



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF AIR QUALITY PLANNING AND STANDARDS**

**Technical Note –Pb Monitoring Implementation Strategy
Analysis Method Issues**

BACKGROUND

On November 12, 2008 EPA substantially strengthened the national ambient air quality standards (NAAQS) for lead (see 73 FR 66934). EPA revised the level of the primary (health-based) standard from 1.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to $0.15\mu\text{g}/\text{m}^3$, measured as total suspended particles (TSP) and revised the secondary (welfare-based) standard to be identical in all respects to the primary standard. Depending on specific circumstances, States have the option of using monitoring for either lead in TSP (Pb-TSP) or lead in PM_{10} (Pb- PM_{10}) using approved Federal Reference Methods (FRMs) or Federal Equivalent Methods (FEMs) to meet monitoring requirements.¹ This document provides guidance in the form of questions and answers related to analyzing for Pb-TSP and Pb- PM_{10} and analysis method issues as they relate to implementation of Pb monitors in support of the strengthened primary standard for Pb.

1. What analysis methods can be used for the revised Pb-TSP and Pb- PM_{10} NAAQS monitoring requirements?

As noted in the 2008 Pb final rule, EPA maintained the current FRM and FEMs for Pb-TSP sampling and analysis for monitoring of the Pb NAAQS. No substantive changes were made to the Pb-TSP method (73 FR 67020). For Pb-TSP monitoring you may use the Atomic Absorption (AA) FRM described in 40 CFR 50 Appendix G or any of the approved equivalent Pb methods on the list posted at:

<http://www.epa.gov/ttn/amtic/files/ambient/criteria/reference-equivalent-methods-list.pdf>.

Pb- PM_{10} must be analyzed by the FRM specified in 40 CFR Part 50, appendix Q (EDXRF) or by an FEM designated in accordance with part 53.33.

2. Is EPA planning any further revisions to existing or approved Pb-TSP methods?

EPA recognizes that significant advances in measurement technology have been made since the promulgation of Appendix G in 1978 and approval of the current Pb-TSP FEMs. Therefore, EPA has encouraged the development of new FEMs and also intends to establish a new FRM through the rulemaking process (expected 2011/2012). EPA strongly encourages monitoring agencies to use one of the new FEMs (see question 4 below) or the new FRM when promulgated.

¹ Refer to the Technical Note on network design for guidance regarding Pb-TSP and Pb- PM_{10} monitors in support of the NAAQS; www.epa.gov/ttn/amtic/pb-monitoring.html

3. Once a new Pb-TSP FRM is promulgated, can I continue to use one of the FEMs currently approved or must I switch to one of the new methods?

Once the new Pb-TSP FRM is promulgated in 40 CFR part 50, EPA intends to take the actions specified in Part 53.16 paragraph (e). Appendix G will be revised and EPA will take the necessary steps to address the use of existing FEMs moving forward. This may result in a future deadline to stop using the old FEMs. States can continue to use existing, approved methods but should consider switching to one of the newly approved FEMs. The new FEMs are more “generic” or universally-applicable and non-proprietary to allow any monitoring organization to use them. They are also based on more up to date extraction and measurement techniques.

4. What is EPA doing to support the process for new Pb-TSP and Pb-PM₁₀ FEMs?

EPA has taken action to expedite the process, including: working with States to identify suitable archived TSP filters for the evaluation of candidate methods; engaging in discussions with Regions, States, and contract laboratories to identify motivated partners for development of new FEMs; and is pursuing the development of a new FRM through the rulemaking process. As a result, three new FEMs have been approved for Pb-TSP (EQL-0310-189; EQL-0510-191; and EQL-0710-192) and a fourth FEM is forthcoming. Standard Operating Procedures (SOPs) for these FEMs can be found at: <http://www.epa.gov/ttn/amtic/pb-monitoring.html>.

At the present time, no FEMs have been approved for Pb-PM₁₀. If Pb-PM₁₀ FEMs are approved in the future, the SOPs will be posted at the URL provided above.

5. If my laboratory uses the Inorganic (IO) Compendium methods 3.1, “Selection, Preparation and Extraction of Filter Material” and 3.5, “Determination of Metals in Ambient Particulate Matter Using ICP/MS”, would this be considered an FEM for Pb-TSP or Pb-PM₁₀?

No, neither compendium method has been approved as an FEM for Pb-TSP or Pb-PM₁₀.

6. Can I use the same FEM analysis methods approved for Pb-TSP for Pb-PM₁₀?

FEMs approved for Pb-TSP cannot be used for Pb-PM₁₀.

7. Can Pb-PM₁₀ data from National Air Toxics Trends Stations (NATTS) be used to meet requirements for Pb monitoring under the new NAAQS?

In order for Pb-PM₁₀ data from NATTS to be used, it must be collected with a low-volume (16.7 Lpm) PM_{10c} sampler (see 40 CFR part 50 Appendix O) and analyzed by the XRF FRM (see 40 CFR part 50 Appendix Q). The Pb-PM₁₀ site must also be sited in accordance with the revised methodological and network design requirements for Pb that are described in 40 CFR Part 58 Appendices C and D.

8. Will EPA provide a national laboratory contract for analysis of Pb-TSP and Pb-PM₁₀ samples collected by state/local monitoring agencies?

Yes, EPA has awarded a national contract for analysis of Pb-TSP and Pb-PM₁₀. For more information on the national contract and how to access it, see:

<http://www.epa.gov/ttn/amtic/files/ambient/pb/nationalcontractforleadanalysis.pdf>