



BRUCE KING
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-2850



10300
ENTERED

JUDITH M. ESPINOSA
SECRETARY

RON CURRY
DEPUTY SECRETARY

December 22, 1992

John Arthur, III
Project Director, WIPP Project Integration Office
Department of Energy Albuquerque Operations Office
P.O. Box 5400
Albuquerque, New Mexico 87115

RE: Comments on Computational Approach to Determine VOC Concentrations Throughout Waste Drum Headspace

Dear Mr. Arthur:

The following comments are provided regarding the DOE draft document entitled; "Combined Experimental - Computational Approach to Determine VOC Concentrations Throughout Waste Drum Headspace". It should be noted that requirements for determination of the VOC concentrations for wastes involved in the WIPP test phase are being addressed independently as part of the WIPP waste characterization plan of the WIPP Part B RCRA permit application.

- o The experiments proposed are for VOC permeation from polymer bags and bottles. Other containers such as glass bottles are not considered hence the computational approach developed will not apply to all containerized wastes in the waste stream.
- o The experimental methods for the 4-liter polyethylene bottles (Section 3.1.2, 'Other Simulated Wastes') are not clear. A diagram of the experimental set-up would be beneficial in this regard.
- o The rate of VOC permeation across a polymer film is dependent on the thickness of the film and the area available for permeation. It seems unlikely that these parameters will be known for the waste drums destined for WIPP.
- o To determine the VOC concentrations within the primary confinement bags, a high degree of equilibrium must be achieved. Will the 28 day test period provide the data necessary to establish when equilibrium is achieved?
- o It does not seem practical that assumptions regarding all

921211

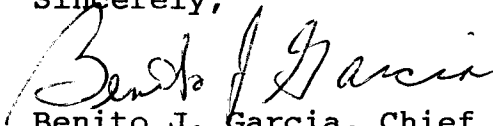


John Arthur III
December 22, 1992
Page 2

surface areas and volumes, diffusion lengths, and transport coefficients are constant yields. Variations in bag size, number of bags, age of bags (and therefore degree of deterioration) that exist in the waste stream make such assumptions untenable.

Again I wish to point out it is highly probable that the model developed from this work will not only have to satisfy conditions imposed by the EPA under the no-migration determination, but will also have to satisfy waste characterization requirements imposed by the state of New Mexico under the RCRA permit.

Sincerely,



Benito J. Garcia, Chief
Hazardous and Radioactive Materials Bureau

JWP

cc: Kathleen Sisneros, Director, WWM Division
Neil Weber, Chief, DOE Oversight
Barbara Hoditscek, Manager, RCRA Permitting
Richard Mayer, EPA Region VI RCRA Program

