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COMMENTS ON REVISED WASTE PIT EE/CA

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Richard F. Celeste
Governor

September 18, 1990

Mr. Bobby Davis
U.S. DOE - FMPC
P.O. Box 398705
Cincinnati, Ohio 45239

Dear Mr. Davis:

The Ohio EPA comments on the Revised Waste Pit EE/CA and Responsiveness Summary are attached. As with the South Plume Revised EE/CA, the Central Office staff did not receive their copy in early September. Therefore, it is likely that additional comments will be sent. Again, I would like to stress the importance of getting our risk assessment staff together to agree on a common methodology.

If you have any questions about the attached comments, please contact me.

Sincerely,

Graham E. Mitchell
DOE Coordinator

GEM/mlf

Encl.

cc: Tom Winston
Catherine McCord, U.S. EPA
Robert Owen, ODH
Lisa August, Geotrans

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ATTACHMENT
OHIO EPA COMMENTS ON THE AUGUST 1990 REVISED EE/CA
FOR THE WASTE PIT AREA STORM WATER RUNOFF CONTROL
AND ACCOMPANYING RESPONSIVENESS SUMMARY

COMMENTS ON THE REVISED EE/CA

1. Page ES-1, last paragraph: The reference to the national Contingency Plan of April 1990 is still incorrect. The citation given in the text to 55 Federal Register 8666 is the March 8, 1990 final rule publishing the NCP with an effective date of April 9, 1990. Stating that the NCP is dated April 1990 while citing the March 8, 1990 Federal Register notice is confusing and misleading. The date should therefore be changed to March 8, 1990.
2. Page ES-6, Table ES-1, Alternative 4, Effectiveness: Environmental: Though a reduction in uranium loading to Paddys Run will occur there will be additional loading of uranium into the Great Miami River at the outfall. Contaminants are essentially being removed from one system and dumped into another, since only approximately 7% of the total waste pit surface runoff will be treated by the Pilot AWWT Facility.
3. Page ES-8, second paragraph: The fact that the volume of waste will probably increase as a result of Alternative 2, since capping material will likely be contaminated, should be included in this paragraph.
4. Page ES-9, fourth paragraph: The last sentence states that Alternative 4 costs approximately one-half of the cost of Alternative 2. Because of cost revisions to both alternatives from the draft EE/CA, Alternative 4 is now about 2/3 of the cost of Alternative 2. This sentence, therefore needs to be revised.
5. Page 1-1, last paragraph: See Comment #1.
6. Page 2-16, Section 2.3, Analytical Data: Careful evaluation of the data indicates a high degree of variability in the presence of uranium in the waste storage area. The possibility of optimizing the economical operations of the proposed alternative needs to be considered to minimize the operational and maintenance costs of the AWWT and the biodenitrification towers, and to minimize down time.

7. Section 2.3.2, General Comment: Sulfate, fluoride, chromium, total suspended solids, and total dissolved solids were found at levels which exceeded either MCLs or NPDES limits. Proposed Alternative 4 fails to consider the need for removal of these contaminants from collected surface water runoff.
8. Page 2-26, second paragraph: This paragraph refers to the highest concentration of fluoride being sampled from location DD-12 by Weston. This location should be presented in Figure 2-6.
9. Page 2-33, second paragraph: Stating that efforts to protect against uranium will also protect against other contaminants is misleading since only 7% of the estimated total surface runoff collected (based on Figure 4-7) will be treated in the Pilot AWWT Facility.
10. Page 2-34, first full paragraph: In the last sentence, the name "sledges" should be corrected to "sedges."
11. Page 3-1, fourth paragraph: As mentioned by Ohio EPA in previous comments on the draft EE/CA, since the various uranium isotopes mentioned here have potential carcinogenic effects, it is not appropriate to merely look at the sum of the ratios of the observed concentration of each radionuclide to its corresponding DCG as if the only interest is a hazard index-type toxicity effect. Since the DCG for individual radionuclides may already exceed the 10^{-6} excess lifetime cancer risk, the summation of these DCGs, even where their ratio is less than 1, would only increase the cancer risk further above the 10^{-6} level.
12. Page 3-1, fourth paragraph: The previous comment notwithstanding, the DOE DCG for average total uranium concentration (550 pCi/l) should also be included in this section.
13. Figure 4-3: As commented on previously, the accumulation trenches (as they are referred to in Section 4.2.3, page 4-5 of the revised EE/CA), should be clearly identified as such in the legend.
14. Page 4-8, Section 4.2.4: The AWWT pilot plant which DOE proposes to construct to treat wastewater from the biodenitrification surge lagoon should be enlarged to enable it to treat the entire average storm water runoff flow (24 gpm) from Alternative 4.
15. Page 4-8, Section 4.2.4, second paragraph: Drainage Area A is considered by DOE to be "relatively noncontaminated." No sampling appears to have been done in this area and no analyses have been provided to backup this statement. The

- fact that this area is adjacent to contaminated Areas H and I makes the validity of this statement questionable.
16. Page 4-9, second paragraph: No actions are suggested to minimize infiltration in this area of restricted flow and watershed storage. Steps to prevent infiltration should be discussed here, as they were for other restricted flow areas.
 17. Page 4-10, second paragraph: This paragraph suggests Drainage Area G is relatively clean and that no runoff control is needed here. Ohio EPA questions how such a decision can be made since, as illustrated by Figure 2-6, little if any sampling has occurred in this drainage area. Soils in this area may be contaminated as a result of runoff from other areas and may continue to be a source of contaminant release into Paddys Run.
 18. Page 5-5, Section 5.2.1: As stated in a previous comment letter, Ohio EPA strongly disagrees with DOE's statement that "...no imminent and substantial endangerment currently exists for any off-site receptor...." The Agency also disagrees with the statement that "...the contribution of contaminants to Paddys Run and the aquifer from storm water runoff from the waste storage area does not represent an imminent and substantial endangerment." The DOE interpretation of what constitutes "imminent and substantial endangerment" is a much narrower interpretation than that of either Ohio EPA, USEPA, or CERCLA. In fact, the existence of a CERCLA 106 order for this site requires (by USEPA policy) an imminent and substantial endangerment to be present. Further, if no imminent and substantial endangerment existed at the FMPC site, there would be no need to conduct an RI/FS (which is by no means complete) or any of the removal actions that are currently being planned. These statements should be deleted from the text or alternate language used since their accuracy is very questionable.
 19. Page 5-7, Section 5.2.1, first paragraph: The calculated value of 80 ug/l, which exceeds 30 ug/l, is dismissed due to its "extreme conservatism." On what technical points is this value dismissed, if any? What alternative or more representative calculated value can be provided?
 20. Page 5-10, fourth paragraph: The discussion of the effect of the capping alternative on the environment should include the fact that such a large amount of surface soil movement will increase sedimentation rates into Paddys Run and will affect the aquatic community.
 21. Page 5-14, Table 5-1: Table 5-1 is not cited anywhere in the text. It is unknown as to where it fits into the document.

22. Section 5.4, General Comment: A uranium removal efficiency of 10% is proposed by the biodenitrification surge lagoon. The efficiencies for the biodenitrification towers, effluent water treatment system, and the AWWT system are unknown. Information regarding these efficiencies are necessary for the evaluation of Alternative 4 (i.e., effectiveness on the environment, reduction in toxicity, mobility, and volume), compared to those of other alternatives. What are the operation and maintenance requirements of this system, specifically removal media, media lifetime, exhausted media disposal/regeneration requirements, and how the system will be cleaned and closed? Alternative 4 also neglects the subsurface flow.
23. Page 5-15, Section 5.4.4: This section should include a discussion of the benefits of Alternative 4 to control sedimentation and runoff which may occur as a result of construction for the final remedy for Operable Unit 1.
24. Page 5-16, Section 5.4.4: There is no discussion of what the potential final remedial alternatives are for each of the operable units to provide a basis for evaluating the consistency of Alternative 4 against them. Alternatives being considered as final remedies should be presented so that it is clear what the relationship is between interim and final alternatives.
25. Page 6-2, Table 6-1, Alternative 4, Environmental Effectiveness: This evaluation factor should specifically state that along with the reduction of uranium loading to Paddys Run, an increase in uranium loading to the Great Miami River will also occur.
26. Appendix A - Cost estimate for Alternative 4: Alternative 4 is the preferred alternative, but the cost estimate is less detailed than any of the others. The estimate is simply a summary, and does not address collection system, biodenitrification towers, AWWT facility, nor operations and maintenance costs. If these costs have truly not been included, it is not clear how this cost estimate can be compared with that for the other alternatives. What are the capital costs for these elements, and if they are not to be considered part of Alternative 4, how will they be addressed as a part of the pending remedial actions at the facility? A cost analysis for the preferred alternative in an EE/CA should be detailed enough to clearly include all major elements of the alternative in order to provide a realistic cost comparison against other alternatives.
27. Appendix B, Table B-3: This table shows a discharge of actinium in excess of 200% of DOE's own standard. Why was this element not tested for previously? What is the source of

this loading? Were any of the samples in the waste pit area analyzed for actinium? Actinium may be another contaminant of concern for this Operable Unit and should be discussed in the document.

28. Appendix C, page C-12: It is not appropriate to use 1 l/day as an average intake of water for risk assessment purposes. USEPA uses a standard 2 l/day value and does not suggest that this is necessarily a maximum daily intake.
29. Appendix C, pages C-15, C-16, and C-18: The basis for the various ingestion rates given on these pages must be given in the EE/CA.
30. Appendix C, page C-25, Carcinogenic Effects: It is inconsistent with USEPA risk assessment methodology to calculate carcinogenic risks in terms of "risks of fatal cancer." USEPA does not separate carcinogenic risks into fatal and non-fatal. DOE's presentation of carcinogenic risk in this manner is very misleading and can give the appearance that carcinogenic risks are smaller than they really are.

COMMENTS ON THE RESPONSIVENESS SUMMARY

1. Section 1, Page 3, DOE response to general comment on treatment issues, second paragraph: It is stated here that the AWWT pilot plant will be capable of treating storm water runoff to 20 ppb which is below the 30 ppb proposed by DOE as the allowable concentration of uranium in groundwater. What impacts would this 20 ppb level have on aquatic organisms?
2. DOE response to Ohio EPA Comment #1, page 2, fourth paragraph: Risk assessments performed for the FMPC must be fully consistent with USEPA risk assessment guidance including the Health Effects Assessment Summary Tables. In the latest update of the HEAST (First/Second Quarters FY-1990, OSWER document OS-230, January/April 1990), to estimate risk-specific concentrations in drinking water, for example, a specified level of risk is divided by the unit risk for drinking water. Hence, the water concentration (in pCi/l) that corresponds to a best estimate of the increased lifetime cancer risk of 1×10^{-6} is calculated as follows:

$$\text{pCi/l in water} = \frac{1 \times 10^{-6}}{\text{unit risk in (pCi/l)}^{-1}}$$

For Uranium 235 and 238, the pathway-specific unit risk given in Appendix C of the HEAST for exposure over a 70 year lifetime is $6.6 \times 10^{-6} \text{ (pCi/l)}^{-1}$. Using this value for the unit

risk in the above equation, the concentration of uranium in ground water corresponding to a 10^{-6} excess lifetime cancer risk is 0.15 pCi/l (0.23 ug/l). For uranium 234, the concentration is slightly lower (about 0.21 ug/l). This means that the 30 ug/l concentration used by DOE in the waste pit EE/CA corresponds approximately to a lifetime cancer risk of 2×10^{-4} , which is outside the 10^{-6} to 10^{-4} acceptable risk range specified in the NCP. It must also be remembered that although the CEDE of 4 mrem is used to establish MCLs for other radionuclides, MCLs are not merely health or risk-based since other factors such as economic impacts of water treatment are also considered when establishing MCLs.

3. DOE response to Ohio EPA Comment #5, page 3: See Comment #1 above on the Revised EE/CA.
4. DOE response to Ohio EPA Comment #10, page 4: DOE's response is inadequate as it did not address the original comment. The original comment was: Besides the DOE DCG for surface water releases, are there any other state or federal surface water standards or criteria for uranium or other nonradiological compounds (such as chromium, TDS, TSS, fluoride, etc.) which are exceeded by the storm water runoff?
5. DOE response to Ohio EPA Comment #14, page 5: DOE's response does not address the original comment. Please provide an adequate response.
6. DOE response to Ohio EPA Comment #16, pages 5 and 6: Ohio EPA's original comment was not to suggest that the waste pits constitute sanitary landfills and should be reclassified as such. The intent of the comment was to point out that it is likely that in the past, these pits did receive what would today be considered to be solid waste (in addition to chemical and radioactive wastes). Like most "sanitary landfills" that in the past accepted chemical wastes, these waste pits, if capped as part of the final site remedy, would need to meet at least meet some minimum level of technical adequacy such as the Best Available Technology provisions of OAC 3745-27-11 for capping. It is also pointed out that the solid waste regulations which DOE cited in its response are not the current regulations. The state's solid waste regulations were recently revised and became effective earlier this year. Under the revised regulations, the waste pit caps as proposed in the EE/CA, with the exception of the RCRA-type cap, would not meet the technical requirements of these regulations.
7. DOE response to Ohio EPA Comment #19, pages 6 and 7: While Ohio EPA could envision placing a new cap over an existing synthetic liner, we do not understand how an existing synthetic liner could otherwise be "integrated" into a final cap design. Ohio EPA also believes that DOE is being somewhat

inconsistent since in its submittal of the initial screening of alternatives for Operable Unit 1, DOE was critical of the lack of long-term effectiveness of using a synthetic liner for waste pit capping and chose not to use one. Now DOE appears to be supporting the use of a synthetic liner.

8. DOE response to Ohio EPA Comment #21, page 7: DOE's response to Ohio EPA's comment regarding the need to clearly identify in the legend of Figure 4-3 the accumulation trenches was to request that Ohio EPA clarify the term "accumulation trenches." By way of clarification, Section 4.2.3, page 4-5, of the EE/CA states: "The flow would be collected in an accumulation trench downgradient of the cap." Given this clarification, please identify these trenches in the legend on Figure 4-3.
9. DOE response to Ohio EPA Comment #22, page 7: DOE's response is inadequate and not responsive to the original comment.
10. DOE response to Ohio EPA Comment #24, page 8: DOE's response is inadequate. See Comment #18 above on the revised EE/CA.
11. DOE response to Ohio EPA Comment #27, page 8: It appears that DOE did not clearly understand this comment. See Comment #19 above on the revised EE/CA for clarification.