

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Part 265**

[SW-FRL 1999-3]

**Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities****AGENCY:** Environmental Protection Agency.**ACTION:** Proposed amendments to rule.

**SUMMARY:** On May 19, 1980, EPA promulgated regulations, applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities during interim status, which prohibited the landfill disposal of most containerized liquid waste or waste containing free liquid on and after November 19, 1981. As a result of issues raised by the regulated community with respect to this prohibition, the Agency is today proposing an amendment to this regulation to allow some containers holding free liquids to be disposed of in a landfill, in some circumstances.

In a separate action in today's *Federal Register*, EPA is providing a 90-day extension (from today's date) of the compliance date for the prohibition of landfill disposal of containerized liquid waste and the restrictions on the landfill disposal of liquid ignitable waste to allow time to complete this rulemaking action and to avoid immediately imposing requirements that might be changed as a result of this rulemaking action.

**DATES:** Comments are due on or before March 29, 1982.

**ADDRESS:** Comments should be addressed to Deneen Shrader, Docket Clerk, Office of Solid Waste (WH-562), U.S. Environmental Protection Agency, Washington, D.C. 20460. Comments should identify the regulatory docket as follows: "Docket No. 3004, Liquids in Landfills." The official docket for this regulation is located in Room 2636, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 and is available for viewing from 9:00 a.m. to 4:00 p.m., Monday thru Friday, excluding holidays.

**FOR FURTHER INFORMATION CONTACT:** The RCRA hazardous waste hotline, Office of Solid Waste (WH-565), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 ((800) 424-9346, 382-3000 in Washington, D.C.). For specific information on this amendment, contact Alfred W. Lindsey, Office of Solid Waste (WH-565), U.S. Environmental Protection Agency, 401 M

Street, SW., Washington, D.C. 20460, (202) 755-9185.

**SUPPLEMENTARY INFORMATION:****I. Introduction**

On May 19, 1980 EPA promulgated hazardous waste regulations in 40 CFR Parts 260-265 (45 FR 33066 *et seq.*) which established, in conjunction with earlier regulations promulgated on February 26, 1980 (45 FR 12721 *et seq.*), principal elements of the hazardous waste management program under Subtitle C of the Resource Conservation and Recovery Act of 1976, as amended 42 U.S.C. 6921 *et seq.* Part 265 of the May 19 regulations sets forth standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities which have interim status under Section 3005(e) of the Resource Conservation and Recovery Act (RCRA). Subpart N (§§ 265.300-265.330) of those regulations established interim status standards applicable to landfills.

Section 265.314(b) of these standards prohibited the landfill disposal of most containerized liquid waste or waste containing free liquid on and after November 19, 1981. Section 265.312(b), as amended on June 29, 1981 (46 FR 33502), provides that liquid ignitable waste may be placed in a landfill, if containerized and handled in the manner specified, until the compliance date for the ban on landfilling liquid waste contained in § 265.314. After that date, disposal of liquid ignitable waste in landfills is prohibited.

The preamble to § 265.314 (45 FR 33214) sets forth the rationale for the prohibition on landfill disposal of containerized liquid waste or wastes containing free liquid. Essentially, two problems may result from the landfill disposal of containerized liquids: leachate generation and subsidence of the final landfill cover. Containers disposed of in a landfill eventually degrade, allowing their liquid contents to escape and contribute to leachate. Also, when containers degrade and their liquid content escapes, they collapse, creating voids, which in turn, may allow slumping and subsidence of the landfill cover material which may increase the infiltration or precipitation and thereby exacerbate the leachate generation problem. These events often occur after the post-closure care period when the owner/operator is no longer operating a leachate collection system, maintaining a final cover, or monitoring ground water.

**II. The Problem With the Current Rule and EPA's Proposed Solution**

EPA received a number of public comments on the prohibition set forth in § 265.314(b). Some of these comments criticized the necessity of this requirement. Others expressed difficulties that the regulated community would face in implementing this requirement. These latter comments fell into two classes. One class cited difficulties they would face in meeting the compliance date of November 19, 1981, for this requirement. They claimed they would have to design and construct sophisticated facilities and procedures to safely inspect incoming containers of waste and remove or solidify any free liquid that they might contain. They further claimed that they might not be able to have such facilities in operation by November 19, 1981. The other class of comments addressed the absence of a definition for the terms "liquid waste" and "waste containing free liquids" and the absence of a test protocol for measuring these properties. These comments noted that the requirement could not be reasonably and assuredly implemented without these definitions and a test protocol. Several of the petitioners for judicial review in *Shell Oil v. EPA* also raised issue with this requirement but focused on the absence of the definition of terms and a test protocol.

The Agency has not found compelling merit in the criticisms about the necessity of restricting the introduction of free liquids or liquid wastes into landfills. EPA strongly believes that introduction of containerized free liquids in landfills should be minimized to the extent possible, if not prohibited, for the reasons set forth in the preamble to the May 19, 1980 promulgation of the Part 265 standards.

The Agency has not found compelling merit in the comments about the difficulties in meeting the November 19, 1981 compliance date. Eighteen months were allowed to enable the regulated community to come into compliance with the requirement and the Agency has evidence that some members of the regulated community have prepared to comply with the requirement. Numerous options have existed for the regulated community to comply with the § 265.314(b) requirement, several of which have been readily implementable. Besides alternatives to landfilling (e.g., incineration, deep well injection, solvent recovery, other recovery, and conventional wastewater treatment techniques), the liquid-containing wastes can be treated by dewatering

techniques (e.g., screens, vacuum filters, filter press, centrifuge, heat drying) or by chemical/absorbent processes (e.g., cement kiln dust, fly ash, vermiculite, fuller's earth, and cementitious materials). Finally, keeping liquid and solid wastes separated at the generation point can achieve liquid-free wastes.

However, the Agency has found merit in the comments criticizing the absence of definition of terms and a test protocol. This led the Agency into a thorough discussion and negotiation of this matter with interested petitioners in *Shell Oil v. EPA*. Out of this discussion and negotiation, EPA came to the following tentative conclusions.

The Agency believes that the current § 265.314(b) prohibition is too extreme for real-world application. In its literal interpretation, landfill disposal of containerized wastes containing only "one drop" of free liquid is banned. This would often require extraordinary, high-cost management practices to achieve compliance. For example, a generator may take reasonable means to deliver liquid-free containerized wastes to a disposal facility by using screening or other dewatering or absorbent-addition methods on his wastes before placing them into containers. But frequently the vibration and settlement occurring in transit to the landfill will result in the separation from the wastes of additional small amounts of free liquids and result in the delivery of containers holding some amount of free liquids at the disposal facility. Therefore, the facility operator, in order to assure compliance with § 265.314(b), would have to open and inspect all incoming containers and perform additional dewatering (decanting) or absorbent-addition operations on those containerized wastes found to contain even the smallest amounts of liquids. The Agency concluded that this opening, inspecting, and additional treatment operation by the landfill operator, in many cases, would add unnecessary costs and operational disruption and could present unnecessary personnel safety and environmental hazards because of the ignitability, volatility or toxicity of many wastes commonly shipped in containers.

Even after considering these real-world problems, the Agency still believes it is appropriate to require in the interim status standards a minimization of free liquids in containerized wastes—minimization that could be achieved by reasonably simple and available dewatering practices and ordinary waste management practices. Because of the lack of extensive data on the levels of free liquids reduction that can be

reasonably achieved on the wide variety of hazardous wastes, the Agency was unable to derive a calculated quantification of "minimization" but came to the professional judgment that containerized wastes containing less than ten percent by volume of free liquids could be readily achieved and reasonably implemented. Indeed, one major landfill operator has indicated that such a level can be and is being achieved in his current operations.

The Agency concluded that a 10 percent maximum objective would produce a decided improvement over past practices in disposing of containerized wastes and, therefore, is consistent with the regulatory strategy of using interim status standards to achieve initial, readily achievable improvements in hazardous waste management practices (see discussion of criteria for interim status standards in 45 FR 33159). The Agency also decided that this objective, combined with other interim status standards, would achieve reasonably acceptable environmental protection for interim status landfill operations. Although the Agency recognizes that the containerized free liquid wastes allowed in landfills often will eventually leak from their containers and migrate out of the landfill and into the environment, it believes that this leakage will be slow, occurring over an extended period of years, and is likely to be considerably diluted and attenuated (in the environment). Because the amount of containerized free liquids available for leaching would be minimized, because the interim status closure and post-closure requirements would limit the amount of additional leachate generation from precipitation infiltration available for environmental migration, and because bulk-free disposal would be regulated, the Agency believes that any potential adverse environmental consequences will be substantially reduced.

At the same time, the Agency has concluded that more rigorous regulation of liquid emplacement in landfills may be justified for permitted facilities. In particular, it believes that certain persistent, mobile, and highly toxic or carcinogenic liquid wastes might need to be absolutely prohibited from disposal in landfills, in either bulk or containerized form. Additionally, some hydrogeologic settings might dictate more severe restriction of landfill disposal of containerized free liquids. The Agency is studying these matters and intends to propose future regulations or amendments as might be called for by its findings. At this time,

however, the Agency believes that minimization of landfill disposal of containerized wastes, as discussed above, is a reasonable objective for interim status standards.

Having come to this position, the Agency discussed with the petitioners in *Shell Oil Co. v. EPA* a simple rule that would prohibit the landfill disposal of containers that contain more than ten percent by volume of free liquids as measured by an appropriate test protocol. In discussing this approach EPA recognized that this requirement, although achievable, would still have some of the same practical real-world problems in implementation as the current rule. Landfill operators might still have to open and inspect incoming containers to monitor compliance and correct noncomplying containers by decanting free liquids or adding absorbent. This opening, inspecting, and additional treatment operation, with its attendant safety and environmental risks, seemed to be a feature to be avoided if possible. Additionally, petitioners claimed that some hazardous wastes require extraordinary means of dewatering to achieve a content of free liquids less than ten percent. They argued that such extraordinary means of dewatering these wastes could be avoided if the regulatory approach taken could average the free liquid content of these wastes with other wastes to achieve the same end result. Consideration of these points ultimately led to the development of today's proposed amendment. As described below, this proposed amendment takes a different approach than discussed above, but the Agency believes that it achieves approximately the same results; that is, land disposal of containerized free liquids will be significantly limited (see discussion in III(B) below). The proposed amendment avoids the necessity of determining the free liquid fraction of individual containers, thereby avoiding the added and potentially unsafe operation of opening of containers to determine compliance with the regulation. This feature also simplifies enforcement of the regulation by focusing inspection on the number of non-exempted containers placed in a landfill rather than on the testing of individual containers for compliance with a specific free-liquid limit. Finally, the Agency believes that today's proposed amendment incorporates an economic incentive for landfill operators to minimize the number of containers holding free liquids in order to conserve that portion of their landfill which, pursuant to

today's proposed rule, may be allocated for containers holding free liquids.

Based on the rationale just discussed, EPA has decided to propose the regulatory approach described below rather than an approach that would limit the liquid content in each container to 10%. EPA does, however, seek public comment on the latter regulatory approach. EPA is still actively considering a regulatory approach based on a "10% rule" as an alternative, or a supplement, to the regulatory approach being proposed today.

### III. Proposed Amendment to § 265.314(b)

#### A. Overview

Today's proposed amendment to § 265.314(b) would allow containers holding free liquids to be placed in a landfill provided that: (1) The volume of such containers does not exceed a formula-determined fraction of the total volume of wastes and reasonable intermediate cover to be placed in the landfill, (2) the closure and post-closure maintenance plans provide for the post-closure maintenance of the final cover to accommodate subsidence that may arise from the collapse of such containers if they rupture and the free liquids escape and (3) such containers are uniformly placed in the landfill so that any subsidence resulting from the collapse of containers will be as uniform as possible. Further, today's proposed amendment requires that each container of waste be assumed to hold free liquids and subject to the above requirements unless: (1) The owner or operator demonstrates that the container does not hold free liquid, (2) the container is very small, such as an ampule, (3) the container only holds such free liquids as it was designed to hold in its use other than storage (e.g., a battery or capacitor holding free liquids), or (4) the container is a "lab pack" as defined in § 265.316. The last three types of containers excepted from the requirements of today's amendment already are allowed to be placed in a landfill without restriction under the current requirements of § 265.314(b) and § 265.316.

#### B. Formula for Determining the Allowable Volume of Containers Holding Free Liquids That May Be Disposed of in a Landfill

The formula contained in today's amendment for determining the fraction of the total volume of waste and intermediate cover that can be devoted to containers holding free liquids was derived from a proposal submitted by the National Solid Waste Management Association (NSWMA) and the

Chemical Manufacturers Association (CMA) during discussions of this issue with petitioners in *Shell Oil v. EPA*. The formula is:

H

$$V = \frac{H}{100} \text{ for } H \text{ less than 25 feet}$$

$$V = 0.3 - \frac{H}{500} \text{ for equal to or greater than 25 feet}$$

where V = the allowable volumetric fraction of the total volume of wastes and reasonable intermediate cover in the landfill that can be used for disposal of containers holding free liquids

H = the maximum vertical depth of waste and reasonable intermediate cover in the landfill at closure (as measured in feet)

Although this formula was derived to limit the subsidence that will result from the degradation of containers holding free liquid, it also serves to limit the amount of free liquids that can be placed in a landfill. As can be easily calculated, the maximum percentage of the volume of a landfill that can be devoted to containers holding free liquids is 25 percent when H is 25 feet. At landfill depths greater and less than 25 feet, the percentage is less; e.g., at landfill depths of 100 feet, the percentage is 10 percent.

Although under today's proposed rule, the amount of free liquids in individual containers subject to the formula limitation is not restricted, the Agency believes that in actual application the average container will be only partially full of free liquids. Therefore, although, in the extreme case, the formula would allow up to 25 percent of the waste volume to be free liquids (if all containers were full of free liquids), EPA believes that, in actual operation, this fraction will be less than 10 percent—a fraction that results if the average free liquid content of containers subject to the formula is 40 percent by volume. Notwithstanding, the Agency is concerned that today's amendment may not achieve the degree of minimization of containerized liquids in landfills that could be reasonably achieved because it does not directly limit the total amount of containerized free-liquids placed in landfills. Consequently, EPA invites public comments on whether and how the amount of containerized free liquids allowed under today's amendment should be further limited. For example, the rule could prohibit the landfilling of containers holding more than a set percentage (e.g., 10 or 25 percent) free liquids by volume. This would entail some sort of inspection of containers to ascertain their percentage volume of free liquids. Opening the containers and measuring the free liquid content may be one method, but this involves the

added operation of inspecting containers which today's rule is designed to avoid (see previous discussion). Some landfill operators and waste transporters have indicated that "tapping" or "rocking" a container and listening for the difference of sound from the portions occupied by free liquids as opposed to solids is a viable and reliable technique that avoids the more time consuming, costly and potentially dangerous operation of opening and quantitatively measuring free liquid content. Although EPA is dubious about the validity of such a technique, it does solicit comment on this technique. (It may, for example, be useful as a means of verifying information supplied by the generator.) Another approach would be for the landfill operator to depend on the generator to achieve the allowable free-liquid content of containerized wastes. This approach could be implemented by the landfill operator requiring certification from the generator that allowable amounts of free liquids in containerized wastes are being delivered and verifying the generator's compliance through random inspections of incoming containers. EPA is willing to consider the use of such procedures in establishing an enforcement policy for this provision.

To monitor compliance with today's amendment, EPA would expect the landfill operator to maintain a plan of the intended final shape and contours of the landfill at closure and the intended disposition of wastes, including containers holding free liquids, and intermediate cover. This plan would have to clearly show the specific space within the landfill to be allocated to containers holding free liquids and show that this space is within the limit allowed by the formula. EPA would also expect the landfill operator to maintain suitable records as part of his operating record demonstrating that containers holding free liquids are placed in accord with the terms of this plan. EPA believes the requirement for such records is currently within the scope of § 265.73(b)(2).

The Agency recognizes that unanticipated events may lead to non-compliance with today's proposed rule. For example, premature closure of the landfill or failure to obtain expected volumes of other-than-containerized-free-liquid-wastes could result in higher volumes of containerized free-liquid wastes than allowed by the formula. Today's amendment does not deal with these possible problems and, indeed, this may be a significant deficiency in the proposed approach for managing containerized free-liquid wastes.

Consequently, EPA invites comments on this issue. In particular, EPA wishes to know if such situations are likely to happen and how best they can be accommodated. If the occurrences are likely to be frequent and the environmental consequences serious, the Agency may have to require provisions in the closure plan and closure financial responsibility to accommodate these eventualities.

### *C. Effect of the Formula on Controlling Subsidence*

As previously mentioned, the formula used in today's proposed rule was derived from a formula submitted by NSWMA and CMA during negotiations in *Shell Oil v. EPA*. It is evident that these petitioners designed the formula to limit the maximum depth of subsidence and, perhaps, the maximum volume of subsidence.<sup>1</sup> The basis for this limitation was the professional judgment of the capable, expert landfill operators, who advised NSWMA and CMA on this matter, that a maximum subsidence depth greater than 11.25 feet should be avoided. EPA relies on this professional judgment in tentatively accepting the formula used in today's proposed amendment.

Under the approach taken in today's proposed amendment, EPA is concerned about the long-term subsidence that may occur in allowing the landfill disposal of containerized liquid wastes. The current rule does not necessitate such a concern because it prohibits the landfill disposal of containers holding free liquids. Consequently, today's proposal includes not only the formula-derived limitation of landfill disposal of containers holding free liquids, but also requirements for (1) uniform placement of containers in the landfill and (2) a final cover at closure designed to accommodate the expected subsidence. The first of these added provisions is intended to alleviate differential subsidence that might be accentuated by non-uniform placement of containers holding free liquid wastes. The second of the additional provisions is intended to assure that special consideration is given in closure and post-closure plans to the added subsidence that may result from the

landfilling of containerized free liquid wastes. Such special considerations may include: (1) Providing greater slopes in the contouring of the final cover at closure to accommodate the loss of elevation of contours when subsidence eventually occurs, (2) the stock-piling of final cover materials at closure for repairing subsidence damage to the final cover, and (3) a commitment in the post-closure plan to extent the post-closure care period for further repair and maintenance of the final cover if unusual subsidence occurs in the later stage of the post-closure care period.

Although the formula in today's proposed amendment will provide a means of calculating the maximum potential dimensions (depth and volume) of subsidence that may be caused by landfilling of containerized free liquid wastes, the more detailed prediction of and planning for remedying damage caused by such subsidence will depend on a great many factors, including the character (bridging capacity, density) of the wastes and soils placed above and between the buried containers. Because the detailed consideration of these factors is too complex to easily articulate in regulatory form, the Agency intends to develop technical guidance to assist compliance with this element of today's proposed amendment.

In spite of the fact that today's proposed amendment addresses the subsidence problem that may attend landfilling of containerized free liquids, the Agency has some concern about the ability of landfill owners and operators to adequately plan and provide for remedying the damage caused by post-closure subsidence.<sup>2</sup> It will be difficult to predict with accuracy, and therefore provide in closure and post-closure plans, the actual timing, location, size, and nature of subsidence and final cover distortion. In addition, it is possible that some amount of the subsidence may occur after the post-closure period. The Agency and the regulated community simply do not have much observed experience or data concerning subsidence in those landfills where containerized wastes are carefully placed. It is possible that subsidence due to landfilling of limited numbers of containers holding free-liquid wastes may not be extensive and may not be significantly greater than the subsidence resulting from the landfill disposal of other wastes. If it can be assumed, as

previously mentioned, that individual containers average 40 percent free liquids, then maximum subsidence depths of four and a half feet can be expected. These subsidence depths may be manageable. Moreover, these subsidence depths may not be significantly different than those that attend the disposal of other wastes and which the Agency has not addressed with any special requirements in the Part 265 regulations.

Another concern that the Agency has with the subsidence that might result from landfilling of containerized free liquid wastes is the significant and, perhaps, irreparable damage that it may have on the integrity of multi-layered final covers. The state of the art in designing and constructing final covers calls for two or three layers of different materials, where each layer has a specific function to serve; e.g., a bottom layer of material of very low permeability to inhibit infiltration of precipitation into the landfill, a second layer of very highly permeable material to promote drainage from the landfill of the precipitation intercepted by the first layer and a top layer of soil for maintaining vegetation cover. Subsidence could disrupt a carefully constructed final cover of this or similar type, and repair would need to be more extensive than merely filling in the depressions created by subsidence with a single type of material stockpiled for this purpose.

Because of these concerns about the possible additional subsidence from the landfill disposal of containers holding free liquid wastes, EPA specifically invites comments on this matter and on the subsidence control requirements included in today's proposed amendment.

### *D. Liner/Leachate Collection System or Absorbent Material*

The proposed regulation does not include a requirement for either (1) a liner and leachate collection and removal system, or (2) placement of absorbent materials around or under the containers holding free-liquid wastes. This requirement was included in the NSWMA/CMA proposal but is not reflected in today's proposed amendment.

EPA believes a liner and leachate collection and removal system is not likely to result in the removal of appreciable quantities of free liquids that eventually may leak from containers placed in a landfill, and therefore will not provide significant additional protection against migration of these liquids into the environment.

<sup>1</sup> The formula produces theoretical depths of subsidence ranging from zero at a fill depth of zero, increasing to a maximum of 11.25 feet at fill depths of 75 feet and then decreasing to zero at fill depths of 150 feet. These theoretical subsidence depths assume that the containers will eventually completely collapse to a theoretical container volume of zero and that soil bridging and other soil structure effects do not attenuate the theoretically possible subsidence depth. In actuality, neither of these assumptions will operate perfectly and the actual subsidence depth will be less than that theoretically predicted by the formula.

<sup>2</sup> Some subsidences may occur during operation of the landfill, particularly in very deep landfills where the weight of very deep overlying materials may cause some collapsing of containers, particularly those that have been weakened because of some amount of decay.

EPA believes that most containers which hold free liquids will fail at some distant future time and then release liquids over a long period of time. These releases could occur after the post-closure care period, when the leachate collection and removal system is no longer operated by the facility operator. Although a very lengthy or indefinite post-closure care period could accommodate this problem, it would not resolve a second problem discussed below.

A second problem arises because, in most cases, leaking containers will release liquids slowly over time. This typically means that leachate within the facility will "rain" down on the facility liner at a relatively low rate. Where the liner is constructed of relatively permeable material (e.g., clay), this low rate of leachate impingement will mean that a significant percentage of the leakage will exfiltrate through the liner rather than flow along the top of the liner to points where it can be collected and removed.

EPA also does not believe that placement of absorbent material around or under containers holding free liquids can be relied upon to significantly absorb liquids that leak from buried containers and thereby prevent migration of these liquids into the environment. The reasons for this belief were discussed in the preamble to the May 19, 1980 regulation (at 45 FR 33214); namely, difficulty in predicting absorbent capacity or performance in a landfill (e.g., the effects of decay, pressure, displacement, capacity taken up by precipitation, and channelized flow).

In accordance with § 265.314(a), bulk liquids may be placed in a landfill if the landfill has a liner, which is chemically and physically resistant to these liquids, and a leachate collection and removal system. The agency believes that a liner and leachate collection system is capable of intercepting and removing most of the leachate derived from bulk liquid disposal and, therefore, minimizing the migration of this leachate into the environment. Bulk liquids, as opposed to liquids in drums, are immediately free to migrate through a landfill and should do so relatively quickly. Therefore, such free liquids can be collected and removed via the leachate collection system during the facility's operating and postclosure care periods. Secondly, unlike containerized liquids which are released gradually and in small quantities, bulk liquids will tend to flow, rather than trickle, down through the landfill onto the liner and thus are much more amenable to

collection and removal via a leachate collection and removal system. Thus, bulk liquids are more likely to flow in the collection system while liquids released from containers are more likely to seep through a liner if the liner is porous (e.g., clay).

The Agency specifically solicits comments on its assessment of the non-necessity of requiring a liner and leachate collection system or the placement of absorbent material in landfills in which containerized free liquids are disposed of.

#### *E. Test Protocol for Free Liquids*

Today's amendment provides that all containers are to be presumed to hold free liquids and landfilled in accordance with the requirements discussed above unless they are demonstrated not to contain free liquids (or unless they are small containers such as ampules; containers such as batteries, designed to hold free liquids for use other than storage; or lab packs). To provide a means of demonstrating that a container does not hold free liquids, today's proposed amendment contains a test protocol for free liquids.

EPA has considered and tested a wide variety of test methods which could be used to define the measure free liquids. Gravity tests, as well as tests which simulate earth pressures at various depths, have been investigated. The literature on over 70 test procedures has been examined. Several of the most promising test procedures examined have been evaluated in the laboratory using samples of typical semisolid waste. The test procedures examined were those employing: A press, a filtration unit similar to the one used in the EP Toxicity Test Procedure (45 FR 33127), a laboratory centrifuge, screens of various mesh sizes, the inclined plane described in the preamble to the May 19, 1980 regulation (at 45 FR 33214) and the paint filter included in today's proposed amendment.

The test protocol EPA is proposing today is a gravity test which is intended to determine, in a simple way, whether a representative sample from a container of waste holds free liquid. EPA believes that this protocol can be used to determine the presence of free liquids in sludges, semi-solids, slurries and other wastes that commonly are received in containers by landfill operators for landfill disposal.

The proposed test protocol calls for a 100 ml representative sample of the waste from a container to be placed in a 400 micron, conical paint filter for five minutes. The filter specified is a standard paint filter which is commonly available at hardware and paint stores

at low cost. The filter is to be supported by a funnel on a ring stand with a beaker or cylinder below the funnel to capture any free liquid that passes through the filter. If any amount of free liquid passes through the filter, the waste is to be considered to hold free liquid and subject to the requirements of § 265.314(b) of today's proposed rule.

Preliminary tests on five different wastes indicate that the five minute test period is adequate to determine whether a waste contains any free liquids, i.e., it provides an adequate "pass/fail" test. However, if the Agency were to adopt a rule requiring the measurement of the percentage of free liquid in the waste in individual containers (see discussion in III(B) above), a longer test period probably would be necessary to achieve an accurate measurement. The Agency's preliminary tests indicate that the five minute test period significantly underestimates the amount of free liquids in samples of some types of wastes and that a 15, 30, or even 45-minute test period may be necessary to accurately measure the free liquid content of such wastes. The Agency solicits comments on whether a longer test period (e.g., 15 to 45 minutes) presents an undue operational burden on landfill operators.

The Agency recognizes that there may be other test protocols that are capable of determining whether or not a waste sample contains free liquids. Indeed, the Agency solicits comments on any such protocols. In addition, whatever protocol is finally adopted, persons will always have the opportunity to petition EPA under §§ 260.20 and 260.21 for use of an equivalent test protocol.

Today's proposed rule does not require a landfill owner or operator to test containers of wastes for their free liquid content. Rather, it enables that person to demonstrate that a container does not hold free liquid to avoid having to meet the requirements of § 265.314(b) for landfill disposal of the container. A landfill owner or operator may choose to consider all containers of waste as holding free liquids and dispose of them in accordance with § 265.314(b). Where he chooses to exercise the option of demonstration, he may use the test protocol or he may choose to make the demonstration in another manner, certifying that his knowledge about the containerized waste substantiates its absence of free liquids.

The Agency believes that this latter demonstration may be possible in some instances (e.g., where the landfill owner or operator receives, on a constant basis, containerized wastes from a certain generator and knows by prior



observation that these containerized wastes do not vary and do not contain free liquids). It should be recognized, however, that EPA would be using the test protocol specified in the regulations for enforcement purposes unless an equivalent test protocol had been established for the waste under §§ 260.20 and 260.21.

Where the landfill owner or operator chooses to test containerized wastes to make the above-discussed demonstration, EPA would expect him to test a representative sample—representative of the waste in the container sampled. Guidance on obtaining representative samples from containers is provided in Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, SW-846, an EPA publication. In those cases where a demonstration is being made on a batch (e.g., truckload) of similar containerized wastes, the representative sample must be representative both among the containers in the batch and of the waste in the individual containers actually sampled.

Today's proposed amendment does not prohibit the co-disposal of "exempted" containers with containers holding free liquids. It does, however, implicitly require careful recordkeeping of those containers exempted and their placement in the landfill so that EPA can properly monitor compliance.

#### IV. Proposed Amendment to § 265.312

Section 265.312, Special requirements for ignitable or reactive waste, as amended on June 29, 1981, states that ignitable waste may not be placed in a landfill unless it is treated, rendered, or mixed before or immediately after placement in a landfill so that it no longer meets the definition of ignitable waste or unless it is containerized and handled according to the specific handling requirements. However, after the compliance date for § 265.314, liquid ignitable waste in containers are banned from landfills in accordance with § 265.312(b).

Today's proposed amendment to § 265.312 deletes any distinction between liquid and solid ignitable waste, and provides that containerized ignitable waste (liquid or solid) may be placed in a landfill subject to the specified handling requirements. With this proposed change, restrictions on the amount of liquid ignitable waste which can be placed in a landfill would be defined by § 265.314(b). Containers holding liquid ignitable waste would be counted in the total number of containers holding liquid waste allowed in the landfill pursuant to the proposed amendment to § 265.314(b). In addition,

liquid ignitable waste in containers would still have to be handled in accordance with the special handling requirements specified in § 265.312. Under the proposed amendment, solid ignitable waste in containers would still be allowed to be disposed of in landfills, provided that it is handled in accordance with the specified handling requirements.

The test for determining which wastes are liquids or contain free liquids, specified in the proposed § 265.314, would be used for determining if an ignitable waste is a liquid or contains free liquid. Thus, liquid ignitable waste will be treated consistently with other containerized waste.

The Agency received 16 written comments on its June 29, 1981 amendment to § 265.312. Some commenters stated that incineration of ignitable wastes can be accomplished and therefore reasoned that the ban on disposal of liquid ignitable waste in landfills should go into effect as scheduled. One commentator has developed a procedure aimed at solidifying semi-solid ignitable waste and raising the flash point of the waste to above 140°F. The majority of the commenters supported the approach used in § 265.312 (b) and (c) as it applied to both liquid and solid containerized ignitable wastes (i.e., allowing landfilling of these wastes under special management conditions); however, the commenters did not believe that the extension until November 19, 1981 for liquid ignitable waste was of sufficient duration. They stated that there continued to be no viable alternative to the landfill disposal of some ignitable wastes.

The Agency continues to believe that most liquid ignitable wastes can be treated, recycled, or disposed of by means other than landfilling (see preamble discussion to June 29, 1981, amendment (46 FR 33502)). However, the proposed amendments to §§ 265.312 and 265.314 will allow the landfill disposal of some liquid ignitable waste. These amendments should, therefore, accommodate those ignitable wastes not amenable to incineration, deep well injection, solvent recovery, use as fuel, or other treatment, recycling, or disposal options.

#### V. Regulatory Analysis

Section 3(b) of Executive Order 12291 (46 FR 13193, February 19, 1981) requires EPA to initially determine whether a rule that it intends to propose or issue is a major rule and to prepare a regulatory impact analysis for all major rules.

EPA has determined that both amendments being proposed today are

not major rules. Accordingly, a Regulatory Impact Analysis is not being prepared for either of these proposed amendments.

Under the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, EPA is required to determine whether a regulation will have a significant impact on a substantial number of small entities so as to require a regulatory analysis. In that the proposed amendments should reduce the burden of compliance with the hazardous waste management regulations for small entities, the Agency had determined that this action is not subject to the Regulatory Flexibility Act.

This proposal was submitted to the Office of Management and Budget for review as required by E.O. 12991.

Dated: February 18, 1982.

Anne M. Gorsuch,  
Administrator.

#### PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

For the reasons set out in the preamble, 40 CFR Part 265 is proposed to be amended as follows:

1. The authority citation for Part 265 reads as follows:

Authority: Secs. 1006, 2002(a), and 3004 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6905, 6912(a), 6924).

2. Section 265.312 is revised to read as follows:

##### § 265.312 Special requirements for ignitable or reactive waste.

(a) Except as provided in paragraph (b) of this section, ignitable or reactive waste must not be placed in a landfill, unless the waste is treated, rendered, or mixed before or immediately after placement in a landfill so that:

(1) The resulting mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under §§ 261.21 or 261.23 of this chapter, and

(2) Section 265.17(b) is complied with.

(b) Ignitable wastes in containers may be landfilled without meeting the requirement of paragraph (a) of this section, provided that the wastes are disposed in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed in non-leaking containers which are carefully handled and placed so as to avoid heat, sparks,

rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other non-combustible material to minimize the potential for ignition of the wastes, and must not be disposed in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

3. Section 265.314 is amended by revising paragraph (b), revising paragraph (c) and redesignating it as paragraph (f), and adding new paragraphs (c), (d), and (e) to read as follows:

**§ 265.314 Special requirements for liquid waste.**

\* \* \* \* \*

(b) Containers holding free liquids must not be placed in a landfill unless:

(1) The volume fraction (V) of the total landfill volume devoted to waste and reasonable intermediate cover that is occupied by containers holding free liquids is no greater than that described by the formula

$$V = \frac{H}{100} \text{ for } H \text{ less than 25 feet}$$

or

$$V = 0.3 - \frac{H}{500} \text{ for } H \text{ equal to or greater than 25 feet}$$

where: H = the average depth of wastes and reasonable intermediate cover in the landfill; and

(2) The closure and post-closure plans required in §§ 265.112 and 265.117 provide for the design and maintenance of the final cover, including the final contour and slope of the final cover, sufficient to accommodate the subsidence and distortion of the final cover that may result from the deterioration of the containers placed in the landfill. The closure plan must provide for the stockpiling or other on-site availability of materials to repair subsidence damage to the final cover that might occur during the post-closure period; and

(3) The containers holding free liquids are placed in a uniform and compact manner in the landfill.

(c) For the purposes of paragraph (b) of this section, all containers are presumed to be containers holding free liquids unless:

(1) The container is very small, such as an ampule; or

(2) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or

(3) The container is a lab pack as defined in § 265.316, and is disposed of in accordance with § 265.316; or

(4) The owner or operator can demonstrate that a representative sample of the waste in the container does not contain any free liquids.

(d) The demonstration requirement of paragraph (c)(4) of this Section can be met if a 100 ml representative sample of the waste from a container can be completely retained in a standard 400 u conical paint filter for five minutes without loss of any portion of the waste from the bottom of the filter (or an equivalent test approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21 indicates no liquids or free liquids in the waste).

(e) Where containers holding free liquids are disposed in only a portion of a landfill, the formula of paragraph (b)(1) of this Section must apply only to that portion of the landfill.

(f) The date for compliance with paragraph (a) of this Section is November 19, 1981. The date for compliance with paragraphs (b) through (e) of this section is March 29, 1982.

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