TWO MINUTE TRAINING

TO: *CH2M HILL PLATEAU REMEDIATION COMPANY*

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

SUBJECT: *METHOD DETECTION LIMITS AND HAZARDOUS WASTE DETERMINATIONS*

DATE: *APRIL 21, 2016*

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TWO MINUTE TRAINING

SUBJECT: Method Detection Limits and Hazardous Waste Determinations

Q: A customer has a sample analyzed via the toxic characteristic leachate procedure (TCLP) to determine if the material is or is not regulated as a RCRA characteristic hazardous waste. Analytical results appear to indicate that all TCLP characteristics are below the specified regulatory levels for D001 through D043 characteristic hazardous wastes. However, the customer notes that the method detection limit (MDL) for selenium is 2.0 ppm TCLP and that the RCRA regulatory threshold is 1.0 ppm TCLP. Since the MDL is higher than the regulatory threshold, must the customer assume that the material is a D010 RCRA hazardous waste?

A: Due to the variance between the MDL and the regulatory threshold it is not known via the analytical data if selenium is present at concentrations ranging from zero up to the MDL of 2.0 ppm TCLP. Therefore the customer has basically three options available for this situation:

1. Re-test the material at a laboratory that can achieve an MDL of less than 1.0 ppm TCLP, or;

2. Use generator knowledge to determine if the material is or is not characteristic for selenium, or;

3. Assume the material is a hazardous waste and will exhibit the characteristic for selenium.

An EPA memo dated November 8, 1990, (RO 11568) and another dated March 25, 1991, (RO 11592) support the three options available to a generator when the MDL is higher than the regulatory threshold.

Note that these options would apply to land disposal restriction treatment standard thresholds referenced at 40 CFR 268.40 and 40 CFR 268.48 as well.

SUMMARY:

- If the MDL is higher than the regulatory threshold the customer should:
  - Assume the material is regulated as a hazardous waste, or;
  - Use generator knowledge to determine if hazardous or nonhazardous, or;
  - Re-test the material at a laboratory with an MDL less than the regulatory level.

The November 8, 1990 and the March 25, 1991 EPA memos 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.

SUBJECT: Method Detection Limits and Hazardous Waste Determinations

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

November 8, 1990 FaxBack # 11568

Art Coleman
Technical Assistance Section
Division of Solid and Hazardous Waste Management
Ohio EPA
P.O. Box 1049
1800 Watermark Dr.
Columbus, OH 43266-0149

Dear Mr. Coleman:

I am writing in response to your letter of October 30,1990 concerning the questions you raised with Method 1311 (TCLP).

In answer to your first question, there are situations when a laboratory is asked to perform an inappropriate test. The TCLP was not intended to be applied to certain matrices, such as oils or neat solvents. In these instances, the waste usually goes through the filter and is, by definition, a liquid and its own extract. The analysis of this liquid extract for organics entails diluting it before injecting it into a GC or GC/MS. The dilution often results in detection limits being much higher than the regulatory thresholds. If this is the case, you **must assume your waste is hazardous** *[EPA emphasis]* since the laboratory cannot demonstrate non-hazardousness with TCLP for these materials. We currently do not have the technology to address this issue.

In answer to your second question, a laboratory **must** use the TCLP if testing for hazardousness under the Toxicity Characteristic or if assessing effectiveness of waste treatment under the Land Disposal Restrictions Program. These two regulations actually contain the method as an appendix and it is, therefore, part of the law. However, the extract obtained from the TCLP may be analyzed by **any** method as long as that method has documented QC and the method is sensitive enough to meet the regulatory limit. In other words, the lab does not have to use SW-846 methods because these methods are intended to serve only as guidance for the regulated community. SW-846 methods that are currently in draft form (e.g., 8250 for chlordane) may also be used to analyze the extract.

In answer to your third question, there are no plans to prepare a clarifying FR update in the near future.

I hope these answers have sufficiently addressed your concerns. If you have any further questions, please give me a call at (202) 475-6722 or write me again at the above address.

Sincerely yours,

Gail Hansen
Health Scientist
Methods Section
(OS-331)

SUBJECT: Method Detection Limits and Hazardous Waste Determinations

Faxback 11592 9442.1991(04)

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

March 25, 1991

Mr. Richard S. Leonard, Quality Assurance Director
National Environmental Testing, Inc.
Woodland Falls Corporate Park
220 Lake Drive East, Suite 301
Cherry Hill, NJ 08002

Dear Mr. Leonard:

The purpose of this letter is to clarify some of the discussion in my letter of August 14, 1990 to you (copy enclosed) which was sent in response to your letter of August 1, 1990. Specifically, I would like to revise the response to question number 4. The original question and the revised response are as follows:

Question 4: Our clients complain that when we dilute a sample (e.g. oil or solvent matrix) to obtain results that meet quality control requirements, that the data so obtained are "useless" because of the high reporting limit. How do we generate analytical data for compliance decisions when dilution must be performed?

Answer: First I want to clarify that, at least with respect to used oil that is destined either for recycling or to be blended as fuel, there is no need on the part of the generator to run a TCLP since these wastes are eligible for the used oil exemption (see 40 CFR 261.6(a) (2) (iii) and (a) (3) (iii). In the case of oily waste that is to be disposed or solvent wastes, it is required that generators determine if their waste is hazardous using either knowledge of their waste and/or the process that generated it or by testing. If they choose to test, then they must use Method 1311 (TCLP). The Agency is aware that running the TCLP on matrices involving oily wastes and organic liquid wastes may result in labs being unable to determine conclusively that the waste is or is not hazardous. In those cases, the generator must use his/her knowledge to make this determination. Where no additional information or knowledge is available, it would probably be prudent for the generator to manage those wastes as hazardous wastes. Please note that in the case of liquid organic wastes, it is possible that these wastes may already be hazardous by virtue of a hazardous waste listing (e.g., spent solvents, hazardous wastes codes F001 -F005), in which case the hazardous waste determination with respect to the TC becomes much less critical (e.g., You would be determining if additional wastes codes applied to the waste instead of making the critical hazardous waste determination). I would also add that the Agency is aware of analytical problems associated with oily and organic liquid wastes and is investigating ways to solve them.

I would like to apologize for any misunderstanding or confusion which may have resulted from my earlier response, and I hope this revised response addresses your concerns. If you have any additional questions related to this or other TC/TCLP issues, please feel free to call Steve Cochran at (202) 382-4770.

Sincerely yours,

Alec McBride, Chief
Technical Assessment Branch