

9487.1988(01)

PCB-CONTAMINATED WASTES, STABILIZATION OF

February 3, 1988

MEMORANDUM

SUBJECT: Stabilization of PCB-Contaminated Wastes

FROM: Marcia E. Williams, Director
Office of Solid Waste

Charles Elkins, Director
Office of Toxic Substances

TO: William J. Muszynski, P.E.
Deputy Regional Administrator
Region 2

This is in response to your letter of December 24, 1987, concerning the stabilization and disposal of PCB-contaminated lagoon sludges and metal hydroxide sludges at the SCA Chemical Services facility in Model City, New York. Your specific issue concerns whether, under RCRA, a minimum unconfined compressive strength of 50 psi is required before placement of stabilized bulk liquids in a hazardous waste landfill. The issue arises due to the January 16, 1987 Policy for Managing Leachate at PCB Landfills (pg. 8) referencing the OSWER Policy Directive #9487.00-2A, June 11, 1986.

Briefly, the January 16, 1987 Policy states that any PCB-containing treatment residue (sludges or slurries) or PCB-containing phrases, which are not incinerated, be stabilized in accordance with the OSWER guidance on the "Liquids in Landfills Ban" prior to being placed in chemical waste landfills. OTS referenced the OSWER Policy Directive as guidance to the TSCA permit writer on method that can be used to determine whether a material is a non-liquid and, therefore, may be landfilled.

Some history concerning the development of the OSWER 50 psi unconfined compressive strength criterion is in order. Section 3004(c)(1) of HSWA prohibits the direct placement into a landfill of bulk liquids that have been solely treated by the addition of

an absorbent (or adsorbent, according to the OSWER policy

directive mentioned above.) Therefore, bulk wastes that are treated solely by the addition of an absorbent or adsorbent are prohibited from being placed in a landfill unless further treatment is performed. Bulk wastes to which no absorbents or adsorbents have been added are required to be tested by the Paint Filter Liquids Test (PFLT). If the bulk waste passes the PFLT (i.e., it is a solid) it is allowed to be disposed of in a landfill. If the bulk waste fails, then additional treatment, without the use of absorbents or adsorbents, is necessary before the waste can be landfilled.

The issue of 50 psi arises when further treatment is performed on the bulk waste. One acceptable form of treatment is chemical solidification/stabilization. It is acceptable because it is not a treatment technology that solely involves the addition of an absorbents or adsorbent material. When reviewing a solidification/stabilization process, if it is not obvious that a chemical reaction has taken place (i.e., if there are any concerns that stabilization is occurring primarily due to the addition of sorbents), then it is recommended that representative samples of the treated waste pass the unconfined compressive strength test with a minimum value of 50 psi.

The policy directive, however, is quite clear that meeting the 50 psi value is neither a requirement nor a condition that must be applied in all cases. It should be noted that the guidance states that if an owner/operator using his/her data demonstrates to the permit writer that something more than absorption or adsorption is occurring, then this is acceptable and the 50 psi issue should not arise. One way to demonstrate a chemical solidification/stabilization process is to demonstrate an increase in strength over time for the treated waste. This increase in strength would not have to reach a 50 psi value. For example, a day-one value of 3 psi for the treated waste and a 28-day value for 37 psi would be an acceptable increase in strength over time. In some cases, more data (i.e., various wastes to reagent recipes) may be required in order for the permit writer to agree that an increase in strength over time has occurred.

In regard to the SCA facility, if a decision is reached that the previous treatment of the leachate did not involve the addition of absorbents or adsorbents, then the wastes (i.e., the

salts and sludges) are only required to be tested using the Paint Filter Liquids Test. If they pass, the wastes are allowed to be disposed of in a landfill. If they fail, then additional treatment that does not solely involve the addition of an absorbent or adsorbent is required in order for the sludges to be bulk disposed.

If the decision is reached that previous treatment has solely involved the addition of an absorbent or adsorbent, then further treatment must be performed before the wastes are allowed to be bulk disposed. An acceptable form of treatment is chemical stabilization/solidification, as discussed above.

In order to determine that an "appropriate recipe" has been developed and followed by the owner or operator for stabilization/solidification, some data collection would still be necessary. This data collection would enable the permit writer to determine that the wastes will be "effectively encapsulated in the stabilized matrix." Data collection is necessary to determine this "effective encapsulation in the stabilized matrix" because a sufficient mixture of reagent to waste must be used to achieve an acceptable increase in strength over time, as discussed above.

If you should seek help in determining whether any previous treatment solely involved the addition of an absorbent or an adsorbent, then you should talk with the following people who can help make that determination. Carlton Wiles, of EPA ORD in Cincinnati, Ohio at FTS 684-7795 or John Cullinane of the Army Corp of Engineers in Vicksburg, Mississippi at 601/542-3723.

The discussion above relates to the OSWER policy directive mentioned in the first paragraph. One point to consider is that if the Region's sole intent is to provide SCA with a draft RCRA Section 3008(h) order, this type of activity allows the Region to impose any type of response measures to protect human health and the environment. If the Region were to decide that the salts and sludges were not subject to the bulk liquids ban (i.e., Section 3004(c)(1) does not apply since no absorbent or adsorbent have been added and the wastes pass the PFLT), additional controls through the Section 3008(h) order could be imposed. If the salts and sludges pass the Paint Filter Liquids Test, but do not have sufficient strength to support a final cover that would be placed over the landfill, then additional treatment of the salts and

sludges could be undertaken to increase their strength so that a final cover will not experience settlement and subsidence.

If you should have any general questions concerning this memo, please call Paul Cassidy of the Land Disposal Branch at FTS-382-4682 or Denise Keehner of the Office of Toxic Substances at FTS-382-3835.

cc: Carlton Wiles, ORD
John Cullinane, USAE
Denise Keehner, OTS
Paul Cassidy, OSW
Dave Eberly, PSPD