



# Attorney General of New Mexico

PO Drawer 1508.  
Santa Fe, New Mexico 87504-1508

505 827-6000  
Fax 505 827-5826

*Handwritten signature: Manuel Tijerina*

TOM UDALL  
Attorney General

OFFICE OF THE ATTORNEY GENERAL

MANUEL TIJERINA  
Deputy Attorney General

December 14, 1994

*Handwritten mark: a circle with a vertical line through it* ENTERED

Mr. Robert Bills  
U.S. Department of Energy  
Carlsbad Area Office  
P.O. Box 3090  
Carlsbad, New Mexico 88221

Dear Bob:

What follows are comments on the Hazardous Constituent Source Term position paper (Nov. 17, 1994) (the "draft"). Like the other position papers, the draft calls for technical expertise beyond our existing capabilities. We have sought but not received grant funds from DOE to obtain the necessary expert assistance. Our comments at present are as follows:

1. The position paper does not state a position. DOE must choose between the vapor pressure limited model and the headspace concentration limited model (or some other model) as a defensible model for SPM purposes and must state its defense of that model.
2. The vapor pressure limited model specifies that each hazardous constituent is present in quantities sufficient to saturate the gas or brine in the waste region (draft at 2-3). Is this model therefore the more conservative (i.e., release-enhancing) of the two proposed?
3. Is it correct that the validity of the vapor pressure limited model depends upon the accuracy of characterization data which establishes the inventory of hazardous constituents? How will such inventory be established, given that the presence of hazardous constituents in waste is indicated only qualitatively through process knowledge in the BIR (draft at 5, lines 6-8)?
4. The vapor pressure limited model has the rationale, inter alia, that headspace measurements do not represent the total mass of hazardous constituents in a waste container (at 3). Given

941204



Mr. Robert Bills  
December 14, 1994  
Page -2-

such rationale, can the headspace concentration limited model be defended?

5. The headspace concentration limited model is said to be bounded by measured drum headspace concentrations weighted by waste types (at 3). Is it then correct that the validity of this model depends upon the representativeness of available headspace concentration data and the validity of projections of waste types? Please state the waste types to be used in weighting; at the meeting it was said to be TRUCON codes. Please explain why projections of waste types can be viewed as defensible.

6. What is the rationale for the conceptual model provision that liquid VOC's and semi-volatiles do not go into solution with brine (draft at 3, lines 45-46)?

7. The draft asserts as a rationale for the headspace concentration limited model that measured drum headspace concentrations in INEL and RFP waste, which is believed to be the most contaminated of all generator sites, are at least two orders of magnitude lower than saturated vapor concentrations (at 4, lines 5-7). Please provide data underlying such statements. Without supporting data the statements cannot be accepted.

8. What "post-closure driving mechanisms" (draft at 4, line 8) have been considered in evaluating whether any such mechanism may elevate VOC concentrations above headspace levels?

9. Please provide the data underlying the statement that VOC's volatilize easily through most waste forms and achieve steady-state rapidly within the drum (draft at 4, lines 10-11).

10. Please justify the statement that VOC data obtained from INEL and RFP waste, while not necessarily representative of the entire waste inventory, are believed to be conservative based on process knowledge (draft at 6, lines 8-10).

11. It is said that headspace data for VOC concentrations exist for nearly 500 drums from RFP and INEL (at 6 line 12). Please identify and provide the data. Without publication of such data it cannot be accepted as factual.

12. Please explain in what way "use of existing headspace data would result in establishing a bounding criteria against which future sampling data would have to be compared." (draft at 6, lines 17-18).

Mr. Robert Bills  
December 14, 1994  
Page -3-

13. It is said that EG&G is conducting a study to establish a relationship between headspace VOC measurements and localized variations in VOC concentrations that may occur in a typical drum of waste (draft at 6, lines 41-43). Please state when the results of the study will be published. Without such study the headspace concentration limited model is not defensible.

14. When will the future BIR referred to at draft 7, lines 8-10, be available? Please provide a copy of this document when it is available.

15. What studies are planned of potential dewatering through waste compaction (draft at 7, lines 37-38)? Without such data a limitation on free liquids cannot be assumed.

16. What studies are planned of degradation of cement-based materials as it may affect VOC concentrations (draft at 7, lines 39-40)? Again, without such studies a limitation on VOC's cannot be assumed.

17. What studies are planned to quantify hazardous constituents released as polymers and cellulose degrade and metals corrode (draft at 7, lines 43-47)? No limit on hazardous constituents can be assumed without such data.

18. Will further studies be done of VOC production by radiolysis (draft at 7, lines 48-57)? What studies are planned, and when will they be completed?

19. Will studies be done to identify the solubilities of liquid and solid hazardous constituents in brine (draft at 8, lines 39-52)? If not, how does the project plan to deal with these factors? In the absence of a project position, the models cannot be accepted.

20. It does not seem that the project has developed a position as to the means to estimate concentrations of hazardous chemicals in the brine phase in the headspace concentration limited model (draft at 10-12). This position needs to be developed before the model can be endorsed.

21. The draft asserts that credit should be taken for post-closure administrative controls to exclude sealed containers and free liquids (draft at 12, lines 41-42). This position is not acceptable without a demonstration of the effectiveness of such controls. Moreover, there will always be some uncertainty, which must be accounted for in the calculations.

Mr. Robert Bills  
December 14, 1994  
Page -4-

22. Since decomposition and/or compression and degradation processes may elevate VOC's above headspace concentrations, the headspace concentration limited model is not defensible (see draft at 12, lines 44-47).

Thank you for considering these comments.

Best regards,



Very truly yours,

LINDSAY A. LOVEJOY, JR.  
Assistant Attorney General

LAL:mh

cc: Larry Weinstock, EPA  
Robert H. Neill, EEG  
Kathleen Sisneros, NMED ✓  
Christopher Wentz, NMEMNR