

Final Regulation Order

Final Amendments to Regulations for the State Ambient Air Quality Standard for Nitrogen Dioxide

Note: Language to be added is underlined and language to be removed is shown in ~~strikeout~~. Asterisks (****) indicate that a portion of the regulation not being amended is not shown here. In section 70200, Table of Standards, no changes are proposed to standards for any substances not listed.

Amend sections 70100.1 and 70200 (Table of Standards) of title 17, California Code of Regulations, to read as follows:

Division 3. Air Resources Board

Chapter 1. Air Resources Board

Subchapter 1.5. Air Basins and Air Quality Standards

Article 2. Ambient Air Quality Standards

§ 70100.1. Methods, Samplers, and Instruments for Measuring Pollutants

(d) *NO₂ Methods.* The method for determining compliance with the NO₂ ambient air quality standard shall be the chemiluminescence Federal Reference Method for the determination of NO₂ in the atmosphere (40 CFR, Part 50, Appendix F- Measurement, as published in 41 Fed.Reg. 52688, Dec. 1, 1976, as amended at 48 Fed.Reg. 2529, Jan. 20, 1983). California Approved Samplers for NO₂ are set forth in the Air Monitoring Quality Assurance Manual, Volume IV, Part D: Monitoring Methods for NO₂ as adopted on February 22, 2007, which is incorporated by reference herein. Samplers, methods, or instruments determined in writing by the Air Resources Board or the Executive Officer to produce equivalent results for NO₂ shall also be California Approved Samplers for NO₂.

Authority cited: Sections 39600, 39601 and 39606, Health and Safety Code. Reference: Sections 39014, 39606, 39701 and 39703(f), Health and Safety Code.

Section 70200. Table of Standards ***

Substance	Concentration and Methods*	Duration of Averaging Periods	Most Relevant Effects	Comments
Nitrogen Dioxide	0.25 <u>18</u> ppm,	1 hour	<p>a. <u>Short-term exposures may lead to adverse health effects in asthmatics: increased airway reactivity and enhanced allergic response after allergen challenge.</u></p> <p>(1). <u>Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups.</u></p> <p>a (2). <u>Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes, which are observed in short term animal tests at or above concentration of the standard.</u></p> <p>b. <u>Contribution to atmospheric discoloration.</u></p>	<p>a. <u>The Both standards is</u> are intended to prevent adverse health effects.</p> <p>b. The <u>1 hour</u> standard imposes an upper limit on adverse effects on welfare, including atmospheric discoloration by NO₂.</p>
	<u>0.030 ppm</u>	<u>Annual</u>	<p><u>Longer term exposures may lead to increased respiratory symptoms and medication use in asthmatics, emergency room visits for asthma in children, hospitalization for respiratory and cardiovascular disease, and premature mortality. Longer term exposures may also lead to changes in lung function growth in children, symptoms in asthmatic children, and pre-term birth. Children may be more susceptible to the potential effects of nitrogen dioxide on the developing lung.</u></p>	
	Gas Phase Chemiluminescence**			

*The list of California Approved Samplers may be obtained from the Air Resources Board, Monitoring and Laboratory Division, P.O. Box 2815, Sacramento, CA 95814. Any equivalent procedure which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

**These standards are violated when concentrations exceed those set forth in the body of the regulation. All other standards are violated when concentrations equal or exceed those set forth in the body of the regulation.

***Applicable statewide unless otherwise noted.

****These standards are violated when particle concentrations cause measured light extinction values to exceed those set forth in the regulations.

NOTE: Authority cited: Sections 39600, 39601(a) and 39606, Health and Safety Code.

Reference: Sections 39014, 39606, 39701 and 39703(f), Health and Safety Code; and Western Oil and Gas Ass'n v. Air Resources Bd. (1984) 37 Cal.3d 502.

Air Monitoring Quality Assurance Manual

Volume IV

Part D: Monitoring Methods for Nitrogen Dioxide

The method for determining compliance with the NO₂ ambient air quality standard shall be the chemiluminescence Federal Reference Method for the determination of NO₂ in the atmosphere (40 CFR, Part 50, Appendix F). California Approved Samplers for NO₂ are set forth in the Air Monitoring Quality Assurance Manual, Volume IV, Part D: Monitoring Methods for NO₂.

The current U.S. EPA “List of Designated Reference and Equivalent Methods” may be obtained through the U.S. EPA Technology Transfer Network Ambient Monitoring Technology Information Center web site at <http://www.epa.gov/ttn/amtic/criteria.html>.

The following method constitutes “California Approved Samplers” for NO₂ for the purposes of determining compliance with California’s ambient air quality standard: Gas phase chemiluminescence method for the determination of NO₂ in the atmosphere (40 CFR, Part 50, Appendix F). The specific instruments approved are:

Advanced Pollution Instrumentation, Inc. Model 200 NO₂ Analyzer - *Automated Reference Method*: RFNA-0691-082 “Advanced Pollution Instrumentation, Inc. Model 200 Nitrogen Oxides Analyzer”. [Federal Register: Vol. 56, page 27014, 06/12/91]

Beckman Model 952-A NO/NO₂/NO_x Analyzer - *Automated Reference Method*: RFNA-0179-034 “Beckman Model 952-A NO/NO₂/NO_x Analyzer”. [Federal Register: Vol. 44, page 7806, 02/07/79]

Bendix Model 8101-B Oxides of Nitrogen Analyzer - *Automated Reference Method*: RFNA-0479-038 “Bendix Model 8101-B Oxides of Nitrogen Analyzer”. [Federal Register: Vol. 44, page 26792, 05/07/79]

Bendix/Combustion Engineering Model 8101-C Oxides of Nitrogen Analyzer - *Automated Reference Method*: RFNA-0777-022 “Bendix or Combustion Engineering Model 8101-C Oxides of Nitrogen Analyzer”. [Federal Register: Vol. 42, page 37435, 07/21/77]

Columbia Scientific Industries Models 1600 and 5600 Analyzers - *Automated Reference Method*: RFNA-0977-025 “CSI Model 1600 Oxides of Nitrogen Analyzer”. [Federal Register: Vol. 42, page 46574, 09/16/77]

Dasibi Model 2108 Oxides of Nitrogen Analyzer - *Automated Reference Method*: RFNA-1192-089 “Dasibi Model 2108 Oxides of Nitrogen Analyzer”. [Federal Register: Vol. 57, page 55530, 11/25/92]

DKK-TOA Corporation Model GLN-114E Nitrogen Oxides Analyzer – *Automated Reference Method*: RFNA-0798-121 “DKK-TOA Corporation Models GLN-114E and GLN-114E-1 Nitrogen Oxides Analyzer”. [Federal Register: Vol. 63, page 41253, 08/03/98]

Environnement S. A. Model AC31M NO₂ Analyzer - *Automated Reference Method*: RFNA-0795-104 “Environnement S. A. Model AC31M Chemiluminescent Nitrogen Oxide Analyzer”. [Federal Register: Vol. 60, page 38326, 07/26/95]

Environnement S. A. Model AC32M NO₂ Analyzer - *Automated Reference Method*: RFNA-0202-146 “Environnement S. A. Model AC32M Chemiluminescent Nitrogen Oxides Analyzer”. [Federal Register: Vol. 67, page 15567, 04/02/02]

Horiba Instruments Models APNA-360 or APNA-360-CE NO-NO₂-NO_x Monitor - *Automated Reference Method*: RFNA-0196-111 “Horiba Instruments, Inc. Models APNA-360 or APNA-360-CE Ambient NO-NO₂-NO_x Monitor”. [Federal Register: Vol. 61, page 11404, 03/20/96]

Horiba Instruments Model APNA-370 NO₂ Monitor *Automated Reference Method*: RFNA-0506-157 “Horiba Instruments Incorporated Model APNA-370 Ambient NO_x Monitor,” standard specification, operated with a full scale fixed measurement range of 0 - 0.50 ppm with the automatic range switching off, at any ambient temperature in the range of 20 °C to 30 °C, and with a 0.3 micrometer sample particulate filter installed. [Federal Register: Vol. 71, page 25587, 05/01/06]

Meloy Model NA530R Nitrogen Oxides Analyzer - *Automated Reference Method*: RFNA-1078-031 “Meloy Model NA530R Nitrogen Oxides Analyzer”. [Federal Register: Vol. 43, page 50733, 10/31/78 and Vol. 44, page 8327, 02/09/79]

Monitor Labs Model 8440E Nitrogen Oxides Analyzer - *Automated Reference Method*: RFNA-0677-021 “Monitor Labs Model 8440E Nitrogen Oxides Analyzer”. [Federal Register: Vol. 42, page 37434, 07/21/77; Vol. 42, page 46575, 09/16/77; Vol. 46, page 29986, 06/04/81]

Monitor Labs/Lear Siegler Model 8840 Nitrogen Oxides Analyzer - *Automated Reference Method*: RFNA-0280-042 “Monitor Labs or Lear Siegler Model 8840 Nitrogen Oxides Analyzer”. [Federal Register: Vol. 45, page 9100, 02/11/80 and Vol. 46, page 29986, 06/04/81]

Monitor Labs/Lear Siegler Model 8841 Nitrogen Oxides Analyzer - *Automated Reference Method*: RFNA-0991-083 “Monitor Labs or Lear Siegler Model 8841 Nitrogen Oxides Analyzer”. [Federal Register: Vol. 56, page 47473, 9/19/91]

Philips Model PW9762/02 NO/NO₂/NO_x Analyzer - *Automated Reference Method*: RFNA-0879-040 “Philips Model PW9762/02 NO/NO₂/NO_x Analyzer”. [Federal Register: Vol. 44, page 51683, 09/04/79]

Seres Model NO_x 2000 G Nitrogen Dioxide Analyzer *Automated Reference Method*: RFNA-0706-163 “Seres Model NO_x 2000 G Nitrogen Dioxide Ambient Air Analyzer,” operated with a full scale measurement range of 1 - 0.50 ppm, at any ambient temperature in the range of 20°C to 30 °C. [Federal Register: Vol. 71, page 42089, 07/25/06]

SIR S.A. Model S-5012 Nitrogen Oxides Analyzer - *Automated Reference Method*: RFNA-0804-152. [Federal Register: Vol. 69, page 47924, 08/06/04]

Teledyne - Advanced Pollution Instrumentation, Inc. Models 200A, 200AU, 200E; Teledyne Analytical Instruments Model 9110A; or Teledyne Monitor Labs sensor-e™ Model TML-41 NO₂ Analyzers - *Automated Reference Method*: RFNA-1194-099 “Teledyne - Advanced Pollution Instrumentation, Inc. Models 200A, 200AU, 9110A, or 200E; Teledyne Analytical Instruments Model 9110A; or Teledyne Monitor Labs, Inc. sensor-e™ Model TML-41 Chemiluminescence Nitrogen Oxides Analyzer”. [Federal Register: Vol. 59, page 61892, 12/02/94]

Teledyne Monitor Labs/Casella/Ecotech Models ML9841, ML9841A/EC9841A, Teledyne Monitor Labs/Casella/Ecotech Model ML9841B/EC9841B, or Wedding & Associates Model 1030 NO₂ Analyzers - *Automated Reference Method*: RFNA-1292-090– “Teledyne Monitor Labs, Casella Monitor, or Ecotech Models ML9841, ML9841A/EC9841A, or ML9841B/EC9841B, or Wedding & Associates, Inc. Model 1030 Nitrogen Oxides Analyzers”. [Federal Register: Vol. 57, page 60198, 12/18/92]

Thermo Electron/Thermo Environmental Instruments Model 14 B/E – *Automated Reference Method*: RFNA-0179-035 “Thermo Electron or Thermo Environmental Instruments, Inc. Model 14 B/E Chemiluminescent NO/NO₂/NO_x Analyzer”. [Federal Register: Vol. 44, page 7805, 02/07/79 and Vol. 44, page 54545, 09/20/79]

Thermo Electron/Thermo Environmental Instruments Model 14 D/E – *Automated Reference Method*: RFNA-0279-037 “Thermo Electron or Thermo Environmental Instruments, Inc. Model 14 D/E Chemiluminescent NO/NO₂/NO_x Analyzer”. [Federal Register: Vol. 44, page 10429, 02/20/79]

Thermo Environmental Instruments Models 42, 42C, 42*i* NO/NO₂/NO_x Analyzer - *Automated Reference Method*: RFNA-1289-074 “Thermo Environmental Instruments Inc. Model 42, Model 42C, or Model 42*i* NO-NO₂-NO_x Analyzer”. [Federal Register: Vol. 54, page 50820, 12/11/89]