



OFFICE OF AIR QUALITY PLANNING AND STANDARDS

RESEARCH TRIANGLE PARK, NC 27711

June 25, 2024

Jody Monk
General Manager
Eastern Technical Associates, Inc.
P.O. Box 1009
Garner, North Carolina 27529

Dear Mr. Monk,

I am writing in response to your letter dated March 22, 2024, in which you provided comments regarding the approval of Alternative Test Method 152 (ALT-152). Thank you for sharing your comments.

On January 25, 2024, a Federal Register Notice of Availability (89 FR 4942) was published announcing several broadly applicable alternative test method approval decisions made under and in support of the New Source Performance Standards (NSPS) and the National Emission Standards for Hazardous Air Pollutants (NESHAP) between January 1, 2023, and December 31, 2023. That notice included an announcement of ALT-152, an alternative for the certification of candidate Method 9 (40 CFR 60, Appendix A) observers through use of a virtual reality (VR) headset. ALT-152 allows the use of a VR headset-based alternative method for conducting Method 9 plume demonstrations and certification, as described in the approval letter, as an alternative to the procedures of section 3.2 of Method 9 with specific limitations, as listed in the letter. As stated in 89 FR 4942, we will revisit approvals of alternative test methods in response to written requests or objections indicating that a particular approved alternative test method either should not be broadly applicable or that its use is not appropriate or should be limited in some way. Your letter of March 22, 2024, contained comments regarding ALT-152 and this letter is our response to those comments.

In your letter, you state that, in a court of law, "there is a long-standing history of photos, digital images and videos of visible emissions (VE's) emitting from sources not being able to represent true opacity values." You go further to state that "such media depicting opacity values of emissions are not and have never been defensible." You assert that "this is largely due to the fact that photos, digital images and videos attempting to depict opacity from VE sources are only the cameras' and output screens' interpretation of the opacity event and do not represent the true opacity, but rather only depict the apparent opacity." For these reasons you feel, "anyone who certified as a visible emissions observer solely using images or videos, as set forth in ALT-152, in that they would not be qualified to view a real visible emission source and determine the true opacity." Additionally, you state that attending in-person Method 9 training provides the VE observer with experience performing observations under "different meteorological conditions, different contrasting backgrounds and

varying lighting conditions” and that these experiences are “invaluable in order to produce quality VE readers.”

We have carefully reviewed and considered your comments, and we respectfully disagree with your assertion that ALT-152 should not be considered “a viable certification method or platform.”

In response to your specific comment that “there is a long-standing history of photos, digital images and videos of visible emissions (VE’s) emitting from sources not being able to represent true opacity values” and that “anyone who certified as a visible emissions observer solely using images or videos, as set forth in ALT-152, in that they would not be qualified to view a real visible emission source and determine the true opacity” we offer the following:

1. With the advancements made and continuing to be made in camera and VR technology we do not agree with this assertion.
2. In the approval letter for ALT-152 we have included very specific requirements for video recordings of the black and white smoke plumes and for the VR headset itself.
3. You did not provide any information or data to support these claims.

Additionally, in response to your comment regarding the need for Method 9 training that provides exposure to “different meteorological conditions, different contrasting backgrounds and varying lighting conditions,” we would like to point out that exposure to these varying conditions is not a requirement under Method 9 training currently. Furthermore, accuracy data for ALT -152 was gathered in the same manner as it was for Method 9 (Evaluation and Collaborative Study of Method for Visual Determination of Opacity of Emissions from Stationary Sources,” Report No EPA-650/4-75-009) and, as detailed in the approval letter, this data provided similar or better results.

Based on the above information, we continue to believe ALT-152 is a viable alternative to in person Method 9 certification training.

Moreover, as detailed in the approval letter for ALT-152, we find there are many potential benefits to using ALT-152. A summary of those benefits is given below:

- Candidate observers can be certified any time of the year, which removes the barrier of scheduling and seasonal smoke school options.
- Candidate observers can certify any time of the day, allowing more shift and rotational workers to be certified.
- More candidates can be certified due to decreased travel, expenses, and scheduling conflicts.
- ALT-152 offers increased accessibility in currently underserved areas of the U.S., its territories and other countries that utilize Method 9 and that currently have limited or no Method 9 training options.
- ALT -152 offers increased accessibility to community groups.
- Users could potentially view known opacities prior to conducting in-field observations as a refresher between certifications.
- ALT-152 provides reduced environmental impact -- smoke is only produced once to create library of plumes and travel to semi-annual smoke schools is no longer necessary.

A copy of your letter (attached) and this response will be posted, along with ALT-152, on the EPA website at <https://www.epa.gov/emc/broadly-applicableapproved-alternative-test-methods>. If you have any questions regarding this issue or if you need further assistance, please contact Kim Garnett at (919) 541-1158 or garnett.kim@epa.gov.

Sincerely,

Steffan M. Johnson, Group Leader
Measurement Technology Group

Attachment

cc: Kim Garnett, OAQPS/AQAD (garnett.kim@epa.gov)
Gregory Fried, OECA/OC (fried.gregory@epa.gov)
Regional Testing Contacts



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3/22/24

RE: Comment on Approved EPA Alternative Method 152 / EPA-HQ-OAR-2007-1196-0017

Mr. Steffan Johnson
Air Quality Assessment Division
Office of Air Quality Planning and Standards (E143-02),
Environmental Protection Agency,
Research Triangle Park, NC 27711

Dear Mr. Johnson,

This letter is to serve as Eastern Technical Associates' (ETA's) comments regarding the approval of EPA Alternative Method 152 (ALT-152) on January 25, 2024. For the following reasons, we feel that the approved method, ALT-152, should not be used for visible emissions observer certification.

1) In the court of law, there is a long-standing history of photos, digital images and videos of visible emissions (VE's) emitting from sources not being able to represent true opacity values. Such media depicting opacity values of emissions are not and have never been defensible. This is largely due to the fact that photos, digital images and videos attempting to depict opacity from VE sources are only the cameras' and output screens' interpretation of the opacity event and do not represent the true opacity, but rather only depict the apparent opacity. Loss of resolution, dynamic range, field of view, and light manipulation are variables where cameras fall short of the human eye and brain. For these reasons, an EPA Method 9 certified visible emissions observer is not qualified to simply view a photo, digital image or video of emissions from a source and determine the true opacity value of the emissions. The same rules would apply to anyone who certified as a visible emissions observer solely using images or videos, as set forth in ALT-152, in that they would not be qualified to view a real visible emission source and determine the true opacity. Certifying by means of ALT-152 could easily cast doubt upon the defensibility and credibility of one's certification. This scenario would have a domino effect and complicate opacity compliance issues due to the fact that opacity data collected could be deemed invalid.

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2) Since the promulgation of EPA Reference Method 9, VE observers have attended outdoor certification programs and tested their eyesight and ability to determine opacity values up against a calibrated smoke generator. Every six months, depending on the day, VE observers experience different meteorological conditions, different contrasting backgrounds and varying lighting conditions. These experiences are invaluable in order to produce quality VE observers, as they can draw from their experiences and learn how adjust to variables that can cause bias in their readings like changing lighting conditions, background contrast and extended pathlength scenarios caused by wind. These are all factors that they will experience in the field and to experience them in the certification process builds on their competency and confidence level. The proposed method, ALT-152, is more of a canned approach and over time will not allow exposure to these valuable experiences, ultimately watering down the visible emissions observer certification process and the competency of VE observers.

Conversely, as a visible emissions training and certification entity for the last 45 years, ETA does value the use of video, digital images and the technology outlined in ALT-152 for the purpose of training and bolstering familiarization with opacity techniques and calibration standards, but would not recommend it as a viable certification method or platform. The process of visible emissions observers certifying every six months using a real visible emissions source with varying lighting conditions, atmospheric conditions and different contrasting backgrounds is invaluable to creating qualified and competent visible emissions observers that can adapt to real world conditions in the field.

We appreciate the valuable opportunity to provide these comments and hope they can be applied in your decision-making process.

Respectfully,

Jody Monk
General Manager
Eastern Technical Associates, Inc.

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