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OHIO EPA COMMENTS ON THE ENGINEERED WASTE MANAGEMENT FACILITY SAMPLING AND ANALYSIS PLAN TRANSMITTAL LETTER

10/11/91

OEPA/DOE-FSO
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LETTER

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George V. Voinovich
Governor

October 11, 1991

Mr. Jack Craig
Project Manager
U.S. DOE FEMP
P.O. Box 398705
Cincinnati, Ohio 45239

Dear Mr. Craig:

Attached are Ohio EPA's comments on the Engineered Waste Management Facility Sampling and Analysis Plan. Many of the comments relate to compliance with ARARs. DOE should also note that Ohio EPA's review and comment of this plan does not indicate Ohio's acceptance of a waste disposal facility on the FEMP. #2068 - Tier 2D

If you have any questions please contact me.

Sincerely,

Graham E. Mitchell
Project Manager

GEM/acn

Enclosure

cc: Kathy Davidson, Ohio EPA
Jim Saric, U.S. EPA
Jenny Tiell, Ohio EPA
Jack Van Kley, Ohio A.G.
Lisa August, GeoTrans
Ed Schuessler, PRC
Robert Owen, ODH

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ATTACHMENT

OHIO EPA COMMENTS ON ENGINEERED WASTE MANAGEMENT FACILITY SAMPLING AND ANALYSIS PLAN

General Comments

1. Ohio EPA review and comment of this sampling plan does not indicate Ohio's acceptance of the siting of a waste disposal site on the FEMP. However, Ohio EPA acknowledges that DOE may need a facility to provide short term storage of waste materials from operable unit remediation and that this facility needs to be properly sited. The issue of siting an onsite disposal facility at FEMP will need to be addressed at a later date.

2. Has DOE considered characterizing offsite areas to the north as part of this effort. It would appear that, with a small additional effort, DOE could acquire valuable information that would answer future questions about this bedrock area. This would provide a complete technical data base to address on-site and near site disposal options.

3. This plan is intended ". . .to support the evaluation of an engineered waste management facility (EWMF) for disposal/storage of waste generated through remediation activities" (page 1, line 7). Since this facility must be assessed as a portion of a given alternative during the Detailed Analysis of Alternatives (DAA), DOE must consider the facility's ability to comply with ARARs. Compliance with ARARs is one of the two threshold criteria for the DAA. USEPA's "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (1988) states, ". . The detailed analysis should summarize which requirements are applicable or relevant and appropriate to an alternative and describe how the alternative meets these requirements." DOE must include in this plan any sampling and analysis activities and any reviews of existing site and regional data sources that would provide data for evaluating compliance with applicable or relevant and appropriate requirements (ARARs). The sampling and analysis plan should state ARARs and detail what data is needed to determine the proposed facility's ability comply with specific ARARs. The following possible state ARARs and TBC's should be considered:

   a. Ohio Revised Code (ORC) 3734.05(D) - Hazardous waste facility standards [redacted]

   b. Ohio Administrative Code (OAC) 3745-27-07 - Solid waste disposal facility permit to install application.

c. Section 3.0, Table 1, should consider the solid waste siting criteria OAC 3745-27-07(B) in development of the data quality objectives.

Several siting criteria issues which may pertain to the waste management facility are highlighted below, however, OAC 3745-27-07(B) should be reviewed for a complete listing.

The sanitary landfill facility is not located within the surface and subsurface areas surrounding a public water supply well through which contaminants may move toward and may reach the public water supply well within a period of five years; and

The sanitary landfill facility is not located above an aquifer declared by the federal government under the "SAFE DRINKING WATER ACT" to be a sole source aquifer prior to the date of receipt of the permit to install application by the Ohio EPA; and

The sanitary landfill facility is not located above an unconsolidated aquifer capable of sustaining a yield of one hundred gallons per minute for a twenty-four hour period to a water supply well located within one thousand feet of the limits of solid waste placement, unless deemed acceptable by the Director; and

The limits of solid waste placement are not located within two hundred feet of a stream, lake, or natural wetland, unless deemed acceptable to the Director; and

The isolation distance between the uppermost aquifer system and the bottom of the recompacted soil liner of a sanitary landfill facility is not less than fifteen feet of insitu or added geologic material unless deemed acceptable by the Director.

d. OAC 3745-50-44 - Contents of "Part B" of the permit application (Hazardous waste)

e. OAC 3745-54, 55, and 57 - New facility standards (Hazardous waste)

f. Ohio EPA Division of Groundwater, Final Guidance, GD 0202.101 - Guidance on solid waste siting criteria: sole source aquifer

g. Ohio EPA Division of Groundwater, Final Guidance, GD 0202.105 - Guidance on solid waste siting criteria: minimum distance from a public water supply well

h. Ohio EPA Division of Groundwater, Final Guidance, GD 0303.110 - Significant zone of saturation

4. To determine the adequacy of this sampling and analysis plan the EWMF must be described in more detail. The following information at a minimum must be included:

1. Size and possible design of the facility
2. What depth will the facility need? Will the infiltration (vertically or horizontally) of water pose any design problems?
3. Approximate surface area and volume that the facility will incorporate
4. Waste forms (treated/untreated)
5. Waste types (hazardous, solid wastes, mixed)
6. Sources of waste

Specific Comments

1. Section 1.0, pg. 1, line 7: This sentence appears to indicate that the evaluation of the EWMF will be included in a feasibility study. Section 2.4, page 4, line 2, states that any baseline risk assessment for the EWMF study area will be performed under Operable Unit 5. This sentence appears to indicate that the EWMF would be evaluated in the feasibility study for Operable Unit 5. Clarify this issue.

2. Section 1.0, pg. 1, lines 14-15: Define "evaluating the viability of siting the EWMF at the FMPC." This should mean evaluation through the DAA but the document suggests otherwise since it fails to address the issue of compliance with ARARs.

3. Section 2.0, pg. 1, line 22: The SAP does not recommend sampling of additional wells as stated in this sentence. The SAP should propose the sampling of wells to determine current groundwater concentrations of potential contaminants of concern in the EWMF study area.

4. Section 2.3, pg. 2, lines 19-21: The background soil samples and reports available are not sufficient for conducting the risk assessments (see OEPA letter to Jack Craig, 8/20/91). DOE needs to submit a sampling and analysis plan to collect data for defining background soil concentrations of naturally occurring elements.

5. Page 2, Section 2.3, 2nd bullet: There should be other chemical interaction testing of the waste leachate with other waste to be placed into the facility. There should also be compatibility testing done between the waste and the proposed facility.

6. Page 2, line 36: How will the flow path be evaluated.

7. Page 3, lines 3-5: Will there be more testing for cation exchange capacity and TOC data for the glacial overburden in the proposed area for the EWMF.

8. Section 2.3, page 3, lines 11-13: Is this sentence suggesting only treated waste will be deposited in the EWMF? Does DOE intend to place any untreated, contaminated soil in the EWMF? See General Comment #4.

9. Section 2.3, page 3, lines 13-16: See Ohio EPA comments (8/23/91) on the use of the modified ANSI/ANS leach test for the Operable Unit 1 Treatability Study Work Plan.

10. Section 2.5, page 4, lines 8-9: Due to the significant implications of NEPA in the siting of the EWMF, it would seem that DOE will need more than a limited ecological survey. A delineation of wetlands and investigation of endangered species and their habitat would seem to be the minimal requirements of NEPA. DOE should be working to answer as many of these types of data needs as possible to determine as soon as possible if the EWMF is feasible on the FEMP.

11. Section 3.0, page 1, line 2: The evaluation of criteria list omits the threshold criteria of compliance with applicable or relevant and appropriate requirements. Revise the list to include this criteria. (See general comment #3.

12. Table 3: A description of the tests not referenced is needed in this SAP.

13. Table 3: How will the Modified ANSI - 16.1 Leach Test be modified? Explain.

14. Table 3, Critical Samples: Where will the critical samples be taken from?

15. Section 3.4, pg. 10: The risk assessment portion fails to address how the risk from possible radon emissions from the disposal facility will be modelled or calculated. Possible radon emissions from the EWMF should be discussed in the text.

16. Section 3.4, pg. 10, line 11: If this facility is to be a waste management facility and not a disposal facility, activities would include operation and maintenance instead of closure and post closure activities.

17. Section 3.4, pg. 10, lines 24-27: Since this data will not be acquired until the OU 5 sampling is complete, how will risk from the EWMF be integrated into the FS risk assessments for OUs 1, 2, & 4?

18. Page 10, lines 31-33: Are long-term effectiveness and permanence grouped together? They do not have the same meaning: long-term effectiveness has a limited time, where permanence means to last indefinitely. Discuss.

19. Table 4: Subsurface samples should be taken to obtain background data on the constituents of the subsurface soils. This data is needed to determine the long-term effectiveness of the facility.

20. Section 3.4, pg. 11, Table 4: Under critical samples the table states that "No subsurface soil samples will be taken for chemical analysis." Section 4.4.1, pg. 12, line 8, states that "Unless HNu field screening indicates otherwise, no subsurface soil samples for chemical analysis will be collected." Clarify this discrepancy. Additionally, if surface soil sampling indicates above background levels of contaminants subsurface soil samples will be needed to determine extent of contamination. DOE should consider subsurface analysis to prevent the need for additional samples.

21. Section 3.4, pg. 12, Attachment 1: DOE should justify the limited list of constituents of concern for surface soil. Additional metals on the list should include arsenic, selenium, zinc, chromium, mercury, etc.

22. Page 18, attachment 2: Many of the detection limits in this table are above the 10^{-6} risk level. Discuss.

23. Page 19, line 1: What are all the exposure scenarios?

24. Section 3.4, pg. 19, line 4: Direct gamma radiation should be considered an additional potential significant route of exposure during construction.

25. Section 3.4, pg. 19, lines 28-30: Runoff from the EWMF and its construction will most likely enter Paddys Run. DOE should address the potential impacts of this runoff and sedimentation on Paddys Run.

26. Section 3.4, pg. 19, line 30: Identification of wetlands cannot be accomplished solely by the use of aerial photographs. A walk-over survey must be performed to evaluate if wetlands occur in the study area.

27. Section 3.4, pg. 19, line 30: Define the significance of whether the area "constitutes an area of permanent surface water."

28. Page 19, last paragraph: Could the wetlands pose a possible pathway for airborne contaminants to enter the soil, subsoil and groundwater at a quicker rate? Or the wetlands could cause other pathways of contamination through the plants and animals associated with the area.

29. Section 3.4, pg. 20, lines 1-3: This paragraph and the portion on the preceding page are confusing and need to be reworded.

30. Section 3.5, pg. 20, lines 27-28: Constituents need not be toxic to threaten ecological receptors. Concentrations affecting reproduction, embryonic development, etc. are sufficient to justify additional sampling.

31. Section 3.5, pg. 21, Table 6, Constituents of Concern: Justification should be provided for the use of uranium as the only contaminant to be analyzed. Is uranium the most easily absorbed or bioaccumulated contaminant of concern? Is it only because it is the most abundant contaminant? Appropriate references should be cited in the justification.

32. Section 3.5, pg. 21, Table 6, Critical Samples: Replace "field geologist" with field botanist/biologist. Wetlands should not only be noted but should be delineated to determine compliance with ARARs and NEPA. Since Facimire et. al., 1990 noted that the endangered Indiana Bat was present in the areas surrounding the FEMP, efforts should be made to determine the presence or absence of these bats in the off property study area and any impact the EWMF and its construction might have on the bats habitat.

33. Section 3.5, pg. 22, line 5: An additional pathway which must be considered for ecological receptors is inhalation and the ingestion of soils by receptors (i.e., moles and mice) living in or on contaminated soils.

34. Section 4.0, pg. 1: The activities should be conducted under the RI/FS QAPP as stated, so long as recent comments submitted by Ohio EPA and USEPA on the QAPP are implemented.

35. Section 4.0: The screened interval for all 1000 series wells should be sampled to ensure the proper formation is monitored.

36. Section 4.1, pg. 1, line 33: Define hydraulic communication.

37. Section 4.1, pg. 2, line 1: By what method will the hydraulic conductivity be tested?

38. Section 4.1.2: The proposed monitor wells and geotechnical borings should be located in such a manner to provide adequate coverage of the area and to ensure that representative samples are collected for the study area. A grid pattern may provide better coverage of the study area for the geotechnical borings compared to the linear alignment of the proposed boring locations shown on Figure 4. All decontamination water and development water should be containerized and tested to ensure proper disposal while any water added into a well during drilling must be tested, and 3 to 5 times the amount of water added during drilling should be removed during development to ensure that representative samples are collected.

39. Section 4.2.1, pg. 5, line 21: Explain how the drillers will know that the borehole is "sufficiently above the overburden/aquifer interface as to avoid leakage from any perched zones into the aquifer."

40. Section 4.2: All geotechnical borings need to be properly abandoned upon completion.

41. Section 4.2.2, pg. 7, line 15: Define what DOE considers background radiation levels for soil.

42. Section 4.2.2, pg. 7, line 20: Explain the meaning of "meeting the intent" of ASTM Method D3740-80.

43. Section 4.3, pg. 7, lines 24-25: Waste interaction between other waste and the facility should be tested also.

44. Section 4.3.2, pg. 11, line 7 and 20: Brass liners are not appropriate for sample collection and storage of samples that will be analyzed for metal content and/or adsorption ratios. Stainless steel liners should be used.

45. Section 4.4.1, pg. 12, line 8: The Hnu can be used as a field screening tool; however, it will not detect all possible chemical constituents of concern.

46. Section 4.4.3, pg. 12, line 27: This section describes radiation field measurements for beta and gamma emitters. Section 3, pg. 17, Table 5, describes a surface gamma survey. Clarify this discrepancy.

47. Section 4.4.3, pg. 15, line 1: Explain how the results of the walkover survey may influence the location of surface soil sampling.

48. Section 4.5, pg. 15, lines 21-29: See Specific Comment #32.

49. Section 4.5.2, pg. 17, lines 8-9: Justification should be provided for collecting twig and leaf tissue for uranium analysis. Are these the most likely portions of the tree to accumulate uranium? Wouldn't core samples provide a better estimate of uranium concentration in the tree since much higher levels of uranium air releases occurred in the past. Appropriate references should be cited in the justification.

bjb

10/11/91