UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
AIR AND RADIATION

R. Paul Detwiler, Acting Manager
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U.S. Department of Energy
P.O. Box 3090
Carlsbad, New Mexico 88221-3090

Dear Dr. Detwiler:

The U.S. Environmental Protection Agency (EPA) received the U.S. Department of Energy's (DOE) Compliance Recertification Application (CRA) for the Waste Isolation Pilot Plant (WIPP) on March 26, 2004. On May 20 and July 12, 2004 (Docket A-98-49: II-B3-72 and II-B3-73, respectively), we provided you with comments related to completeness of the CRA documentation. We appreciate your responses to some of our comments and we look forward to receiving the remaining responses.

In our ongoing review, we have identified additional documentation needed to constitute a complete application, as well as several technical issues. Enclosure 1 describes the items we require to make a completeness determination. The topics covered by this letter include: additional references; clarification of issues related to chemistry and actinide solubilities, the waste inventory, and hydrology; and documentation on computer codes and parameters.

We have also identified several technical areas of concern. First, since DOE submitted the original certification application (CCA), new information has become available on the Culebra hydrology and potential recharge related to potash mining. The possibility of potash mining as a potential source of recharge may affect previous interpretations of the ground water chemistry and ground water basin modeling that was done for the CCA. DOE must update the ground-water basin modeling and ground-water chemistry interpretations for the units above the Salado to accommodate the possibility that potash mining is a potential source of recharge. DOE must also provide discussion on how this new information would or would not affect the current performance assessment.

Second, the CRA discusses a change in Attachment TFIELD where "several areas north of the [Land Withdrawal Boundary] have been ruled out as potential mining areas in the updated version due to recent oil and gas drilling in those areas." Our regulations at §194.32 require that performance assessments account for activities in the vicinity of the WIPP, including "existing leases that can be reasonably expected to be developed in the near future." In the WIPP Compliance Application Guidance (CAG), we explained that, in implementing this requirement

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for mining, DOE should examine the "estimated lives of existing mines and plans for new mines in the vicinity of the WIPP" and should "use mine-able reserves in estimating mine lives and the extent of potential mining." (See CAG, p. 45) That is, we expected DOE to look broadly at the *potential for* existing resources to be developed, without substantial deference to whether the leases were currently viable for development. The methodology in the CRA for mining outside the controlled area is inconsistent with this approach. We do not find that the presence of oil or gas drilling is a sufficient basis for eliminating potash mining areas from consideration, especially in light of anecdotal evidence that mining does occur in proximity to such boreholes. DOE must account for the potash mining areas that have been omitted from the current modeling.

Lastly, in the CRA, DOE assumes that methanogenesis will be the major microbial degradation process instead of denitrification and sulfate reduction, which were assumed for the CCA. This is important because less gas is assumed to be produced through the methanogenesis process than through the other microbial processes. In early 2004, we reviewed data related to gas generation pathways as part of our evaluation of compressed waste from the Advanced Mixed Waste Treatment Facility. Based on the data provided at that time (Kanney et. al, 2004; Docket A-98-49, Item II-B2-33), we were unable to resolve the uncertainty about whether methanogenesis would be the dominant gas generation pathway, due to the potential for excess sulfate in the disposal system. (See EPA's letter dated March 26, 2004; Docket A-98-49, II-B3-68.)

Additional data must be provided in order to justify the assumption of methanogenesis as the primary gas generation pathway. If DOE cannot provide new evidence that methanogenesis will be the dominant reaction, DOE must assume that microbial degradation of Cellulosics, plastics, and rubber PR will take place through denitrification and sulfate reduction when calculating the maximum amount of carbon dioxide that could be produced by microbial degradation of CPR. Refer to Enclosure 1 for further discussion of these technical issues, as well as information requests related to completeness.

If you have any questions about these requests or EPA's overall recertification review, please contact Betsy Forinash at 202-343-9233.

Sincerely,

Elizabeth Cotsworth

Elizabeth Cotsworth, Director
Office of Radiation and Indoor Air

Enclosure

cc: Russ Patterson, DOE/CBFO
Lynne Smith, DOE/EM
Steve Casey, DOE/CBFO
Steve Zappe, NMED
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