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1451.	Method Detection Limits and Hazardous Waste Determinations II	ENCORE SEP 2, 2021
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1454.	Decharacterized Hazardous Waste Listed Solely for Non-Toxic Characteristics	ENCORE SEP 23, 2021
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## TWO MINUTE TRAINING

**TO:** CENTRAL PLATEAU CLEANUP COMPANY

**FROM:** PAUL W. MARTIN, RCRA Subject Matter Expert  
CPCCo Environmental Protection, Hanford, WA

**SUBJECT:** HAZARDOUS DEBRIS MACROENCAPSULATION AND SIZE REDUCTION

**DATE:** JULY 28, 2022

<u>CPCCo Projects</u>	<u>CPCCo Functionals</u>	<u>HMIS</u>	<u>Hanford Laboratories</u>	<u>Other Hanford Contractors</u>	<u>Other Hanford Contractors</u>
Tania Bates Theresa Boles Justin Bolles James Brack Rene Catlow Peter Ceton Richard Clinton Patty Drago Paul Fernandez Ryan Fisher Andrew Getz Cory Grabee Lawanda Grow Char Hall Stuart Hildreth Aprill Jivelekas Sasa Kosjerina William Krueger Richard Lipinski Stuart Mortensen Edward Myers Trey Reppe Melissa Sahn-dame Seth Slater Phil Sheely Kat Thompson Jeff Westcott Richard Willson Nick Wood Jon Wright	Sara Austin Jeff Bramson Bob Bullock Frank Carleo Bob Cathel Stacy Cutter Jeanne Elkins Jonathan Fullmer Randal Fox Sarah Horn John Hultman Julie Johanson Mitch Marrott Morgan Matson Stewart McMahand Carlie Michaelis Brian Mitcheltree Anthony Nagel Chris Plager Linda Petersen Brent Porter Sean Sexton Dave Shea Deborah Singleton Dale Snyder Britt Wilkins Jennifer Williams	Morgan Baker Brett Barnes Curt Clement Mike Demiter Kip George Jerry Cammann Kelly Elsethagen Garin Erickson Katie Hall Dashia Vander Sys Mark Kamberg Jon McKibben Saul Martinez Matt Mills Carly Nelson Eric Pennala Jon Perry Dave Richards Christian Seavoy David Shaw John Skoglie Greg Sullivan	Dean Baker Linda Conlin Bailey Hardy Garrett Knutson Eric Van Mason Melanie Myers  <u>DOE RL ORP WIPP</u>  Duane Carter Ingrid Colton Tony McKarns Bryan Trimberger Robin Varljen Allison Wright	Bill Bachmann Scott Baker Michael Carlson Danielle Collins Paul Crane Tina Crane Ron Del Mar John Dorian Mark Ellefson Darrin Faulk James Hamilton Leah Hare Andy Hobbs Stephanie Johansen Ryan Johnson Mike Lowery Michael Madison Terri Mars Steve Metzger Tony Miskho Tom Moon Chuck Mulkey Michelle Oates Kirk Peterson	Dan Saueressig Lana Strickling Joelle Moss Greg Varljen Julie Waddoups Jay Warwick Ted Wooley

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## TWO MINUTE TRAINING

**SUBJECT:** Hazardous Debris Macroencapsulation and Size Reduction

**Q:** A customer has hazardous debris that is intended for macroencapsulation under the alternative treatment standards for debris at [40 CFR 268.45](#). The customer would like to shred the debris to increase waste packaging efficiency and save on disposal costs. However, the customer is concerned that if the debris is reduced in size and no longer exceeds 60 mm, macroencapsulation per 268.45 would no longer be an option. Should our customer be concerned?

**A:** Per [40 CFR 268.2\(g\)](#), one of the many criteria of the debris definition is that the debris is a solid material exceeding a 60 mm particle size, e.g., about the size of a tennis ball. Per an EPA memo dated October 3, 1997, ([RCRA Online Number 14241](#)) it states:

*"The Phase I preamble at [57 FR 37235](#) [August 18, 1992] states it is the Agency's position that material with a particle size less than 60 mm is amenable to conventional treatment for process waste and small particle-sized material and that such material can be reasonably sampled for analysis to document compliance with the concentration-based treatment standards for the waste contaminating the material.*

*Furthermore, 40 CFR 268.45, Table 1(C)(2) footnote 5 also applies to macroencapsulation, and states that if the particle size is reduced so that the material no longer meets the 60 mm minimum particle size limits for debris, then the most stringent treatment standard of any waste contaminating the material applies, unless the debris has been cleaned and separated from the contaminated soil and waste prior to size reduction."*

Therefore, our customer should be concerned.

Even though the debris could be shredded, if the debris intended for macroencapsulation is reduced in size to less than 60 mm, the conventional LDR treatment standards at [40 CFR 268.40](#) would apply. The alternative treatment standards for debris at 40 CFR 268.45 would no longer apply since the waste no longer meets the debris definition and has become amenable to sampling and analysis.

### SUMMARY:

- Hazardous debris is defined, among other things, as a solid material exceeding 60 mm in size.
- If hazardous debris is size reduced to  $\leq 60$  mm, the waste no longer meets the definition of debris.
- Non-debris waste is not eligible for the alternative LDR treatment standards at 40 CFR 268.45 and is subject to the conventional LDR treatment standards at 268.40 since the waste is amenable to sampling and analysis.

Excerpts from 40 CFR 268.2, 40 CFR 268.45, and the October 3, 1997, EPA memo are attached to the e-mail. If you have any questions, please contact me at [Paul W. Martin@rl.gov](mailto:Paul_W_Martin@rl.gov) or at (509) 376-6620.

## TWO MINUTE TRAINING - ATTACHMENT

**SUBJECT:** Hazardous Debris Macroencapsulation and Size Reduction

### 40 CFR 268.2 Definitions applicable in this part

- (g) *Debris* means solid material exceeding a 60 mm particle size that is intended for disposal and that is: A manufactured object; or plant or animal matter; or natural geologic material. However, the following materials are not debris: any material for which a specific treatment standard is provided in Subpart D, Part 268, namely lead acid batteries, cadmium batteries, and radioactive lead solids; process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emission residues; and intact containers of hazardous waste that are not ruptured and that retain at least 75% of their original volume. A mixture of debris that has not been treated to the standards provided by §268.45 and other material is subject to regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection.

### 40 CFR 268.45 Treatment standards for hazardous debris

#### Footnotes

<sup>5</sup>If reducing the particle size of debris to meet the treatment standards results in material that no longer meets the 60 mm minimum particle size limit for debris, such material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste prior to size reduction. At a minimum, simple physical or mechanical means must be used to provide such cleaning and separation of nondebris materials to ensure that the debris surface is free of caked soil, waste, or other nondebris material.

## TWO MINUTE TRAINING -ATTACHMENT

**SUBJECT:** Hazardous Debris Macroencapsulation and Size Reduction

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

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

Faxback 14241

Catherine Sharp, Assistant Director  
Waste Management Division  
Department of Environmental Quality  
1000 N.E. 10th Street  
Oklahoma City, Oklahoma 73117-1212

October 3, 1997

Dear Ms. Sharp:

This is in response to your letter of June 18, 1997 presenting several questions regarding hazardous waste debris that arose as a result of discussions with a permitted hazardous waste facility, testimony in court, and review of the August 18, 1992 debris rule (57 FR 37194). We have reviewed your questions and include them with our responses below.

1. As indicated in the August 18, 1992 Federal Register (57 FR 37194, 37225), are broken or ruptured containers always hazardous debris when contaminated with hazardous waste, or will the origin and conditions under which the containers are ruptured affect whether the containers may be considered hazardous debris?

The Agency has stated that broken or ruptured containers that are contaminated with prohibited wastes are subject to the land disposal restrictions (LDR) treatment standards for debris. See 57 FR 37225/2 which states, "broken or ruptured containers are always debris if contaminated with prohibited waste." If the contaminating waste is removed from the containers during treatment, the waste itself is subject to the treatment standards for the waste (57 FR 37225/3). EPA intended for the debris standards to apply to cases where the debris and the waste are inseparable, since then the matrix is different from that of a process waste, and it needs treatment by special standards (57 FR 37223 n. 13). Therefore, wastes in a non-intact drum can be left in the drum and the entire matrix treated as debris only if the wastes are not readily separable from the drum. Furthermore, the mixing of hazardous waste or contaminated soil with debris to avoid LDR treatment standards is prohibited (57 FR 37243).

2. Is it permissible for either a TSD facility or a hazardous waste generator to shred hazardous debris prior to macroencapsulation?

There is no prohibition against shredding the debris prior to macroencapsulation. The Phase I preamble at 57 FR 37235 states it is the Agency's position that material with a particle size less than 60 mm is amenable to conventional treatment for process waste and small particle-sized material and that such material can be reasonably sampled for analysis to document compliance with the concentration-based treatment standards for the waste contaminating the material. Furthermore, 40 CFR 268.45, Table 1(C)(2), footnote 5 also applies to macroencapsulation, and states that if the particle size is reduced so that the material no longer meets the 60 mm minimum particle size limits for debris, then the most stringent treatment standard of any waste contaminating the material applies, unless the debris has been cleaned and separated from the contaminated soil and waste prior to size reduction.

**FROM:** Paul W. Martin

**DATE:** 7/28/2022

**FILE:** 2MT\2022\072822.rtf

**PG:** 3

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## TWO MINUTE TRAINING -ATTACHMENT

**SUBJECT:** Hazardous Debris Macroencapsulation and Size Reduction

3. If the answer to question 2 above is yes, must the shredder be permitted as a miscellaneous unit, and under what conditions may the shredding be performed i.e., must the conditions at 40 CFR 268.45, Table 1(C)(2), footnote 5 be followed?

Because shredding hazardous waste or debris meets the definition of treatment in 40 CFR 260.10, shredders handling hazardous wastes have been identified as either distinct units or ancillary devices to other units, depending on the specific circumstance. However, we believe that shredders are generally controlled most appropriately when permitted as individual units, either as miscellaneous units or as tanks. Table 1(C)(2), footnote 5 must be followed, especially as it pertains to maintaining proper particle size limits.

4. If hazardous debris has been either intentionally or unintentionally mixed with hazardous waste by a TSD facility, can the resultant mixture be separated and the hazardous debris disposed using the alternative treatment standards found at 40 CFR 268.45 Table 1(C)(1) or would the entire mixture be subject to the most stringent treatment standard of any waste that is part of the mixture?

The Phase I preamble at page 57 FR 37243 states that the intentional mixing of hazardous waste or contaminated soil with debris to avoid the concentration-based treatment standard for the waste or soil is prohibited. Furthermore, on page 57 FR 37224, "such situations where debris is used merely to dilute another prohibited waste, the mixture would remain subject to the most stringent treatment standard of any waste that is part of the mixture." As a practical matter (for example, during cleanup activities) debris and non-debris material may be found in a mixture. However, containers cannot be loaded with debris and hazardous waste in percentages such as 49 percent hazardous waste and 51 percent debris to meet the classification of "primarily debris"; the containerized mixture must be representative of the mixture as found at the excavation site. The Phase I preamble at 57 FR 37243 states that if debris is intentionally mixed with contaminated soil or hazardous waste (e.g., after excavation) and the mixture is regulated as debris by the application of the mixture principle and subsequently immobilized, prohibited sham mixing has occurred.

However, once mixing has occurred, there is no prohibition against reseparating the debris from the waste and treating each according to the appropriate standards.

5. Is designation of a waste by the generator as hazardous debris on the accompanying land disposal restriction form as described at 268.7(a)(1)(iv) the only acceptable or required means of designating a particular waste as hazardous debris?

According to 40 CFR 268.7(a)(1)(iv), a generator must identify on the notification form, for hazardous debris, the contaminants subject to treatment as provided by 40 CFR 268.45(b) and the following statement: "this hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45." If a generator fails to meet the requirements of 40 CFR 268.7(a)(1)(iv), the generator must submit the proper forms to the TSD facility prior to treatment or disposal by the TSD.

## TWO MINUTE TRAINING - ATTACHMENT

**SUBJECT:** Hazardous Debris Macroencapsulation and Size Reduction

6. If a generator does not designate its hazardous waste as hazardous debris as described at 268.7(a)(1)(iv), is it permissible for a TSD facility to designate the hazardous waste as hazardous debris after receipt without prior approval of the generator?

Although the regulations (40 CFR 268.7) do not specifically prohibit a treater from identifying waste or debris differently from the generator's identification of that waste, they require generators and treaters to accurately characterize wastes. This does not change the prohibition on intentional mixing of waste with debris to avoid the treatment standard for the waste itself, so if the treater's characterization differed from the generator's characterization due to sham mixing, the practice would not be allowed, and the treater (as well as a generator who mixes impermissibly) may well be in violation of Resource Conservation and Recovery Act (RCRA) requirements. Therefore, the Agency certainly expects that in cases of disagreement, the treater will contact the generator to resolve the discrepancy.

7. How must a TSD's hazardous debris management practices, i.e., bulking or mixing from different sources; be described in its hazardous waste permit?

Practices such as bulking and mixing of wastes must be included in the TSD's hazardous waste permit. The Phase I preamble at 57 FR 37241-242 addresses permit requirements for the treatment of hazardous debris, and states that treatment is "currently subject to the applicable interim status and permit standards of 40 CFR parts 264, 265, 266 and 270 that ensure protection of human health and the environment." Furthermore, the preamble goes on to say that debris treatment standards "do not affect those existing facility standards."

Therefore, descriptions used for hazardous debris management practices would be similar to descriptions for other waste treatment activities and incorporate either the technology specific standards of 40 CFR part 264, or the environmental performance standards of part 264, subpart X. Also, please note 40 CFR part 270, subpart C which addresses permit conditions for all RCRA hazardous waste permits.

We appreciate the opportunity to respond to your questions. Because of the complexity of some of these hazardous debris issues, we welcome the opportunity to provide any further clarification on this response, and respond to any case-specific questions you may have. For questions regarding the debris rule, please contact Peggy Vyas of my staff at (703) 308-5477. Questions regarding the miscellaneous unit standards of subpart X should be directed to Jeff Gaines of my staff at (703) 308-8655.

Sincerely,

Elizabeth A. Cotsworth, Acting Director  
Office of Solid Waste