

Oral Statement from Will Ollison, American Petroleum Institute

I appreciate the opportunity to provide API's support of Agency efforts to revise the federal reference method (FRM) for ambient ozone (O₃). A set of detailed written comments on the draft CASAC letter to the Administrator has been provided to you by Alan Leston.

We agree that the current ethylene chemiluminescence (ET-CL) FRM is obsolete and needs to be replaced, in part since it apparently will not meet ORD's newly proposed FRM humidity interference specification. The new 5 ppb specification is reduced from an earlier 20 ppb level; however, as documented in ASTM Method D 5149, the ET-CL water vapor interference ranges up to 9 ppb O₃ at the current 75 ppb standard level. The draft CASAC letter fails to discuss, but should, how this apparent disqualification of the ET-CL method affects its proposed retention as an FRM, and whether it could still be used in support of continuing certification of federal equivalent methods (FEMs) historically based on ET-CL.

The new UV calibration photometer performance specifications in the proposed revised 40 CFR 50 Appendix D-1 (Calibration Section 4.3.1) should also be addressed in the CASAC letter. Surprisingly they also seem to disqualify the NIST O₃ Standard Reference Photometer (SRP) from continuing as the primary O₃ network calibration standard. Even with the recent and ongoing improvements to the SRP discussed in Norris et al. 2013, the SRP would not appear to meet the revised Appendix D-1 specifications that require that no O₃ is generated in the [absorption] cell by the [photometer] lamp and that the length of the light path through the absorption cell must be known with an accuracy of at least 99.5%.

We agree that both the nitric oxide chemiluminescence (NO-CL) and nitric oxide "scrubberless" ultraviolet absorption (UV-SL) FEMs are strong FRM candidates but would prefer the UV method for several reasons:

1. The scrubberless UV technology facilitates the upgrading of existing network UV photometers;
2. Its use of cylinder N₂O instead of NO lowers field operation hazard and cost, and
3. In our experience, its field performance was superior in a 2010 summer ambient inter-monitor comparison in Houston and in 2012 and 2013 micro-environmental UV monitor comparisons in the Raleigh/Durham area (Ollison et al. 2013; Johnson et al. 2014).

We ask that CASAC encourage ORD to join us in testing network UV monitors upgraded with humidity and scrubberless technologies this summer and winter before to making an FRM choice between the nitric oxide-CL and scrubberless UV candidates.

In view of the relatively sparse and conflicting ORD field data recently presented, we ask that CASAC encourage a modest data collection delay, rather than prematurely affirming a new FRM now. As noted in subcommittee member and public commentary, more regional and seasonal testing of these FRM candidates is warranted. Such results will likely become available

for Agency consideration prior to a late 2015 Agency promulgation of this December's proposed O3 NAAQS revision.

I thank you for your attention and will attempt to answer any questions you may have.

References:

ASTM - Standard Test Method for Ozone in the Atmosphere: Continuous Measurement by Ethylene Chemiluminescence, Designation: D 5149 – 02, ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

Johnson, T., Capel, J., Ollison, W. (2014). Measurement of microenvironmental ozone concentrations in Durham, North Carolina, using a 2B Technologies 205 FEM monitor and an interference-free 2B Technologies 211 monitor. *Journal of the Air & Waste Management Association*, 64(3): 360-371.

Norris, J.E., Choquette, S.J., Viallon, J., Moussay, P., Wielgosz, R. Guenther, F.R. (2013). Temperature measurement and optical path-length bias improvement modifications to National Institute of Standards and Technology ozone reference standards. *Journal of the Air & Waste Management Association*, 63(5):565–574.

Ollison, W.M., Crow, W., Spicer, C.W. (2013). Field testing of new-technology ambient air ozone monitors. *Journal of the Air & Waste Management Association*, 63(7): 855-863.