



DEPARTMENT OF
ECOLOGY
State of Washington

Rulemaking to Update Chapters 173-400 and 173-401 WAC

April 18, 2024 Stakeholder meeting

Introductions

Anthony Bruma – Host

Cooper Garbe – Rules and Planning Unit Supervisor

Linda Kildahl – Rulemaking Lead

Gary Huitsing – Permit and Policy Engineer

Catherine Lucke – Policy Engineer

Agenda

- Rulemaking overview
- Ecology's Source Test Manual
 - Review proposed updates to 2004 Source Test Manual – Procedures for Compliance Testing
 - Q and A
- Wrap up, next steps

Objectives of Rulemaking

Update 2 air quality rules

- Chapter 173-400 WAC, General Regulations for Air Pollution Sources
 - Change references to refer to Ecology's new Source Test Manual
- Chapter 173-401 WAC, Operating Permit Regulation
 - Remove affirmative defense provisions

Rulemaking Timeline

- **Announcement:** filed on January 18, 2024 (CR-101)
- **Proposal:** expected September 2024 (CR-102)
 - Stakeholder meeting: April 18, 2024
 - Stakeholder meeting: May 15, 2024
- **Adoption:** expected December 2024 (CR-103)
- **Rule effective:** 31 days after adoption

Rule Text Changes

- Chapter 173-400 WAC
 - Update to refer to new source test manual in sections -040, -050, -060, and -105
- Chapter 173-401 WAC
 - Remove affirmative defense provisions in section -645 to align with 2023 federal Clean Air Act amendment
 - Correct incorrect reference in section -925

Where We Are Now

Informal public comment period opens today

- Submit comments¹ online for draft source test manual and rule text through May 31, 2024

Next meeting is May 15, 2024

- Review updates to source test manual since April 18, 2024

Questions about rulemaking

¹ <https://ac.ecology.commentinput.com?id=QsE5P7Sbx2>

Updates to Source Test Manual

Gary Huitsing



Ecology Source Test Manual

Procedures for Compliance Testing

- What is in the current September 20, 2004 manual? Why is it not posted online?
- Why is it taking so long to revise the manual?
- Why does Ecology have a source test manual?
- What changes are planned for the manual?
- Why are methods that have been removed from the manual relevant now?
- What is the process for updating the manual?

What's in Current Manual – Why Not Posted



Source Test Method 8	Particulate Sampling by an Impinger Train
Source Test Method 9A	Visual Determination Of Opacity For A Three Minute Standard
Source Test Method 9B	Visual Determination Of Opacity For A Six Minute Standard
Source Test Method 14	Carbonyl Determination Bisulfite Absorption
Source Test Method 17	Combustible Gas Detection using Catalytic Oxidation
Source Test Method 18	Particulate Measurement using Intermediate Vol Samplr
Source Test Method 19	Particulate Size using a Cascade Impactor
Source Test Method 101	Washington-Oregon 1973 Hog Fuel Boiler Study Committee Method
Source Test Calibration Method (STCM) 4	Barton Analyzer Calibration
Source Test Calibration Method (STCM) 5	Ecocal Generator Calibration
Source Test Laboratory Procedure (STLP) 3	Hydrocarbons Condensables Determination
Source Test Laboratory Procedure (STLP) 4	Dichloromethane Extraction of Filters
Conditional Source Test Method (CTM) 038	Measurement of Ammonia Emissions from Highway, Nonroad and Stationary Use Diesel Engines by Extractive Fourier Transform Infrared (FTIR) Spectroscopy
Conditional Source Test Method (CTM) 039	Measurement of PM _{2.5} and PM ₁₀ Emissions by Dilution Sampling (Constant Sampling Rate Procedures)

Why is it Taking So Long to Revise the Manual

- Changing the manual requires making changes to Chapter 173-400 WAC rules
- Our rule writing team has been extremely busy in recent years (pandemic, climate rules, etc.). The manual change was not a top priority.

Why Do We Have a Manual

- To address compliance with WACs (some of which are now outdated)
- Key aspects of the manual:
 - The purpose of the manual was never to include all available methods.
 - But rather, as stated in the proposed manual introduction:

The purpose of this manual is to provide source test methods where other methods are not available. As new methods are developed, Ecology will update this manual to remove outdated methods.
 - Therefore, it needs to be kept up-to-date to be relevant.

What Changes are Planned To the Manual



- Remove 12 of the 14 methods (why)
 - Most methods are old/unused/outdated
 - Some methods use DCM (“highly hazardous and WA state laws regarding its use in the workplace are so restrictive that it is nearly impossible to comply with them for a small business. Recent EPA studies have shown similar recoveries with hexane...”
- Revise existing methods 9A & 9B
 - Based on previous Ecology AQ determinations: A 1983 letter promised to add EPA’s LIDAR alternative option [Defined as a mobile lidar system which includes both laser radar (or LADAR), and Light Detection and Ranging (or LIDAR)]
 - To revise per secondary plume potential
- Complete a long-standing process of removing the total carbonyl limit in WAC 173-400-050(2) to match SIP*, where it has already been removed
 - To complete corresponding removal of Method 14 (carbonyls) from manual

*Section 4 note: Subsection (2) of this section (a state-only provision) does not apply to a unit subject to this subsection because this subsection is a federal requirement.
- Add a “Disposition of Methods” section explaining what methods from the 2004 manual were removed and why. Previous updates lacked this feature.

What Changes are Planned to 9A/9B



A N N O U N C E M E N T

Sept. 27, 1983

Effective October 17, 1983, the State of Washington Department of Ecology's Source Test Manual will include EPA's LIDAR Test Method, as alternates to WDOE Methods 9A and 9B.

As was proposed on July 26, 1983, the alternates are identical to EPA's Alternate of Method 9 (40 CFR 60 Appendix A), except for Section 2.6.4. The three minute opacity standard, WDOE Method 9A, Alternate 1 reads as follows:

*The EPA alternative defines a mobile lidar system as including both laser radar (or LADAR), and Light Detection and Ranging (or LIDAR). The EPA alternate method also provides the following description of how mobile LIDAR systems (both LADAR and LIDAR) work:

“The lidar is used to measure plume opacity during either day or nighttime hours because it contains its own pulsed light source or transmitter. The operation of the lidar is not dependent upon ambient lighting conditions (light, dark, sunny or cloudy).”

What Changes are Planned to 9A/9B

(cont.)

Input from Smoke School Inc:

“When water vapor in the plume condenses and becomes visible at a distinct distance from the emission outlet, the observer must evaluate opacity of emissions at the emission outlet prior to the condensation of water vapor and the formation of the steam plume. **Or, as an alternative, if secondary plumes are present downstream of the steam column, the observer may evaluate the opacity of emissions wherever the opacity is greatest, before or after the steam column.**”

Why are Methods That Have Been Removed From the Manual Relevant Now

- 2018 EPA OIG stack testing audit
 - Discovered some facilities still using methods that were removed in 2004 (ECY Method 5)
 - Issue of permits referring to outdated methods in general
- Opacity Method 9B
 - Discovered some facilities still using 9B in a way that was discarded in 1990
 - Switched from average-based opacity (similar to EPA's Method 9) to one based on opacity exceedances (similar to 9A)

What is the Process for Updating the Manual



- We started gathering information from throughout the state in 2017-2019 to see which methods are still being used and how they are being used.
- We have presented the current manual at 3 permit writers meetings with local clean air agencies, hoping to answer these questions.
- We have reached out to 4 individuals from stack testing companies (or former employees of stack testing companies) for input.
- We have reached out to Ecology regions (HQ technical group, NWRO technical group, ERO, CRO).
- We have reached out to local regions or reviewed their permits (NWCAA, SRCAA, SWCAA, PSCAA).
- We have reached out to Garrett Bosch of Smoke School Inc, Yakima and the YRCAA Smoke School regarding our opacity methods (certification and LIDAR alternative) and other edits.
- Restarted the update process in 2023, etc. (CR-101, -102, etc.)

Gathering Information

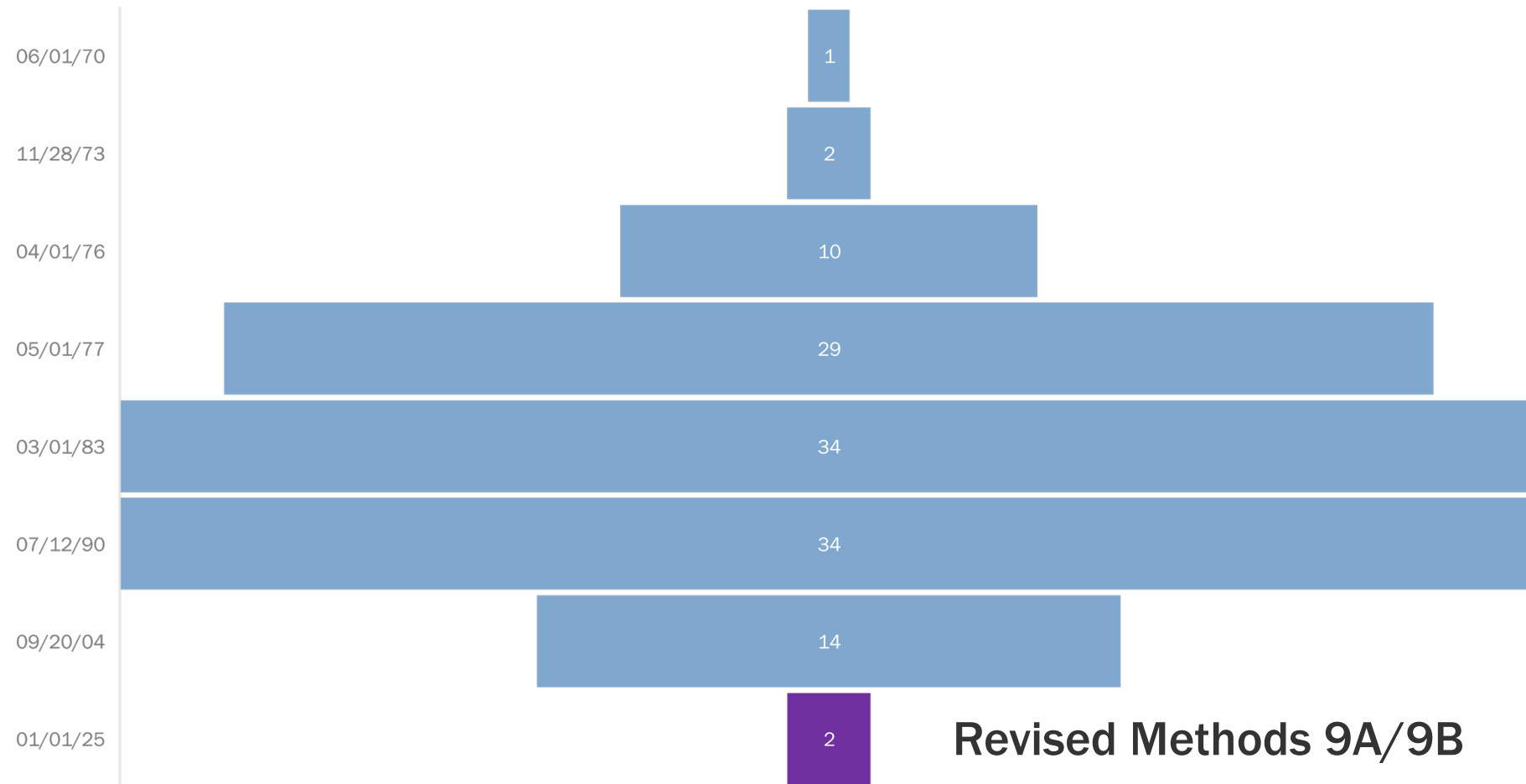
History of Manual to Present

1. 1970-1971 – Washington-Oregon Air Quality Committee: Criteria for Smoke and Opacity Training School
2. November 28, 1973 – Washington-Oregon 1973 Hog Fuel Boiler Study Committee Method
3. April 1, 1976 – First known version of Ecology Source Test Manual (inter office)
4. May 1977 – First full known version of Ecology Source Test Manual
5. 1981 – Ecology began revising manual for second version
6. March 1, 1983 – Second version revised
7. July 26, 1983 – Ecology announced opacity alternative, but manual not revised.
8. July 12, 1990 – Third version finalized. Letter regarding certification legal issues.
9. September 20, 2004 – Fourth version finalized (current version)
10. September 2017 – Review started (input from stack testing and opacity experts)
11. March 2019 – Drafted new version with only Methods 9A,9B. Put on hold.
12. 2023-25 – Ecology reopened this project. Getting ready for eventual public comment.



History/Summary

Ecology Source Test Manual (Number of Methods/Proposed)



Questions?



Wrap Up

Submit informal comments¹ on draft rule language and updated source test manual: April 18, 2024 – May 31, 2024.

See Chapter 173-400/401 WAC rulemaking web page:²

- to submit informal comments
- the updated source test manual³
- rule text amendments for Chapter 173-400 WAC⁴ and Chapter 173-401 WAC⁵

¹ <https://ac.ecology.commentinput.com/?id=QsE5P7Sbx2>

² <https://ecology.wa.gov/regulations-permits/laws-rules-rulemaking/rulemaking/wac-173-400-401-air-pollution-sources>

³ <https://ecology.wa.gov/getattachment/9b84f599-f34a-41e2-9e8d-20d86e6966bc/400SourceTestManual202404.pdf>

⁴ <https://ecology.wa.gov/getattachment/f8a99de7-8655-489d-8107-bfecdb6d12c4/400DraftRule20240318.pdf>

⁵ <https://ecology.wa.gov/getattachment/36781bd4-c4f3-4060-a89c-c7b1f72f7f4a/401DraftRule20240318.pdf>

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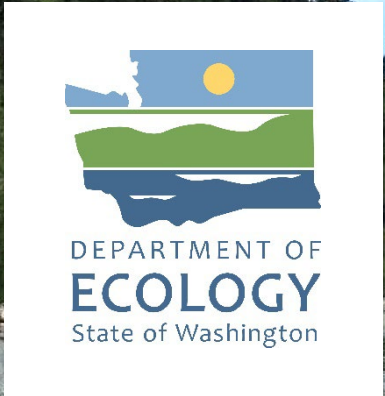
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Thank you