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UCAPCO APPLICATION FOR A VARIANCE UNDER 3004(c)(2) OF RCRA

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

OCT 29 1987

MEMORANDUM

SUBJECT: Union Carbide Agricultural Products Company Waiver
Request Under §3004(o)(2) of HSWA

FROM: Marcia Williams, Director
Office of Solid Waste

TO: Robert E. Greaves, Acting Chief
Waste Management Branch (3HW30)

Per your memorandum of September 16, 1987 requesting our assistance in responding to Union Carbide Agricultural Products Company's (UCAPCO) application for a variance under §3004(o)(2) of RCRA, our views are set forth below.

Section 3005(j) requires the installation of double liners and a leachate collection system by November 8, 1988 for all surface impoundments that existed on November 8, 1984 and that qualified for interim status. Certain exceptions from these requirements, however, are authorized under §3005(j)(2), (3), (4) & (13). One other means of obtaining a waiver of §3005(j) requirements is set forth in §3004(o)(2). That section authorizes the Administrator to grant variances from the double liner and leachate collection system requirements if:

the owner or operator demonstrates to the Administrator, and the Administrator finds for such landfill or surface impoundment, that alternative design and operating practices together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as such liners and leachate collections systems.

Unsuccessful in its attempt to obtain an exemption pursuant

RO 13072

to §3005(j)(3), UCAPCO now proposes to satisfy the requirements of obtaining a variance under §3004(o)(2) by a combination of intragradiant cut-off walls and the removal and treatment of contaminated ground water within such walls. UCAPCO submits that these design and operating practices coupled with the particular hydrogeologic setting of its facility will ensure that the ground water and surface water beyond the waste management area will be protected as effectively as it would with the

installation of liners and a leachate collection system. A fundamental premise of UCAPCO's proposal is that an evaluation for effectiveness occur at the edge of the waste management area and not at the point hazardous constituents enter the ground water. Whereas hazardous constituents will be allowed to contaminate ground water beneath the units, UCAPCO claims that its proposed system will not allow migration beyond the waste management area. In UCAPCO's view, "any degree of contamination [of the ground water] within the waste management area is authorized" provided that the ground water outside the area is protected. Accordingly, UCAPCO's proposal attempts to demonstrate that the system will control the escape of hazardous constituents from the ground water beneath the unit to ground water beyond the waste management area as opposed to the escape of hazardous constituents to the ground water beneath the unit.

In our view, UCAPCO's proposal fails to meet the requirements of §3004(o)(2) on its face. Section 3004(o)(2) authorizes a waiver of the double liner and leachate collection system requirements only upon a demonstration that a proposed alternative will "prevent the migration of any hazardous constituents into the ground water or surface water" at least as effectively as a double liner and leachate collection system. UCAPCO's proposal, however, is specifically designed to allow migration of hazardous constituents into the ground water. The term "ground water" in §3004(o)(2) is not qualified by the phrase "beyond the waste management area." Nor is there any evidence of Congressional intent that the term "ground water" means only ground water beyond the waste management area. Surely if Congress had intended such a test for waivers of the double liner and leachate collection system requirement, it would have stated so clearly.

To the contrary, in amending §3004 of RCRA, Congress devised a threefold scheme to ensure protection of human health and the environment from hazardous waste treatment, storage, and disposal activities. The first "line of defense" is the requirement of a

liner and leachate collection system to prevent the escape of hazardous constituents from landfills or surface impoundments. The second line of defense is the requirement for ground-water monitoring to detect any failure of such containment device. And, the third line of defense is the requirement to take corrective action to clean up any problems resulting from such failure. Containment with collection and removal of leachate within the unit to prevent leakage to ground water as the intended purpose of the liner and leachate collection system requirement is supported not only by the language of §3004(o)(2) in authorizing waivers of such

requirements only for methods equally effective at preventing migration to ground water but also by the language of §3004(o)(5)(B). That section provides that the liner requirement of §3004(o)(1)(A)(i) can be satisfied pending issuance of regulations by construction of a liner system "... to prevent the migration of any constituent through such liner...." Any system, therefore, that only controls constituent migration after it enters ground water cannot meet the equivalency test of §3004(o)(2). The system proposed by UCAPCO fully allows the migration of hazardous constituents to the ground water beneath the unit and therefore does not prevent the migration of hazardous constituents "into the ground water." Moreover, because migration of hazardous constituents freely occurs with respect to such ground water, UCAPCO's proposed system cannot be "as effective as" a double liner and leachate collection system in preventing migration to the ground water.

UCAPCO's argument that EPA regulations express an intent on EPA's part to "write off" ground water beneath hazardous waste management units because they only require compliance with ground-water standards at the edge of the waste management area demonstrates UCAPCO's fundamental misunderstanding of EPA regulations. Compliance with ground-water standards is determined at the edge of the waste management area simply because the installation of ground-water monitoring wells directly through a unit was considered to put at risk the effectiveness of containment devices underlying such unit. As the preamble to the regulations establishing the ground-water monitoring system stated:

EPA does not believe that the placement of wells required in this regulation presents a significant risk that monitoring wells will become conduits for leachate passing to ground water....[T]he regulation calls for monitoring at the edge of the waste management area rather than under the solid waste itself. This is to eliminate any suggestion that the wells should be

drilled through any natural or artificial barrier that may contain the waste. The problem of migration of leachate will be reduced by plac[ing] monitoring wells outside of any containment barrier. ... 45 FR 33066, 33193 (May 19, 1980).

Thus, this requirement in no way evidences an intent of EPA's part to allow contamination of ground water beneath a unit. Accordingly, any reference to EPA regulations in the legislative history of §3004(o) cannot support the conclusion that Congress intended to forfeit the quality of ground water beneath hazardous waste management units. In fact, EPA has expressly stated its contrary views with respect to the meaning of "ground water" in guidance addressing a

waiver provision similar to §3004(o)(2). Section 3005(j)(4) authorizes a waiver from the double liner and leachate collection system requirements upon a showing of, among other things:

that such surface impoundment is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time. The Administrator or the State shall take into account locational criteria established under Section 3004(o) (7).

EPA's guidance regarding the meaning of "ground water" states:

EPA interprets this provision as referring to the closest source of ground water or surface water, whether contaminated or noncontaminated, usable or nonusable, as the point to which there must be no migration of any hazardous waste or constituents. As used in this provision, "ground water" includes, but is not limited to, all USDW's and all aquifers; it encompasses "all water below the land surface in a zone of saturation" (40 CFR 260.10). A demonstration of no migration in saturated soil would not be appropriate for this exemption because waste migration into the saturated zone is interpreted as ground-water contamination. Because Section 3005(j) is concerned with migration that could be prevented through the installation of a double liner and leachate collection system and because the escape of hazardous wastes or constituents through overtopping, surface water runoff and runoff, and/or erosion are addressed independently in various sections of 40 CFR Part 264, the demonstration

of no migration to surface waters for this exemption should address migration in subsurface soils. The demonstration of "no migration" to both ground water and surface water should therefore be made for the unsaturated soil beneath the facility. Interim Status Surface Impoundments Retrofitting Variances, EPA/530-SW-86-017 (July 8, 1986).

In sum, §3004(o)(2) allows for waivers of the liner and leachate collection system requirements only for alternatives at least as effective as the first line of defense against migration of hazardous constituents, i.e., containment within the unit and maximizing the collection and removal of leachate before it can migrate out of the unit. Congress did not authorize substitution of a corrective action type system that is responsive only to the further migration of hazardous constituents as a substitute for initial containment requirements. See Senate Report No. 98-284 at 28. In fact, Congress specifically amended §3004 "to correct the deficiency in existing regulations allowing double liners and ground-water monitoring to be alternatives." H.R. 2867, Conf. Rep at 89. Accordingly, substitution of UCAPCO's

proposed system for the double liner and leachate collection system requirement would undermine Congress' and the Agency's carefully crafted, tiered strategy for ensuring protection of human health and the environment.

We are therefore unable to conclude that the proposed alternative would be as effective as the liner and leachate collection system requirement in preventing migration of hazardous constituents into the ground water.

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