6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[FRL-9902-59-ORD]

Ambient Air Monitoring Reference and Equivalent Methods: Designation of Five New Equivalent Methods.

AGENCY: Office of Research and Development; Environmental Protection Agency (EPA).

ACTION: Notice of the designation of five new equivalent methods for monitoring ambient air quality.

SUMMARY: Notice is hereby given that the Environmental Protection Agency (EPA) has designated, in accordance with 40 CFR Part 53, five new equivalent methods, one for measuring concentrations of PM_{10}, one for measuring concentrations of $PM_{10-2.5}$, two for measuring $PM_{2.5,}$ and one for measuring NO_2 in the ambient air.

FOR FURTHER INFORMATION CONTACT: Robert Vanderpool, Human Exposure and Atmospheric Sciences Division (MD-D205-03), National Exposure Research Laboratory, U.S. EPA, Research Triangle Park, North Carolina 27711. E-mail: Vanderpool.Robert@epa.gov.

SUPPLEMENTARY INFORMATION: In accordance with regulations at 40 CFR Part 53, the EPA evaluates various methods for monitoring the concentrations of those ambient air pollutants for which EPA has established National Ambient Air Quality Standards (NAAQSs) as set forth in 40 CFR Part 50. Monitoring methods that are determined to meet specific requirements for adequacy are designated by the EPA as either reference methods or equivalent methods (as applicable), thereby permitting their use under 40 CFR Part 58 by States and other agencies for determining compliance with the NAAQSs.

The EPA hereby announces the designation of five new equivalent methods for measuring pollutant concentrations in the ambient air: one for measuring concentrations of $PM_{10-2.5}$, one for measuring concentrations of PM_{10}, two for measuring concentrations of $PM_{2.5}$ and one for measuring concentrations of NO_2. These designations are made under the provisions of 40 CFR Part 53, as amended on August 31, 2011 (76 FR 54326- 54341).

Two of the new equivalent methods for PM are automated monitoring methods utilizing a measurement principle based on sample collection by filtration and analysis by an inertial micro-balance that provides direct mass measurements in near real time. Separation of the PM_{10} aerosol into $PM_{10-2.5}$ and $PM_{2.5}$

particle size fractions is by a virtual impactor. The newly designated equivalent methods are identified as follows:

EQPM-1013-207, "Thermo Scientific TEOM® 1405-DF Dichotomous Ambient Particular Monitor with FDMS®," configured for dual filter sampling of fine ($PM_{2.5}$) and coarse particles using the US EPA PM_{10} inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19 and a virtual impactor, with a total flow rate of 16.67 L/min, fine sample flow of 3 L/min, and coarse sample flow rate of 1.67 L/min, and operating with firmware version 1.70 and later, operated with or without external enclosures, and operated in accordance with the Thermo Scientific TEOM® 1405-DF Dichotomous Ambient Particulate Monitor Instruction Manual. This designation applies to $PM_{10-2.5}$ measurements only.

EQPM-1013-208, "Thermo Scientific TEOM® 1405-DF Dichotomous Ambient Particular Monitor with FDMS®," configured for dual filter sampling of fine ($PM_{2.5}$) and coarse particles using the US EPA PM_{10} inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19 and a virtual impactor, with a total flow rate of 16.67 L/min, fine sample flow of 3 L/min, and coarse sample flow rate of 1.67 L/min, and operating with firmware version 1.70 and

later, operated with or without external enclosures, and operated in accordance with the Thermo Scientific TEOM® 1405-DF Dichotomous Ambient Particulate Monitor Instruction Manual. This designation applies to PM_{10} measurements only.

Applications for the equivalent method determinations for these candidate methods were received by the EPA Office of Research and Development on July 26, 2011 and March 6, 2009. The monitors are commercially available from the applicant, Thermo Fisher Scientific, Air Quality Instruments, Environmental Instruments Division, 27 Forge Parkway, Franklin, MA 02038.

Two of the new equivalent methods are automated monitoring methods utilizing a measurement principle based on sample collection by filtration and analysis by beta radiation attenuation. The newly designated equivalent methods are identified as follows:

EQPM-1013-209, "Met One Instruments, Inc. BAM-1022 Beta Attenuation Mass Monitor – Outdoor $PM_{2.5}$ FEM Configuration," configured for 24 1-hour average measurements of $PM_{2.5}$ by beta attenuation, using a glass fiber filter tape roll (460130) and a sample flow rate of 16.67 liters/min and with the standard (BX-802) EPA PM_{10} inlet (meeting 40 CFR 50 Appendix L specifications)

and with a BGI VSCC® Very Sharp Cut Cyclone (BX-808) particle size separator, and equipped with external enclosure BX-922 and BX-592 ambient temperature sensor or BX-596 ambient temperature/barometric combination sensor or BX-597 ambient temperature/barometric pressure/relative humidity combination sensor. Instrument must be operated in accordance with the BAM 1022 Particulate Monitor operation manual, revision 3 or later. This designation applies to $PM_{2.5}$ measurements only.

The application for the equivalent method determination for this candidate method was received by the EPA Office of Research and Development on January 16, 2013. The monitor is commercially available from the applicant, Met One Instruments, Inc., 1600 Washington Blvd., Grants Pass, Or 97526.

EQPM-1013-211, "Environnement S.A. Model MP101M $PM_{2.5}$ Beta Attenuation Monitor" using a glass fiber filter tape roll, operated at a sample flow rate of 16.67 liters/min for 24-hour average measurements of $PM_{2.5}$, configured with the standard EPA PM_{10} inlet (meeting 40 CFR 50 Appendix L specifications) associated with a BGI VSCC® Very Sharp Cut Cyclone particle size separator and using a temperature regulated sampling tube with ambient meteorological sensor. With or without optional ESTEL

analog inputs/outputs, serial link: 1 RS-232/422; USB port; Ethernet port (TCP/IP). Instrument must be operated in accordance with the Ambient Air Continuous Particulate Monitor Model MP101M operation manual. This designation applies to $PM_{2.5}$ measurements only.

The application for the equivalent method determination for this candidate method was received by the EPA Office of Research and Development on June 11, 2013. The monitor is commercially available from the applicant, Environment S.A., 111 bd Robespierre, 78300 POISSY, France.

The new equivalent method for NO_2 is an automated method (analyzer) utilizing the principle of Cavity Attenuated Phase Shift spectroscopy and the calibration procedure specified in the operation manual. The newly designated equivalent method is identified as follows:

EQNA-1013-210, "Environnement S.A. Model AS32M cavity attenuated phase shift spectroscopy Nitrogen Dioxide Analyzer", operated on any full scale range between 0-500 ppb and 0-1000 ppb, at any ambient temperature in the range of 20°C to 30°C, with automatic response time ON, set to 11, in accordance with the associated instrument manual; with sample particulate filter; zero gas

inlet and zero check enabled; sample permeation dryer. Serial link: 2 RS-232; USB port; Ethernet port (TCP/IP); onboard html web server and, with or without any of the following options: internal permeation bench; ESTEL analog inputs/outputs.

The application for equivalent method determination for the NO2 method was received by the Office of Research and Development on November 29, 2012. This analyzer model is commercially available from the applicant, Environment S.A., 111 bd Robespierre, 78300 POISSY, France.

Test monitors representative of these methods have been tested in accordance with the applicable test procedures specified in 40 CFR Part 53, as amended on August 31, 2011. After reviewing the results of those tests and other information submitted in the applications, EPA has determined, in accordance with Part 53, that these methods should be designated as equivalent methods.

As designated equivalent methods, these methods are acceptable for use by states and other air monitoring agencies under the requirements of 40 CFR Part 58, Ambient Air Quality Surveillance. For such purposes, the methods must be used in strict accordance with the operation or instruction manuals associated with the methods and subject to any specifications

and limitations (e.g., configuration or operational settings) specified in the applicable designated descriptions (see the identification of the methods above).

Use of the methods also should be in general accordance with the guidance and recommendations of applicable sections of the "Quality Assurance Handbook for Air Pollution Measurement Systems, Volume I," EPA/600/R-94/038a and "Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, Ambient Air Quality Monitoring Program" EPA-454/B-08-003, December, 2008. Provisions concerning modification of such methods by users are specified under Section 2.8 (Modifications of Methods by Users) of Appendix C to 40 CFR Part 58.

Consistent or repeated noncompliance should be reported to: Director, Human Exposure and Atmospheric Sciences Division (MD-E205-01), National Exposure Research Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

Designation of these new equivalent methods is intended to assist the States in establishing and operating their air

quality surveillance systems under 40 CFR Part 58. Questions concerning the commercial availability or technical aspects of the methods should be directed to the applicant.

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[FR Doc. 2013-27016 Filed 11/08/2013 at 8:45 am; Publication Date: 11/12/2013]