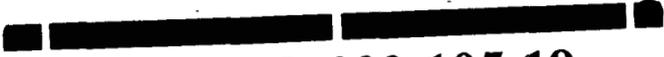


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**CHARACTERIZATION OF METAL COATED WITH
LEAD-BASED PAINT**

09/16/91

**DOE-2152-91
DOE-FSO/OEPA
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LETTER**



Department of Energy
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2062

SEP 16 1991
DOE-2152-91

Mr. Paul Pardi
Group Leader, SHWMU
Ohio Environmental Protection Agency
40 South Main Street
Dayton, Ohio 45402

Dear Mr. Pardi:

CHARACTERIZATION OF METAL COATED WITH LEAD-BASED PAINT

This letter summarizes for your information the methodology used at the Fernald Environmental Management Project (FEMP) for determining if process equipment and other metal wastes coated with lead-based paint generated from construction projects contain levels of lead above the regulatory level for the Toxicity Characteristic (TC). Mike Hayes (Ohio EPA, SW District Office) discussed this methodology with Neal Frink [Westinghouse Environmental Management Company of Ohio (WEMCO), Environmental Compliance] on May 6, 1991. While the regulations are clear that it is the generator's responsibility to fully characterize its waste, we want to make every effort to keep you informed of the status of our compliance program.

Background:

Prior to the ban on the use of lead-based paint, such paint was commonly used at the FEMP to coat process equipment and other metal surfaces in order to retard rust. When such equipment is removed or replaced as a result of construction projects, the metal must be characterized to determine whether it contains listed hazardous waste or exhibits any of the hazardous waste characteristics. The presence of lead-based paint raises the possibility that the lead could be leachable and thereby cause failure of the Toxicity Characteristic for lead. Samples of such paint have indeed indicated that the lead is leachable from the paint above the regulatory limit (5 ppm) in some cases.

In order to evaluate the material as generated (i.e., the entire waste form) a representative sample of the material must be taken. A direct application of the TCLP would require grinding the entire waste form to less than 9.5 mm and subjecting 100 grams of the material to the TCLP extraction. Because grinding solid metal waste forms (e.g., structural steel) is an arduous task at best, an alternative approach has been developed by WEMCO to yield comparable results.

Methodology for Evaluating Effect of Lead-Based Paints:

The methodology for evaluating equipment and other material for the presence of leachable lead is based on a combination of knowledge of the waste and sampling and analysis data. Knowledge of the waste includes such items as characteristics of the material itself (usually steel), size and shape of the material, and portion of the surface area coated with the paint in question.

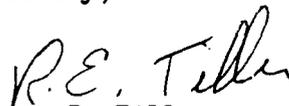
The FEMP has developed extensive background documentation on the sampling and analysis of lead-based paints at the FEMP. This documentation has made it possible to separate wastes into process equipment (including piping) and building material (such as window and door frames). Statistical analysis of sampling results leads to a threshold (high) level of leachability used in evaluations for each category of waste. The evaluation procedure is as follows:

- 1) Assume the high level of leachability and a paint thickness greater than FEMP specifications (approximately 5/1000 inch). Evaluate the TC level for the material as a whole using known substrate thicknesses. If the material fails (TC greater than regulatory level), then
- 2) Assume the high level of leachability and measure paint thickness via multiple pin gauge assessments. Repeat the evaluation. If the material still fails, then
- 3) Perform TCLP on paint scrapings from the material and use the analytical results with measured paint thickness in reevaluation.

This approach takes what DOE believes to be a technically justified and implementable approach to assessing the regulatory status under the Toxicity Characteristic of lead-based paint on process equipment consistent with regulatory requirements.

If you have any questions, please contact David Rast at (513) 738-6322.

Sincerely,



Robert E. Tiller
Manager

FO:Rast

cc:

M. Hayes, OEPA-Dayton
S. L. Bradley, WEMCO
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