

<u>SUBJECT</u>		<u>DATE</u>
1056. Hazardous Waste Tanks and the Less than 90-Day Accumulation Time Limit	ENCORE	APR 23, 2015
1057. Decharacterized RCRA Waste - Manifesting and LDR Reporting	ENCORE	APR 30, 2015
1058. Decharacterized Hazardous Waste Listed Solely for Non-Toxic Characteristics	ENCORE	MAY 7, 2015
1059. Decharacterized Wastes, <90-Day Accumulation Time Limits and LDR Storage Prohibition	ENCORE	MAY 14, 2015
1060. Decharacterized Wastes and the LDR Dilution Prohibition	ENCORE	MAY 21, 2015
1061. Hazardous Debris Macroencapsulation and Size Reduction	ENCORE	MAY 28, 2015
1062. Universal Waste Lamps and Prohibition on Crushing		JUN 4, 2015
1063. F003 Listed Hazardous Waste and the 10% Rule	ENCORE	JUN 11, 2015
1064. F001 - F005 Listed Hazardous Waste and the 10% Rule	ENCORE	JUN 18, 2015
1065. Macroencapsulation of Hazardous Debris and Presence of Free Liquids	ENCORE	JUN 25, 2015
1066. DOT Shipping of Damaged, Defective or Recalled Lithium Batteries		JUL 1, 2015
1067. Used Oil Eligibility for Animal and Vegetable Oils	ENCORE	JUL 9, 2015
1068. Used Oil Eligibility for Petroleum Oils Mixed with Animal or Vegetable Oils		JUL 16, 2015
1069. Conditioned Exclusion for Listed Hazardous Waste Debris Treated via Extraction/Destruction	ENCORE	JUL 23, 2015
1070. Conditioned Exclusion for Characteristic Debris Treated via Immobilization		JUL 30, 2015
1071. RCRA Personnel Training and Classroom Training vs. Online Training		AUG 6, 2015
1072. PCB Decontamination Standards with No Decontamination Performed		AUG 13, 2015
1073. PCB Manifest Exceptions a.k.a. When is a PCB Manifest Not Required	ENCORE	AUG 19, 2015
1074. PCB Manifest Relief a.k.a. When is a PCB Manifest Not Required – The Sequel		AUG 27, 2015
1075. Hazardous Debris and Radioactively Contaminated Cadmium Batteries	ENCORE	SEP 3, 2015
1076. Hazardous Debris and Radioactively Contaminated Lead Acid Batteries	ENCORE	SEP 10, 2015
1077. Mercury Wet Cell Batteries - Debris or Not Debris	ENCORE	SEP 17, 2015
1078. Hazardous Debris and Non-Radioactive Lead Acid Batteries		SEP 24, 2015
1079. Unused Paraformaldehyde - U Listed Hazardous Waste or Not?	ENCORE	OCT 1, 2015
1080. CAS Numbers and the Hazardous Waste "U" and "P" Listings	ENCORE	OCT 8, 2015
1081. Universal Waste One Year Accumulation and Multiple Handlers	ENCORE	OCT 15, 2015
1082. LDR Notifications and F001-F005 Constituents of Concern	ENCORE	OCT 29, 2015
1083. LDR Notifications and F001-F005 Constituents of Concern – Again	ENCORE	NOV 5, 2015
1084. LDR Notifications and F001-F005 Constituents of Concern - One Last Time	ENCORE	NOV 12, 2015
1085. DOT and Terminal Protection of Alkaline Batteries	ENCORE	NOV 19, 2015
1086. Used Oil and Keeping Containers Closed – WAC 173-303 vs. 40 CFR 279		NOV 24, 2015
1087. PCB Weight Determinations	ENCORE	DEC 3, 2015
1088. Satellite Accumulation Requirements and Container Inspections	ENCORE	DEC 10, 2015
1089. 'Twas The Night Before Christmas - The Twenty-Third Annual Edition	ENCORE	DEC 24, 2015
1090. Satellite Accumulation and 85-Gallon Containers	ENCORE	DEC 31, 2015
1091. PCB Date Removed From Service Notations – On the Item or In a Log	ENCORE	JAN 7, 2016
1092. The Date Removed From Service Marking on the PCB Mark	ENCORE	JAN 14, 2016
1093. Generator Weekly Inspection Log Documentation – Federal vs. WA State	ENCORE	JAN 21, 2016
1094. Used Oil and Weekly Inspections	ENCORE	JAN 28, 2016
1095. TSCA/PCB Determinations for Fluorescent Light Ballasts via the Manufacture Date	ENCORE	FEB 4, 2016
1096. PCB Containers and Multiple Removed From Service Dates	ENCORE	FEB 11, 2016
1097. Generator Inspection Logs and Corrective Action Documentation	ENCORE	FEB 18, 2016
1098. PCB Concentrations and Micrograms per Centimeters Squared ($\mu\text{g}/\text{cm}^2$)		FEB 25, 2016
1099. RCRA Empty Containers and Removing as Much Waste as Possible	ENCORE	MAR 3, 2016
1100. PCB Incineration and "Six Nines" Destruction Removal Efficiency Criteria	ENCORE	MAR 10, 2016
1101. RCRA Treatment and The Two-Part Definition		MAR 17, 2016
1102. D002 Waste and Dilution as Adequate LDR Treatment	ENCORE	MAR 24, 2016
1103. Satellite Accumulation of Aerosol Cans and Determining the 55-Gallon Limit		MAR 31, 2016
1104. Satellite Accumulation and Process Location Changes	ENCORE	APR 7, 2016
1105. Satellite Accumulation Prior to and After Recycling		APR 14, 2016
1106. Method Detection Limits and Hazardous Waste Determinations	ENCORE	APR 21, 2016
1107. Method Detection Limits and Hazardous Waste Determinations II	ENCORE	APR 28, 2016
1108. Radioactive Lead Solids vs. Non-radioactive Lead Contaminated Debris	ENCORE	MAY 5, 2016

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TWO MINUTE TRAINING

TO: CH2M HILL PLATEAU REMEDIATION COMPANY

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

SUBJECT: RADIOACTIVE LEAD SOLIDS VS. NON-RADIOACTIVE LEAD CONTAMINATED DEBRIS

DATE: MAY 5, 2016

<u>CHPRC Projects</u>	<u>CH PRC - Env. Protection</u>	<u>MSA</u>	<u>Hanford Laboratories</u>	<u>Other Hanford Contractors</u>	<u>Other Hanford Contractors</u>
Richard Austin Roni Ashley Tania Bates Bob Cathel Rene Catlow Richard Clinton Larry Cole John Dent Brian Dixon Eric Erpenbeck Stuart Hildreth Mike Jennings Stephanie Johansen Jeanne Kisielnicki Melvin Lakes Marty Martin Jim McGrogan Stuart Mortensen Anthony Nagel Dean Nester Dave Richards Phil Sheely Connie Simiele Jennie Stults Michael Waters Jeff Widney	Brett Barnes Mitch Boyd Ron Brunke Bill Cox Laura Cusack Lorna Dittmer Rick Engelmann Ted Hopkins Sasa Kosjerina Jim Leary Dale McKenney Jon McKibben Rick Oldham Linda Petersen Fred Ruck Ray Swenson Wayne Toebe Lee Tuott Daniel Turlington Dave Watson Joel Williams	Jerry Cammann Jeff Ehlis Garin Erickson Lori Fritz Panfilo Gonzales Jr. Dashia Huff Mark Kamberg Edwin Lamm Candice Marple Saul Martinez Jon Perry Thomas Pysto Christina Robison Don Rokkan Lana Strickling Lou Upton	(TBD) <u>DOE RL, ORP, WIPP</u> Mary Beth Burandt Duane Carter Cliff Clark Mike Collins Tony McKarns Ellen Mattlin Greg Sinton Scott Stubblebine	Bill Bachmann Dean Baker Scott Baker Lucinda Borneman Paul Crane Tina Crane Jeff DeLine Ron Del Mar John Dorian Mark Ellefson Darrin Faulk Joe Fritts Tom Gilmore Rob Gregory Gene Grohs James Hamilton Andy Hobbs Ryan Johnson Dan Kimball Megan Lerchen Richard Lipinski Charles (Mike) Lowery Michael Madison Terri Mars Cary Martin Grant McCalmant Steve Metzger Tony Miskho Matt Mills Tom Moon Chuck Mulkey Mandy Pascual Kirk Peterson Jean Quigley	Dan Saueressig Merrie Schilperoort Joelle Moss Glen Triner Greg Varljen Julie Waddoups Jay Warwick Kyle Webster Jeff Westcott Ted Wooley

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TWO MINUTE TRAINING

SUBJECT: Radioactive Lead Solids vs. Non-radioactive Lead Contaminated Debris

Q: Radioactive lead solids (RLS), such as lead shielding, have a land disposal restrictions (LDR) treatment standard of macroencapsulation (MACRO) per [40 CFR 268.42](#), which does not include tanks or containers. Nonradioactive lead contaminated hazardous debris has an LDR treatment standard of macroencapsulation per [40 CFR 268.45](#), which does include tanks or containers. What if a customer has two drums that contain a mixture of RLS and lead contaminated debris? Assuming no deliberate mixing and that visual inspection indicates drum A is 60% RLS/40% debris and drum B is 60% debris/40% RLS, which LDR standard of macroencapsulation applies to each mixture - 268.42 (MACRO) or 268.45 (macroencapsulation) or both?

A: Per [40 CFR 268.2\(g\)](#), a mixture of debris and non-debris can be regulated as debris, if the mixture is primarily debris based upon visual inspection. Per an EPA memo dated October 6, 1994 ([RO 13705](#)), "primarily" debris was defined as a mixture comprising at least 50% debris, by volume, for a mixture of two components. If the mixture was comprised of three components (debris, soil, and sludge), then the volume of debris had to be greater than the soil and greater than the sludge.

Drum A is primarily RLS (60%), therefore MACRO at 40 CFR 268.42 would apply, i.e., the mixture is not primarily debris. The customer would have to ensure that the waste from drum A is macroencapsulated per 268.42, which prohibits a tank or container as the "jacket of inert material".

Drum B is primarily hazardous debris (60%), therefore macroencapsulation at 40 CFR 268.45 could apply. The customer would have to ensure that the waste from drum B is macroencapsulated per 268.45, which does not prohibit a tank or container as the "jacket of inert material". (Note that 40 CFR 268.45 is an alternative treatment standard. Therefore, the customer could always choose to treat the debris waste per the more stringent waste code specific LDR treatment standards at [40 CFR 268/268.42](#); hence the use of the term "could" in the above sentences).

Also note that debris and non-debris cannot be deliberately mixed to avoid the otherwise applicable LDR treatment standards of 40 CFR 268.40. If non-debris and debris are deliberately mixed, the mixture would have to be treated per the more stringent waste code specific treatment standards referenced in 40 CFR 268.40, as applicable. Deliberate mixing of non-debris with debris is considered impermissible dilution.

SUMMARY:

- Mixtures of debris and non-debris can be regulated as debris if the mixture is primarily debris.
- "Primarily" debris means debris comprising more than 50% of two components or the larger of three components, etc.
- A drum of 60% debris and 40% RSL, could be managed as debris and macroencapsulated per 40 CFR 268.45, i.e., sealed in a noncorroding container, etc.

Excerpts from 40 CFR 268.2(g), 268.42, 268.45 and the October 6, 1994 EPA memo are attached to the e-mail. If you have any questions, please contact me at "Paul_W_Martin@rl.gov" or at (509) 376-6620.

FROM: Paul W. Martin

DATE: 5/4/16

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TWO MINUTE TRAINING - ATTACHMENT

SUBJECT: Radioactive Lead Solids vs. Non-radioactive Lead Contaminated Debris

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 268.40 Applicability of treatment standards.

WASTE CODE	TREATMENT STANDARDS FOR HAZARDOUS WASTE NOTE: NA means not applicable			
	WASTE DESCRIPTION AND TREATMENT/ REGULATORY SUBCATEGORY	REGULATED HAZARDOUS CONSTITUENTS		NONWASTEWATER
		Common Name	CAS No.	Concentration in mg/kg unless noted as "mg/l TCLP"; or Technology Code
D008	Wastes that exhibit or are expected to exhibit the characteristic of toxicity for lead based upon the toxicity characteristic leachate procedure (TCLP) in SW-846.			0.75 mg/l TCLP and meet 268.48 treatment standards
	Radioactive Lead Solids Subcategory (Note: these lead solids include, but are not limited to (see 268.40 for complete details).	Lead	7439-92-1	MACRO

40 CFR 268.42 Treatment standards expressed as specified technologies.

Table 1. Technology Codes and Description of Technology-Based Standards

Technology code	Description of technology-based standards
MACRO:	Macroencapsulation with surface coating materials such as polymeric organics (e.g., resins and plastics) or with a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media. Macroencapsulation specifically does not include any material that would be classified as a tank or container according to 40 CFR 260.10.

40 CFR 268.45 Treatment standards for hazardous debris.

Table 1. Alternative Treatment Standards For Hazardous Debris

Technology description	Performance and/or design and operating standard	Contaminant restrictions
C. Immobilization Technologies 1. Macroencapsulation: Application of surface coating materials such as polymeric organics (e.g., resins and plastics) or use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media.	Encapsulating material must completely encapsulate debris and be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).	None.

FROM: Paul W. Martin

DATE: 5/4/16

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TWO MINUTE TRAINING - ATTACHMENT

SUBJECT: Radioactive Lead Solids vs. Non-radioactive Lead Contaminated Debris

FAXBACK 13705

9551.1994(01)

CLARIFICATION OF CERTAIN ASPECTS OF 40 CFR 268 DEBRIS REGULATIONS

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

October 6, 1994

Mr. Kenneth L. Humphrey
Environmental Affairs Director
Envirosafe Services of Ohio, Inc.
4350 Navarre Avenue
P.O. Box 167571
Oregon, Ohio 43616-7571

Dear Mr. Humphrey:

This letter is in response to your request of August 11, 1994, requesting clarification of certain aspects of the 40 CFR 268 debris regulations, specifically that portion of the 40 CFR 268.2(g) definition of debris which states: "A mixture of debris that has not been treated to the standards provided by section 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."

In your letter you ask for clarification as to: 1) whether waste shipments containing mixtures of debris and non-debris materials are to be regulated as debris if the debris portion is present at 50 percent or greater, by volume based on visual inspection; and 2)-whether EPA has defined the term "primarily" as included in the definition of mixtures of debris and non debris materials other than the percentage given at the [57 FR 37235](#), footnote 42.

The EPA has not defined the term "primarily" as it is used in the definition of debris, nor has it been specifically defined elsewhere in the final rule, preamble or EPA background document. You are correct in noting that the only reference to a specific percentage, with respect to the term "primarily" is found on [57 FR 37235](#), footnote 42. As discussed on [57 FR 37224](#), the Agency has classified debris as any mixture of materials (debris, soil and/or sludge), where the debris portion comprises the largest amount of material present by volume, based on visual inspection. As such, if a mixture is comprised of three components (debris, soil, and sludge); the mixture would be classified as debris if the volume of debris is greater than soil and greater than the volume of sludge.

If however, the mixture is comprised of two components, debris and soil or debris and sludge as described in your question, the debris component would have to comprise at least 50 percent, by volume, based on visual inspection to be subject to the debris rule.

FROM: Paul W. Martin

DATE: 5/4/16

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TWO MINUTE TRAINING - ATTACHMENT

SUBJECT: Radioactive Lead Solids vs. Non-radioactive Lead Contaminated Debris

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EPA would like to stress, however, that the determination of a mixture as primarily debris cannot be achieved by deliberately mixing the debris with other wastes in order to change the treatment classification. Such mixing is impermissible dilution under section 268.3. In addition, in 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 is specified in section 268.41(b).

Finally, in response to your third question, a State's authorized program generally operates in lieu of the Federal RCRA requirements. However, for requirements based on HSWA authority (which includes the various Land Disposal Requirements), EPA is required to implement these authorities until the State has adopted them and received authorization from EPA.

When a State is not yet authorized for a HSWA-based authority, facilities are required to comply with the Federal HSWA requirement, as well as any applicable provisions of State law that address the same matter. States may adopt and implement authorities that are equivalent to or more stringent than the corresponding Federal laws. However, if State law is less stringent than Federal laws, the State authority would not apply.

If you should have any further questions regarding this matter, please contact Richard Kinch of my staff at 703-308-8434.

Sincerely,

Michael Shapiro, Director
Office of Solid Waste

cc: Richard Kinch

FROM: Paul W. Martin

DATE: 5/4/16

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