UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC
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OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Clarification on Use of $PM_{2.5}$ Field and Laboratory Requirements for Low Volume PM_{10} Monitoring to Support PM_{10} NAAQS

FROM: Mike Papp, QA Team Lead
Ambient Air Monitoring Group (C304-06)

TO: Regional Air Program Managers and Staff

Some recent discussions have occurred with monitoring organizations over what field and laboratory requirements are most applicable to low volume PM_{10} methods. Use of PM_{10} low volume samplers, and the filter media used to collect these samples, is most similar to the field and laboratory $PM_{2.5}$ requirements in 40 CFR Part 50 Appendix L (since the PM_{10} samplers are basically $PM_{2.5}$ samplers with the second stage particle size seperator removed) and should be used in lieu of 40 CFR Part 50 Appendix J.

Background

The PM_{10} method, 40 CFR Part 50 Appendix J, was promulgated for use with high volume and dichot samplers and has not subsequently been modified to include low volume samplers. However, during the consideration of the proposed $PM_{10-2.5}$ standard in 2006 (did not become a NAAQS), the Office of Research and Development (ORD) promulgated the $PM_{10-2.5}$ Federal Reference Method as 40 CFR Part 50, Appendix O. Where Appendix O describes the field sampling and laboratory requirements, it references the $PM_{2.5}$ 40 CFR Part 50 Appendix L requirements for both the PM_{10} and $PM_{2.5}$ component of the measurement. The PM_{10} low volume samplers for use in the PM_{10} monitoring for NAAQS compliance utilize the same filter media as the $PM_{10-2.5}$ and $PM_{2.5}$ method. Due to the filter material, its size, and the mass accumulated on the filter for a 24-hour period, the laboratory requirements for low volume PM_{10} would also be the same as that for $PM_{2.5}$. Since the current method, 40 CFR Part 50 Appendix J, was not revised to accommodate low volume samplers, the validation templates in the 2013 version of the *QA Handbook for Ambient Air Pollution Measurement Systems Volume II*[1] incorporated the $PM_{2.5}$ 40 CFR Part 50 Appendix L requirements into the PM_{10} low volume method and included the following description:

[1] http://www3.epa.gov/ttn/amtic/qalist.html

Monitoring organizations can use low-volume PM instruments for PM_{10} monitoring. However, PM_{10} data collection for NAAQS purposes must be reported in standard temperature and pressure (STP). 40 CFR Part 50 App J describes the reference method for PM_{10} but this method was promulgated for dichot and high volume methods that have improved over the years. Since monitoring organizations may be able to use the low volume methods for multiple uses (PM_{10c}, PM_{10}-Pb) it is suggested that the validation criteria for this method follow the method requirements associated with the $PM_{2.5}$ which is Appendix L. Where there are particular requirements directly related to the NAAQS evaluation, App J will be used.

All field and laboratory requirements in the PM_{10} low volume validation template refer to the $PM_{2.5}$ method either in the regulation (40 CFR Part 50 Appendix L) or the $PM_{2.5}$ Guidance Document (Method 2.12)[2].

In summary, when measuring PM_{10} using low volume methods, monitoring organization QA project plans (QAPPs) and standard operating procedure (SOPs) for field and laboratory operations need to reference and follow the $PM_{2.5}$ 40 CFR Part 50 Appendix L requirements and $PM_{2.5}$ Method 2.12 guidance.

[2] Quality Assurance Guidance Document 2.12 Monitoring PM2.5 in Ambient Air Using Designated Reference or Class I Equivalent Methods http://www3.epa.gov/ttn/amtic/qapollutant.html