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m e m o r a n d u m

to: Bob Sweeney, Hazardous Waste Bureau date: December 26, 1995 #8
from: Richard Stafford, Solid Waste Bureau
subject: Triassic Park liner design review/HELP model comments

1. Does 40CFR301/MTR allow for inclusion of natural geologic strata within a liner? To be components of a liner?

2. They need to explain the installation of a clay liner component over the LDS and FML at the bottom of the facility. What is the purpose of this clay liner component? The compaction effort required to achieve a 1×10^{-7} cm/sec saturated hydraulic conductivity could damage the underlying LDS layer and the FML. They need to demonstrate they can achieve 10^{-7} in this layer.

3. The lower FML needs to be placed, at a minimum, on a 6-inch prepared layer of compacted in-situ material or select fill compacted to 90% Standard Proctor Density. This layer must be free of stones greater than 1/2-inch in any dimension, organic matter local irregularities, protrusions, loose soil and any abrupt changes in grade that could damage the FML.

4. The LCRS/LDS sump and removal system design needs to be included in the permit application. (See page 8 of Waiver Justification Document.)

5. They have not justified deletion of the liner along the slope. Particularly as this is in the Upper Dockum which they say is more porous than the Lower Dockum upon which the floor of the facility is proposed to be constructed.

6. The HELP modeling is presented for the closed condition only. HELP modeling needs to be done for the full operational development of the facility. Attached is a procedure the Solid Waste Bureau requires for all HELP model simulations for alternate liner designs. The SWB utilizes a similar procedure for covers, also.

7. The HELP model appendix is too incomplete to be able to make a thorough evaluation. The complete input and output for the entire evaluation as described in comment 5 needs to be submitted. Some specific comments/questions are:

1. A pinhole density of 1 per acre is more conservative and more commonly used for this type of analysis.

2. The fourth layer down will behave more like a vertical percolation layer rather than as a barrier layer as they have made it. It would need to remain fully saturated at all times to be considered a barrier layer for HELP modeling purposes. This consideration may be valid for the bottom layer as well.

3. A saturated hydraulic conductivity of 1×10^{-7} cm/sec is too low for layer four. (See comment 2 above.)

4. What is the availability of soil having the material characteristics input for layer 4? (See attached justification sheets.)

5. The initial soil water contents for layer 8 in the Gandy Floor, layers 8 and 10 in the MTR Floor and layer 2 in the MTR Slope are too high. One of them is double the porosity! This will have a primary impact on the output.

8. I am returning, with comments, the material you sent on December 1, except for the Waiver Justification Document. I understand Secretary Weidler has some questions regarding the liner and wants to talk about it when he returns from vacation. I'll send it on to you then.

xc: JDD