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WM: 201.6

MEMORANDUM FOR: Donald A. Nussbaumer
Assistant Director for State Agreements Program
Office of State Programs

FROM: Edward F. Hawkins, Acting Chief
Low-Level Waste Licensing Branch
Division of Waste Management

SUBJECT: REVIEW OF PLAN FOR FINAL CLOSURE OF MAXEY FLATS SITE

As you requested, we have reviewed the preliminary draft copy of "A Program to Provide the Basis and Plan for the Decommissioning of the Maxey Flats Shallow Land Burial Facility." The approach presented in this document seems to be generally well thought out.

The plan presented in this document should lead to an environmentally acceptable decommissioning plan. However, this document does not appear to address the possibility that plans which are feasible from an engineering and long-term safety point of view may result in significant short-term releases and may be relatively expensive. Although the immediate decommissioning of the site is undoubtedly desirable, longer termed plans may be more cost effective even though a higher degree of maintenance would be required in the short term. Early in Task 4 of the plan, we recommend that estimated costs be reviewed to see if funding at the desired level will be available before they proceed with detailed construction plans. If none of the designs are economically feasible, given the funds that will be available, they could perform another iteration of Task 3 by looking at longer termed decommissioning plans.

Longer termed decommissioning plans could include continued operation of the evaporator or provisions for periodic replacement of a temporary infiltration barrier, such as the current plastic covering, in conjunction with backfilling of areas of subsidence. When consolidation of the materials in the trenches has reached a point where subsidence of trench caps is no longer a problem, a permanent infiltration barrier could then be constructed. Other long term plans have also been suggested. Although maintenance costs in the short term would be higher, the total cost of the project could be lower.

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We are available to provide assistance as this project continues. You should be aware that we are in direct contact with Kentucky relative to specific technical aspects of the project. We will keep you informed of our activities. Specific comments on the draft report are attached. If you have any futher questions, please contact me.

Original Signed By

Edward F. Hawkins, Acting Chief
Low-Level Waste Licensing Branch
Division of Waste Management

Enclosure:
As stated

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COMMENTS ON
"A PROGRAM TO PROVIDE THE BASIS AND PLAN
FOR THE DECOMMISSIONING OF THE MAXEY
FLATS SHALLOW LAND BURIAL FACILITY"

1. Page 1-3 - In the list of engineered features contained in the decommissioning plan "surface water management" should also be included. Later in the report on page 3.8 this is listed as being important. Since surface erosion could drastically affect any cover in the long term, this should be considered as a major engineered feature.

2. Page 1-3 - On this page and throughout the report, the phrase "updip ground-water flow barrier" is used. This should be "upgradient" instead of "updip."

3. Page 1-5 - In the list of present needs, the phrase "provide permanent upgradient ground-water flow barrier" should be added.

4. Page 1-6 - The list of engineered features should again include "surface water management."

5. Page 1-9 - The design drawing for the Native Soil/Bentonite option should be modified to show a "bentonite-treated soil" instead of "bentonite." Pure bentonite is subject to excessive cracking upon drying. It is usually applied in a mixture with soil to minimize the probability of cracking and to keep costs low. Acceptably low permeabilities can be obtained when the bentonite is mixed with local soils or clays.

6. Page 1-10 - The basis for the cost estimates shown here and on page 4-2 were not given. Therefore, we have not been able to evaluate these numbers.

7. Page 1-10 - Part of Task 3 should include evaluating the potential of radioactive releases during the remedial action or as a result of the remedial action.

8. Page 3-20 - The section entitled "Bentonite" should be modified to show that the bentonite would be mixed with native soils. It is possible that this will significantly reduce the cost estimates of using a bentonite cover.

9. Page 3-23 - On the list of characteristics we would again recommend including an effective surface water management system to minimize erosion.

10. Page 4-1 - In the third paragraph of this page, it is stated that "in-situ grouting and dynamic compaction both appear feasible." Although both methods are physically possible it is questionable whether dynamic compaction of low-level waste can be achieved without excessive short term releases or increases in the likelihood of future releases. Further, there is a question as to whether dynamic compaction can effectively stabilize the entire depth of the trenches.

11. Page 4-11 - The method for evaluating existing designs shows four general topics for consideration, one of which is "safety and licensing." We feel that a best to worst ranking on this topic should only be done after determining that all designs to be evaluated meet safety requirements. Additionally, safety needs to be considered during the remedial action as well as after decommissioning.