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**LETTER RESPONSE TO COMMENTS RECEIVED
ON THE ENGINEERED WASTE MANAGEMENT
FACILITY SAMPLING AND ANALYSIS PLAN**

03/20/92

**DOE-1175-92
DOE-FO/OEPA**

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LETTER

3007



Department of Energy
Fernald Environmental Management Project
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6357

MAR 20 1992

DOE-1175-92

Mr. Graham E. Mitchell, Project Manager
Ohio Environmental Protection Agency
40 South Main Street
Dayton, Ohio 45402-2086

Dear Mr. Mitchell:

LETTER RESPONSE TO COMMENTS RECEIVED ON THE ENGINEERED WASTE MANAGEMENT FACILITY SAMPLING AND ANALYSIS PLAN

For your information, enclosed are the responses to your comments on the Engineered Waste Management Facility Sampling and Analysis Plan. The United States Environmental Protection Agency (U.S. EPA) approval (enclosed) of the revised plan was received on March 11, 1992. Therefore, as previously discussed, your comments have been addressed through a letter response, rather than a plan modification.

If you or your staff any comments or questions, please contact Randi Allen at (513) 738-6158.

Sincerely,

A handwritten signature in black ink, appearing to read "Jack R. Craig".

Jack R. Craig
Fernald Remedial Action
Project Manager

FN:Allen

Enclosure: As Stated

cc w/enc.:

J. J. Fiore, EM-42, TREV
K. A. Hayes, EM-424, TREV
J. Benetti, USEPA-V, AT-18J
M. Butler, USEPA-V, 5CS-TUB-3
J. A. Saric, USEPA-V, HRE-8J
J. Kwasniewski, OEPA-Columbus
T. Schneider, OEPA-Dayton
T. W. Hahne, PRC
L. August, GeoTrans
R. L. Glenn, Parsons
D. J. Carr, WEMCO
L. S. Farmer, WEMCO
J. P. Hopper, WEMCO
J. D. Wood, ASI/IT
J. E. Razor, ASI/IT
AR Coordinator, WEMCO

RESPONSES TO OEPA COMMENTS ON RESPONSES TO COMMENTS

Engineered Waste Management Facility

Date Document Issued Jan 17, 1992
Date Comments Due None expected /Received OEPA - Feb 10, 1992
Date Responses Due _____
Date Report Due _____

1. Commenting Organization:OEPA Commentor:
Pg. # Section # Paragraph # Sent./Line #
Original Comment #1

Comment: Comment #6: The response to comment #6 states "Other constituents will be analyzed if they are found in soils at sufficient levels to be of concern for ecological risk." What criteria will DOE use to determine if "sufficient levels to be of concern for ecological risk" are present in soils?

Response: The criteria which DOE will use to determine if sufficient levels of other constituents are present to be of concern for ecological risk are whether predicted uptake of constituents from soils would result in accumulation in trees at levels above no observed effect concentrations for plants. Predicted concentrations of constituents in trees will be estimated by multiplying soil concentrations by soil-to-plant transfer coefficients, as described in the Draft Risk Assessment Work Plan Addendum. The concentrations will then be compared to literature values for no observed effect levels.

Action: No action

2. Commenting Organization:OEPA Commentor:
Pg. # Section # Paragraph # Sent./Line #
Original Comment #2

Comment: Comment #3 and #15: Unless DOE has conducted studies in addition to those detailed in the March 1990 ASI/IT report, DOE has not collected enough detailed information on the presence of endangered species and critical habitat within the area of study for the EWMF. Since such data has not been provided to the EPAs and the work was not reviewed or approved by them, DOE may be at risk of having insufficient information to produce an acceptable and complete Feasibility Study.

Response: The details of threatened and endangered species surveys will be presented in the Site-Wide Characterization Report. The intent to conduct surveys for the Indiana bat and the cave salamander was approved by the EPAs in the RI/FS Work Plan, Section 6, Biological Resources Sampling Plan.

Action: No action. The Site-Wide Characterization Report will be available for review in early August.

3.	Commenting Organization:OEPA	Commentor:	
	Pg. #	Section #	Paragraph #
	Original Comment #3		Sent./Line #

Comment: Comment #16: a) The response fails to achieve the primary request of the comment, "A clear objective needs to be defined for collecting tree samples for uranium." DOE needs a clear objective to support its decision to sample and the method chosen for this sampling. b) It is still unclear why it is important to have data which is comparable to that collected at other sites. No clear use for such comparisons has been provided in the text or response to comments. Additionally, if the objective of this sampling effort is different from that of other studies then the usefulness of such comparisons is limited at best. Just because leaf and twig sampling is the most commonly used does not mean it is the most appropriate sampling to meet the objectives of this sampling effort. c) Sufficient time exists for altering the sampling protocol if leaf and twig tissue will be sampled. Leaf tissue will not be available for a number of months for deciduous trees. d) The response states, "However, the sampling plan already recommends further tree sampling if hazardous constituents are found in soil at concentrations likely to result in significant uptake by trees." What criteria will DOE employ to determine if sufficient concentrations are present to result in significant uptake?

Response: (a) DOE agrees with Comment #16 that the goal is determining baseline conditions in the trees prior to construction of the EWMF and that therefore leaves and twigs are the preferred tissue. (b) DOE feels that it is useful to be able to compare biotic uptake of constituents at the FEMP relative to that observed at other natural and contaminated sites. The sampling protocol used was consistent with the approved SAP data quality objectives and with the stated goal as well. (c) Sampling was completed in January following U.S. EPA approval of the Work Plan in October. (d) See the response to Comment #1 on the previous page.

Action: No action

Response: As noted in the response to Comment #4b, the modified ANSI/ANS-16.1 test is being conducted to evaluate an inorganic leachate recipe, and not treatability options. The use of waste from OU 1 was chosen because it represents the largest volume of production-generated waste potentially destined for the EWMF, and a composite of all waste present at the FEMP was not feasible under the current schedule.

Action: No action

6.	Commenting Organization:OEPA	Commentor:	Sent./Line #
	Pg. # Section # Appendix A	Paragraph #	
	Original Comment #6		

Comment: Appendix A, Page 5, Table A.1: The table contains a number of typographical errors which were not noticed previously but need to be corrected. Under 5 Days, delete one Be and add As, Hg, K, Pb, and Se. Under 45 Days, delete one Be and add As, Hg, K, Pb and Se. Under 90 Days, delete one Ba, and add Fe and Tl.

Response: Comment noted. Under 5 and 45 days, one Be will be deleted. However, as specified in Section A.2.0, paragraph 3, at 5- and 45-day sampling intervals, 100ml of solution will be removed and analyzed for ICP metals, pH, and uranium with a complete chemical and radiological characterization of the leachate performed on the entire solution volume at the end of 90 days. This analytical method will optimize the leachate amounts required for the 90-day tests relative to laboratory space and costs while allowing reasonable estimates of contaminant equilibriums versus time within the contact solution. Therefore As, Hg, K, Pb, and Se will not be analyzed. Under 90 days in Table A.1, one Ba will be deleted with Fe, Tl and total uranium added to the listing.

Action: A revised Table A.1 is attached to this comment response document and will be transmitted to appropriate EWMF SAP, Final Revision 1 recipients.

TABLE A.1
ANALYTICAL SCHEDULE AND PARAMETERS OF INTEREST
FOR MODIFIED ANSI/ANS-16.1 LEACH TEST

5 Days	45 Days	90 Days		
pH	pH	pH	¹³⁷ Cs	Eh
Ag	Ag	Ag	²³⁷ Np	alk
Al	Al	Al	²³⁸ Pu	Cl
Ba	Ba	As	^{239,240} Pu	F
Be	Be	Ba	²²⁶ Ra	NH ₄ ⁺
Ca	Ca	Be	²²⁸ Ra	NH ₄ ⁺
Cd	Cd	Ca	⁹⁰ Sr	NO ₃ ⁻
Co	Co	Cd	⁹⁹ Tc	PO ₄ ⁻³
Cr	Cr	Co	²²⁸ Th	SO ₄ ⁻²
Cu	Cu	Cr	²³⁰ Th	TOC
Fe	Fe	Cu	²³² Th	
Mg	Mg	Fe	²³⁴ U	
Mo	Mo	Hg	^{235,236} U	
Mn	Mn	K	²³⁸ U	
Na	Na	Mg	TOTAL U	
Ni	Ni	Mo		
Sb	Sb	Mn		
Si	Si	Na		
Tl	Tl	Ni		
U	U	Pb		
V	V	Sb		
Zn	Zn	Se		
		Si		
		Tl		
		V		
		Zn		