

SW-846: 2012 and Beyond

Major Changes in Update V

All methods in **Update V** received the following updates:

- Revised – Initial Demonstration of Proficiency (IDP)
- Replaced the method detection limit (MDL) with the lower limit of quantitation (LLOQ)
- Improved overall method formatting for consistency with new SW-846 methods style guidance.
- The addition of RSE (Relative Standard Error) as an acceptable calibration model

The following methods were extensively reviewed by the work groups. Major revisions include:

8000

- Items regarding instrument maintenance were condensed and streamlined for ease of reference

6010/6020

- Revised description of spectral interference check procedures
- Revisions to the section on matrix interference check samples: the post-digestion spike is recommended if a high concentration sample is not available for performing the dilution test.

5021

- Included response column and a classification system for analytes in Secs. 1.1 and 1.2 to provide an indication of which VOC responses were improved by the matrix modifier.
- Added an alternative for calibration standard preparation to Sec. 7.4.1 that allowed for multiple calibration levels prepared by adding different volumes of one or more stock solutions.

SW-846: Projects in the Queue

1. For Update VI, work on the methods that were earmarked for Update V, but were not addressed.
2. Collaborate with USGS to develop a new extraction procedure for hexavalent chromium.
3. Evaluate the impact of and provide possible solution for the supply shortage of a calibrant needed for the analysis of PCBs, dioxin/furan using HRMS.
4. Address the Methods User's Request List. There are currently 48 methods on the list, many with typos, and some needing bigger changes and potential rule changes. Examples include methods referencing mercury thermometers, Method 9040 (pH), other hazardous waste characteristics, and Method 3060A.
5. Further develop method 9200 (lead bioavailability) for inclusion in SW-846.
6. Resolve the preservation issue for vinyl chloride and styrene.
7. Collaborations with the ACIL work groups to improve timeliness regarding the issuance of methods.
8. Collaborate with EPA SPC, program offices, DoD, and external partners for possible method and standards development.
9. Update the SW-846 website to be more user-friendly, including the policy statement.
10. Ongoing updates of FAQs for MICE.

Update V Summary

Target date for Federal Register Notice: Fall 2012

Chapter	Chapter Title
1	Project Quality Assurance and Quality Control
2	Choosing the Correct Procedure
3	Inorganic Analytes
4	Organic Analytes
5	Miscellaneous Test Methods

Number	Method Title
1313	Liquid-Solid Partitioning as a Function of Extract pH using a Parallel Batch Extraction Procedure
1316	Liquid-Solid Partitioning as a Function of Liquid-to-Solid Ratio in Solid Materials using a Parallel Batch Extraction Procedure
3200	Mercury Species Fractionation and Quantification by Microwave-assisted Extraction, Selective Solvent Extraction and/or Solid Phase Extraction
3511	Organic Compounds in Water by Microextraction
3572	Extraction of Wipe Samples for Chemical Agents
4025	Screening for Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans (PCDD/Fs) by Immunoassay
4430	Screening For Polychlorinated Dibenzo-p-Dioxins And Furans (PCDD/Fs) By Aryl Hydrocarbon-Receptor PCR Assay
4435	Method For Toxic Equivalents (TEQS) Determinations For Dioxin-Like Chemical Activity with the CALUX® Bioassay
5021	Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis
6010	Inductively Coupled Plasma-Atomic Emission Spectrometry
6020	Inductively Coupled Plasma-Mass Spectrometry
6800	Elemental and Speciated Isotope Dilution Mass Spectrometry
8000	Determinative Chromatographic Separations
8276	Toxaphene and Toxaphene Congeners by Gas Chromatography/Negative Ion Chemical Ionization Mass Spectrometry (GC-NICI/MS)
9013	Cyanide Extraction Procedure for Solids and Oils
9014	Titrimetric and Manual Spectrophotometric Determinative Methods for Cyanide
9015	Metal Cyanide Complexes by Anion Exchange Chromatography and UV Detection
9016	Free Cyanide in Water, Soils and Solid Wastes by Microdiffusion

Leaching Environmental Assessment Framework (LEAF)

LEAF represents a shift in leaching techniques from current single-point pH tests, such as TCLP and SPLP, to a suite of leaching tests that may be interpreted individually or integrated to provide characteristic leaching behavior of a solid material over a range of potential release scenarios. It is a collaboration between: Vanderbilt University, Energy Research Centre of the Netherlands, DHI (Denmark), EPA Office of Research and Development and EPA Office of Resource Conservation and Recovery.

EPA is including the following two leaching tests for inclusion into Update V:

Method 1313: Liquid-Solid Partitioning as a Function of Extract pH for Constituents in Solid Materials using a Parallel Batch Extraction Procedure

Method 1316: Liquid-Solid Partitioning as a Function of Liquid-Solid Ratio for Constituents in Solid Materials using a Parallel Batch Extraction Procedure

Future work includes:

- Formalizing Methods 1314 and 1315
- Inter-laboratory validation of the LEAF test methods
- Comparison of LEAF testing results with field leaching observations
- Applying the LEAF testing approach to coal combustion residues for evaluating use and disposal options

For more information, view the EPA's report Background information for the Leaching environmental Assessment Framework (LEAF) test methods

<http://www.epa.gov/nrmrl/pubs/600r10170/600r10170.pdf>

MICE Service

The Methods Information Communication Exchange (**MICE Service**) provides a valuable service to the public by answering questions and taking comments regarding "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846)." The MICE Service is maintained by the EPA Office of Resource Conservation and Recovery and operated by TechLaw, Inc., utilizing chemists, sampling experts, and environmental scientists knowledgeable in SW-846 procedures.

Here's how to reach the MICE Service:

E-mail: MICE@techlawinc.com

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New and Improved Chapter One

Chapter One of SW-846 has been rewritten to provide a road map for implementing quality systems to generate data of sufficient quality for their intended use. The main highlights include:

- Reflects the current Quality Assurance approach used by data users and decision makers performing environmental work requiring government oversight
- General overview provided with specific references to important EPA guidance documents for details on implementing an effective Quality Assurance system
- Serves as a basis for new staff responsible for implementing and assessing data collection and generation activities



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