EPA Comment # 15)
Comment: The original comment recommends discussing the nature and extent of contamination at the FEMP in relation to the environmental media at each of the Operable Unit 5 study areas. DOE responded, in part, that it would add the following sentence to the end of Section B.1.2: "Tables B.2-4 through B.2-6 list the contaminants of potential concern by study area." Although this response is adequate, the

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sentence that appears in the revised RI report is incomplete. The RI report should be revised to include the complete sentence.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: B.3.0 Page #: NA Line #: NA
Original General Comment #: 228 (U.S. EPA Comment # 16)
Comment: The original comment recommends providing information regarding the uncertainty of different risk assessment elements for radiological contaminants. DOE responded by adding Table B.3-10, which summarizes these uncertainties. This response is adequate; however, the second column of the table is apparently incomplete in that it does not discuss the "source term data" factor. A discussion of this factor should therefore be included in the second column of the table.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: December 13, 1994

SUBJECT: Review of the Responses to Comments on the Baseline Risk Assesssment for Operable Unit 5, Fernald Environmental Management Project (FEMP), Fernald, OH, October 1994

FROM: Pat Van Leeuwen, Toxicologist
Technical Support Unit

TO: Jim Saric
Project Manager

I have reviewed the Response to Comments Document for the Remedial Investigation Report for Operable Unit 5 of the Fernald Environmental Management Project (FEMP). The cross-references have not been incorporated in the text unless specifically required, and the document is still difficult to read.

If you have any questions on these comments or any risk assessment issues, please contact me at 886-4904.

Comment # 56 (EPA #1) P. A.1-18, section A.1.5.1
The response to this comment is acceptable.

Comment # 58 (EPA #2) P. A.2-4,line 30
The response to this comment is acceptable.

Comment # 59 (EPA #3) P. A.2-6, lines 3-4
The response to this comment is acceptable.

Comment # 60 (EPA #5) P. A.2-9, lines 22-24
The response to this comment is acceptable.

Comment # 61 (EPA #4) Tables A.2-1 through A.2-12
The response to this comment is acceptable.

Comment # 62 (EPA #7) P. A.2-11, Table
The response to this comment is acceptable.

Comment # 70 (EPA #6) P. A.2-10, section A.2.4
The response to this comment is acceptable.

Comment # 76, (EPA #12) Section A.3

I noted the slight text changes on page A.3-17. However, the additional proposed text given in the response document, starting with "The text will further note ...." could not be located in the revised document. Where are the expanded discussions of the Area 6 contamination?

Comment # 77 (EPA #15) P. A.3-19, para. 1

The response to this comment is acceptable.

Comment # 78 (EPA #16) P. A.3-19/20

The reference to Plates E-77 through E-90 did not greatly aid me in locating the "uranium plume", refered to earlier, or the "six distinct plumes" refered to in this text. Some additional text explanation (which plumes on the plates are the ones refered to in the text) or some identification on the maps seems to be needed.

Comment # 79 (EPA #9) Pp A.3-28/A.3-30 Current Land Use Scenarios

The response to this comment is acceptable, provided that "exclusion" of the ingestion of groundwater in line 41 is changed to "inclusion" of the ingestion of groundwater.

Comment # 80 (EPA #17) P. 3-36, lines 5-6

The response to this comment is acceptable.

Comment # 81 (EPA #18) P. A.3-38, lines 9-18

A review of the data in Table A.IV-62 indicates that the wells may not be very homogeneous (concentrations of some contaminants differ by more than an order of magnitude); I did not have Appendix I, so I could not compare the data well by well. Also, the distribution of many contaminants is noted in the Table as "undefined"; however the methodology described on page A.2-6, lines 19-21: "For data sets containing less than 20 samples and having undefined distribution, the nonparametric 95th percentile is always the maximum detected concentration" does not seem to have been followed. What methodology was used to determine the "representative concentration" value when this methodology was not used? (I noted that the data in the OU # 2 FS was ordered from the largest value to the smallest, instead of the reverse as suggested in Appendix A.II. This would have directed the choice of the value for the 95th percentile from the ordered data to the lowest value rather than the highest value. Was this also done in the OU #5 RI?)

Comment # 82 (EPA #19) P. A.3-39, line 16

The response to this comment is acceptable.

Comment # 83 (EPA #20) P. A.3-64, lines 18-26

The response to this comment is acceptable, except for the last sentence (p A.3-68, lines 3-4), which do not seem to be quite correct. I think that you mean that this results in a combined soil ingestion rate of 0.18 g/day for the RME farmer and 0.12 g/day for the CT farmer.

Comment # 84 (EPA #8) Table A.3-2A

The response to this comment is acceptable.

Comment # 85 (EPA #10) Tables A.3-2A/2B

The addition of the footnotes in Tables A.3-2A/2B is acceptable. Please refer also to the response to comment # 81.

Comment # 86 (EPA #11) Tables A.3-3.....

There is still some inconsistency here. Text, p A.2-13, indicates that carbon tetrachloride was retained as a CPC; however, it is not found in the section 3.0 tables. There may be other missing entries.

Comment # 87 (EPA #13) Table A.3-7

After a second consideration of the Off-Property, Future Land Use scenarios and the Off-Property, Current Land Use scenarios for the off-site resident farmer/child, the explanation given by DOE for the difference in the Surface Soil contaminant levels did not make much sense. The difference between the two scenarios is said to be a difference in the manner for calculating groundwater contaminant concentrations, with the predicted values used for the future land use scenario including fate and transport. Actually, no change in land use is apparent here, only a change in time. The explanation for the difference in soil values indicates that radionuclide decay was considered, but this does not explain why Pb-210, for example, disappears. Doesn't Ra-226 ultimately result in Pb-210? The Ra-226 levels do not decrease, so why isn't there a constant decay to Pb-210? I also noted that no adjustment was made to other radionuclides for decay or in-grow.

I have the feeling that the method for predicting the surface soil contaminant levels (based on radioactive decay of some radionuclides) was different from the manner in which these processes were assessed for groundwater. Also, the scenario described as the Future Land Use with Controls/Off-Property Resident Farmer/Child is really a variation of the Current Land Use without Access Controls scenario and only varies with time, not land use. Please review the methodology for determining the concentration values in surface soil and groundwater in the described future land use scenario for consistency, and explain why this scenario is thought to be associated with a change in land use. Some explanations in the text are clearly needed to clarify these issues.

Comment # 88 (EPA #14) Table A.3-9
The response to this comment is acceptable.

Comment # 138 (EPA #21) Table A.4-5
The response to this comment is acceptable.

Comment # 142 (EPA #22) P. A.5-14, lines 16-19
The response to this comment is acceptable.

Comment # 143 (EPA #23) P. A.5-17, lines 17-26
The additional text explanation and reference is acceptable. The inclusion of a reference to the Section 5 text and tables would be even better! Please refer also to the discussion in comment #87. Some consistency in the assumptions made for future exposures to groundwater and other media is needed.

Comment # 144 (EPA #25) P. A.5-21, lines 21-28
The response to this comment is acceptable.

Comment # 145 (EPA #24) P. A.5-22, lines 28-31
The response to this comment is acceptable.

Comment # 149 (EPA #26) Tables A.5-2 thru A.5-12/ A.5-20
Not all tables have been corrected. Please change the "0E+00" risk notation in Tables A.5-19 and A.5-20.

Comment # 151 (EPA #30) P. A.6-11, lines 21-31
The response to this comment is acceptable.

Comment # 152 (EPA #27) P. A.6-5, lines 32-35
The response to this comment is acceptable. It would be helpful if I could receive a copy of all such Supplemental documents which are relevant to the Fernald site.

Comment # 153 (EPA #28) P. A.6-5, line 47
The response to this comment is acceptable.

Comment # 154 (EPA #29) P. A.6-8, lines 21-25
The added text seems to be inconsistent with the preceeding sentence. The use of "probable" in the preceeding sentence instead of the word "plausible" would make more sense. I do not understand the reference to "any of the more plausible landuse scenarios" in line 9; the reader does not know which scenarios DOE has rated as plausible. Also, why are parentheses included in this explanation?

Comment # 167 (EPA #31) P. A.6-12, section A.6.3

The remaining original text appears to be redundant and only confuses the reader. I think you are trying to say that there is uncertainty in the risk assessment due to the uncertainty in knowing the true population exposure, and this uncertainty has been evaluated by preparing a central tendency risk estimate for the maximally exposed individual in addition to the RME estimate. Perhaps a total rewrite of this paragraph would provide more clarification of the point in question. Also the RME exposure is sometimes described as a 95th percentile exposure and sometimes as a 90th percentile exposure. The text should be consistent.

Comment # 170 (EPA #32) P. A.7-6, lines 8-10

The response to this comment is acceptable.

Comment # 210 (EPA #33) Attachment A~v, Section A.V.68 Lead

I did not see evidence of any attempt to update the lead profile as suggested in the response document. The changes to page A.5-24 are not the same as correcting this toxicological discussion. The last three paragraphs in the tox profile are still badly dated. The 1994 OSWER Directive sets a screening level of 400 ppm for residential exposures. I do not see any reference to the Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children, version 0.99d in this profile. This is the Superfund tool for evaluating lead exposures; the Model has been reviewed in 1991 and the revised Model was released for use in 1994.