TWO MINUTE TRAINING

TO: *CENTRAL PLATEAU CLEANUP COMPANY*

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

SUBJECT: *MACROENCAPSULATION OF HAZARDOUS DEBRIS AND PRESENCE OF FREE LIQUIDS*

DATE: *AUGUST 11, 2022*

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TWO MINUTE TRAINING

SUBJECT: Macroencapsulation of Hazardous Debris and Presence of Free Liquids

Q: A customer has hazardous debris as defined at 40 CFR 268.45 in the form of crushed containers. The crushed containers will be landfilled following macroencapsulation as defined at 40 CFR 268.45 Table 1. Some of the containers contain small amounts of free liquids and the customer is concerned about the prohibition on liquids in landfills at WAC 173-303-140(4)(b) *[40 CFR 264.314(c) / 265.314(b)]*. Can the customer's debris contain free liquids if destined for macroencapsulation and then landfill?

A: Per the August 18, 1992, Federal Register (57 FR 37194) on page 37223, it states:

"Even though debris must be a solid material, it may contain or be mixed with free liquids. The liquids may be waste or ground or surface water that may be entrapped in the debris (e.g., in partially crushed containers) or may be still oozing from the debris if the debris was newly generated or newly excavated from a remediation site. (If liquids separate from hazardous debris prior to treatment of the debris, they must be managed as hazardous waste.) Liquids that are entrapped in debris will be effectively treated under today's [hazardous debris] *treatment standards for extraction or destruction technologies. If an extraction technology is used, the toxic constituents in the liquid will be removed from the debris as a treatment residue and is subject to the LDRs for the waste contaminating the debris. If a destruction technology is used, the toxic constituents in the liquids should be destroyed.*

We note, however, that debris that is immobilized prior to land filling may not contain free liquids as provided by §§264.314 and 265.314. Thus, free liquids (including liquids in crushed containers) cannot be present in debris that is macroencapsulated or sealed, and cannot be present in debris that has been microencapsulated."

Therefore, the customer's debris consisting of crushed drums destined for landfill, could not be macroencapsulated, or sealed or microencapsulated, and landfilled if the treated debris contained free liquids. The free liquids would have to be removed prior to landfilling. However, the free liquids would not have to be removed if the debris was be treated via an extraction or destruction technology listed in 40 CFR 268.45, Table 1.

SUMMARY:

- Hazardous debris must be a solid, but may contain or be mixed with free liquids.
- Hazardous debris containing entrapped liquids are effectively treated via extraction or destruction technologies, e.g., chemical extraction, thermal extraction, thermal destruction, etc.
- Hazardous debris containing free liquids cannot be treated via macroencapsulation or sealing, and cannot contain free liquids after microencapsulation and then disposed in a landfill.

Excerpts from WAC 173-303-140(4) and 40 CFR 264/265.314 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.

TWO MINUTE TRAINING - ATTACHMENT

SUBJECT: Macroencapsulation of Hazardous Debris and Presence of Free Liquids

WAC 173-303-140 Land Disposal Restrictions.

(4) Land disposal restrictions and prohibitions. The land disposal requirements of this subsection apply to land disposal in Washington state.

(b) Disposal of liquid waste. Special requirements for bulk and containerized liquids.

(i) The placement of bulk or noncontainerized liquid dangerous waste or dangerous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

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

(A) All free-standing liquid:

(I) Has been removed by decanting, or other methods; or

(II) Has been mixed with sorbent or stabilized (solidified) so that free-standing liquid is no longer observed; or

(III) Has been otherwise eliminated; or

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

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

(D) The container is a labpack and is disposed of in accordance with WAC 173-303-161 and this chapter.

(iii) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following tests must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" EPA Publication SW-846 as incorporated by reference in WAC 173-303-110 (3)(a).

(iv) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: Materials listed or described in (b)(iv)(A) of this subsection; materials that pass one of the tests in (b)(iv)(B) of this subsection; or materials that are determined by the department to be nonbiodegradable through WAC 173-303-910.

SUBJECT: Macroencapsulation of Hazardous Debris and Presence of Free Liquids

40 CFR §264.314 Special requirements for bulk and containerized liquids

(a) The placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

(b) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095B (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in §260.11 of this chapter.

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

(1) All free-standing liquid:

(i) Has been removed by decanting, or other methods;

(ii) Has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or

(iii) Has been otherwise eliminated; or

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

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

(4) The container is a lab pack as defined in §264.316 and is disposed of in accordance with §264.316.

(d) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in paragraph (d)(1) of this section; materials that pass one of the tests in paragraph (d)(2) of this section; or materials that are determined by EPA to be nonbiodegradable through the part 260 petition process.

40 CFR §265.314 Special requirements for bulk and containerized liquids

40 CFR 265.314 (interim status permits) has essentially the same wording as 40 CFR 264.314 (final status standards) except the order of the paragraphs is slightly different and paragraph (d) reads:

"(d) The date for compliance with paragraph (a) of this section is November 19, 1981. The date for compliance with paragraph (c) of this section is March 22, 1982."