State of California
AIR RESOURCES BOARD

Resolution 07-8

February 22, 2007

Agenda Item No.: 07-2-1

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (ARB or the Board) to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, section 39606(a)(2) of the Health and Safety Code requires the Board to adopt standards for ambient air quality "in consideration of public health, safety, and welfare, including, but not limited to, health, illness, irritation to the senses, aesthetic value, interference with visibility, and effects on the economy"; and requires health-based standards to be based on the recommendation of the Office of Environmental Health Hazard Assessment (OEHHA);

WHEREAS, section 39606(d)(2) of the Health and Safety Code requires the Board to revise ambient air quality standards determined to be inadequate to protect infants and children with an adequate margin of safety, and to establish the standards "at levels that adequately protect the health of the public, including infants and children, with an adequate margin of safety";

WHEREAS, section 39606(b) of the Health and Safety Code requires OEHHA to assess four specific factors relevant to infants and children in preparing its recommendation to the Board: exposure patterns, special susceptibility, effects of exposure, and interaction of multiple air pollutants;

WHEREAS, section 39014 of the Health and Safety Code defines "ambient air quality standards" (AAQS) to mean "specified concentrations and durations of air pollutants which reflect the relationship between the intensity and composition of air pollution to undesirable effects established by the state board";

WHEREAS, section 70101 of title 17, California Code of Regulations, states that "the objective of ambient air quality standards is to provide a basis for preventing or abating the effects of air pollution, including effects on health, esthetics and economy"; that "pollution levels below those shown in the standards should not ordinarily produce the associated effects"; that "ambient air quality standards shall be reviewed and subject to modification whenever substantial pertinent new information becomes available and at least once every five years"; and that "to the extent feasible, review of a standard shall

be coordinated with the review of any corresponding federal standard by the Environmental Protection Agency";

WHEREAS, based on section 39014 of the Health and Safety Code and on sections 70100 and 70200 of title 17, California Code of Regulations, California ambient air quality standards have four elements: (1) a definition of the air pollutant, (2) an averaging time, (3) a pollutant concentration, and (4) a monitoring method to determine levels of the pollutant in the ambient air relative to attainment of the standard;

WHEREAS, section 39606(d)(1) of the Health and Safety Code required the Board, in consultation with OEHHA, by December 31, 2000, "to review all existing health-based ambient air quality standards to determine whether, based on public health, scientific literature, and exposure pattern data, these standards adequately protect the health of the public, including infants and children, with an adequate margin of safety";

WHEREAS, on December 7, 2000, the Board approved a joint ARB/OEHHA staff report that contained preliminary reviews of all of the health-based California ambient air quality standards, and found that health effects may occur in infants, children, and other potentially susceptible subgroups exposed to several pollutants at or near levels corresponding to current California ambient air quality standards;

WHEREAS, on December 7, 2000, the Board further found that the ambient air quality standard for nitrogen dioxide had the third highest priority for review and revision;

WHEREAS, the current state ambient air quality standard for nitrogen dioxide is 0.25 parts per million (ppm) for one-hour, and the current national ambient air quality standard for nitrogen dioxide is an annual average of 0.053 ppm;

WHEREAS, on April 14, 2006, staff released for public review a draft report titled "Review of the California Ambient Air Quality Standard for Nitrogen Dioxide, Public Review Draft," authored by ARB and OEHHA staff, which contained draft recommendations for amending the nitrogen dioxide standard as recommended by OEHHA;

WHEREAS, in accordance with section 57004 of the Health and Safety Code, the draft staff report and proposed amendments were peer reviewed by the Air Quality Advisory Committee (AQAC), an independent scientific review committee, comprised of scientific experts on nitrogen dioxide and appointed by the Office of the President of the University of California, and were discussed at a public meeting on June 12-13, 2006;

WHEREAS, on December 5, 2006, the AQAC submitted its written report on the draft staff recommendations for amending the nitrogen dioxide standard, finding that the recommendations for revising the nitrogen dioxide standard are based upon sound scientific knowledge, methods, and practices, and are supported by the scientific literature;

WHEREAS, on December 8, 2006, ARB received the OEHHA recommendations for revision of the nitrogen dioxide standard, which were to reduce the current one-hour standard to 0.18 ppm and to add a new annual standard of 0.030 ppm;

WHEREAS, on January 5, 2007, ARB released its final staff report titled "Review of the California Ambient Air Quality Standard for Nitrogen Dioxide, Staff Report, Initial Statement of Reasons for Proposed Rulemaking," which presents the findings of the joint ARB/OEHHA staff review of the health and scientific literature on nitrogen dioxide, as well as exposure pattern data for nitrogen dioxide in California, and staff recommendations for amending the nitrogen dioxide standard; the proposed amendments are set forth in Attachment A hereto;

WHEREAS, on February 1, 2007, a public workshop was held to receive public input on staff's final proposal to amend the nitrogen dioxide standard;

WHEREAS, the proposed amendments provide that the California-approved samplers for nitrogen dioxide are set forth in the Air Monitoring Quality Assurance Manual, Volume IV, Part D: Monitoring Methods for Nitrogen Dioxide, then pending adoption; this document was subsequently adopted on February 14, 2007;

WHEREAS, the California Environmental Quality Act and Board regulations approved by the Resources Secretary as a certified regulatory program require that no project which may have significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available to reduce or eliminate such impacts, and that the decision-maker shall make a written response to significant environmental issues;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of chapter 3.5 (commencing with section 11340), part 1, division 3, title 2 of the Government Code;

WHEREAS, the Board has received and reviewed a substantial body of evidence and testimony, in both written and oral form, from the ARB and OEHHA staff, AQAC, and members of the public, prior to and at a duly-noticed public hearing held on February 22, 2007 relating to the adverse health effects of nitrogen dioxide, and finds as follows:

1. The potential health impacts of exposure to nitrogen dioxide air pollution are significant, particularly in sensitive human populations such as asthmatics and children;

2. The scientific review suggests the need for separate standards for one-hour and annual averaging times to provide adequate public health protection from both short, peak exposures, and longer-term, lower concentration exposures;

3. The revision of the current one-hour nitrogen dioxide standard of 0.25 ppm to 0.18 ppm, not to be exceeded, is necessary to protect public health with an adequate margin of safety; this recommendation is based on evidence of increased airway reactivity and enhanced allergic response in asthmatics from short-term exposures;

4. The establishment of a new annual average nitrogen dioxide standard at 0.030 ppm, not to be exceeded, is necessary to protect public health with an adequate margin of safety; this recommendation is based on evidence that:

   a) longer-term exposures may lead to increased respiratory symptoms and medication use in asthmatics, emergency room visits for asthma in children, and hospitalization for respiratory disease, as well as some evidence, for premature mortality and hospitalization for cardiovascular disease;

   b) longer-term exposures may lead to changes in lung function growth in children and pre-term birth effects; and

   c) children may be more susceptible to the potential effects of nitrogen dioxide on developing lung;

5. The current monitoring method for nitrogen dioxide, which uses gas-phase chemiluminescence for determining compliance with the State ambient air quality standard for nitrogen dioxide, should be retained, and all federally approved chemiluminescence methods (i.e., samplers) for nitrogen dioxide should be incorporated by reference as "California Approved Samplers"; this will result in no change in air monitoring equipment practices, and will align state monitoring requirements with federal requirements;

6. The monitoring methods proposed should eliminate any ambiguity that may exist between the acceptable use of samplers for state and federal programs;

7. The proposed standards provide an adequate margin of safety that allows for and compensates for scientific uncertainty, as well as the lack of precise predictions regarding the health impacts of air pollutants on a multiplicity of potentially susceptible subpopulations;

8. The proposed standards will in and of themselves have no adverse environmental or economic impacts because they simply establish health-protective levels for nitrogen dioxide and do not specify any control measures;

9. The review of the proposed standards has been coordinated to the extent feasible with the review of the corresponding federal standards, which has led to proposed methods, samplers, and instruments for measuring nitrogen dioxide in California that include the adoption of federal reference methods;

10. Due to the potentially serious health impacts of nitrogen dioxide to public health, it is necessary and appropriate to proceed with the adoption of State nitrogen dioxide standards prior to U.S. Environmental Protection Agency review of the National Ambient Air Quality Standard for nitrogen dioxide; and

11. No less burdensome/more effective alternative would achieve the public health protection purpose of the proposed regulation.

NOW, THEREFORE, BE IT RESOLVED that the Board adopts the amendments to sections 70100.1 and 70200, title 17, California Code of Regulations, set forth in Attachment A hereto.

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I hereby certify that the above is a true and correct copy of Resolution 07-8, as adopted by the Air Resources Board.

Lori Andreoni

Lori Andreoni, Clerk of the Board

Resolution 07-8

February 22, 2007

Identification of Attachments to the Resolution

Attachment A: Amendments to sections 70100.1 and 70200, title 17, California Code of Regulations as set forth in Appendix A to the Staff Report: Initial Statement of Reasons released January 5, 2007

State of California
Environmental Protection Agency
AIR RESOURCES BOARD

Notice of Decision and
Response to Significant Environmental Issues

Item:	STATE AMBIENT AIR QUALITY STANDARD FOR NITROGEN DIOXIDE
Approved By:	Resolution 07-8
Agenda Item:	07-2-1
Public Hearing Date:	February 22, 2007
Issuing Authority:	Air Resources Board
Comment:	No comments were received identifying any significant environmental issues pertaining to this item. The Staff Report identified no adverse environmental effects.
Response:	N/A
Certified:	Trini Balcazar, Regulations Coordinator
Date:	November 1, 2007

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