Updating the Toxic Organic Methods

Tuesday, March 22, 2016

OVERVIEW – TODAY'S AGENDA

- Background
- General Process for Updating TO Methods
- Proposed Method Update Schedule
- TO-15 Method Update Process
- How to Submit Comments
- Open Chat Discussion

Note: Please type any questions in the chat box.

HISTORY – METHODS FOR AIR TOXICS

- *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, 1988, Winberry et al.
- Last updated in 1999
- Performance based
- Guideline methods: Air toxics are not regulated
- No process for updating

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ACTIONS TAKEN

- Formed ad hoc toxic organics (TO) methods workgroup several years ago to address issues
- Listened to air toxics community
- Investigated possible processes and alternative methods programs
- Sought support of EPA management

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GOALS OF THE AD HOC WORKGROUP

- To update the TO methods
  - Develop and implement a formal process for updating existing TO methods
  - Develop and implement a process for approving new TO methods
- To develop and implement a communication strategy for updating and revising the TO methods

Overall goal: To advance the science for air toxics!!!!

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RESULT OF ACTIONS

ORD's Air, Climate, and Energy National Program Task EM-1.5 authorizes initial updates:

- Establishes a systematic process to review existing methods and assigns priority
- Establishes a formal TO methods workgroup with members from OSA, OAQPS, and ORD

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CORE WORKGROUP ESTABLISHED

- Lara Phelps (OSA)
- Marie Russell (OSA Fellow)
- Dave Shelow (OAQPS)
- Kevin Cavender (OAQPS)
- Karen Oliver (NERL)
- Don Whitaker (NERL)

Other members will be added as appropriate.

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GENERAL PROCESS FOR UPDATING TO METHODS

GENERAL PROCESS

- Workgroup responsibilities
  - Establish the update process
  - Assign priorities
  - Solicit input
- ORD responsibilities
  - Conduct research
  - Prepare draft method updates
  - Evaluate draft methods through inter-laboratory testing as appropriate

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GENERAL PROCESS (continued)

To finalize a method, the workgroup will:

- Facilitate internal and external peer review of the draft method
- Make the TO method available for air toxics community use once approved

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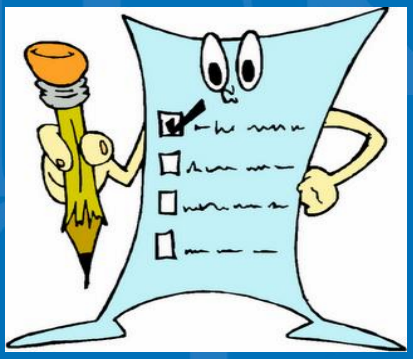
PROPOSED METHOD UPDATE SCHEDULE



PRIORITY APPROACH

- TO method updates are not mandated, so we have leeway in our approach
- We define the schedule based on stakeholder and client needs
- We define the number of updates being addressed at any given time
- Not all methods will necessarily need to be updated

HIGH-PRIORITY METHODS

- TO-15: Canister samples, GC-MS
- TO-11A: Formaldehyde, HPLC
- TO-17: Active sampling with sorbent tubes, GC-MS
- TO-4A: Pesticides and PCBs, high-volume PUF, GC-MD
- TO-13A: PAHs, GC-MS
- TO-16: Long-path open-path FTIR

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MID-PRIORITY METHODS

- TO-9A: Dibenzo-*p*-dioxins/dibenzofurans, HRGC-HRMS
- TO-10A: Pesticides and PCBs, low-volume PUF, GC-MD
- TO-12: NMOC PDFID – not updated in 1999 (date of last version not clear)
- TO-14A: Canister samples, GC with non-specific detectors

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LOW-PRIORITY METHODS

- Methods last updated in 1984:
  - TO-1: VOCs using Tenax tubes, GC-MS
  - TO-2: VOCs using carbon molecular sieve, GC-MS
  - TO-3: VOCs using cryogenic preconcentration techniques, GC-FID or ECD
  - TO-5: Aldehydes and ketones using DNPH impingers, HPLC
- Methods last updated in 1986:
  - TO-6: Phosgene using aniline impingers, HPLC
  - TO-7: *N*-Nitrosodimethylamine using Thermosorb/N cartridge, GC-MS
  - TO-8: Phenol and methylphenols using impingers, HPLC

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CURRENT SCHEDULE

- **TO-15: Canister samples, GC-MS, 2016–2017**
  (Note: TO-15 is serving as a pilot process)
- **TO-11A: Formaldehyde, HPLC**
- TO-17: Active sampling with sorbent tubes, GC-MS
- TO-4A: Pesticides and PCBs, high-volume PUF, GC-MD
- TO-13A: PAHs, GC-MS
- TO-16: Long-path open-path FTIR

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EPA United States Environmental Protection Agency

TO-15 METHOD UPDATE PROCESS

EPA United States Environmental Protection Agency

SUMMARY OF PROPOSED CHANGES TO METHOD TO-15

- Add table of target compounds (current table lists VOCs as defined by Clean Air Act)
- Update concentration ranges for calibration standards, MDLs, canister cleanliness, etc.
- Include TOF and SIM/Scan technology
- Revisit system tune requirements
- Allow best fit for calibration curves
- Include periodic challenge to cans with calibration standards to assess target compound recovery

SUMMARY OF PROPOSED CHANGES TO METHOD TO-15 (continued)

- Revise time frame for blank testing canisters
- Update canister cleaning techniques
- Update vendor lists for
  - Canisters
  - VOC preconcentration systems and auto samplers
  - VOC standards dilution systems
  - Canister cleaning systems
  - Calibration standards
- Update documents and references

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SUMMARY OF PROPOSED CHANGES TO METHOD TO-15 (continued)

- Review comments submitted for the National Air Toxics Trends Stations Program Technical Assistance Document (TAD)
- Incorporate appropriate TAD updates into TO-15

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REQUEST AIR TOXICS COMMUNITY INPUT

- Input is requested from the air toxics community on changes you would like addressed in the TO-15 update
- We are requesting substantive technical comments that will improve the method

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HOW TO SUBMIT COMMENTS

Visit EPA's website,
https://www.epa.gov/measurements/method-development#toxic,
for the submission package:

- A PDF version of the TO-15 method with line numbering – reference this copy for all comments
- A list of currently planned revisions for review
- A comment form with instructions
  - Download the comment form
  - Fill in requested information including the reference section, pages, and lines for each comment
  - Save and email to designated addresses as an attachment

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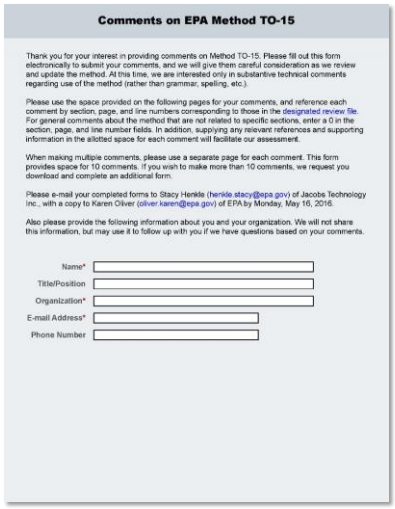
COMMENT FORM



Comments on EPA Method TO-15

Thank you for your interest in providing comments on Method TO-15. Please fill out this form electronically to submit your comments, and we will give them careful consideration as we review and update the method. At this time, we are interested only in substantive technical comments regarding use of the method (rather than grammar, spelling, etc.).

Please use the space provided on the following pages for your comments, and reference each comment by section, page, and line numbers corresponding to those in the designated review file. For general comments about the method that are not related to specific sections, enter a 0 in the section, page, and line number fields. In addition, supplying any relevant references and supporting information in the allotted space for each comment will facilitate our assessment.

When making multiple comments, please use a separate page for each comment. This form provides space for 10 comments. If you wish to make more than 10 comments, we request you download and complete an additional form.

Please e-mail your completed forms to Stacy Henkle (henkle.stacy@epa.gov) of Jacobs Technology Inc., with a copy to Karen Oliver (oliver.karen@epa.gov) of EPA by Monday, May 16, 2016.

Also please provide the following information about you and your organization. We will not share this information, but may use it to follow up with you if we have questions based on your comments.

Name*
Title/Position
Organization*
E-mail Address*
Phone Number

Section Page(s) Line(s)

Comment

References and Supporting Information

SUBMISSION RULES

- Seeking comments for TO-15 only at this time
- Must use the Comment Form
- Follow instructions on the form/website
- Must be submitted via email as directed
- Only substantive technical comments requested
- Comments are due May 16, 2016

WEBSITE

https://www.epa.gov/measurements/method-development#toxic

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ACKNOWLEDGMENT

The TO methods workgroup wishes to acknowledge Stacy Henkle and Tamira Cousett of Jacobs Technology Inc. for their support of this effort under contract EP-C-15-008.

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QUESTIONS/DISCUSSION

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