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Dr. Reva Rubenstein
Director
Institute of Chemical Waste Management
National Solid Wastes Management Association
1120 Connecticut Avenue, N.W.
Washington, D.C. 20036

Dear Dr. Rubenstein:

This letter is in response to your letter of December 6, 1982, requesting interpretation of closure and post-closure requirements regarding land disposal facilities. I have responded to your questions in the order presented in your letter and attachment.

1. Recontouring the final cover material and/or adjusting in-place waste in the same unit as required to maintain the function of final cover as a result of subsidence and settlement, does not constitute receipt of hazardous waste after January 25, 1983. These sections must be described in each facility's closure and post-closure plans which must be approved by the Regional Administrator. Modifications can be made to these plans as necessary with Agency approval.
2. The controlled irrigation of the vegetative cover is allowed in order to establish vegetation during the closure period or to maintain it during prolonged dry spells in the post-closure period. But the regulations require the final cover to provide long-term minimization of migration of liquids through the closed landfill (§264.310(a)(1)), and to function with minimum maintenance (§264.310(a)(2)). Thus, the guidance documents recommend that the plant species chosen be indigenous, require minimal or no additional moisture, and be selected based on anticipated moisture, light, temperature, elevation, and competitive cohabitants, etc. The closure and post-closure plans should contain a description of why and when the irrigation may be determined to be necessary (e.g., recommended by local agronomist to establish vegetation during a dry period), the amount and

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frequency of water application, and water balance analysis showing the effect of the irrigation water on total annual liquid input through the final cover.

EPA has available two reports that provide technical information on this subject, entitled "Evaluating Cover Systems for Solid and Hazardous Waste" SW-867, September 1982, which discusses irrigation of plant cover and other plant requirements; and (2) "Hydrologic Simulation on Solid Waste Disposal Sites" SW-868, September 1982, which is a computerized water balance model, to evaluate the probable hydrologic performance of existing or proposed landfill designs. Both of the reports are available from the Government Printing Office (SW-867 is Stock No. 055-000-00228-2 @\$4.75, SW-868 is Stock No. 055-000-00225-8 @\$6.00). EPA is currently revising the model for "Hydrologic Simulation on Solid Waste Disposal Sites" to enable its use in estimating seepage through the liner as well as through the cover. The revised model should be available early in 1983.

Your statement that 40 CFR Parts 264 and 265 prohibit the addition of bulk liquids to the waste management unit is not quite accurate. Bulk liquids are allowed if the site is lined and has a leachate collection and removal system. Liquids in the leachate collection system must be removed during operation, closure, and post-closure. In general, the addition of liquids into the unit during closure would be permitted only if by doing so the facility and waste will be stabilized sooner. As you know, the objective during and after closure is to remove liquids and keep them out. If liquids are added during closure, the closure period would need to be extended until the addition stopped.

To further clarify the above explanations I must emphasize four points. First, any liquid applied to the final cover of a landfill to sustain vegetation cannot be a hazardous waste (e.g., cannot be leachate unless it is no longer a hazardous waste), cannot harm the vegetation, and cannot otherwise impair the integrity of the final cover (e.g., cause increased infiltration because of damage caused by pH). Second, liquids may not be injected into the waste after closure (e.g., leachate recirculation by injection), since this is contrary to the post-closure objective of

keeping liquids out. Third, as stated above, liquids could be allowed during closure, including leachate recirculation, if: (a) there is a liner and leachate collection system, (b) leachate is removed from the leachate collection system, (c) the addition of liquids serves to enhance closure (e.g., accelerates subsidence and stabilization), rather than merely serves as a convenient way to dispose of the liquids, and (d) the liquid addition is explained and justified in the closure plan. Such closure would not be completed until recirculation ceases. Also, recirculation of a hazardous waste (leachate) after January 26, 1983 would make the unit a regulated unit subject to the requirements of Part 264. I should point out that recirculation of a hazardous waste (leachate) can occur during operation and would normally be considered an operational rather than closure activity. Closure activities are those which lead to stabilization of the unit in a timely manner after receipt of wastes has ceased. Fourth, the characteristics and purpose of any liquids to be added to the landfill or to the cover during or after closure must be specified in the closure or post-closure plans and approved by the RA (or authorized State), including any extension of the closure period. Such purpose and extension must be consistent with the environmental objectives specified in Part 264 or 265.

3. Landfills that are currently engaged in co-disposal of hazardous and non-hazardous wastes could continue to accept non-hazardous wastes after January 25, 1983, in order to complete a partially filled hazardous waste unit and close under either 40 CFR Part 265 or Part 264 requirements. This assumes that the owner or operator completes the cell in a timely manner, which generally means within the 180 day closure period. If the closure cannot be completed within the 180 days the owner or operator must apply to have the closure period extended beyond 6 months, for a specified time period, as provided in 40 CFR 265.113(b) or 264.113(b), to allow the waste to be filled until the designated elevation is reached. This type of closure could be approved if it provides for a more environmentally sound closure, and not merely for the economic convenience of the owner or operator. Each extension will be considered on a case-by-case basis. The regulatory concern is closing the landfill in as expedient a time as is practical (i.e., achieving final contour and

final cover) so as to prevent additional rainfall infiltration and other environmental exposure. Pertinent factors include use of earth materials and redesigning the final contours. The Regional Administrator or approved State permitting authority could approve a closure plan or modification to the closure plan allowing the unit or cell to be completed with non-hazardous waste after January 25, 1983, and possibly extending the closure period (more than 6 months) after January 25, 1983 upon such a showing. Conditions for accomplishing this would be in any approved closure plan or closure permit (e.g., time period, final contours, type of waste).

4. For the situation where a surface impoundment "closes as a landfill" before January 25, 1983, I presume you mean no more hazardous wastes received after January 25, 1983, but closure (e.g., dewatering, etc.) has not yet been done. The waste will be removed from the surface impoundment, solidified and replaced in the same impoundment, to ensure that it will bear the weight of the cover. EPA does not consider this replacement of waste after January 25, 1983, to be "receipt" of hazardous waste which would constitute a "regulated unit". This decision assumes that the solidifying material is not a hazardous waste.
5. For your last question you described the case where multiple hazardous waste trenches will cease to receive hazardous waste on or before January 25, 1983, and where the closure plan provides for a delayed closure of a half-filled trench for the deposit of solidified hazardous waste from closed and capped trenches. In general, such placement of solidified hazardous waste from the closed trenches into the reserved half-filled trench, even at the same facility, will be considered "receipt" of hazardous waste such as to constitute a "regulated" unit because the waste is received and disposed at the facility unit after January 26, 1983. I refer you to the July 26, 1982 Federal Register preamble discussion at 47 FR 32289 which describes the concept of a waste management unit. Where landfills consist of a series of trenches which are separately lined, each trench is a separate waste management unit. The transfer of hazardous waste from one unit to another unit after January 26, 1983 therefore makes the receiving trench or unit a "regulated" unit.

As a side note, I should mention that the closure performance standard for interim status and for permitting facilities is the same (40 CFR 264.111 and 40 CFR 265.111). The final cover or cap for landfills closed under Part 264 or 265 standards should be similar. Significant differences in the design of the cap should result from site specific factors rather than the type of permit the facility has. Thus, many of the above comments apply to both Part 264 and 265 closure requirements.

I hope the above explanations help clarify the regulations for you. Should you have any further questions with regard to how this regulation effects NSWMA members please contact me or Fred Lindsey of my staff (382-4756).

Sincerely yours,

John H. Skinner
Acting Director
Office of Solid Waste

cc: Regions I-X (With incoming)

Mike Cook
Eileen Claussen
John Lehman
Bruce Weddle
Lisa Friedman
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