

Area of Contamination Policy (AOC)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 25 1996

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Norman H. Nosenchuck, P.E., Director
Division of Solid & Hazardous Materials
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233-7250

Dear Mr. Nosenchuck:

Thank you for your letter requesting additional information on the scope and applicability of the Area of Contamination (AOC) concept. Independent of your request, EPA recently completed guidance on application of the AOC concept during cleanups regulated under the Resource Conservation and Recovery Act (RCRA) and other cleanups. This guidance is attached.

As you requested, we have reviewed the June 11, 1992 letter from Sylvia K. Lowrance to Douglas H. Green regarding application of the AOC concept to routine earthmoving and grading activities. The discussion in the June 11, 1992 letter continues to reflect Agency policy on areas of contamination.

The area of contamination concept was discussed in detail in the preamble to the National Contingency Plan (55 FR 8758-8760, March 8, 1990). Through the AOC concept, EPA recognizes that certain discrete areas of generally dispersed contamination may be equated to RCRA landfills. Just as movement of hazardous wastes within a landfill would not typically constitute a new act of treatment, storage or disposal for purposes of RCRA, movement of media contaminated by hazardous wastes within an area of contamination does not typically trigger RCRA requirements. While the area of contamination concept was first explained in the CERCLA NCP, it is based on an interpretation of RCRA. It applies equally to RCRA corrective action sites and other actions.


In most cases the AOC concept is applied in the context of a government overseen cleanup action, and delineation of AOCs are reviewed, overseen and approved as part of those actions. However, since the AOC concept is an interpretation of current Federal statutory and regulatory requirements, its application outside overseen cleanup actions does not require oversight or

advance approval at the Federal level. When the AOC concept is applied outside the context of an overseen cleanup action, EPA encourages consultation with the appropriate agency and routinely cautions individuals that mis-application of the AOC concept could, potentially, result in substantial fines and penalties associated with improper disposal of hazardous waste. EPA also routinely cautions individuals that state standards may be more stringent and may require oversight or advance approval of all AOCs.

In your letter, you mention the specific concern that individuals could store soils contaminated with hazardous wastes in temporary piles anywhere within an overall area of contamination while installing pipelines or foundation footings and then replace the soil, "all with no RCRA regulatory requirements or governmental oversight." We note that, while movement of soil contaminated with hazardous waste within an area of contamination would not typically trigger RCRA, the AOC concept in no way shields individuals from otherwise applicable cleanup requirements. For example, in many states discovery of contaminated soils triggers reporting requirements under the state cleanup program. In these cases, if a state determined that cleanup was warranted it could require management or removal of contaminated soils, independent of RCRA. We believe that, addressing potential cleanup needs for contaminated soils discovered during normal earthmoving and grading activities using cleanup laws is more appropriate than imposing the RCRA permitting process on these activities.

Thank you for your concern regarding the AOC concept. EPA continues to believe that proper application of this concept will support appropriate remedies and expedite cleanup processes, not encourage avoidance of legitimate cleanup obligations. For additional information, your staff may wish to contact Elizabeth McManus or Hugh Davis, of my staff, at (703) 308-8657 and (703) 308-8633, respectively.

Sincerely yours,


for Michael Shapiro, Director
Office of Solid Waste

Enclosure



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 13 1995

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: Use of the Area of Contamination (AOC) Concept During RCRA Cleanups

FROM: *Michael Shapiro*
Michael Shapiro, Director
Office of Solid Waste

Stephen D. Luftig
Stephen D. Luftig, Director
Office of Emergency and Remedial Response

Jerry Clifford
Jerry Clifford, Director
Office of Site Remediation Enforcement

TO: RCRA Branch Chiefs
CERCLA Regional Managers

This memorandum confirms that, under current regulations, certain broad areas of contamination (AOCs) may be considered RCRA landfills. Under certain conditions, hazardous wastes may be moved within such areas without triggering RCRA land disposal restrictions or minimum technology requirements. This memorandum also describes the distinctions between the final Corrective Action Management Unit (CAMU) regulations and the Area of Contamination (AOC) approach, and encourages appropriate use of both options to expedite remedial actions.

Area of Contamination Approach

The area of contamination concept was discussed in detail in the preamble to the National Contingency Plan (55 FR 8758-8760, March 8, 1990). In this discussion, EPA clarified that certain discrete areas of generally dispersed contamination (called "areas of contamination" or "AOCs") could be equated to a RCRA landfill and that movement of hazardous wastes within those areas would not be considered land disposal and would not trigger the RCRA land disposal restrictions. The NCP also discusses using the concept of "placement" to determine which requirements might apply within an AOC. The concept of "placement" is important because placement of hazardous waste into a landfill or other land based unit is considered land disposal,



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which triggers the land disposal restrictions, and may trigger other RCRA requirements including permitting (at a non-CERCLA site), closure and post-closure. In the NCP, EPA stated, "placement does not occur when waste is consolidated within an AOC, when it is treated in situ, or when it is left in place." Placement does occur, and additional RCRA requirements may be triggered, when wastes are moved from one AOC to another (e.g., for consolidation) or when waste is actively managed (e.g., treated *ex situ*) within or outside the AOC and returned to the land. Additional information on when placement does and does not occur is provided in the attached guidance document, *Determining When Land Disposal Restrictions (LDRs) Are Applicable to CERCLA Response Actions*, OSWER Directive 9347.3-05FS, July 1989.

Although the AOC concept was initially discussed in the context of the CERCLA program, it applies equally to RCRA corrective action sites, cleanups under state law, and voluntary cleanups¹. For additional information on the AOC concept, see, for example, the October 9, 1990 memorandum from Sylvia Lowrance to David Ullrich, "Replacement of Contaminated Soil and Debris Treated under a Treatability Variance," the January 7, 1991 letter from Don Clay to Richard Stoll, and the June 11, 1992 letter from Sylvia Lowrance to Douglas Green (attached).

The interpretations of landfill, placement and the area of contamination concept discussed in the NCP preamble were reiterated by EPA in the 1990 subpart S proposal (55 ER 30798, July 27, 1990). In the 1990 proposal, EPA termed AOCs at RCRA facilities "Corrective Action Management Units" or "CAMUs." Although the name was changed, from AOC to CAMU, the CAMU concept discussed in the 1990 proposal was equivalent to the AOC concept (although, as discussed below, the CAMU concept was broadened when the final CAMU rule was issued). In response to great interest in the CAMU/AOC concept as discussed in the 1990 proposal, EPA issued a fact sheet titled *Use of the Corrective Action Management Unit Concept* in August 1992 (attached). In the August, 1992 fact sheet, EPA further reiterated the AOC concept by explaining that broad areas of contamination, including specific subunits², could be considered landfills under the RCRA regulations and discussed activities which would or would not trigger additional RCRA requirements when conducted in such areas.

The discussions of the AOC approach in the NCP preamble, 1990 subpart S proposal, and the August, 1992 fact sheet continue to reflect EPA's interpretation of current statutory and regulatory provisions. They remain useful guidance documents when the AOC approach is

¹Although advance approval at the Federal level is not required for private parties to take advantage of the AOC concept, we encourage them to consult with the appropriate agency to ensure they implement the AOC concept appropriately. It should be noted that the agency responsible for determining that the AOC concept is being properly applied might not be the same as the agency overseeing cleanup at a site. Additionally, states may have more stringent standards which require consultation and/or prior approval of an AOC.

²Note, if the subunit were a RCRA regulated unit, inclusion of the unit within an AOC could necessitate a RCRA permit modification or a change under RCRA interim status.

under consideration at RCRA corrective action sites, Superfund sites and during other cleanup actions involving the movement or consolidation of hazardous waste, or media and debris contaminated with hazardous waste.

Relationship of the AOC Concept to the Final CAMU Rules

On February 16, 1993, EPA published final Corrective Action Management Unit regulations (58 FR 8658, February 16, 1993). The final CAMU rule differs from the AOC approach in important respects. First, the CAMU regulations create a new type of RCRA unit - a "Corrective Action Management Unit" or "CAMU." CAMUs are distinct from the type of units listed in RCRA Section 3004(k)³. Second, only EPA and authorized states may choose to designate CAMUs for management of remediation waste during RCRA corrective action and other cleanups. Third, the CAMU regulations expanded the flexibility available for management of remediation wastes beyond that offered by the AOC approach. Under the CAMU regulations, certain activities which would normally be considered placement are allowed when carried out in an agency-approved CAMU, including: remediation waste⁴ may be removed from a CAMU and replaced (before or after treatment) in the same or a different CAMU; remediation waste may be consolidated into a CAMU before or after treatment; and, remediation waste may be moved (again, before or after treatment) between two or more CAMUs at the same facility.

While the CAMU concept contained in the final CAMU rule was historically an outgrowth of the AOC concept, it has a separate statutory and regulatory basis; therefore, it supplements rather than supersedes the AOC concept. The AOC concept was not altered when the final CAMU rules were promulgated and it does not depend on the existence of the CAMU rule.

As you may be aware, several parties challenged the CAMU rule. The lawsuit has been stayed pending promulgation of the final Hazardous Waste Identification Rule for contaminated media ("HWIR-Media"). At the time the stay was issued, EPA stated that the HWIR-Media rule was expected to replace a substantial portion of the CAMU rule; however, as long as the CAMU rule remains in effect, CAMUs may be used to facilitate protective remedies under RCRA, CERCLA, and state cleanup authorities. If a CAMU is under consideration, we recommend you take the following steps, in addition to the CAMU approval steps required at 40 CFR § 264.552:

³ RCRA Section 3004(k) defines the term land disposal, when used with respect to a specified hazardous waste, to include placement of such hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave.

⁴ Remediation waste is defined as, "all solid and hazardous wastes, and all media (including groundwater, surface water, soils, and sediments) and debris, which contain listed hazardous wastes or which themselves exhibit a hazardous waste characteristic, that are managed for the purpose of implementing corrective action requirements under 40 CFR § 264.101 and RCRA section 3008(h). For a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing RCRA sections 3004(v) or 3008(h) for releases beyond the facility boundary.

1) explain the potential risks associated with CAMUs to facility owner/operators by informing them that the CAMU rule has been challenged and that EPA may issue a proposal to withdraw it; 2) where possible, mitigate potential risks associated with CAMUs by, for example, implementing a CAMU remedy within the shortest possible time frame; and 3) document all CAMU decisions completely, emphasizing how the CAMU provides support for the best site-specific remedy.

Continued Use of the AOC Concept

Both AOCs and CAMUs can be used to expedite effective and protective remedial actions; however, EPA encourages the use of the AOC concept in cases where the additional flexibility provided in the final CAMU regulations is not needed. For example, the AOC concept is particularly useful for consolidation of contiguous units or areas of contaminated soil. Using the AOC concept, a RCRA facility owner/operator with a large contiguous area of soil contamination could consolidate such soils into a single area or engineered unit within an AOC without triggering the RCRA land disposal restrictions or minimum technology requirements. Use of the AOC concept would not be affected by the pending litigation over CAMU or any changes in the CAMU rule. In addition, please note, the AOC and CAMU concepts only address management of materials which would otherwise be subject to RCRA (i.e., hazardous wastes, or media and debris contaminated with hazardous waste). RCRA regulated materials are a subset of the materials managed during site cleanups.

We know you will continue to use the AOC and CAMU concepts to support appropriate remedies and to expedite cleanup processes. If you have any questions regarding the AOC or CAMU concepts, please contact Elizabeth McManus, Hugh Davis or Robin Anderson at (703) 308-8657, (703) 308-8633, and (703) 603-8747, respectively.

attachments

cc: Susan Bromm, OECA
Elizabeth Cotsworth, OSW
Larry Reed, OERR
Jim Woolford, FFRRO
Barbara Pace, OGC
George Wyeth, OGC
Earl Salo, OGC
RCRA Regional Division Directors
Superfund Regional Division Directors



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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APR - 6 1994

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Scott M. DuBoff
WINSTON & STRAWN
1400 L Street, N.W.
Washington, D.C. 20005-3502

Dear Mr. DuBoff:

In your letter of February 9, 1994, you request clarification of the Agency's interpretation of "active management" in the closing of waste management facilities (surface impoundments) that contain waste sludges meeting the description of waste types that became subject to Subtitle C of the Resource Conservation and Recovery Act (RCRA) after the impoundments had been permanently removed from service. Specifically, this request seeks verification of a site-specific case described in the letter.

In the specific case of an impoundment which stopped receiving or generating any hazardous wastes prior to the effective date of the newly identified characteristic or newly identified listing, and the impoundment is the final disposal site for the wastes, the unit is not subject to regulation under 40 CFR parts 264 or 265 (See 55 FR 39410, September 27, 1990 and 55 FR 46383, November 2, 1990). However, it should be noted that inactive units that are located at facilities otherwise subject to Subtitle C interim status or permitting requirements are solid waste management units subject to corrective action requirements under sections 3008(h) and 3004(u) of RCRA. Any treatment, storage, or disposal of wastes (i.e., active management) in the unit after the effective date of the new listing or characteristic could subject the unit and wastes to Subtitle C control.

Section 3005 of RCRA prohibits the operation of hazardous waste treatment, storage, or disposal facilities without a permit. EPA interprets the term "disposal" for purposes of RCRA Subtitle C regulation to have the same meaning as the term "land disposal" as defined under section RCRA 3004(k). Therefore, conducting any of the activities that constitute "land disposal" of hazardous wastes will subject the unit to Subtitle C permitting and land disposal restrictions. "Land disposal" occurs when hazardous wastes are placed into a unit, including when hazardous


wastes from different units are consolidated into one unit, or removed and treated outside a unit and redeposited, or treated within the unit in an incinerator, impoundment, or tank and then redeposited. "Land disposal" does not occur, for example, when hazardous wastes are moved or consolidated within a unit, treated in situ, or capped in place, or when non-hazardous solid waste is added to the unit. As noted in the final rule which identified wastewater treatment sludges from petroleum refining as hazardous wastes (55 FR 46383, November 2, 1990), EPA does not view the one time removal of wastes during closure as changing the status of the unit with respect to permitting, as long as there has not been ongoing management of the waste in the impoundment. One-time removals do "generate" waste, and this waste must comply with treatment standards prior to final land disposal.

It also should be noted that although the movement of waste within a unit would not constitute land disposal under RCRA 3005 or 3004(k) (as described above); this activity would generally be defined as "disposal" under RCRA section 1004(3) and thus be subject to RCRA section 7003 authorities.

During closure-in-place, the sludges are often mixed with a stabilizing material designed to stabilize the sludge either chemically or physically to provide sufficient bearing capacity for the placement of an impervious cap and to prevent migration of any contaminants to groundwater from a unit. Conducting activities that constitute hazardous waste "treatment" (including in situ treatment) would subject the unit to permit requirements as a hazardous waste treatment facility.

Because "treatment" may be occurring during activities designed to stabilize the wastes prior to capping, Subtitle C permitting may be triggered. However, whether or not the addition of material to improve the load-bearing ability of final cover actually involves the physical or chemical stabilization (i.e., treatment) of RCRA hazardous waste is a site-specific determination. Therefore, we will forward your letter to Region V and help the appropriate Regional staff obtain any additional national guidance they may require.

Sincerely,



David Bussard, Director
Characterization and Assessment Division

cc: David Fagan, OSW/PSPD, 5303W
Richard Witt, OGC, 2355
Mike Ribody, Region V



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 31 1992

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Use of the Corrective Action Management Unit (CAMU) Concept

TO: Waste Management Division Directors, Regions I - X
RCRA Branch Chiefs, Regions I - X
RCRA Regional Counsel, Regions I - X

FROM: Sylvia Lowrance, Director
Office of Solid Waste

[Handwritten signatures]
Bruce Diamond, Director
Office of Waste Programs Enforcement

At the February 1992 Stabilization Conference in Colorado Springs we discussed the possibility of implementing the corrective action management unit (CAMU) concept before final promulgation of the Subpart S regulations. At that time OSWER made a commitment to provide further guidance to the Regions on how to use existing RCRA regulations to achieve some of the remedial benefits of the CAMU. The attached document, "Use of the Corrective Action Management Unit Concept," provides that guidance.

The CAMU portion of Subpart S is on a current schedule to be finalized by December 1992. The attached guidance, which was developed jointly by OSWER and OGC, clarifies the Agency's legal authority for utilizing a CAMU-like approach before the CAMU rule is finalized, and provides guidance on when and how to use the concept. The concept can be applied during final remedies, and in the implementation of stabilization actions to reduce imminent threats and contain releases. We encourage the use of this concept whenever the success of the remedial option at a particular facility will be enhanced.

If you have any questions regarding the content of this guidance, please call Dave Fagan at (202) 260-4497.

cc: Lisa Friedman, OGC
Henry Longest, OERR
Kathie Stein, OE



Use of the Corrective Action Management Unit Concept

Office of Solid Waste

BACKGROUND

Beginning in 1992, EPA began implementing a new strategy to increase the pace of cleanup and to achieve positive environmental results at RCRA treatment, storage and disposal facilities (TSDFs) requiring corrective action. While comprehensive facility cleanup is still the long-term goal for the RCRA Corrective Action Program, this new initiative emphasizes the importance of stabilizing sites by controlling releases and preventing the further spread of contaminants.

At most RCRA facilities, stabilization or final remedial actions will involve excavation and on-site management of contaminated soils, sludges and other wastes that are subject to the RCRA Subtitle C hazardous waste regulations. In these situations, a number of issues can arise regarding the applicability of certain RCRA requirements, and how these requirements may affect the remedial activities. Specifically, experience in the RCRA and CERCLA remedial programs has shown that the RCRA land disposal restrictions (LDRs) and minimum technology requirements (MTRs) may limit the types of remedial options available at sites, as well as affect the types of specific technologies that may be used, the volumes of materials that are managed, and other features of remedies under consideration.

Recognizing that strict application of these RCRA requirements may limit or constrain desirable remedies, including stabilization programs, EPA is developing an important regulatory concept, known as the Corrective Action Management Unit (CAMU), to facilitate effective and protective remedial actions. This

concept, first discussed in the proposed Subpart S corrective action regulations (55 FR 30798, July 27, 1990), is similar to the Superfund concept of the "area of contamination," in which broad areas of contamination, often including specific subunits, are considered to be a single land disposal unit for remedial purposes.

CAMUs may be particularly useful for specific remedial activities such as consolidation of units or contaminated surficial soils. For example, a group of unlined inactive lagoons that are continuing sources of releases to groundwater may be best remediated by removing and treating the concentrated wastes in another unit, and excavating the remaining low-concentration contaminated soils from underneath the lagoons. These soils could then be consolidated and placed into a protective and cost-effective single-capped unit, thereby controlling further releases to groundwater. In other situations site remediations will require excavation of large quantities of relatively low-level contaminated surficial soils. In these cases a protective and cost-effective remedy might be to excavate the soils and consolidate them into a single area or engineered unit within the area of contamination. For both of these examples, application of LDRs and possibly MTR requirements would result in a more costly and complex remedy, that may delay remediation and result in little additional environmental protection for the site.

As proposed in the Subpart S rule, there may be certain types of situations in which application of the CAMU concept (55 FR 30842) would be inappropriate. In addition, several

factors (55 FR 30883) may be considered by decision-makers in determining how CAMUs would actually be designated at sites. Although owner/operators may propose a specific area as a CAMU, it is the responsibility of EPA or the authorized State to determine whether a CAMU is necessary and appropriate, and, if so, to determine the boundaries of the unit.

The Subpart S regulations have not yet been finalized. However, although the CAMU concept has been presented only in proposed regulations, existing regulatory authority may be used to implement this type of approach in site remediations and stabilization actions. The Agency's experience with the RCRA and CERCLA remedial programs indicates that the CAMU concept could be applied immediately to great advantage at a significant number of RCRA cleanup sites. This guidance is presented to clarify the use of the CAMU concept prior to final regulations.

USE OF LANDFILL DESIGNATION FOR REMEDIAL PURPOSES

Specifically, certain contaminated areas at sites that require remediation, including groups of units in such areas, may be designated as a "landfill" under the current RCRA landfill definition (40 CFR § 260.10). Designating such an area of a facility as a landfill within the existing regulatory framework can achieve remedial benefits similar to those that would be obtained by using CAMUs under the Subpart S proposal. Prior to the promulgation of final CAMU rules, EPA encourages the use of this approach at contaminated sites, where it can promote effective and expeditious remedial solutions. EPA recommends that decisions on designating certain contaminated areas or groups of units as a landfill be made in accordance with applicable regulations and generally in accordance with the CAMU provisions in the Subpart S proposal.

Owner/operators proposing to address certain areas at a facility as a single landfill for remedial purposes should request approval from EPA or the authorized State agency. The Regional Administrator or the authorized State Director will be the ultimate decision-maker as to whether such a landfill unit will help achieve the remedial objectives at the facility. EPA recommends decisions to use existing authorities, waivers, or variances to achieve many of the same objectives as the proposed Subpart S rule CAMU provisions should generally follow the proposed regulatory provisions (55 FR 30883) and preamble

discussion (55 FR 30842) in defining the boundaries of the remedial unit. The Region or authorized State may also look to Superfund guidance in the designation of AOCs (55 FR 8758-8760).

Designating an area of contamination as a "landfill" will require that the unit comply with certain RCRA requirements that are applicable to landfills. The specific requirements that apply will differ, depending on whether the landfill is considered to be: (1) an existing non-regulated landfill, or (2) a regulated hazardous waste landfill. This distinction is determined by the regulatory status of the units or areas that are included as part of the landfill. The following discussion explains further the requirements associated with these two types of landfills.

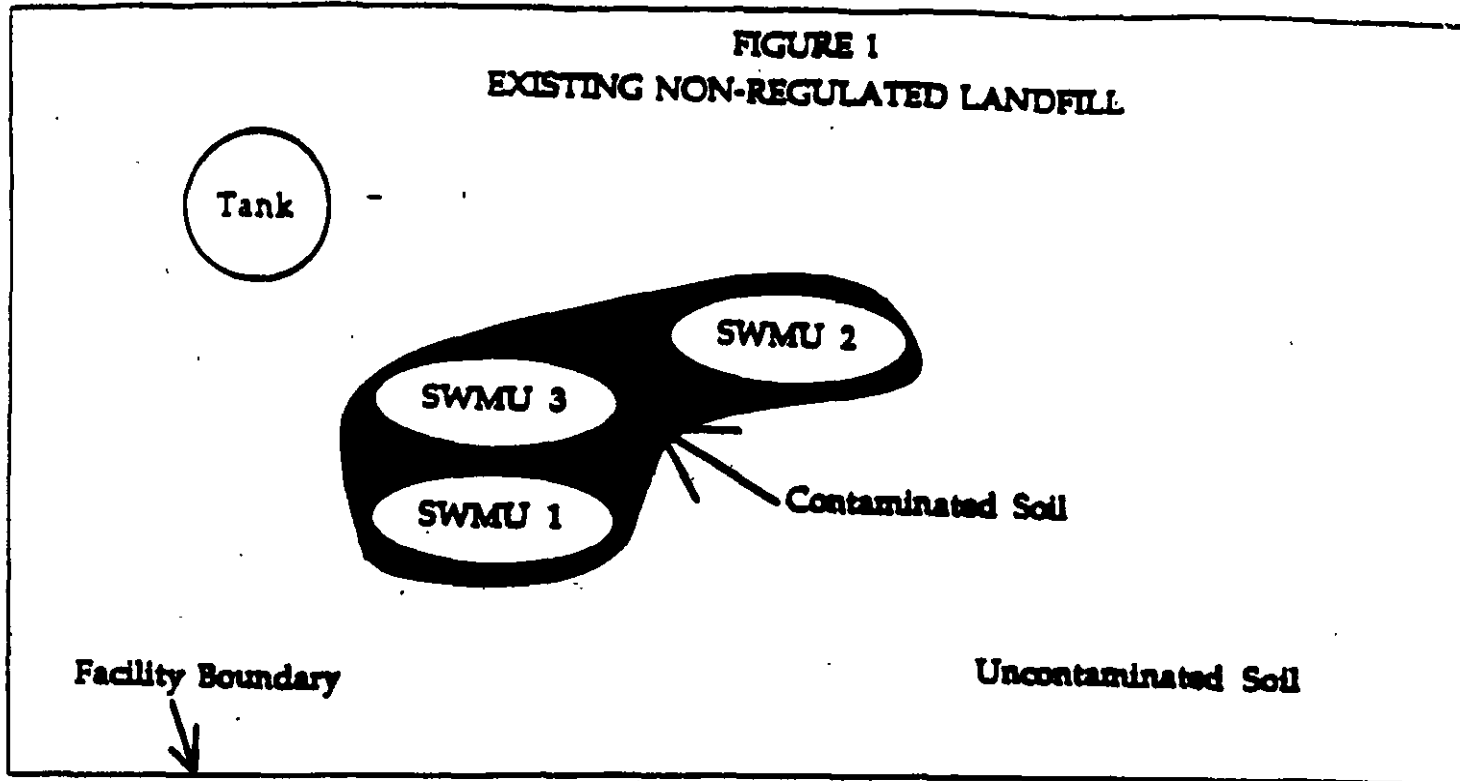
Existing Non-Regulated Landfills

Figure 1 shows an area of contamination at a facility that includes several land-based solid waste management units (SWMUs) that are not regulated as hazardous waste units under RCRA (e.g., because all of the disposal occurred before the RCRA hazardous waste regulations went into effect). By designating this area as a single landfill, EPA can approve movement and consolidation of hazardous wastes and soils contaminated with hazardous waste within the unit boundary, without triggering the LDRs or MTRs. For example, contaminated soils in and around SWMUs 1 and 2 could be consolidated into SWMU 3 and capped without triggering LDR requirements.

This landfill would not be subject to the RCRA Part 264 or Part 265 design and operating requirements for hazardous waste landfills. This is because the landfill would not have received hazardous waste after November 19, 1980. (See 40 CFR § 270.1(c)). In the absence of specific Part 264 or 265 requirements for such units, appropriate ground water monitoring and closure requirements for the landfill can be determined by EPA or the State as part of the corrective action remedial decision-making process. These requirements would be based on an assessment of site specific factors, such as waste characteristics, site hydrogeology, exposure potential, and other factors. This allows the regulator further flexibility in designing remedial solutions which are effective and protective based on actual site conditions.

These non-regulated landfills would remain exempt from regulation under Parts 264 and 265, under the following circumstances:

**FIGURE 1
EXISTING NON-REGULATED LANDFILL**



- The landfill cannot receive hazardous waste from other units, either on-site or off-site. The landfill could, however, receive non-hazardous wastes as part of the cleanup actions. If it were to receive hazardous waste, the landfill would become a regulated unit (40 CFR § 270.1(c)) subject to the requirements of Subparts F (40 CFR § 264.90) and G (40 CFR § 264.110). The facility permit would have to be modified accordingly (for interim status facilities, a change would have to be approved under 40 CFR § 270.72), and the wastes would have to be treated to comply with applicable LDR standards prior to placement in the landfill.
- If hazardous waste treatment (including in-situ treatment) takes place within the landfill, the owner/operator must comply with all Part 264 or 265 requirements applicable to the treatment unit, and must modify the permit or Part A to include the new treatment unit.
- Similarly, residuals from treatment of hazardous wastes that have been removed from the landfill and treated in a non-

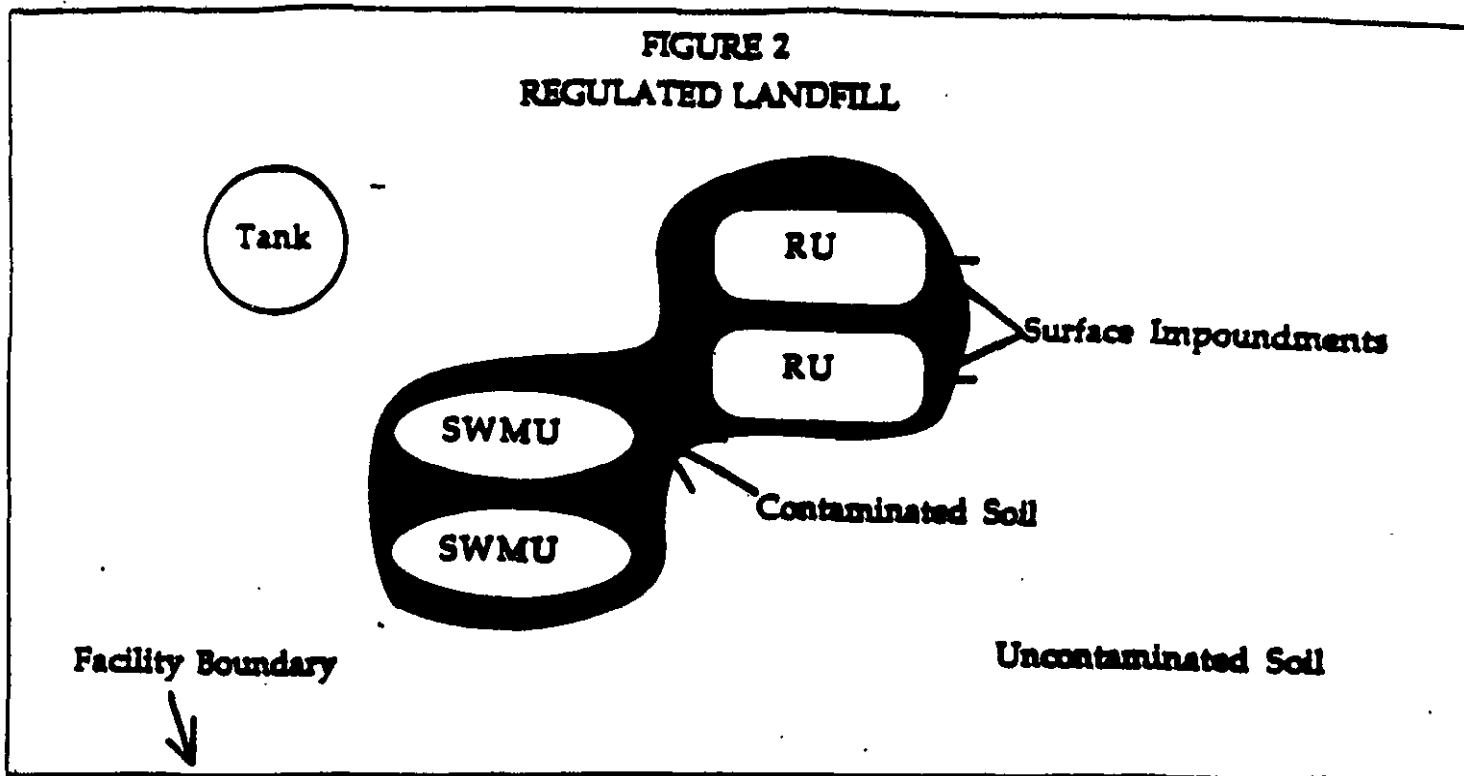
land-based unit cannot be redeposited into the landfill unless the residuals meet the LDRs. If the residuals were still hazardous by characteristic or still contained hazardous wastes, disposal of the residuals into the landfill would require the landfill to be designated a "regulated unit," as the unit would have received hazardous waste after July 26, 1982.

- Hazardous wastes transferred from the non-regulated landfill to another land-based unit would also have to meet LDR standards.

Regulated Landfills

Figure 2 shows an area of contamination that could be designated as a landfill, which contains two regulated units (as defined in 40 CFR § 264.90). As with the previous example in Figure 1, designating this area as a landfill would allow wastes to be moved and consolidated within the area without triggering the LDRs. However, because this landfill contains regulated units, the entire area must be considered a regulated unit. Accordingly, the following requirements would apply:

**FIGURE 2
REGULATED LANDFILL**



- The unit boundaries of the original regulated units that were specified on the Part A or Part B application would have to be redesignated to encompass the entire new landfill unit, according to the applicable procedures in 40 CFR §§ 270.72, 270.41 or 270.42.
- The landfill would have to comply with applicable Part 264 or 265 requirements for landfills, including the Subpart F ground water monitoring requirements and Subpart G closure and post-closure requirements. Subpart F requirements would generally involve installation of additional ground water monitoring wells. Compliance with Subpart G would likely also require modifications to the closure and post-closure plans for the unit.

MTRs would not necessarily apply to these newly designated regulated landfills. If the original regulated unit located within the landfill was not subject to the MTRs (i.e., the landfill was not new or expanding after 1984), the landfill could be considered by the Agency or authorized State to be a redesignation of that existing unit, rather than a lateral expansion. As such, the landfill would not be subject to the MTRs. However, if the regulated

unit encompassed by the landfill was originally subject to MTRs, the entire area of the landfill would be subject to MTRs.

SUMMARY

Existing regulatory standards (e.g., replacement of treatment residuals into the CAMU triggers the LDRs) cannot be waived to implement the CAMU concept prior to a final CAMU rulemaking. EPA is considering removing some of these limitations in the final rule. Nonetheless, despite these current limitations, there may be a number of situations where the use of landfills can yield substantial benefits in remediating sites. EPA recommends that the guidance provided in this fact sheet be used in evaluating the use of landfills to implement timely and protective corrective actions at RCRA facilities.

FOR FURTHER INFORMATION

Inquiries concerning the guidance contained in this fact sheet should be directed to Dave Fagan (202) 260-4497, or Anne Price (202) 260-6725.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 11 1992

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Douglas H. Green
Piper & Marbury
1200 Nineteenth Street, N.W.
Washington, D.C. 20036-2430

Dear Mr. Green:

Thank you for your letter of April 30, 1992, requesting clarification of the Environmental Protection Agency's (EPA's) interpretation of the applicability of certain Resource Conservation and Recovery Act (RCRA) requirements to common excavation-type activities.

The particular situation which you presented in your letter involves excavation of soils, such as trenching operations for pipeline installation, where the soils may be hazardous by characteristic, or may contain listed hazardous wastes. We understand that your questions specifically relate to excavations being conducted on public roadways or at other similar locations that are not necessarily associated with or are part of a RCRA-regulated treatment, storage, or disposal facility.

In the example which you cited in your letter, the soils from the excavation or construction activities are temporarily moved within the area of contamination, and subsequently redeposited into the same excavated area. In these situations, we agree that such activity does not constitute treatment, storage, or disposal of a hazardous waste under RCRA. The activity of placing waste in the ground would not normally meet the regulatory definitions of "treatment" or "storage" (40 CFR 260.10). In addition, as you noted in your letter, movement of wastes within an area of contamination does not constitute "land disposal" and thus does not trigger RCRA hazardous waste disposal requirements (55 FR 8666, March 8, 1990). Thus, RCRA requirements such as land disposal restrictions would not apply.

With respect to generator requirements, as you indicated, a hazardous waste "generator" is one, by site, who produces a hazardous waste or first causes the waste to be regulated as hazardous (40 CFR 260.10). In the circumstances you described, the excavation does not "produce" the hazardous waste, nor does it subject the waste to hazardous waste regulation since, as

discussed above, the activity you described is not "treatment," storage," or "land disposal" of hazardous waste. Therefore, we agree that the activity is not subject to any generator requirements.

Please let me know if you have any further questions regarding this issue.

Sincerely yours,



Sylvia K. Lawrence, Director
Office of Solid Waste



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 16 1991

OFFICE OF
GENERAL COUNSEL

MEMORANDUM

SUBJECT: LDR Applicability for Investigative Derived Waste

FROM: Caroline H. Wehling *CW*
Attorney
Solid Waste and Emergency
Response Division (LE-132S)

TO: Steven C. Golian
Chief
Remedial Guidance Section (OS-220)

This is in response to your request for guidance on compliance with land disposal restrictions for investigative-derived wastes which are temporarily stored in drums within an AOC pending response selection. Specifically you have asked whether a drum is in itself a RCRA "unit" such that, if waste is removed from the drum, it must meet LDR requirements prior to redeposition in the AOC.

I agree that, in certain circumstances, the placement of hazardous waste from an AOC into a drum within the AOC, followed by replacement in the AOC would not constitute "land disposal" for RCRA purposes. For RCRA regulatory purposes, "land disposal" is the placement of waste into a land disposal unit (such as an AOC). Land disposal of hazardous wastes is subject to the pretreatment requirements of the LDR program. Movement of hazardous waste from a storage unit (such as a tank or container storage area) into a land disposal unit constitutes "land disposal" of hazardous waste.

As we have discussed, a drum is not in itself a RCRA unit. See 40 C.F.R. 260.10 (definition of "hazardous waste management unit"). However, drums and the land on which drums are placed may constitute a RCRA storage unit, specifically a "container storage area". Thus, if the drum storage you described involved the placement of hazardous waste into drums within a separate storage or treatment area, either on land within the AOC or on a pad, the removal of waste and replacement into the AOC could

constitute land disposal. On the other hand, EPA does not generally consider drums placed within a landfill to form "container storage areas". Thus, if waste is placed into drums which remain within the AOC and which are not placed into a separate storage or treatment area, such placement would not be considered a unit distinct from the landfill itself. As a result, removal of waste from the drums and redeposition within the landfill would not constitute land disposal.

Please call me if you have any additional questions about this. I can be reached at FTS 382-7720.

cc: Tina Kaneen, OGC
Larry Starfield, OGC
George Wyeth, OGC
John Hollister, OERR
✓ Dave Fagan, OSW



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 7 1991

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Richard G. Stoll
Freedman, Levy, Kroll & Simonds
1050 Connecticut Ave. N.W.
Washington, D.C. 20036-5366

Dear Mr. Stoll,

This letter is in response to your inquiry dated August 22, 1990 concerning the applicability of EPA's "Superfund LDR Guides." As you asserted, those interpretations of RCRA were found in the 1990 NCP and other CERCLA documents, but you asked whether those interpretations apply at all sites, regardless of whether the cleanup activity is being conducted under federal CERCLA authorities.

The preamble to the 1990 NCP represents an official Agency-wide position concerning the interpretation of RCRA and other statutes relevant to federally-mandated CERCLA cleanups (see 53 FR 51394, 51443-45 (December 21, 1988) and 55 FR 8666, 8758-62 (March 8, 1990)). The LDR Guides implement these interpretations in more detail. These interpretations of RCRA would apply at Superfund sites and at non-Superfund sites. Therefore, in general, the answer to your question about the applicability of the LDR Guides and NCP interpretations is that they apply wherever the cleanup involves a RCRA waste. However, it is conceivable that some of the interpretations of RCRA developed to apply to federal CERCLA sites may not exactly match non-CERCLA circumstances because of different statutory constraints or authorities. With that caveat, let me address the specific issues and questions raised in your letter.

First, your comments focus on the interpretations of Area of Contamination (AOC), "placement," and the presumption of entitlement to treatability variances for contaminated soil and debris. Your principal concern focused on whether the interpretations offered of these issues in the NCP and LDR Guides apply at all sites. The answer is yes.

Second, you also questioned whether the NCP interpretations and the LDR Guides noted above apply equally where "a party may want to move or treat contaminated soil and debris as part of a

RCRA corrective action, as part of a cleanup carried out under State law, and/or as part of a voluntary cleanup." The answer is yes.

Third, you asked whether in situ treatment that is not "placement" at a CERCLA site is also not placement at a non-CERCLA site (site A in your letter). The answer is yes.

Fourth, you question whether excavation and movement of contaminated soil within a certain area would be "placement" at a non-CERCLA site (site B), since you interpret it not to be placement at a CERCLA site. The limited facts given in that question do not allow us to unambiguously state whether there is "placement" at either site, although as a general rule the AOC concept is operable at RCRA corrective action sites. It should be noted, however, that designation of an AOC is a function performed by the regulating agency.

Fifth, you asked whether the presumption in favor of treatability variances and definition of appropriate alternative treatment would be the same for a non-CERCLA site (site C). The answer is that any presumption in favor of a treatability variance would be the same whether the site is a RCRA site or a federal or private party CERCLA site.

I hope that this response meets your needs. If you need additional information or clarification, please contact Steve Golan at (703) 308-8360.

Sincerely,

Don R. Clay
Assistant Administrator



03W-206

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 9 1990

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Replacement of Contaminated Soil and Debris
Treated under a Treatability Variance

FROM: Sylvia K. Lowrance, Director
Office of Solid Waste

Handwritten signature of Sylvia K. Lowrance in black ink.

TO: David Ullrich, Acting Director
Waste Management Division, Region V

This memorandum is in response to your correspondence of April 25, 1990, in which you requested guidance in relation to six specific questions dealing generally with how the RCRA land disposal restrictions may affect certain remedial situations. We apologize for the delay in responding to your request; however, it was necessary for us to insure consensus at Headquarters in order to address the questions you have posed. We offer the following response to those six questions:

1. Q: Can soil and debris which has been treated in a tank within the area of contamination (AOC) in accordance with a treatability variance be replaced within the area of contamination without meeting any additional 40 CFR Part 264 requirements?

A: If contaminated soil and debris is treated to meet standards specified in a treatability variance that has been approved by the Agency, the treated soil/debris may then be placed in any treatment, storage or disposal unit that is in compliance with RCRA Subtitle C. This could include an "area of contamination" (i.e., a RCRA landfill) that has been designated by the Regional Administrator for the purpose of remediating the facility or site. Thus, as a regulatory matter, there would be no real distinction between soil/debris that is treated to the standard(s) set in the treatability variance and then placed in another unit, as opposed to "pure" hazardous wastes that are treated to the applicable Part 268 standards, and placed in another unit, except as discussed in the response to Question #5 (concerning contaminated media which no longer contains any waste).

By stating in your question that the treated wastes are to be redeposited into the AOC, we assume there is an

implied question as to what design and operating standards would then be applicable to the AOC itself. This is discussed in our response to question #6, below.

2. Q: Has the policy set forth on Page 5.12 of the document Implementing the Land Disposal Restrictions, October 1989, been revised?

A: This policy has not been revised. The policy states that once an owner/operator receives a treatability variance, completes treatment, and has a treatment residual to be land disposed, the residue can be directed to any permitted or interim status unit.

3. Q: For the purpose of land disposal, is the residue of soil treated under a treatability variance to be distinguished from the residue of waste treated according to treatment standards?

A: No. See response to Question 1, above.

4. Q: For the purpose of land disposal, is the residue of soil treated under a treatability variance in a tank within the area of contamination to be distinguished from the residue of soil treated under a treatability variance in a tank outside of the area of contamination?

A: No. The location of the tank in relation to the "area of contamination" would not create a distinction as to how or where the treatment residuals could be land disposed. This assumes, of course, that the wastes have been treated to the standards specified in the treatability variance. A tank cannot be considered a part of the AOC (landfill), regardless of where it is physically located; thus, its location would have no bearing on the standards that would apply to management of the contaminated soils (or other hazardous wastes, for that matter) after they have been treated in the tank.

5. Q: Is a treatability variance for soil and debris to be considered in effect a delisting? Do the principles of the "contained in" policy for the treatment of contaminated ground water have any applicability to the treatment of contaminated soil and debris?

A: A treatability variance for soil/debris does not have the effect of a delisting approved for the waste. The treated residuals typically will still contain hazardous wastes, and thus must be managed as such. In contrast, when wastes are delisted they are generally no longer subject to Subtitle C regulation.

The "contained in" policy applies to ground water

and other contaminated media such as soil which are contaminated with listed hazardous wastes. Thus, if ground water or soil are treated such that concentrations of the listed wastes are at or below health based levels, the ground water or soil would no longer "contain" the hazardous wastes, and would therefore be no longer subject to Subtitle C regulation.

6. Q: If an AOC can be considered a RCRA unit for the purpose of closure, would an AOC ever be considered equivalent to a RCRA compliant unit for the purpose of disposal? (See page 6 of OSWER Directive 9234.2-04FS RCRA ARARs: Focus on Closure Requirements.)

A: As outlined in the cited ARARs manual, the AOC is a concept which can be applied in the context of remediation under CERCLA response actions or RCRA corrective actions. It is in many ways analogous to situations where two or more regulated surface impoundments would be treated as one unit in the context of closure of the impoundments.

When applied in the context of RCRA corrective actions or CERCLA remedial actions, the AOC concept would allow the Regional Administrator to designate a broadly contaminated contiguous area to be a RCRA "unit" (i.e., a landfill) for the purpose of implementing the remedy. In an existing landfill, the movement or consolidation of hazardous wastes within the designated area would not by itself trigger Subtitle C requirements (including the land disposal restrictions and the RCRA minimum technology requirements) since that movement or consolidation does not constitute "disposal" for Subtitle C purposes. If, however, wastes are excavated from the designated area, treated in another unit, and subsequently redeposited into the same area or unit, disposal has occurred, and the landfill would have to comply with applicable Part 264 or 265 requirements, including the LDRs, MTRs, closure standards (264.310), and the ground water monitoring requirements of Subpart F, Part 264 or 265.

The proposed Subpart S corrective action rule explains the AOC (described therein as the "corrective action management unit") concept in more detail. However, if you have more specific questions or issues regarding AOCs, we will be glad to work with you or your staff to resolve them.

If there are any questions on the above responses to your questions, please contact Dave Fagan (FTS 382-4497) or Judy

View Record DetailUNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

September 5, 1990

Richard G. Stoll
Freedman, Levy, Kroll & Simonds
Washington Square
1050 Connecticut Ave., N.W.
Washington, D.C. 20036-5366

Dear Mr. Stoll:

This is in response to your request for confirmation that certain activities do not require a hazardous waste management permit under the Resource Conservation and Recovery Act ("RCRA"). Specifically, you have asked whether movement of hazardous waste that does not constitute "land disposal" would nonetheless require a hazardous waste disposal permit. It would not.

Section 3005 of RCRA prohibits the operation of a hazardous waste treatment, storage or disposal facility without a permit. EPA has interpreted the term "disposal" for purposes of RCRA Subtitle C regulation to have the same meaning as the term "land disposal" as defined under Section 3004(k). 53 Fed. Reg. 51444 (December 21, 1988) (defining "treatment", "storage" and "disposal" under Subtitle C of RCRA); 55 Fed. Reg. 8759, 8760 (March 8, 1990). Moreover, EPA has interpreted "land disposal" under Section 3004(k) to include movement of hazardous waste into a unit, but not movement within the unit. 55 Fed. Reg. 8759, 8760 (March 8, 1990). As a result, movement of hazardous waste within a land disposal unit --- for instance, the transfer of waste from one part of a hazardous waste disposal unit to another part of that unit --- would not constitute "disposal" under Section 3005 and thus would not require a permit. See 55 Fed. Reg. 8760 (March 8, 1990) (earthmoving operations within a land disposal unit would not be subject to Subtitle C disposal requirements or permitting).

Note, however, that if such transfer were associated with land treatment activities, the unit may be subject to permit requirements as a hazardous waste treatment facility. In addition, the movement of waste within a unit would generally constitute "disposal" as defined under Section 1004(3) and thus be subject to Section 7003 authorities.

If you have further questions about this issue please feel free to contact me or Carrie Wehling of my staff.

Sincerely,

Lisa K. Friedman
Associate General Counsel
Solid Waste and Emergency
Response Division (LE-132S)

LAW OFFICES
FREEDMAN, LEVY, KROLL & SIMONDS

July 10, 1990

Lisa K. Friedman, Esq.
Associate General Counsel
U.S. EPA
LE-132S
Room 503, West Tower
401 M Street, S.W.
Washington, D. C. 20460

Dear Lisa:

I am seeking your confirmation that certain types of hazardous waste movement will not trigger the need for a disposal permit under RCRA. If you agree with my analysis and conclusions, I ask that you please send me a letter stating this.

EPA has recently explained in some detail how to determine whether various types of activities constitute "placement" for purposes of triggering land disposal restrictions (LDRs) under RCRA. EPA's interpretations may be found in (1) OSWER Directive 9347.3-05FS, July 1989, also known as "Superfund LDR Guide #5;" (2) the proposed NCP preamble of December 21, 1988, particularly at 53 Fed. Reg. 51444, and (3) the final NCP preamble of March 8, 1990, particularly at 55 Fed. Reg. 8758-60.

In these documents, the concept of "placement" within or outside an "Area of contamination" (AOC) is pivotal. Essentially, EPA has stated that the act of moving hazardous wastes within a single AOC will not be considered "placement" that triggers LDRs (unless such movement also includes placing the waste in a separate unit such as incinerator or tank within the AOC).

While these documents deal with placement in the LDR context, they do not generally address the equally important issue of whether certain activity triggers the need for a permit under RCRA. Based upon my review of the statute, EPA regulations, and various EPA preamble statements, I have the following conclusion: any moving of hazardous waste not placement for purposes of triggering LDRs similarly trigger the need for a RCRA disposal permit. My analysis follows.

First, RCRA §1004(3) defines "disposal" quite broadly, and goes well beyond active "placement" to include passive leaking, leaching, etc. The statutory requirement to obtain a permit, however, is not triggered merely by any such disposal. Rather RCRA §3005(a) requires only that disposal facilities have permits. See first sentence of §3005(a). The statute does not define the term "disposal facility." EPA's regulations, however, have defined this term consistently since 1980:

Disposal facility means a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure.

40 CFR 260.10 (emphasis added).

Even at this early stage of the analysis, one can detect the basis for my conclusion. "Placement" of waste is a key to the definition of a disposal facility, and a disposal facility is necessary to trigger the requirement for a disposal permit.

Recent EPA discussions provide strong support for this conclusion. In the final "first third" LDR preamble, EPA made the following statement in responding to a comment:

Thus, only facilities where hazardous waste is intentionally placed into land or water after November 19, 1980 require a RCRA disposal permit.

53 Fed. Reg. 31149, cols. 1-2, August 17, 1988 (emphasis added).

This statement may still beg the question whether EPA defines "placed" (or "placement") in the same way for both LDR-triggering and disposal permit-triggering purposes. In the final NCP preamble of March 8, 1990, however, EPA moves clearly in this direction:

Under RCRA section 1004(3), the term "disposal" is very broadly defined and includes any "discharge, deposit, injection, dumping, spilling, leaking, or placing" of waste into or any land or water. Thus, "disposal" (in a statutory, rather than the regulatory subtitle C meaning of the term) would include virtually any movement of waste, whether within a unit or across a unit boundary. In fact, the RCRA definition of "disposal" has been interpreted by numerous courts to include passive leaking, where no active management is involved (see, e.g., U.S. v. Waste Industries, Inc.

734 F.2d.159 (4th Cir. 1984)). However, Congress did not use the term "disposal" as its trigger for the RCRA land disposal restrictions, but instead specifically defined the new, and more narrow, term "land disposal" in section 3004(k). The broader "disposal" language continues to be applicable to RCRA provisions other than those in subtitle C. such as section 7003.

55 Fed. Reg. 8759, emphasis added.

In this passage, EPA makes quite clear that the broad definition of disposal in RCRA §1004(3) not only is inapplicable to LDRs but also is inapplicable throughout the entirety of Subtitle C. Instead, EPA relies on the term "placement" as it appears in RCRA §3004 (k) to define disposal for all purposes throughout Subtitle C. 55 Fed. Reg. 8759, col. 2.

If there were any further doubt about the linkage of the concept of "placement" in the LDR context and the concept of "placed" in the permit context, EPA appears to have resolved it in an example in the same preamble. After noting that certain movement of wastes within a unit would not be placement that triggers LDRs, EPA says that the requirement to obtain a RCRA permit would similarly not apply. 55 Fed. Reg. 8759-60.

I submit that all this points to only one logical conclusion: when one appropriately determines that a particular act is not placement for LDR purposes, such act will therefore not trigger the need for a disposal permit under RCRA.

I ask that you please confirm in writing the validity of my conclusion. I look forward to hearing from you.

Very truly yours,

Richard G. Stoll

FaxBack # 11950

Thursday
March 8, 1990

Environmental Protection Agency

Part II

**Environmental
Protection Agency**

40 CFR Part 300
National Oil and Hazardous Substances
Pollution Contingency Plan; Final Rule

requirements. Rather, given the need to ensure finality of remedy selection in order to achieve expeditious cleanup of sites, and given the length of time often required to design, negotiate, and implement remedial actions, EPA believes that this is the most reasonable interpretation of the statute.

As EPA discusses elsewhere in this preamble, one variation to this policy occurs when a component of the remedy was not identified when the ROD is signed. In that situation, EPA will comply with ARARs in effect when that component is identified (e.g., during remedial design), which could include requirements promulgated both before and after the ROD was signed. EPA notes that newly promulgated or modified requirements may directly apply or be more relevant and appropriate to certain locations, actions or contaminants than existing standards and, thus, may be potential ARARs for future responses.

It is important to note that a policy of freezing ARARs at the time of the ROD signing will not sacrifice protection of human health and the environment, because the remedy will be reviewed for protectiveness every five years, considering new or modified requirements at that point, or more frequently, if there is reason to believe that the remedy is no longer protective of health and environment.

In response to the specific comments received, EPA notes that under this policy, EPA does not intend that a remedy must be modified solely to attain a newly promulgated or modified requirement. Rather, a remedy must be modified if necessary to protect human health and the environment, newly promulgated or modified requirements contribute to that evaluation of protectiveness. For example, a new requirement for a chemical at a site may indicate that the cleanup level selected for the chemical corresponds to a cancer risk of 10^{-2} rather than 10^{-6} , as originally thought. The original remedy would then have to be modified because it would result in exposures outside the acceptable risk range that generally defines what is protective.

This policy that newly promulgated or modified requirements should be considered during protectiveness reviews of the remedy, but should not require a reopening of the ROD during implementation every time a new state or federal standard is promulgated or modified, was discussed in the preamble to the proposed rule (53 FR at 51440) but not in the rule section itself. For the reasons outlined above, EPA believes that this concept is critical to the expeditious and cost-effective

accomplishment of remedies duly selected under CERCLA and the NCP, and thus is appropriate for inclusion in § 300.430(f)(1)(iii)(B) of the final NCP. This will afford both the public and implementing agencies greater clarity as to when and how requirements must be considered during CERCLA responses, and thus will allow the CERCLA program to carry out selected remedies with greater certainty and efficiency. Of course, off-site CERCLA remedial actions are subject to the substantive and procedural requirements of applicable federal, state, and local laws at the time of off-site treatment, storage or disposal.

Final rule: EPA is adding the following language to the rule at § 300.430(f)(1)(ii)(B):

(B) On-site remedial actions selected in a ROD must attain those ARARs that are identified at the time of ROD signature or provide grounds for invoking a waiver under § 300.430(f)(1)(ii)(C)(3).

(7) Requirements that are promulgated or modified after ROD signature must be attained (or waived) only when determined to be applicable or relevant and appropriate and necessary to ensure that the remedy is protective of human health and the environment.

(2) Components of the remedy not described in the ROD must attain (or waive) requirements that are identified as applicable or relevant and appropriate at the time the amendment to the ROD or the explanation of significant differences describing the component is signed.

Name: Applicability of RCRA requirements.

Proposed rule: The preamble to the proposed rule discussed when RCRA subtitle C requirements will be applicable for site cleanups (53 FR 51443). It described the prerequisites for "applicability" at length, which are that: (1) The waste must be a listed or characteristic RCRA hazardous waste and (2) treatment, storage or disposal occurred after the effective date of the RCRA requirements under consideration (for example, because the activity at the CERCLA site constitutes treatment, storage, or disposal, as defined by RCRA).

The preamble explained how EPA will determine when a waste at a CERCLA site is a listed RCRA hazardous waste. It noted that it is often necessary to know the origin of the waste to determine whether it is a listed waste and that, if such documentation is lacking, the lead agency may assume it is not a listed waste.

The preamble discussed how EPA will determine that a waste is a characteristic hazardous waste under RCRA. It stated that EPA can test to

determine whether a waste exhibits a characteristic or can use best professional judgment to determine whether testing is necessary, "applying knowledge of the hazard characteristic in light of the materials or process used."

The preamble also discussed when a CERCLA action constitutes "land disposal," defined as placement into a land disposal unit under section 3004(k) of RCRA, which triggers several significant requirements, including RCRA land disposal restrictions (LDRs) and closure requirements (when a unit is closed). It equated an area of contamination (AOC), consisting of continuous contamination of varying amounts and types at a CERCLA site, to a single RCRA land disposal unit, and stated that movement within the unit does not constitute placement. It also stated that placement occurs when waste is redeposited after treatment in a separate unit (e.g., incinerator or tank), or when waste is moved from one AOC to another. Placement does not occur when waste is consolidated within an AOC, when it is treated in situ, or when it is left in place.

Response to comments: EPA received many comments on its discussion of when RCRA requirements can be applicable to CERCLA response actions. On the issue of compliance with RCRA in general, most of these commenters argued that RCRA requirements are not intended for site cleanup actions, that such compliance will result in delays and that RCRA requirements are often unnecessary to protect human health and the environment at CERCLA sites. Other commenters argued, however, that EPA is trying to avoid compliance with RCRA requirements. Most of the comments, however, focused on when LDRs are applicable to CERCLA actions and on EPA's discussion of what actions associated with remediation trigger LDRs.

Some commenters opposed EPA's interpretation of "land disposal" or "placement" as too lenient, believing that EPA is trying to avoid compliance with RCRA laws, particularly LDRs. These commenters argued that LDRs should be applicable when hazardous wastes are managed, excavated, or moved in any way. One argued that ARARs waivers are available to address situations when the LDR levels cannot be achieved and should be used as necessary, rather than trying to narrowly define the universe of ARARs to avoid waivers. This commenter was also concerned with EPA's use of the term "unit," calling it an inappropriate concept for Superfund sites because it

will allow the excavation and redeposition of waste within very large areas without ever meeting RCRA design and operating standards and LDR. One commenter asserted that EPA concerns on LDRs stem from an unjustifiable belief that LDR cleanup levels cannot be achieved.

Other commenters believed that the definition of "placement" should provide more flexibility. One asserted that replacement of treated residuals in the proximate area should not constitute placement. The commenter argued that Congress intended to address, preventively or prospectively, the original act of disposal, and that an innocent government or public entity should not be required to assume the entire environmental responsibility of the original disposers. The commenter also argued that establishing that replacement of treated waste triggers LDRs will be a serious disincentive to treating wastes. Some commenters argued that LDRs should not be relevant and appropriate where the CERCLA waste to be disposed on land is merely similar in composition to RCRA banned waste.

Other commenters argued that LDRs are inappropriate for CERCLA remedial actions. They noted an inherent conflict between LDRs, which require treatment to BDAT levels, and the CERCLA process, and claimed that LDRs will supplant CERCLA's "carefully articulated and balanced approach to remedy selection." Commenters asserted that compliance with LDRs will create technical problems because of differences between CERCLA wastes and those evaluated for LDRs. The solutions recommended by these commenters primarily focused on narrowing or eliminating RCRA applicability, but included suggestions for creating treatability groups for CERCLA-type waste and seeking legislative waivers from LDRs, e.g., a waiver from LDRs for Superfund actions at NPL sites.

One commenter believed that the concept of "unit" is not readily transferable to CERCLA sites due to the age and former uses of many of the sites undergoing remediation. Given the ramifications of LDRs, the commenter argued, it may be more reasonable to create a presumption of treating the entire site as one "unit," even if remediation includes a series of operable units.

Some comments were received on EPA's statements on consolidating waste. One stated that consolidation of small amounts of waste across units should not be considered placement, because that will lead to less

environmentally sound and less cost-effective solutions, particularly if LDRs are triggered. Another recommended that EPA should allow consolidation of small volumes of waste anywhere on-site, for purposes of storage or treatment, without triggering otherwise applicable RCRA standards. Another commenter requested clarification that consolidation within a unit included normal earthmoving and grading operations.

1. *Actions constituting land disposal.* EPA disagrees with commenters who considered EPA's interpretation of the definition of "land disposal" under RCRA section 3004(k) to be too narrow. These commenters argued that any movement of waste should be considered "placement" of waste, and thus "land disposal" under RCRA section 3004(k).

The definition of "land disposal" is central to determining whether the RCRA LDRs are applicable to a hazardous waste which is being managed as part of a CERCLA response action, or RCRA closure or corrective action. The term "land disposal" is defined under RCRA section 3004(k) as including, but not limited to, "any placement of such hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave." The terms "landfill," "surface impoundment," and the others, refer to specific types of units defined under RCRA regulations. Thus, Congress generally defined the scope of the LDR program as the placement of hazardous waste in a land disposal unit, as those units are defined under RCRA regulations.

EPA has consistently interpreted the phrase "placement * * * in" one of these land disposal units to mean the placement of hazardous wastes into one of these units, not the movement of waste within a unit. See e.g., 51 FR 40577 (Nov. 7, 1986) and 54 FR 41566-67 (October 10, 1989) (supplemental proposal of possible alternative interpretations of "land disposal"). EPA believes that its interpretation that the "placement * * * in" language refers to a transfer of waste into a unit (rather than simply any movement of waste) is not only consistent with a straightforward reading of section 3004(k), but also with the Congressional purpose behind the LDRs. The central concern of Congress in establishing the LDR program was to reduce or eliminate the practice of disposing of untreated hazardous waste at RCRA hazardous waste facilities. The primary aim of Congress was prospective rather than

directed at already-disposed waste within a land disposal unit. See 51 FR 40577 (Nov. 7, 1986). Moreover, interpreting section 3004(k) to require application of the LDRs to any movement of waste could be difficult to implement and could interfere with necessary operations at an operating RCRA facility. For instance, when hazardous waste is disposed of in a land disposal unit at an operating RCRA facility, there may well be some "movement" of the waste already in the unit. Under the commenters' approach, such movement without pretreatment of the moved waste could be in violation of the LDRs. Thus, under the commenters' interpretation, virtually no operational activities could occur at any RCRA land disposal unit containing hazardous waste without pretreatment of any waste disturbed by the operation: clearly an infeasible approach.

EPA also believes that this interpretation of section 3004(k) is supported by the legislative history for this provision (see 129 Cong. Rec. H8139 (Oct. 6, 1983) (statement of Rep. Breaux)), and by the Congressional choice to define "land disposal" more narrowly for purposes of application of the LDRs than the already-existing term "disposal", which has a much broader meaning under RCRA. Under RCRA section 1004(3), the term "disposal" is very broadly defined and includes any "discharge, deposit, injection, dumping, spilling, leaking, or placing" of waste into or on any land or water. Thus, "disposal" (in a statutory, rather than the regulatory subtitle C meaning of the term) would include virtually any movement of waste, whether within a unit or across a unit boundary. In fact, the RCRA definition of "disposal" has been interpreted by numerous courts to include passive leaking, where no active management is involved (see, e.g., *U.S. v. Waste Industries, Inc.*, 734 F.2d 159 (4th Cir. 1984)). However, Congress did not use the term "disposal" as its trigger for the RCRA land disposal restrictions, but instead specifically defined the new, and more narrow, term "land disposal" in section 3004(k). The broader "disposal" language continues to be applicable to RCRA provisions other than those in subtitle C, such as section 7003. Thus, for the reasons outlined above, EPA believes that the existing interpretation, that movement of waste within a unit does not constitute "land disposal" for purposes of application of the RCRA LDRs, is reasonable.

With respect to the commenter who asked whether normal earthmoving and grading operations within a land disposal unit constitute "placement into

the unit", under EPA's interpretation of RCRA section 3004(k), such activity would not be "placement into the unit" and thus the RCRA LDRs and other subtitle C disposal requirements would not be applicable (nor would the requirement to obtain a permit under RCRA or minimum technology requirements in RCRA section 3004(o) apply).

Given this interpretation of section 3004(k), EPA does not believe that it is necessary to invoke ARAR waivers of LDRs for any movement of waste within a unit, which was the alternative suggested by the commenters. Nor does EPA believe that the widespread use of such waivers would be practical or desirable. 54 FR 41568-69 (October 10, 1989).

EPA also does not fully agree with the commenters who argued that the RCRA concept of "unit" does not apply to CERCLA sites. The commenters who criticized the application of the RCRA "unit" to the CERCLA area of contamination for purposes of section 3004(k) believed it to be either too broad, allowing large areas to escape the LDRs, or too narrow, not allowing entire CERCLA sites to be considered a single "unit". In contrast to hazardous waste management units at a RCRA facility, CERCLA sites often do not involve discrete waste management units, but rather involve land areas on or in which there can be widespread areas of generally dispersed contamination. Thus, determining the boundaries of the RCRA land disposal "unit," for which section 3004(k) would require application of the LDRs at these sites, is not always self-evident.

EPA generally equates the CERCLA area of contamination with a single RCRA land-based unit, usually a landfill. 54 FR 41444 (December 21, 1989). The reason for this is that the RCRA regulatory definition of "landfill" is generally defined to mean a land disposal unit which does not meet the definition of any other land disposal unit, and thus is a general "catchall" regulatory definition for land disposal units. As a result, a RCRA "landfill" could include a non-discrete land area on or in which there is generally dispersed contamination. Thus, EPA believes that it is appropriate generally to consider CERCLA areas of contamination as a single RCRA land-based unit, or "landfill". However, since the definition of "landfill" would not include discrete, widely separated areas of contamination, the RCRA "unit" would not always encompass an entire CERCLA site.

Waste consolidation from different units or AOCs at a CERCLA site are

subject to any applicable RCRA requirements regardless of the volume of the waste or the purpose of the consolidation. Thus, EPA disagrees with those commenters that asserted that small volumes of hazardous waste at a CERCLA site can be consolidated anywhere on-site for storage or treatment purposes without consideration of any applicable RCRA requirements. Such requirements may, however, be subject to ARAR waivers in appropriate circumstances.

The remaining comments received with respect to EPA's interpretation of section 3004(k) discussed the achievability of LDR cleanup levels, questioned the appropriateness of applying the LDRs to remedial actions, and requested more flexibility regarding the LDRs. These comments were the basis for EPA's supplemental notice and proposed reinterpretation of section 3004(k), which is discussed below.

In light of the numerous comments received on the interpretation of "land disposal" in RCRA section 3004(k), as it relates to removal, treatment, and redeposition of hazardous wastes generated by CERCLA and RCRA remedial and other activities, and in view of the important policy decisions that RCRA LDRs pose for the CERCLA and RCRA programs, EPA decided to separately and more fully discuss the issue, the interpretation outlined in the proposed NCP, and possible alternative interpretations of "land disposal". In a supplemental notice to the proposed NCP (54 FR 41568 (Oct. 10, 1989)), EPA outlined several technical, policy, and legal issues concerning LDR applicability to removal, treatment, and redeposition of hazardous wastes, and requested comment on two alternative interpretations of "land disposal". The first alternative would allow the excavation and replacement of previously disposed hazardous wastes in the same unit or area of contamination; since the same wastes would remain in the same unit, this activity would not constitute "land disposal". Under the second alternative, hazardous wastes could be excavated and redeposited either within the original unit or area of contamination, or elsewhere at the site in a new or existing unit. These interpretations would allow greater flexibility in remedial decision-making, in the context of both CERCLA actions and RCRA corrective actions and closures.

On November 6 and 7, 1989, EPA held a forum on contaminated soil and groundwater ("Contaminated Media Forum") to provide an opportunity for interested groups to further address these issues. The Contaminated Media

Forum was attended by representatives from EPA, states, environmental groups, Congress, and the regulated community. A summary of the concerns raised and suggested solutions appears in the public docket for this rulemaking.

2. Selection of LDR treatment standards. Upon further examination, EPA believes that many of the problems discussed in the supplemental notice, and raised by commenters, result from treatment standards developed pursuant to the RCRA LDR program that are generally inappropriate or infeasible when applied to contaminated soil and debris. As discussed in the October 1989 notice, EPA's experience under CERCLA has been that treatment of large quantities of soil and debris containing relatively low levels of contamination using LDR "best demonstrated available technology" (BDAT) is often inappropriate. 54 FR 41567, 41568 (October 10, 1989). EPA noted that:

Experience with the CERCLA program has shown that many sites will have large quantities—in some cases, many thousands of cubic meters—of soils that are contaminated with relatively low concentrations of hazardous wastes. These soils often should be treated, but treatment with the types of technologies that would meet the standard of BDAT may yield little if any environmental benefit over other treatment based remedial options.

54 FR 41568 (October 10, 1989). Examples of these and other situations reflecting EPA's experience concerning the inappropriateness of incinerating contaminated soil and debris are included in the record for this rule. In addition, as discussed below, EPA has experienced problems in achieving the current noncombustion LDRs for contaminated soil and debris. Based on EPA's experience to date and the virtually unanimous comments supporting this conclusion, EPA has determined that, until specific standards for soils and debris are developed, current BDAT standards are generally inappropriate or unachievable for soil and debris from CERCLA response actions and RCRA corrective actions and closures. Instead, EPA presumes that, because contaminated soil and debris is significantly different from the wastes evaluated in establishing the BDAT standards, it cannot be treated in accordance with those standards and thus qualifies for a treatability variance from those standards under 40 CFR 268.44.

Accordingly, persons seeking a treatability variance from LDR treatment standards for contaminated soil and debris do not need to demonstrate on a case-by-case basis

that BDAT standards for prohibited hazardous wastes are inappropriate or not achievable. As an alternative, persons seeking a treatability variance for soil and debris may meet the appropriate levels or percentage reductions in the currently available guidance (Superfund LDR Guidance #6A, "Obtaining a Soil and Debris Treatability Variance for Remedial Actions", EPA OSWER Directive 9347.3-06FS, July 1989). In the context of Superfund Records of Decision (ROD), this means that EPA will generally include such a variance in the proposed plan and ROD when treatment of contaminated soil and debris is an element of the remedial action. Further, EPA intends to issue guidance supplementing the Superfund Guidance #6A to expedite the processing of such treatability variances in conjunction with established remedy selection procedures.

Treatment standards for prohibited hazardous wastes are based on performance achievable by application of BDAT. 51 FR at 40578 (Nov. 7, 1986). BDAT, however, is not a technology-forcing program, nor does it always require the lowest possible levels of waste treatment achievable with any technology. See 130 Cong. Rec. S9178 (July 25, 1984) (Statement of Sen. Chafee introducing the amendment that became RCRA section 3004(m)). Rather, what Congress contemplated is a scheme whereby hazardous wastes are to be treated using the technology (or technologies) generally considered to be suitable for the waste and that substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration. *Id.*; see also H. Rep. No. 198, 98th Cong. 1st Sess. 33; S. Rep. No. 284, 98th Cong. 1st Sess. 16-17.

EPA's rules developing treatment standards likewise recognize that the treatment standards be based on appropriate technologies even if more stringent treatment methods are technically feasible. 51 FR at 40588-592 (Nov. 7, 1986). For example, EPA has generally based treatment standards for organic contaminants in wastewaters (normally defined as aqueous materials containing less than 1% total organic compound (TOC) and total suspended solids (TSS)) on technologies other than incineration (or other combustion), even though such organics could be treated to lower levels if the wastewaters were incinerated. This is because incineration (or other combustion) is not normally an appropriate technology for wastewaters, notwithstanding its capability of performing to lower levels than conventional wastewater treatment.

More generally, EPA's rules on treatability variances recognize that prohibited wastes be treated by appropriate technologies. The rules thus state that a petitioner may request a treatability variance "where the treatment technology is not appropriate to the waste". 40 CFR 268.44(a).

Similarly, treatability variances are warranted where the applicable numerical treatment standard for the waste cannot be achieved. 40 CFR 268.44(a). For this reason, EPA has found that current BDAT standards based on noncombustion technology also warrant a treatability variance for soil and debris. The complex matrices often present in soil and debris may reduce the effectiveness of stabilization and other noncombustion technologies in treating these wastes. For example, the presence of oil and grease or sulfites in the mixture may substantially interfere with the stabilization process. More generally, stabilization is a complex treatment process and its application to unique soil and debris mixtures is not yet well understood. EPA's development of alternative treatment levels in the Superfund Guidance #6A noted above was based on available data for soil and debris mixtures and thus is more tailored with respect to achievability than the existing BDAT standards for these waste mixtures. The difference between these levels and the existing BDAT standards for these wastes demonstrates the feasibility of achieving the current BDAT standards for soil and debris. These alternative numbers thus support EPA's presumption that the BDAT standards are generally inappropriate or not achievable for soil and debris.

This presumption is supported by the commenters on the December, 1988 and October, 1989 proposals. EPA received numerous comments from a wide range of commenters discussing the inappropriateness or infeasibility of applying BDAT standards to contaminated soil and debris. The principal reason given for the inappropriateness of the current BDAT standards was the complexity of soil and debris mixtures and the interference with treatability caused by unique matrices of contaminants in the soil and debris. Moreover, commenters noted that wastestream-derived BDATs have not been fully demonstrated for many contaminated soils and debris and that the presence of trace quantities of one waste in soil and debris may inappropriately require use of a treatment method that would not otherwise be applicable to the other wastes present. These comments were

further supported by comments made at the Contaminated Media Forum.

The Agency's experience also supports this conclusion of general inappropriateness or infeasibility of current BDAT standards for soil and debris. For example, as indicated above EPA has developed alternative treatment levels for soil and debris in the Superfund #6A guidance which are based on the application of the specific treatment technologies to soil and debris, rather than industrial process wastes. Thus, these alternative levels, which are better tailored to the treatability of the complex soil and debris mixtures found at Superfund sites, reflect Agency experience concerning the inappropriateness or infeasibility of current BDAT for soil and debris.

EPA has long indicated its intention to develop separate treatment standards for contaminated soil and debris (without regard, incidentally, to the origin of such waste, so that the treatment standards would apply whether the soil and debris is generated from a CERCLA action or some other activity). 51 FR 40577 (Nov. 7, 1986). Although the Agency has already expended considerable effort on such standards, it has not been able to propose or promulgate regulations because of the more pressing need to implement the rest of the land disposal prohibition statutory provisions before the various statutory deadlines. See RCRA sections 3004 (d), (e), and (g). EPA does not expect that the same level of treatment performance will be required for soil and debris as for industrial process wastes.

In the interim period until EPA promulgates these treatment standards, contaminated soil and debris are subject to the same treatment standards as the prohibited hazardous wastes that they contain, unless a variance is appropriate and is approved according to 40 CFR 268.44. 53 FR at 31146-149 (Aug. 17, 1988) and *Chemical Waste Management v. EPA*, 869 F.2d 1528, 1535-46, 1538-40 (D.C. Cir. 1989). Where standards for the underlying waste are based on the performance of incineration, EPA has granted national capacity variances for the contaminated soils and debris because there is insufficient national capacity to treat these wastes. 40 CFR 268.30(c), 268.31(a)(1), 268.32(d)(1), 268.33(b), and 268.34(d). Where BDAT treatment standards are in effect, it is possible to petition for a treatability variance based on the inappropriateness of the BDAT standards to treat the contaminated soil and debris. 40 CFR 268.44(a). As discussed earlier, EPA

believes that it is unnecessary for petitioners (or the lead Agency in CERCLA response actions) to make site-specific demonstrations that BDAT standards are inappropriate for contaminated soil and debris. The numerous comments and Agency experience supporting a presumption that the BDAT standards are inappropriate or not achievable is clearly warranted at this time because the criteria in 40 CFR 268.44 for treatability variances are generally met for soil and debris. As a result, under EPA's established treatability variance procedures (40 CFR 268.44), variance applications for contaminated soil and debris do not need to demonstrate that the physical and chemical properties differ significantly from wastes analyzed in developing the treatment standard and that, therefore, the waste cannot be treated to specified levels or by specified methods. Petitions need only focus on justifying the proposed alternative levels of performance, using existing interim guidance containing suggested treatment levels for soil and debris (Superfund LDR Guidance #6A, "Obtaining a Soil and Debris Treatability Variance for Remedial Actions", EPA OSWER Directive 9347.3-06FS, July 1989) as a benchmark.

Although the presumption is that BDAT standards are not appropriate for soil and debris, there may be special circumstances where EPA determines that the existing BDAT standards are appropriate for contaminated soils and debris at a particular site, such as where high levels of combustible organics in soil are present. In these circumstances, the Agency would make a determination that treatment to the BDAT standards was appropriate and would require such treatment.

EPA regulations provide that treatability variances may be issued on a site-specific basis. 40 CFR 268.44(h).²²

²² In light of today's determination, the application of this rule requires clarification in two respects. First, although EPA is today establishing a general presumption that BDAT standards are inappropriate or not achievable for treating soil and debris, the Agency does not believe that this presumption triggers the rulemaking variance procedures in 40 CFR 268.44(a). Even with the presumption, treatment levels will be determined on a case-by-case basis, and commenters may submit information contending that the presumption is not applicable in a particular case. Thus, it is EPA's view that the site-specific, non-rulemaking procedures in 40 CFR 268.44(h) are entirely appropriate. See 53 FR 31199-31200 (August 17, 1988).

Second, EPA does not interpret its site specific variance procedures as invariably requiring applicants to demonstrate that they cannot meet applicable treatment levels or methods. The first sentence of 40 CFR 268.44(h) makes it clear that an applicant may make one of two demonstrations to qualify for a variance: he may show either that he

Thus, they may be approved simultaneously with the issuance of a RCRA permit, the approval of a RCRA closure plan, or the selection of a remedy in a CERCLA response action in the ROD. In the case of an on-site CERCLA response action, the procedural requirements of the variance process do not apply. See CERCLA sections 121(e)(1) and 121(d)(2). The variance decision will be made as part of EPA's remedy selection process, during which data justifying alternative treatment levels will be included in the administrative record files, and public participation opportunities and Agency response to comment will be afforded as appropriate under this rule.

In EPA's view, the Agency's determination that the BDAT standards are generally inappropriate for contaminated soil and debris addresses many of the practical concerns raised by commenters in the supplemental notice on the Agency's interpretation of the term "land disposal". For this reason, and because EPA has had insufficient time to review and evaluate the many lengthy and complex issues raised by commenters on the supplemental notice, EPA is deferring any final decision to modify that interpretation. (EPA will respond to comments on the alternatives in the supplemental notice when the Agency makes a final decision on the proposed reinterpretation of land disposal.) Until a final decision is made, the interpretation announced in the preamble to the proposed NCP and discussed in section 1 above will remain in effect.

Final rule: There is no rule language on this issue.

Name: Determination of whether a waste is a hazardous waste.

Proposed rule: The preamble to the proposed rule discussed how to determine whether hazardous waste regulated under RCRA Subtitle C was present at a site (53 FR 51444).

Response to comments: Some commenters raised questions about EPA's discussion about determining whether a waste exhibits a hazardous characteristic. One argued that EPA cannot assume a waste is not a characteristic waste in the absence of testing and should therefore adopt a liberal and inclusive approach to

cannot meet a treatment standard, or that a treatment method (or the method underlying the standard) is inappropriate for his waste. The final sentence of § 268.44(h), identifying the showing an applicant must include in his variance application, on its terms applies only to applications submitted under the first criterion. EPA's presumption, however, applies to soil and debris regardless of which of the two types of variances apply.

determining whether RCRA applies to avoid expensive and time-consuming testing. Another commenter asked for clarification on who was responsible for applying "process knowledge" to determine whether a waste was a hazardous waste in the absence of testing. The commenter asserted that, under RCRA, EPA exercises prosecutorial discretion if a generator, acting in good faith, decides incorrectly that his waste is not hazardous. EPA notes that when it determines that there is a violation there will normally be some kind of enforcement action taken; the level and type of prosecutorial response will depend on a number of factors, for example, the size of the company, the significance of the violation, the intent, etc.

Under RCRA rules, a generator is not required to test, but may use knowledge of the waste and its constituents to judge whether the waste exhibits a characteristic. (See 40 CFR 262.11(c).) EPA believes this should also apply if the lead agency or PRP at a CERCLA site is the "generator." EPA wants to make clear, however, that a decision that a waste is not characteristic in the absence of testing may not be arbitrary, but must be based on site-specific information and data collected on the constituents and their concentrations during investigations of the site. Based on site data, it will be very clear in some cases that a waste cannot be characteristic; for example, if a waste does not contain a constituent regulated as EP toxic, a decision that the waste does not exhibit this characteristic can reliably be made without testing for EP toxicity. EPA does not expect to undertake testing when it can otherwise be determined with reasonable certainty whether or not the waste will exhibit a characteristic.

In response to the second concern, the determination whether a waste is a hazardous waste may be made by EPA, the state, or a PRP, depending on the nature of the action. EPA will take any necessary or appropriate action if decisions about the hazardous nature of the waste are in error or are made without proper basis.

Several commenters discussed the question of whether RCRA requirements can be applicable to RCRA hazardous waste disposed of before the RCRA requirements went into effect in 1980. One commenter argued that they could not be, unless the waste exhibited a characteristic at the time of the CERCLA action. However, as one commenter noted, EPA has consistently maintained in enforcement actions that RCRA requirements apply to any waste

materials disposed of prior to 1980 when those materials are managed or disposed of today. EPA agrees with this latter comment and believes that this policy applies to CERCLA actions as well. This was also upheld in a recent DC Court of Appeals decision, *Chemical Waste Management v. EPA*, 869 F.2d 1526 (DC Cir. 1989). RCRA requirements can apply when the CERCLA action constitutes treatment, storage or disposal of RCRA hazardous waste. Note that RCRA requirements may also be relevant and appropriate to pre-1980 waste.

One commenter suggested that EPA allow consolidation, for purposes of storage or treatment, of small volumes of wastes without triggering RCRA standards. In response, while EPA appreciates the concerns with meeting substantive storage and treatment requirements for small amounts of waste, EPA believes that waste should be managed according to standards when those standards are ARARs unless a waiver (such as for interim measures) can be justified. It should be noted that RCRA may not be applicable for small quantity generators, as defined under RCRA; however, a determination would still have to be made about whether any RCRA requirements would be relevant and appropriate to small quantities.

Final rule: There is no rule language on this issue.

Name: When RCRA requirements are relevant and appropriate to CERCLA actions.

Proposed rule: The preamble to proposed § 300.400(g)(2)(i), identification of applicable or relevant and appropriate requirements, criteria for relevant and appropriate, stated that RCRA requirements may be relevant and appropriate when a waste is similar in composition to a RCRA listed waste (53 FR 51446).

Response to comments: 1. *RCRA requirements as relevant and appropriate for wastes similar to RCRA hazardous waste.* Several commenters expressed concern that RCRA requirements may be potentially relevant and appropriate for waste that is not a RCRA hazardous waste, but is similar to a RCRA hazardous waste. Commenters argued that virtually any waste or CERCLA substance is similar to a RCRA hazardous waste in some way, either in chemical composition, in toxicity, in mobility, or in persistence, and were concerned that this policy represented an enormous expansion of the RCRA program.

EPA believes that RCRA requirements can potentially be relevant and

appropriate to wastes other than those that are known to be hazardous waste. For example, some information or records must be available that identify the source of the waste in order to determine that the waste is a listed hazardous waste. As a result, two separate wastes could be identical in composition, but only one identified as a RCRA hazardous waste because manifests are available that identify it as a listed waste. RCRA requirements would be applicable for the manifested waste, but not for the other, even though the two wastes are physically the same. EPA believes that RCRA requirements can be potentially relevant and appropriate when the waste cannot be definitively identified as a listed hazardous waste.

EPA wants to emphasize, however, that a number of the factors identified in § 300.400(g)(2) should be considered in determining whether a RCRA requirement is relevant and appropriate. The similarity of the waste to RCRA hazardous waste or the presence of a RCRA constituent alone does not create a presumption that a RCRA requirement will be relevant and appropriate. Nor is it always necessary or useful to conduct an in-depth, constituent-by-constituent comparison of a CERCLA waste with RCRA hazardous wastes, because most RCRA requirements are the same regardless of the specific composition of the hazardous waste. Indeed, the statute requires attainment of those requirements that are relevant and appropriate under the circumstances of the release. Thus, the decision about whether a RCRA requirement is relevant and appropriate is based on consideration of a variety of factors, including the nature of the waste and its hazardous properties, other site characteristics, and the nature of the requirement itself.

EPA anticipates that it will often find some RCRA requirements to be relevant and appropriate at a site and others not, even for the same waste. This is because certain waste characteristics shared with RCRA hazardous wastes may be more important than others when evaluating whether a given requirement is relevant and appropriate. For example, the mobility of the waste, among other factors, may be a key concern in evaluating whether the RCRA requirement that the cap used in closing a landfill be less permeable than the bottom liner (40 CFR 264.310(a)(5)) is relevant and appropriate. Other properties of the waste might be more important in evaluating the relevance and appropriateness of other RCRA requirements.

2. *RCRA requirements as relevant and appropriate for mining wastes.* Several commenters asked EPA to state in the NCP or its preamble that RCRA subtitle C requirements will not be relevant and appropriate to mining wastes. They noted that, recognizing the unique characteristics of mining wastes, Congress exempted certain mining wastes from regulation as hazardous wastes under RCRA until EPA completed studies on these wastes to determine specifically whether such regulation was appropriate. On July 3, 1986, EPA published its determination for beneficiation and extraction wastes which found that regulation under subtitle C was not warranted for these wastes, because EPA believes such requirements, " * * * if universally applied, would be either unnecessary to protect human health and the environment, technically infeasible, or economically impracticable to implement." (51 FR 24496.) The commenters argue, therefore, that subtitle C requirements, which are not legally applicable to these mining wastes, also cannot be relevant and appropriate, since EPA has formally made the determination that these requirements are not appropriate for such wastes.

The commenters emphasized that mining waste sites differ in a number of ways from industrial wastes sites. They argue that mining wastes are of enormous volume and generally of lower toxicity, that the sites typically cover extremely large areas and may present less hazard because they tend to be in drier climates, reducing leaching potential, or contain constituents that are less mobile. For these reasons, which formed the basis of EPA's decision under RCRA, RCRA requirements would not be relevant and appropriate for mining sites remediated under CERCLA. Commenters requested that EPA give guidance specifically in the NCP to ensure consistent decisions on ARARs at mining sites.

EPA agrees that RCRA requirements for hazardous waste will not be applicable to those mining wastes excluded from regulation by the statute. (Note, however, that EPA has recently removed certain mineral processing wastes from the mining waste exclusion, making them subject to subtitle C, 54 FR 36592, September 1, 1989; 55 FR 2322, January 23, 1990. EPA has also promulgated regulations listing certain wastes from mineral processing operations as hazardous, 53 FR 35412, September 13, 1988.) In addition, EPA agrees that RCRA subtitle C requirements will generally not be

relevant and appropriate for those mining wastes for which EPA has specifically determined that such regulation is not warranted. The reason is that the factors that caused EPA not to regulate these wastes as hazardous include many of the same factors that EPA considers in judging whether a requirement is relevant and appropriate at a particular site.

However, EPA does not agree that RCRA requirements for hazardous waste can never be relevant and appropriate for CERCLA remediation of mining sites. In its determination for beneficiation and extraction wastes, EPA found that, "if universally applied," subtitle C requirements would not be appropriate for mining wastes. (51 FR 24500.) However, a decision about whether a requirement is relevant and appropriate is made on a case-by-case basis, based on the specific characteristics of the site and the release. There may be some sites where the site circumstances differ significantly from those which caused EPA to decide that subtitle C regulation is not warranted and where certain requirements are appropriate and well-suited to the site or portions of the site. In such a situation, some RCRA requirements may be relevant and appropriate.

EPA is developing regulations under subtitle D of RCRA designed specifically for mining wastes that will not be regulated as hazardous waste. When promulgated, these regulations are likely to be either applicable or relevant and appropriate for remediation of mining sites.

Another commenter stated that EPA needs to develop a long-term initiative to simplify the use of RCRA ARARs. EPA recognizes that the interaction between the two laws can be very complicated and continues to work to resolve and give guidance on issues involving CERCLA compliance with RCRA laws.

Final rule: There is no rule language on this issue.

Name: Examples of potential federal and state ARARs and TBCs.

Potential ARARs and TBCs include, but are not limited to, the following:

1. *Federal requirements which may be potential applicable or relevant and appropriate requirements.* i. EPA's Office of Solid Waste administers, inter alia, the Resource Conservation and Recovery Act of 1976, as amended, (42 U.S.C. 6901). Potentially applicable or relevant and appropriate requirements pursuant to that Act are:

a. *Open Dump Criteria*—Pursuant to RCRA subtitle D criteria for

classification of solid waste disposal facilities (40 CFR part 257).

Note: Only relevant to nonhazardous wastes.

b. RCRA subtitle C requirements governing standards for owners and operators of hazardous waste treatment, storage, and disposal facilities: (40 CFR part 264, for permitted facilities, and 40 CFR part 265, for interim status facilities):

(1) Ground-Water Protection and Monitoring (40 CFR 264.90–264.109).

(2) Closure and Post Closure (40 CFR 264.110–264.120).

(3) Containers (40 CFR 264.170–264.178).

(4) Tanks (40 CFR 264.190–264.199).

(5) Surface Impoundments (40 CFR 264.220–264.249).

(6) Waste Piles (40 CFR 264.250–264.269).

(7) Land Treatment (40 CFR 264.270–264.299).

(8) Landfills (40 CFR 264.300–264.339).

(9) Incinerators (40 CFR 264.340–264.999).

(10) Land Disposal Restrictions (40 CFR 268.1–268.50).

(11) Dioxin-containing wastes (50 FR 1978).

(12) Standards of performance for storage vessels for petroleum liquids (40 CFR part 60, subparts K and K(a)).

(13) Codification rule for 1984 RCRA amendments (50 FR 28702, July 15, 1985; 52 FR 45788, December 1, 1987).

ii. EPA's Office of Water administers several potentially applicable or relevant and appropriate statutes and regulations issued thereunder:

a. Section 14.2 of the Public Health Service Act as amended by the Safe Drinking Water Act, as amended, (42 U.S.C. 300(f)).

(1) Maximum Contaminant Levels (for all sources of drinking water exposure). (40 CFR 141.11–141.16).

(2) Maximum Contaminant Level Goals (40 CFR 141.50–141.52, 50 FR 46936).

(3) Underground Injection Control Regulations (40 CFR parts 144, 145, 146, 147).

b. Clean Water Act, as amended, (33 U.S.C. 1251).

(1) Requirements established pursuant to sections 301, 302, 303 (including state water quality standards), 304, 306, 307, (including federal pretreatment requirements for discharge into a publicly owned treatment works), 308, 402, 403 and 404 of the Clean Water Act. (33 CFR parts 320–330, 40 CFR parts 122, 123, 125, 131, 230, 231, 233, 400–469).

(2) Available federal water quality criteria documents are listed at 45 FR 79318, November 28, 1980; 49 FR 5831,

February 15, 1984; 50 FR 30784, July 29, 1985; 51 FR 8012, March 7, 1986; 51 FR 22978, June 28, 1986; 51 FR 43865, December 3, 1986; 52 FR 6213, March 2, 1987; 53 FR 177, January 5, 1988; 53 FR 19028, May 28, 1988; 53 FR 33177, August 30, 1988; 54 FR 19227, May 4, 1989.

(3) Clean Water Act section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR part 230).

(4) Procedures for Denial or Restriction of Disposal Sites for Dredged Material (Clean Water Act section 404(c) Procedures, 33 CFR parts 320–330, 40 CFR part 231).

c. Marine Protection, Research, and Sanctuaries Act (33 U.S.C. 1401). (1) Incineration at sea requirements (40 CFR parts 220–225, 227–229. See also 40 CFR 125.120–125.124).

iii. EPA's Office of Pesticides and Toxic Substances administers the Toxic Substances Control Act (15 U.S.C. 2601). Potentially applicable or relevant and appropriate requirements pursuant to that Act are:

PCB requirements generally: 40 CFR part 761; Manufacturing, Processing, Distribution in Commerce, and Use of PCBs and PCB Items (40 CFR 761.20–761.30); Markings of PCBs and PCB Items (40 CFR 761.40–761.45); Storage and Disposal (40 CFR 761.60–761.79); Records and Reports (40 CFR 761.180–761.185, 761.187 and 761.193). See also 40 CFR 129.105, 750.

iv. EPA's Office of External Affairs administers potentially applicable or relevant and appropriate requirements regarding requirements for floodplains and wetlands (40 CFR part 6, Appendix A).

v. EPA's Office of Air and Radiation administers several potentially applicable or relevant and appropriate statutes and regulations issued thereunder:

a. The Uranium Mill Tailings Radiation Control Act of 1978 (42 U.S.C. 2022) and Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings (40 CFR part 192).

b. Clean Air Act (42 U.S.C. 7401). (1) National Primary and Secondary Ambient Air Quality Standards (40 CFR part 50).

(2) Standards for Protection Against Radiation (10 CFR part 20). See also 10 CFR parts 10, 40, 60, 61, 72, 960, 961.

(3) National Emission Standards for Hazardous Air Pollutants (40 CFR part 61). See also 40 CFR 427.110–427.116, 763.

(4) New source performance standards (40 CFR part 60).

vi. Other Federal Requirements:

a. National Historic Preservation Act (16 U.S.C. 470). Compliance with NHPA



Superfund LDR Guide #5

Determining When Land Disposal Restrictions (LDRs) Are Applicable to CERCLA Response Actions

CERCLA Section 121(d)(2) specifies that on-site Superfund remedial actions shall attain "other Federal standards, requirements, criteria, limitations, or more stringent State requirements that are determined to be legally applicable or relevant and appropriate (ARAR) to the specified circumstances at the site." In addition, the National Contingency Plan (NCP) requires that on-site removal actions attain ARARs to the extent practicable. Off-site removal and remedial actions must comply with legally applicable requirements. This guide outlines the process used to determine whether the Resource Conservation and Recovery Act (RCRA) land disposal restrictions (LDRs) established under the Hazardous and Solid Waste Amendments (HSWA) are "applicable" to a CERCLA response action. More detailed guidance on Superfund compliance with the LDRs is being prepared by the Office of Solid Waste and Emergency Response (OSWER).

For the LDRs to be applicable to a CERCLA response, the action must constitute placement of a restricted RCRA hazardous waste. Therefore, site managers (OSCs, RPMs) must answer three separate questions to determine if the LDRs are applicable:

- (1) Does the response action constitute placement?
- (2) Is the CERCLA substance being placed also a RCRA hazardous waste? and if so
- (3) Is the RCRA waste restricted under the LDRs?

Site managers also must determine if the CERCLA substances are California list wastes, which are a distinct category of RCRA hazardous wastes restricted under the LDRs (see Superfund LDR Guide #2).

(1) DOES THE RESPONSE CONSTITUTE PLACEMENT?

The LDRs place specific restrictions (e.g., treatment of waste to concentration levels) on RCRA hazardous wastes prior to their placement in land disposal units. Therefore, a key determination is whether the response action will constitute placement of wastes into a land disposal unit. As defined by RCRA, land disposal units include landfills, surface impoundments, waste piles, injection wells, land treatment facilities, salt dome formations, underground mines or caves, and concrete bunkers or vaults. If a CERCLA response includes disposal of wastes in any of these types of off-site land disposal units, placement will occur. However, uncontrolled hazardous waste sites often have widespread and dispersed contamination, making the

concept of a RCRA unit less useful for actions involving on-site disposal of wastes. Therefore, to assist in defining when "placement" does and does not occur for CERCLA actions involving on-site disposal of wastes, EPA uses the concept of "areas of contamination" (AOCs), which may be viewed as equivalent to RCRA units, for the purposes of LDR applicability determinations.

An AOC is delineated by the areal extent (or boundary) of contiguous contamination. Such contamination must be continuous, but may contain varying types and concentrations of hazardous substances. Depending on site characteristics, one or more AOCs may be delineated. Highlight 1 provides some examples of AOCs.

Highlight 1: EXAMPLES OF AREAS OF CONTAMINATION (AOCs)

- A waste source (e.g., waste pit, landfill, waste pile) and the surrounding contaminated soil.
- A waste source, and the sediments in a stream contaminated by the source, where the contamination is continuous from the source to the sediments.
- Several lagoons separated only by dikes, where the dikes are contaminated and the lagoons share a common liner.

* The AOC does not include any contaminated surface or ground water that may be associated with the land-based waste source.

For on-site disposal, placement occurs when wastes are moved from one AOC (or unit) into another AOC (or unit). Placement does not occur when wastes are left in place, or moved within a single AOC. Highlight 2 provides scenarios of when placement does and does not occur, as defined in the proposed NCP. The Agency is current reevaluating the definition of placement prior to the promulgation of the final NCP, and therefore, these scenarios are subject to change.

Highlight 2: PLACEMENT

Placement does occur when wastes are:

- Consolidated from different AOCs into a single AOC;
- Moved outside of an AOC (for treatment or storage, for example) and returned to the same or a different AOC; or
- Excavated from an AOC, placed in a separate unit, such as an incinerator or tank that is within the AOC, and redeposited into the same AOC.

Placement does not occur when wastes are:

- Treated in situ;
- Capped in place;
- Consolidated within the AOC; or
- Processed within the AOC (but not in a separate unit, such as a tank) to improve its structural stability (e.g., for capping or to support heavy machinery).

In summary, if placement on-site or off-site does not occur, the LDRs are not applicable to the Superfund action.

(2) IS THE CERCLA SUBSTANCE A RCRA HAZARDOUS WASTE?

Because a CERCLA response must constitute placement of a restricted RCRA hazardous waste for the LDRs to be applicable, site managers must evaluate whether the contaminants at the CERCLA site are RCRA hazardous wastes. Highlight 3 briefly describes

the two types of RCRA hazardous wastes -- listed and characteristic wastes.

Highlight 3: RCRA HAZARDOUS WASTES

A RCRA solid waste⁹ is hazardous if it is listed or exhibits a hazardous characteristic.

Listed RCRA Hazardous Wastes

Any waste listed in Subpart D of 40 CFR 261, including:

- F waste codes (Part 261.31)
- K waste codes (Part 261.32)
- P waste codes (Part 261.33(e))
- U waste codes (Part 261.33(f))

Characteristic RCRA Hazardous Wastes

Any waste exhibiting one of the following characteristics, as defined in 40 CFR 261:

- Ignitability
- Corrosivity
- Reactivity
- Extraction Procedure (EP)
- Toxicity

⁹ A solid waste is any material that is discarded or disposed of (i.e., abandoned, recycled in certain ways, or considered inherently waste-like). The waste may be solid, semi-solid, liquid, or a contained gaseous material. Exclusions from the definition (e.g., domestic sewage sludge) appear in 40 CFR 261.4(a). Exemptions (e.g., household wastes) are found in 40 CFR 261.4(b).

Site managers are not required to presume that a CERCLA hazardous substance is a RCRA hazardous waste unless there is affirmative evidence to support such a finding. Site managers, therefore, should use "reasonable efforts" to determine whether a substance is a RCRA listed or characteristic waste. (Current data collection efforts during CERCLA removal and

remedial site investigations should be sufficient for this purpose.) For listed hazardous wastes, if manifests or labels are not available, this evaluation likely will require fairly specific information about the waste (e.g., source, prior use, process type) that is "reasonably ascertainable" within the scope of a Superfund investigation. Such information may be obtained from facility business records or from an examination of the processes used at the facility. For characteristic wastes, site managers may rely on the results of the tests described in 40 CFR 261.21 - 261.24 for each characteristic or on knowledge of the properties of the substance. Site managers should work with Regional RCRA staff, Regional Counsel, State RCRA staff, and Superfund enforcement personnel, as appropriate, in making these determinations.

In addition to understanding the two categories of RCRA hazardous wastes, site managers will also need to understand the derived-from rule, the mixture rule, and the contained-in interpretation to identify correctly whether a CERCLA substance is a RCRA hazardous waste. These three principles, as well as an introduction to the RCRA delisting process, are described below.

Derived-from Rule (40 CFR 261.3(e)(2))

The derived-from rule states that any solid waste derived from the treatment, storage, or disposal of a listed RCRA hazardous waste is itself a listed hazardous waste (regardless of the concentration of hazardous constituents). For example, ash and scrubber water from the incineration of a listed waste are hazardous wastes on the basis of the derived-from rule. Solid wastes derived from a characteristic hazardous waste are hazardous wastes only if they exhibit a characteristic.

Mixture Rule (40 CFR 261.3(a)(2))

Under the mixture rule, when any solid waste and a listed hazardous waste are mixed, the entire mixture is a listed hazardous waste. For example, if a generator mixes a drum of listed F006 electroplating waste with a non-hazardous wastewater (wastewaters are solid wastes - see Highlight 3), the entire mixture of the F006 and wastewater is a listed hazardous waste.

Mixtures of solid wastes and characteristic hazardous wastes are hazardous only if the mixture exhibits a characteristic.

Contained-in Interpretation (OSW Memorandum dated November 13, 1986)

The contained-in interpretation states that any mixture of a non-solid waste and a RCRA listed hazardous waste must be managed as a hazardous waste as long as the material contains (i.e., is above health-based levels) the listed hazardous waste. For example, if soil or ground water (i.e., both non-solid wastes) contain an F001 spent solvent, that soil or ground water must be managed as a RCRA hazardous waste, as long as it "contains" the F001 spent solvent.

Delisting (40 CFR 260.20 and .22)

To be exempted from the RCRA hazardous waste "system," a listed hazardous waste, a mixture of a listed and solid waste, or a derived-from waste must be delisted (according to 40 CFR 260.20 and .22). Characteristic hazardous wastes never need to be delisted, but can be treated to no longer exhibit the characteristic. A contained-in waste also does not have to be delisted; it only has to "no longer contain" the hazardous waste.

If site managers determine that the hazardous substance(s) at the site is a RCRA hazardous waste(s), they should also determine whether that RCRA waste is a California list waste. California list wastes are a distinct category of RCRA wastes restricted under the LDRs (see Superfund LDR Guide #2).

(3) IS THE RCRA WASTE RESTRICTED UNDER THE LDRs?

If a site manager determines that a CERCLA waste is a RCRA hazardous waste, this waste also must be restricted for the LDRs to be an applicable requirement. A RCRA hazardous waste becomes a restricted waste on its HSWA statutory deadline or sooner if the Agency promulgates a standard before the deadline. Because the LDRs are being phased in over a period of time (see Highlight 4), site managers may need to determine what type of restriction is in

Highlight 4: LDR STATUTORY DEADLINES

Waste	Statutory Deadline
Spent Solvent and Dioxin-Containing Wastes	November 8, 1986
California List Wastes	July 8, 1987
First Third Wastes	August 8, 1988
Spent Solvent, Dioxin-Containing, and California List Soil and Debris From CERCLA/RCRA Corrective Actions	November 8, 1988
Second Third Wastes	June 8, 1989
Third Third Wastes	May 8, 1990
Newly Identified Wastes	Within 6 months of identification as a hazardous waste

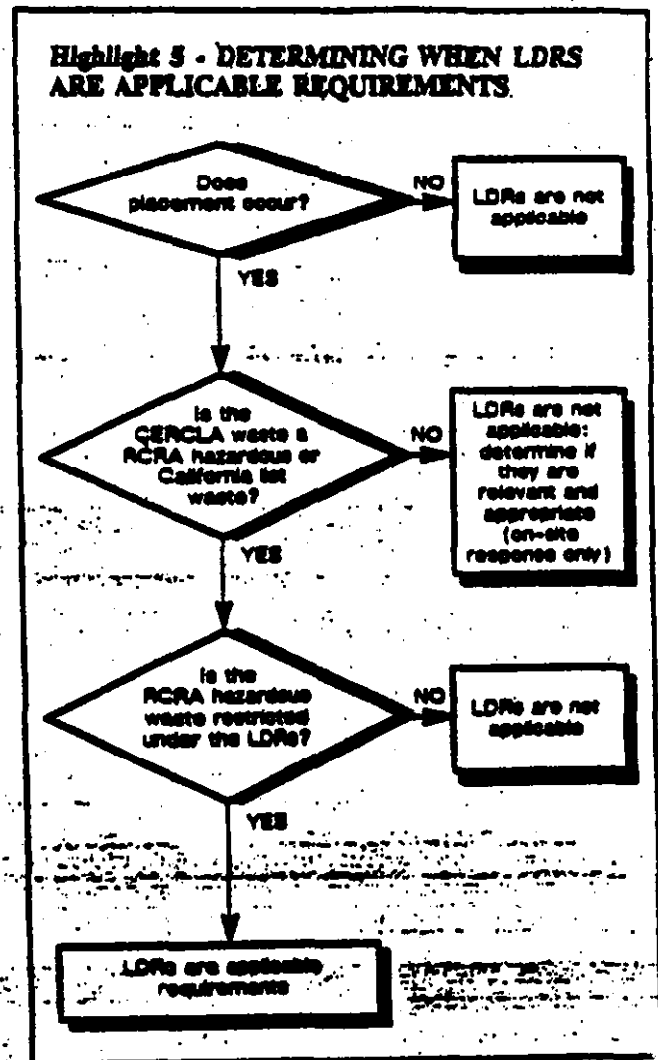
effect at the time placement is to occur. For example, if the RCRA hazardous wastes at a site are currently under a national capacity extension when the CERCLA decision document is signed, site managers should evaluate whether the response action will be completed before the extension expires. If these wastes are disposed of in surface impoundments or landfills prior to the expiration of the extension, the receiving unit would have to meet minimum technology requirements, but the wastes would not have to be treated to meet the LDR treatment standards.

APPLICABILITY DETERMINATIONS

If the site manager determines that the LDRs are applicable to the CERCLA response based on the previous three questions, the site manager must: (1)

comply with the LDR restriction in effect, (2) comply with the LDRs by choosing one of the LDR compliance options (e.g., Treatability Variance, No Migration Petition), or (3) invoke an ARAR waiver (available only for on-site actions). If the LDRs are determined not to be applicable, then, for on-site actions only, the site manager should determine if the LDRs are relevant and appropriate. The process for determining whether the LDRs are applicable to a CERCLA action is summarized in Highlight 5.

Highlight 5 - DETERMINING WHEN LDRS ARE APPLICABLE REQUIREMENTS



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40 CFR Part 300

National Oil and Hazardous Substances
Pollution Contingency Plan; Proposed
Rule

would need to comply with the applicable closure requirements for those units in completing the remedial action. Second, if the lead agency determines that RCRA listed or characteristic hazardous waste is present at the site (even if the waste was disposed before the effective date of the requirement) and the proposed CERCLA action involves treatment, storage, or disposal as defined under RCRA, then RCRA requirements related to those actions would be applicable.

These two scenarios are contingent upon determinations that RCRA Subtitle C hazardous waste is present and on the identification of the period of waste management. To determine whether a waste is a listed waste under RCRA, it is often necessary to know the source. However, at many CERCLA sites no information exists on the source of the wastes nor are references available citing the date of disposal. The lead agency should use available site information, manifests, storage records, and vouchers in an effort to ascertain the source of these contaminants. When this documentation is not available, the lead agency may assume that the wastes are not listed RCRA hazardous wastes, unless further analysis or information becomes available which allows the lead agency to determine that the wastes are listed RCRA hazardous wastes. If the lead agency assumes the wastes are not listed RCRA hazardous wastes and it is determined that the wastes are not characteristic wastes under RCRA (see discussion below, 17.i.) RCRA requirements would not be applicable to CERCLA actions, but may be relevant and appropriate if the CERCLA action involves treatment, storage or disposal and/or if the wastes are similar or identical to RCRA hazardous waste.

Under certain circumstances, although no historical information exists about the waste and when it was treated, stored, or disposed, it may be possible to identify the wastes as RCRA characteristic wastes. With respect to hazardous characteristics, (ignitability, corrosivity, reactivity, or EP toxicity), it is the responsibility of the generator (in this case, the lead agency or PRP conducting the action) to determine if the wastes exhibit any of these characteristics (defined in 40 CFR 261.21 through 24). The lead agency must use best professional judgment to determine, on a site-specific basis, if testing for hazardous characteristics is necessary. Testing is required unless it can be determined, by "applying knowledge of the hazard characteristic in light of the materials or process used," that the

waste does not have hazardous characteristics (40 CFR 262.11(c)).

In determining whether to test for the toxicity characteristic using the Extraction Procedure (EP) Toxicity Test, it may be possible to assume that certain low concentrations of waste are not toxic. For example, if the total waste concentration is 20 times or less the EP Toxicity concentration, the waste cannot be characteristic hazardous waste. In such a case RCRA requirements would not be applicable and would not likely be relevant or appropriate unless the waste also contained other RCRA hazardous wastes and the CERCLA action involved treatment, storage, or disposal.

If the wastes exhibit hazardous characteristics, RCRA requirements are potentially applicable if the wastes also were either treated, stored, or disposed after the effective date of the applicable RCRA requirement or if the CERCLA actions will involve treatment, storage, or disposal.

ii. *Actions constituting treatment, storage, or disposal.* Many CERCLA actions occur in areas of contamination that contain waste treated, disposed of, or stored prior to November 19, 1980. If left untouched, wastes in such areas are not currently regulated under Subtitle C of RCRA. (Solid waste management units at RCRA facilities are regulated by the 3004(u) corrective action requirements.) However, certain physical movement, alteration, or disturbance of RCRA hazardous waste associated with a remedial action may meet the RCRA definition of treatment, storage, or disposal. For instance, treatment has occurred when the CERCLA remedial action uses "any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, dispose of; or amenable for recovery, amenable for storage, or reduced in volume." 40 CFR 260.10.

Similarly, storage occurs when a CERCLA remedial action involves the "holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere." 40 CFR 260.10.

Land disposal occurs when RCRA hazardous waste is placed into a land disposal unit, including a "landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation,

or underground mine or cave." RCRA section 3004(k).

Movement of hazardous waste entirely within a unit does not constitute "land disposal" under Subtitle C of RCRA. However, movement of hazardous waste into a unit (i.e., across the boundary of a unit) does constitute "land disposal."

In many cases CERCLA sites contain areas of contamination (with differing levels of concentration, including hot spots, of hazardous substances, pollutants, or contaminants) that may be characterized as a unit, usually a landfill, under RCRA. In such cases where RCRA hazardous waste is moved into the area of contamination, RCRA disposal requirements are applicable to the disturbed waste and certain land disposal requirements (such as for closure) may be applicable to the area where the waste is received.

Therefore, the following activities constitute land disposal under RCRA Subtitle C where the waste involved is RCRA hazardous waste:

- a. Wastes from different units are consolidated into one unit;
- b. Waste is removed and treated outside a unit and redeposited into the same or another unit; or
- c. Waste is picked up from the unit and treated within the area of contamination in an incinerator, surface impoundment, or tank and then redeposited into the unit (does not include in-situ treatment).

In contrast, an example of an activity that does not constitute "land disposal" is the mere consolidation of RCRA hazardous wastes within a unit. Similarly, the covering and sealing off of hazardous waste, called "capping with waste in place," is also not considered "land disposal" and RCRA Subtitle C requirements would not be applicable. If some of the waste at a site is moved into another unit, but other waste is left behind in the original unit (the unit in which such waste was found), "land disposal" applies only with regard to the waste that is moved into another unit. Under these examples, however, certain RCRA land disposal requirements might nevertheless be relevant and appropriate to such waste. (See ARARs preamble sections below, 16.iii. and 17.)

iii. *Hypothetical examples of compliance with RCRA: land disposal restrictions.* Land disposal restrictions under RCRA sections 3004 (d) through (k) are triggered whenever there is placement of RCRA hazardous wastes subject to land disposal restrictions ("banned waste") into a land-based unit. Such land disposal does not occur when

wastes disposed prior to the effective date of the applicable prohibition only become subject to the LDRs if they are removed from the land and placed into a land disposal unit after the effective date of the applicable prohibition. (See 53 FR 31138, 31148, (August 17, 1988) and *Chemical Waste Management v. US EPA*, 86 9 F.2d 1526, 1536 (D.C. Cir. 1989)), "treatment or disposal of [hazardous waste] will be subject to the [LDR] regulation only if that treatment or disposal occurs after the promulgation of applicable treatment standards.") Similarly, environmental media contaminated by hazardous wastes placed before the effective dates of the applicable land disposal restrictions does not become subject to the LDRs unless they are removed from the land and placed into a land disposal unit after the effective dates of the applicable restrictions.

The land disposal restrictions do not attach to environmental media contaminated by hazardous wastes when the wastes were placed before the effective dates of the applicable land disposal prohibitions. If these media are determined not to contain hazardous wastes before they are removed from the land, then they can be managed as non-hazardous contaminated media and they're not subject to land disposal restrictions. For example, soil contaminated by acetone land disposed ("placed") in 1986 (prior to the effective date of the land disposal prohibition for acetone) and, while still in the land, determined not to contain hazardous waste, is not subject to the land disposal restrictions.¹⁷ This is consistent with the Agency's approach in the HWIR-waste rule, where it indicates that LDRs do not attach to wastes that are not hazardous at the time they are first generated (60 FR 66344, December 21, 1995).

Since application of the land disposal restrictions is limited, in order to determine if a given environmental medium must comply with LDRs one must know the origin of the material contaminating the medium (i.e., hazardous waste or not hazardous waste), the date(s) the material was placed (i.e., before or after the effective date of the applicable land disposal prohibition), and whether or not the medium still contains hazardous waste (i.e., contained-in decision or not).

¹⁷ Similarly, soil contaminated by acetone placed in a solid waste management unit in 1986, but leaked into the soil at some point after 1986, is not subject to the land disposal restrictions provided that, while the soil is still in the land, the Director determines it does not contain hazardous wastes. LDRs would not attach because, in this case, it is the initial placement of hazardous waste that determines whether there is a duty to comply with LDRs.

Facility owner/operators should make a good faith effort to determine whether media were contaminated by hazardous wastes and ascertain the dates of placement. The Agency believes that by using available site- and waste-specific information such as manifests, vouchers, bills of lading, sales and inventory records, storage records, sampling and analysis reports, accident reports, site investigation reports, spill reports, inspection reports and logs, and enforcement orders and permits, facility owner/operators would typically be able to make these determinations. However, as discussed earlier in the preamble of today's proposal, if information is not available or inconclusive, facility owner/operators may generally assume that the material contaminating the media were not hazardous wastes. Similarly, if environmental media were determined to be contaminated by hazardous waste, but if information on the dates of placement is unavailable or inconclusive, facility owner/operators may, in most cases assume the wastes were placed before the effective date.

The Agency believes that, in general, it is reasonable to assume that environmental media do not contain hazardous wastes placed after the effective dates of the applicable land disposal prohibitions when information on the dates of placement is unavailable or inconclusive, in part, because current regulations, in effect since the early 1980's, require generators of hazardous waste to keep detailed records of the amounts of hazardous waste they generate. These records document whether the waste meets land disposal treatment standards and list the dates and locations of the waste's ultimate disposition. With these records, the Agency should be able to determine if environmental media were contaminated by hazardous wastes and if they would be subject to the land disposal restrictions.

In addition, EPA believes that the majority of environmental media contaminated by hazardous wastes were contaminated prior to the effective dates of the applicable land disposal restrictions. Generally, the contamination of environmental media by hazardous waste after the effective date of the applicable land disposal restriction would involve a violation of the LDRs, subject to substantial fines and penalties, including criminal sanctions. The common exception would be one-time spills of hazardous waste or hazardous materials. In these cases, the Agency believes that, typically, independent reporting and record keeping requirements (e.g., CERCLA sections 102 and 103 reporting

requirements) coupled with ordinary "good housekeeping" procedures, result in records that will allow the Agency to determine the nature of the spilled material, and the date (or a close approximation of the date) of the spill. The Agency requests comments on this approach and on any other assumptions, records, or standards of evaluation that would ensure that facility owner/operators would identify any contaminated media subject to land disposal restrictions properly and completely.

Information on contained-in decisions should be immediately available since, generally, these determinations are made by a regulatory agency on a site-specific basis and careful records are kept.

2. Treatment Requirements—§ 269.30

a. Approach to treatment requirements and recommendations of the FACA Committee. RCRA section 3004(m) requires that treatment standards for wastes restricted from land disposal, " * * * specify those levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized." A recurring debate through EPA's development of the land disposal restriction program has been whether treatment standards should be technology-based (i.e., based on performance of a treatment technology) or risk-based (i.e., based on assessment of risks to human health and the environment that are posed by the wastes). The Agency believes that both approaches are allowed. It has long been recognized that Congress did not directly address the questions of how to set treatment standards in the language of section 3004(m).¹⁸ In addition, Congress did not specifically address whether the LDR treatment standards for newly generated wastes and remediation wastes must be identical; the structure of RCRA's LDR provisions suggests that Congress believed that remediation waste may merit special consideration. (See, RCRA sections 3004(d)(3) and 3004(e)(3), which

¹⁸ See, e.g., 51 FR 40572, 40578 (November 7, 1986); *Hazardous Waste Treatment Council v. US EPA*, 886 F.2d 355, 361-3 D.C. Cir. 1989; 53 FR 6640, 6641 (February 26, 1990). The legislative history of section 3004(m) is likewise inconclusive. See discussion of the legislative history at 55 FR 6640, 6641-6642 (February 26, 1990) "[a]t a minimum, the [legislative history shows] that Congress did not provide clear guidance on the meaning of 'minimize threats'."