

OSWER Policy Directive # 9476.00-18

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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MEMORANDUM

SUBJECT: Guidance on Demonstrating Equivalence of Part 265 Clean
Closure with Part 264 Requirements

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TO: Regions I-X

I. PURPOSE

This memorandum provides guidance to Regional RCRA permits staff concerning the review of Part 264 equivalency demonstrations for interim status surface impoundments and waste piles that certified clean closure under Part 265 standards prior to March 19, 1987. The Agency discussed the requirements for submitting equivalency demonstrations in the preamble to the December 1, 1987, Codification Rule (52 FR 45788). This memorandum expands upon that discussion by providing further guidance on the Agency's expectations for the review and approval of these demonstrations.

II. AUTHORITY

Section 3005(i) of the Hazardous and Solid Waste Amendments of 1984 (HSWA) requires all landfills, surface impoundments, waste piles, and land treatment units that received waste after July 26, 1982, to comply with the ground-water monitoring, unsaturated zone monitoring, and corrective action requirements applicable to new units. EPA implemented this provision in the December 1, 1987, Codification Rule. 40 CFR Section 270.1(c) requires that units which received waste after July 26, 1982, or which certified closure after January 26, 1983, obtain a post-closure permit unless they successfully demonstrate compliance with the Part 264 requirements for closure by removal.

III. CLEAN CLOSURE REQUIREMENTS UNDER PARTS 264 AND 265

Prior to March 19, 1987, the Part 265 regulations governing interim status clean closures differed significantly from the Part 264 requirements pertaining to permitted units. In March of 1987 (52 FR 8704), the Agency issued conforming changes to the Part 265 regulations to bring them into conformance with the Part 264 requirements.

A. Part 264 Clean Closure Requirements

The Part 264 provisions (§§ 264.228 and 264.258) require the owner/operator to "remove or decontaminate all waste residues, contaminated system components (liners, etc.), [and] contaminated subsoils..." The Agency interprets the terms "remove" and "decontaminate" to mean "...removal of all wastes and liners, and the removal of all leachate and materials contaminated with the waste or leachate (including ground water) that pose a substantial present or potential threat to human health or the environment" (52 FR at 8706). To meet this standard, owner/operators must demonstrate that no Part 261 Appendix VIII constituents remain in the soils, vadose zone, or ground-water above Agency-recommended limits before certifying clean closure.

These Agency-approved limits or factors include water quality standards and criteria, health-based limits based on verified reference doses (RfDs) and Carcinogenic Potency Factors (CPFs), or site-specific Agency-approved health advisories (52 FR at 8706).

When assessing potential exposures to constituents released from the unit, the owner/operator must establish the points of compliance directly at or within the unit boundary for all routes of exposure (surface water contact, ground-water ingestion, inhalation, direct contact, and soil ingestion). In setting these points of compliance, consideration of contaminant attenuation between the unit and potential exposure points is not allowed.

Further discussion of these requirements is provided in the preamble to the March 19, 1987, conforming changes regulation (52 FR 8704), and in a subsequent Notice of Clarification issued on March 28, 1988 (53 FR 9944). Pending the up-coming issuance of the clean closure guidance mentioned in the March 19, 1987, preamble, these two sources provide the fullest interpretation of

Agency policy concerning the requirements applicable to units undergoing clean closure.

B. Previous Part 265 Interim Status Clean Closure Requirements

The pre-1987 Part 265 interim status clean closure requirements differed from the Part 264 requirements in several significant ways. First, these standards allowed owner/operators to discontinue removal activities and certify closure if they were able to demonstrate that residuals associated with the unit were no longer hazardous. This provision allowed owner/operators of surface impoundments containing solely characteristic wastes to meet the clean closure standard by demonstrating that wastes no longer exhibit the characteristic that first brought the impoundment under regulatory control. In this situation, owner/operators could have clean closed without evaluating the presence of additional Appendix VIII constituents that could pose a threat to human health or the environment.

Secondly, the interim status ground-water monitoring requirements applicable to these units only required owner/operators to monitor for indicator parameters and hazardous waste constituents for which a waste was listed. Owner/operators did not have to demonstrate that all Appendix VIII constituents that could pose a threat to human health or the environment had been removed in order to certify clean closure.

Finally, interim status facilities were not required to demonstrate that all releases of Appendix VIII constituents to soils, surface water, air, or ground water posing a threat to human health or the environment had been removed at closure.

IV. EQUIVALENCY DEMONSTRATION INFORMATION REQUIREMENTS

A. General Information Requirements for Equivalency Demonstrations

40 CFR Section 270.1(c) now affords owner/operators who closed under the Part 265 requirements the option of demonstrating that the units had actually been closed in accordance with the Part 264 requirements, by submitting an "equivalency demonstration". This equivalency demonstration is outside the Part B post-closure permit application and review process. The Agency expects owner/operators to submit sufficient

information in their equivalency demonstrations to allow the Agency to determine whether the clean closures fully comply with the Part 264 requirements. The Agency does not intend, however, that owner/operators submit the same quantity of information required when submitting full Part B permit applications.

The demonstration submitted by the owner/operator must include, at a minimum, sufficient information for identifying the type and location of the unit, the unit boundaries, the waste that had been managed in the unit, and the extent of waste and soil removal or decontamination undertaken at closure. Relevant ground-water monitoring and soil sampling data should also be submitted to demonstrate that any Appendix VIII constituents originally in the unit and the remain at closure are below levels posing a threat to human health and the environment. These levels are those discussed in the March 28, 1987 preamble, i.e., water quality standards and criteria, health-based limits, carcinogenic potency factors, or ATSDR site-specific Agency-approved advisories (52 FR at 8706).

Owner/operators can submit information demonstrating that the closure certified under Part 265 complies with the Part 264 standards using existing data developed at the time of closure. If insufficient data are available to support this demonstration, owner/operators may collect new data to demonstrate that the Part 265 clean closure meets the Part 264 clean closure requirements that were in effect at the time of closure. If upon review, the Agency determines that the closure does not meet the Part 264 standards, the owner/operator will be required to submit a Part B permit application containing all the applicable information required in Part 270, including ground-water monitoring information.

B. Acceptability of Specific Information Supporting Equivalency Demonstrations

Five potential issues concerning the acceptability of specific kinds of data used in an equivalency demonstration have been identified. These issues are discussed below.

1. Acceptability of Previously Collected Data

Many facility owner/operators will have generated considerable amounts of data during their original closure

activities. To the extent that these data represent the conditions at closure and provide sufficient information to determine compliance with the Part 264 requirements, they may be used to support an equivalency demonstration. Regional staff should evaluate the information for the extent to which it fulfills the requirements of Part 264, and for its overall quality, reliability, and accuracy.

While previously collected data may be used, in many cases owner/operators will need to collect additional information on hazardous constituents that may remain in the soils, vadose zone, or ground water to demonstrate equivalency.

2. Use of Existing Soil and Ground-Water Sampling Data as Proxies for Missing Data

The Agency believes that in limited cases owner/operators may use existing soil and ground-water sampling data as proxies for missing data. In the first case, soil sampling data can serve as a proxy for ground-water monitoring data when these are not available. In the second case, ground-water monitoring data can be used to demonstrate the acceptability of a soil or vadose zone cleanup. In such cases, the Agency may consider these data when reviewing equivalency demonstrations. For example, some owner/operators may wish to use previously collected soil sampling data as a surrogate for actual ground-water sampling data in order to demonstrate compliance with the Part 264 ground-water clean closure levels, or facility owner/operators may wish to demonstrate that soil contamination was remediated sufficiently by submitting ground-water monitoring data demonstrating no migration of contaminants from the soil. It is more likely that EPA will accept soil sampling data as a proxy for ground-water monitoring data than the converse. One such example of where soil sampling and vadose zone data might be used as a surrogate for ground-water sampling data is in a hydrogeologic setting where the water table is located at significant depths from the surface or where ground-water monitoring is not feasible.

Demonstrations using soil sampling data will, however, generally require assumptions of contaminant fate and transport in the relevant subsurface media. As stated in the preamble to the March 19, 1987, conforming change rule, the Agency does not believe it is appropriate to consider assumptions about

subsurface attenuation when approving clean closure, given the uncertainty involved in such assumptions and the fact that all further regulatory control ends upon certification of the closure.

3. Requirement for Full Appendix VIII Sampling

The Part 264 clean closure standards require a demonstration that all Appendix VIII constituents originally in the unit have been removed or decontaminated. As with the 40 CFR Section 264.93 monitoring requirements, however, the Agency believes that it may be possible to exclude some hazardous constituents from consideration based on knowledge of past activities at the unit. Equivalency demonstrations that consider all the hazardous constituents that may reasonably be expected to be in or derived from the wastes managed in the unit may be acceptable in lieu of the full list of Appendix VIII constituents.

The Regions may decrease the list of constituents that must be evaluated to the extent that information submitted by the owner/operator is complete relative to the wastes disposed and demonstrates that these constituents could not reasonably be present in environmental media affected by the unit. In evaluating such demonstrations, Regions should also evaluate closely the potential that additional Appendix VIII constituents may be present in the soils or ground water beneath the unit.

4. Use of Data from Previously Existing Ground-Water Monitoring Systems

The Agency will consider equivalency demonstrations based on data from previously existing ground-water monitoring systems provided such ground-water monitoring systems were in compliance with the applicable requirements. At a minimum, such systems must have met the Part 265 Subpart F ground-water monitoring requirements. To the extent that these systems were located, screened, and operated properly to gather representative ground-water information, the Agency believes that they can be used to support an equivalency demonstration. In order to determine whether monitoring system were in compliance with Part 265, Regions should examine available records and documents, such as old inspection reports, enforcement records, CME reports, or Ground-Water Task Force reports.

5. Practicability of Obtaining New Data

Some facilities will have certified clean closure several years ago, and subsequently may have constructed structures on top of clean closed units, making it difficult to obtain new data for the equivalency demonstration. For example, a building with a concrete floor or wastewater treatment unit constructed on top of a clean closed hazardous waste management unit could obstruct the collection of new sampling data. Collecting new soil or ground-water data at such a site might require either drilling through the concrete floor of the building or using angled drilling techniques.

The Agency recognizes the difficulties associated with data collection in these cases. In reviewing the quantity of such data submitted, the Regions may consider the technical difficulties involved in collection such data. The standard of protection against which equivalency demonstrations will be evaluated will not, however, be different depending on the technical difficulties of data collection. Accordingly, the Agency will require owner/operators to submit representative existing data and/or to collect those data necessary to demonstrate compliance with the Part 264 requirements.

V. APPLICABILITY TO LANDFILLS

EPA interprets its regulations to allow landfills from which wastes have been removed at closure to accomplish "clean closure" and, if closed under 40 CFR Part 265 standards, to allow an equivalency demonstration to be made under 40 CFR Section 270.1(c)(5) and (6), through redefinition of the landfill as a waste pile, surface impoundment, or land treatment unit. It is most likely that the redefinition, or change in process, will be to a waste pile, pursuant to 40 CFR Section 270.72(c). Clean closures or demonstrations of equivalency with clean closure are governed by the applicable Part 264 closer requirements (e.g., 40 CFR Section 264.258 for waste piles).

As an alternative to making an equivalency demonstration pursuant to 40 CFR Section 270.1(c)(5), the owner/operator of a landfill from which all waste has been removed and for which the owner/operator can provide evidence that the level of contamination is such that it no longer poses a threat to human health and the environment, may request that the Regional

Administrator shorten the post-closure care period [40 CFR Section 264.117(a)(2)(i)]. The term of the post-closure permit should then be modified to a minimal period in accordance with 40 CFR Section 270.42.

VI. CONTENTS OF THE EQUIVALENCY DEMONSTRATION AND PROCEDURES FOR SUBMITTAL

No specific format for an equivalency demonstration is required. For ease in review, the Agency suggests that the equivalency demonstrations include three basic sections: 1) a Unit Description, 2) a Description of Closure Activities Conducted, and 3) a Demonstration of Compliance with Clean Closure Levels.

The first section, Unit Description, should provide information on the size and location of the unit, the wastes managed by the unit (EPA hazardous waste numbers and quantities), any liner system and leachate collection system, containment system, and run-on and run-off control systems. In addition, owner/operators should present a description of the hydrogeology of the immediate area, including descriptions of ground-water and soil conditions, ground-water monitoring systems, detection programs, and any corrective action activities undertaken. For land treatment units, information concerning application rates should also be included.

The second section, the Description of Closure Activities Conducted, must identify, in detail, all removal and decontamination activities completed at the unit during closure. This description should include information on the quantity of waste removed (by waste type), the quantity of leachates and contaminated containment liquids removed, the quantity of bottom sludges/residues removed, the quantity of contaminated soil removed, the methods used for removal of inventory (i.e., waste, sludge residue, liquid, and soil), and the procedures used for decontaminating and/or disposing of inventory. Specifically, the description of the decontamination and disposal activities should identify the method of decontamination of equipment/structures, the treatment or disposal of cleaning agents/rinsewater, and the demolition and removal of containment systems (e.g., liners, dikes) and other equipment/structures.

The previously approved closure plan should provide the

majority of the descriptive material required for sections 1 and 2 of the demonstration. The owner/operator should not assume that the closure plan has been retained by the Agency; relevant portions of the plan should be resubmitted. A copy of the closure certification should also be provided.

The third section, Demonstration of Compliance with Clean Closure Levels, should present sampling data supporting the owner/operator's equivalency demonstration. This section should specify where the samples were taken in each relevant medium, when the samples were taken, what parameters were examined, and the analytical results. The information should specify the sampling protocols and analytical methods used during the sampling activities, along with available quality assurance/quality control information. The raw sampling data should be presented in an appendix to the report, while the results should be summarized in a clear manner in the body of the report. In cases where surrogates or proxies are proposed for use, the owner/operator should fully explain the reason for the use of such proxies and any analytic assumptions which were made. Where data from all Appendix VIII constituents are not submitted, section 2 of the submission should support the assertion that such constituents were not and are not present in the unit.

Finally, the demonstration should include a narrative discussion summarizing both the results of previously collected data and new data collected for this demonstration. In the conclusion, the section should compare the results of sampling data to the applicable clean closure levels for the relevant parameters.

The December 1, 1987, Codification Rule presented procedures and timeframes for the submittal, review, and approval of equivalency demonstrations. The timeline presented below summarizes the critical dates and activities that must be followed by owner/operators and the Agency upon receipt of an equivalency demonstration.

EQUIVALENCY DEMONSTRATION TIMELINE
