

9553.1987(16)

APPROPRIATE TREATMENT METHODS FOR ELEMENTAL MERCURY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

NOV 18 1987

Mr. Douglas W. Jackson
Project Manager
Rollins Environmental Services (FS) Inc.
9000 Gulf Freeway, Suite 240
Houston, Texas 77017

Dear Mr. Jackson:

This is in response to your letter of October 15, 1987, concerning your questions on appropriate treatment methods for elemental mercury that were addressed in a telephone conversation with William Fortune of my staff. Specifically, you asked whether broken mercury thermometers might be treated with sulfur to form mercuric sulfate, followed by encapsulation of the mercuric sulfate/glass mixture in concrete prior to being land disposed.

As you are aware, the Agency did not establish treatment standards in the July 8, 1987 final rule for liquid hazardous wastes containing metals (including mercury and/or compounds). As a result, California list wastes containing mercury are currently subject to the statutory prohibitions and thus are prohibited from land disposal unless treated to concentrations below the prohibition level or rendered nonliquid. The Agency has indicated (see 52 FR 25778) that certain solidification technologies may be considered appropriate treatment for California list metals, at least until treatment standards are adopted for these wastes. Solidification techniques, where reagents (i.e., substances that take part in reactions or processes) are added that produce physical or chemical changes, or otherwise immobilize the hazardous constituents, would be considered legitimate treatment (rather than dilution).

With respect to hazardous waste management practices in general, it has been the Agency's preference that waste minimization methods (e.g., reclamation, use or reuse of a waste) be utilized over treatment and land disposal options. Since the broken thermometers contain mercury in its elemental form, this waste would appear to have considerable potential for recovery and reuse. Prior to treating and disposing of these broken thermometers, we suggest that you investigate the availability of facilities (such as secondary mercury firms) willing to accept these wastes. If a recovery and reuse option is not feasible, your proposed solidification technique - treat the liquid elemental mercury with sulfur to produce mercuric sulfate (note: any reaction would likely form mercuric sulfide), encapsulate in concrete, and dispose in a landfill - would be in compliance with the prohibitions on California list metals provided it immobilizes or chemically fixes the mercury, and thereby legitimately renders the waste nonliquid, or if it reduces the concentrations below the specified prohibition levels.

I hope this information addresses your concerns. Please feel free to contact William Fortune, of my staff at (202) 475-6715, if you have further questions.

Sincerely,

Stephen R. Weil, Chief
Land Disposal Restrictions Branch