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Hazardous Waste Treatability Studies Sample Exclusion

Revised Rule Issued

Effective Date: February 18, 1994

Introduction

In the July 19, 1988, Federal Register [52 FR 27290] the Environmental Protection Agency (EPA) issued a final rule that conditionally exempted waste samples used in small-scale treatability studies from regulation under Subtitle C of the Resource Conservation and Recovery Act (RCRA). The exemption applies to the following three categories of wastes: non-acutely hazardous waste, acutely hazardous waste, and media (e.g., soil and debris) contaminated with acutely hazardous waste. The final rule was intended to promote the development of new technologies for the treatment of hazardous wastes. However, in order to minimize danger to human health and the environment, it also imposed limitations and conditions on the amount of wastes that may be exempted from RCRA Subtitle C regulations for use in treatability studies. The July 19, 1988, final rule specified maximum quantities that may be used for treatability studies and established record-keeping responsibilities for generators, sample collectors, and laboratories or testing facilities. For a discussion of the provisions of the regulations promulgated on July 19, 1988, please refer to the "The Small-scale Treatability Sample Exemption" Information Brief (EH-231-002/0191, January 1991) prepared by DOE's Office of Environmental Guidance (EH-231).

On July 7, 1993, EPA proposed amendments to the existing regulations that would increase the quantity limits for certain types of waste. [58 FR 36367] A fourth category, media contaminated with non-acutely hazardous waste, was added to the original three categories of hazardous wastes that are allowed an exemption. In addition, EPA proposed to extend the period of time for which laboratories may conduct treatability studies involving bioremediation technologies from 1 year to 2 years.

The Agency solicited comments on the amount of time needed to perform treatability studies involving bioremediation technologies. Most of the provisions in the existing regulations (e.g., record-keeping requirements) were retained when the new rule was proposed. EPA issued a new final rule on February 18, 1994. [59 FR 8362] The revised requirements will be codified at 40 CFR 261.4(e) and (f).

Statutory Authority

The existing regulations were promulgated under the authority of RCRA which, for the purposes of hazardous waste authorization, is also referred to as "pre-HSWA" (i.e., prior to the Hazardous and Solid Waste Amendments of 1984). The following scenarios describe how the new provisions may go into effect:

- ☐ States that have received authorization for regulations promulgated under pre-HSWA authority must receive authorization from EPA for any additional (newly promulgated) pre-HSWA regulations before they may be implemented in that State. For example, whether or not a State has already received authorization to implement the existing treatability exemption regulations [40 CFR 261.4(e)], the State must receive authorization to implement the revised treatability studies sample exclusion provisions published in the new final rule.
- ☐ The new final rule will go into effect immediately only in States that have not received authorization for any hazardous waste provisions that were promulgated under pre-HSWA authority, because EPA still has the regulatory authority in those States.

Because the new final rule is less stringent than the existing regulations, States that have already received authorization for the existing regulations are not required to adopt the new final rule. Consequently, application of the revised treatability sample exclusion provisions may be limited for generators, transporters, laboratories, and testing facilities located in authorized States. Specifically, the size of the sample (that is allowed an exemption) that a generator can ship to a testing facility or laboratory depends upon the status of both the generator's State and the consignment State regarding the administration of the new final rule (see 40 CFR 261.4 (e)(2)(i)). The State that administers the more stringent regulations (in this case, the existing 40 CFR 261.4(e) regulations), determines the amount of waste that can be exempted from RCRA when used for treatability studies. This situation can occur if: (1) the generator's State administers the new final rule but the consignment State does not, or (2) the consignment State administers the new final rule but the generator's State does not.

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It is recommended that the regulatory agencies in both the generator's State and the testing facility's State be consulted to determine the applicability of the treatability study's sample exclusion from regulation as a hazardous waste under RCRA Subtitle C prior to shipment of a sample from one State to another.

Provisions of the Existing Regulations

Toxicity of Wastes As It Applies to Treatability Study Samples

The amount of waste or contaminated media that is allowed an exemption under the existing regulations for use in treatability studies is dependent upon whether the sample is (1) acutely hazardous or (2) non-acutely hazardous. A description of those types of wastes is as follows:

(1) Wastes That Are Acutely Hazardous

EPA designated certain wastes as acutely hazardous because (1) they are fatal to humans in low doses; (2) in the absence of human toxicological data, they have been shown in studies to meet or exceed the "indices" or "limits" listed in 40 CFR 261.11(a)(2); or (3) they are otherwise capable of causing or significantly contributing to an increase in either a serious, irreversible or an incapacitating, reversible illness.

Acutely hazardous wastes include most "P-listed" wastes and some "F-listed" wastes, as explained below.

P-listed hazardous wastes are defined in 40 CFR 261.33(e). They include discarded commercial products, off-specification commercial chemical products, manufacturing chemical intermediates, container residues, and spill residues of substances listed in 40 CFR 261.33. There are, however, several P-listed wastes that are not acutely hazardous. In 40 CFR 261.33(e), EPA has designated a "(T)" after the chemical name of those P-listed wastes that are not acutely hazardous.

F-listed wastes are hazardous wastes from non-specific sources (please refer to 40 CFR 261.31). Only the following F-listed wastes are acutely hazardous: F020, F021, F022, F023, F026, and F027. In 40 CFR 261.31(a), EPA has designated an "(H)" after the description of these F-listed wastes to indicate that they are acutely hazardous.

(2) Wastes That Are Not Acutely Hazardous

- ☐ all U- and K-listed,
- ☐ most F-listed,
- ☐ corrosive (C),
- ☐ ignitable (I),
- ☐ reactive (R), and
- ☐ toxicity characteristic (E) wastes.

Treatability Exclusion Provisions As They Apply to Generators and Sample Collectors

The maximum quantities allowable for exemption that a generator or sample collector may use or ship to a testing facility or laboratory are limited to:

- ☐ 1,000 kg of any non-acutely hazardous waste, 1 kg of acutely hazardous waste, or 250 kg of media (i.e., soil, water, or debris) contaminated with acutely hazardous waste. [40 CFR 261.4(e)(2)(i)] For the definition of debris and hazardous debris, please refer to 40 CFR 268.2(g) and (h).
- ☐ Mixed waste (i.e., waste with a radioactive component and a RCRA hazardous component) is not provided with a specific exemption under the existing regulations because EPA only regulates the RCRA hazardous component. Consequently, mixed waste has the same treatability exemption limits as other RCRA hazardous wastes.
- ☐ A maximum additional 500 kg of non-acutely hazardous waste, 1 kg of acutely hazardous waste, and 250 kg of media contaminated with acutely hazardous waste, as allowed on a case-by-case basis by the EPA or the authorized State. [40 CFR 261.4(e)(3)]

Treatability Exclusion Provisions As They Apply to Transportation of Samples

The transportation of each sample shipment must comply with U.S. Department of Transportation (USDOT), U.S. Postal Service (USPS), or other applicable shipping requirements. [40 CFR 261.4(e)(2)(iii)(A)]

If USDOT, USPS, or other shipping requirements do not apply to the shipment of the sample, the following information must accompany the sample:

- ☐ the name, mailing address, and telephone number of the generator of the sample and of the facility performing the treatability study, and
- ☐ the quantity of waste, date of the shipment, a description of the sample (including the EPA Hazardous Waste Number), and confirmation of the sample being shipped to a laboratory or testing facility that either (1) has a RCRA permit, (2) has interim status, or (3) is exempt under 40 CFR 261.4(f). [40 CFR 261.4(e)(2)(iii)(B)]

The generator or sample collector must keep the following records for 3 years:

- ☐ copies of all shipping documents and documents indicating the amount of waste shipped for treatability studies;
- ☐ the name, address, and EPA identification number of the laboratory or testing facility that received the waste;
- ☐ the date of the shipment; and
- ☐ whether or not the unused residue was returned to the generator. [40 CFR 261.4(e)(2)(v)]

Treatability Exclusion Provisions As They Apply to Laboratories or Testing Facilities

Laboratories or testing facilities must comply with the following major provisions of the existing regulations.

- ☐ The laboratory or testing facility must notify the Regional Administrator or the authorized State that it intends to conduct treatability studies. [40 CFR 261.4(f)(1)]
- ☐ The laboratory or testing facility must have an EPA identification number.¹ [40 CFR 261.4(f)(2)]
- ☐ The laboratory or testing facility is restricted to a treatment initiation rate of 250 kg per day of "as received" hazardous waste. [40 CFR 261.4(f)(3)]
- ☐ The maximum amount of "as received" hazardous waste that the laboratory or testing facility may store is 1,000 kg, not including treatability residues or treatment materials added. Of the 1,000 kg maximum, 500 kg may be media contaminated with acutely hazardous waste. Alternatively, but not in addition, the 1,000 kg may contain a maximum of 1 kg of acutely hazardous waste. [40 CFR 261.4(f)(4)]
- ☐ Within 90 days of the completion of the treatability study, the laboratory or testing facility must return the sample to the generator or sample collector, or send it to a designated facility for disposal. [40 CFR 261.4(f)(5)]
- ☐ The laboratory or testing facility must return the sample to the generator or sample collector, or send it to a designated disposal facility, within 1 year of the date upon which the laboratory or testing facility received the sample from the generator or sample collector. [40 CFR 261.4(f)(5)]
- ☐ The treatability study must not involve the placement of hazardous waste on land. [40 CFR 261.4(f)(6)]
- ☐ The treatability study must not involve the open burning of hazardous waste. [40 CFR 261.4(f)(6)]
- ☐ The laboratory or testing facility must retain the following records for 3 years: (1) the name, address, and EPA identification number of the generator or sample collector of each waste sample; (2) the date the sample was received, (3) the quantity of waste accepted; (4) the quantity of "as received waste" in storage each day; (5) the date on which the treatability study was initiated and the amount of waste used; and (6) the date the treatability study was concluded. [40 CFR 261.4(f)(7)]
- ☐ The laboratory or testing facility must retain a copy of the treatability study contract and all shipping papers associated with the transportation of the sample to and from the facility for 3 years from the completion date of the treatability study. [40 CFR 261.4(f)(8)]

¹ Many DOE facilities (e.g., Oak Ridge National Laboratory) have several research and development laboratories and testing facilities within each site. In the background document to the February 18, 1994, "Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Treatability Studies Sample Exclusion" final rule, EPA addressed the regulated community's requests to clarify the definition of testing facility or laboratory. If a testing facility or laboratory has its own unique EPA identification number, then it will be treated as an entity separate from the remainder of the facility.

- ☐ By March 15 of each year, the laboratory or testing facility must prepare and submit a report to the Regional Administrator or authorized State that estimates the number of treatability studies and the amount of waste expected to be used in treatability studies during that calendar year. [40 CFR 261.4(f)(9)]

Provisions of the New Final Rule

New Category

The February 18, 1994, final rule adds media contaminated with non-acutely hazardous waste to the list of waste categories exempted.

New Exemption Amounts

The new final rule provides for an increase in the amount of media (i.e., ground water, surface water, sediment, soil, and debris) used in treatability studies that may be exempted. The new exemption amounts are specified below. A comparison between the quantity limits of the existing regulations and the new final rule is provided in Table 1.

- ☐ The generator or sample collector may use a maximum of 10,000 kg of media contaminated with non-acutely hazardous wastes or 2,500 kg of media contaminated with acutely hazardous wastes for each process being evaluated for each generated waste stream (amends 40 CFR 261.4(e)(2)(i)).
- ☐ The maximum total amount of mass allowable for each sample shipment is 10,000 kg. The total amount may be comprised entirely of media contaminated with non-acutely hazardous waste or may include one of the following: 2,500 kg of media contaminated with acutely hazardous waste, 1,000 kg of non-acutely hazardous waste, or 1 kg of acutely hazardous waste (amends 40 CFR 261.4 (e)(2)(ii)).
- ☐ In any single day, the maximum amount of waste upon which treatment may be initiated as part of a treatability study is as follows: a maximum of 10,000 kg of "as received" media contaminated with non-acutely hazardous waste, or 2,500 kg of media contaminated with acutely hazardous waste, or 250 kg of other "as received" hazardous waste (amends 40 CFR 261.4(f)(3)).
- ☐ The maximum total quantity of a sample that may be stored at the laboratory or testing facility is 10,000 kg. Of that amount, (1) all of it may be media contaminated with non-acutely hazardous waste or (2) it may include a maximum of 2,500 kg of media contaminated with acutely hazardous waste, 1,000 kg of non-acutely hazardous waste, and 1 kg of acutely hazardous waste (amends 40 CFR 261.4(f)(3)).
- ☐ The case-by-case exemption amounts have been increased to 2,500 kg for media contaminated with acutely hazardous

waste and to 5,000 kg for media contaminated with non-acutely hazardous waste (amends 40 CFR 261.4 (e)(3)). The new final rule permits the generator, laboratory, or testing facility to request the case-by-case variance in advance. The case-by-case variance may be applicable to shipment, storage, and treatment of samples used for treatability studies. The amount approved by the Regional Administrator or the authorized State will depend upon the evaluation of several factors, including the nature of the technology used, the type of process (i.e., batch or continuous), the size of the unit, etc.

Time Limits

The new final rule increases the time limit for bioremediation technologies. The laboratory or testing facility has 2 years to use the sample for treatability studies. The new final rule allows a case-by-case extension for a maximum of 2 additional years at the discretion of the Regional Administrator or the authorized State. Some examples of bioremediation technologies include bioventing, composting, landfarming, bioaugmenta-

tion, and the use of biofilters (amends 40 CFR 261.4(f)(5)). In the new final rule, EPA retained the time limit of 1 year for solidification and stabilization technologies.

Finally, EPA promulgated a provision in the new final rule that allows a laboratory or testing facility to store a treated waste stream sample (500 kg limit) generated from treatability studies for a maximum of 5 years. This amount, however, must be included in the total storage quantity limit (amends 40 CFR 261.4(f)(5)).

Please direct questions about the RCRA final rule on Hazardous Waste Treatability Studies Sample Exclusion to:

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Table 1. Maximum Amount of Wastes Used for Treatability Studies That May Be Exempted From RCRA Subtitle C Regulation [40 CFR 261.4(e)]

| Type of Waste | Existing Regulations (July 19, 1988, Rule) | New Final Rule (February 18, 1994, Rule) |
|---|---|---|
| Acutely Hazardous Waste | 1 kg | 1 kg |
| Non-Acutely Hazardous Waste | 1,000 kg | 1,000 kg |
| Media Contaminated with Acutely Hazardous Waste | 250 kg | 2,500 kg |
| Media Contaminated with Non-Acutely Hazardous Waste | N/A ² | 10,000 kg |
| Case-by-Case Variance for Acutely Hazardous Waste | 1 kg | 1 kg |
| Case-by-Case Variance for Non-Acutely Hazardous Waste | 500 kg | 500 kg |
| Case-by-Case Variance for Media Contaminated with Acutely Hazardous Waste | 250 kg | 2,500 kg |
| Case-by-Case Variance for Media Contaminated with Non-Acutely Hazardous Waste | 500 kg | 5,000 kg |

² Media contaminated with non-acutely hazardous waste was not a category in the July 19, 1988, final rule; samples that are media contaminated with non-acutely hazardous waste would be considered as non-acutely hazardous waste, therefore, the maximum amount that can be exempted from RCRA Subtitle C regulation when used for treatability studies is 1,000 kg.