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**TITLE 326 AIR POLLUTION CONTROL BOARD**

**FINDINGS AND DETERMINATION OF THE COMMISSIONER  
PURSUANT TO [IC 13-14-9-8](#) AND DRAFT RULE  
LSA Document #10-127**

**DEVELOPMENT OF AMENDMENTS TO RULES CONCERNING THE NATIONAL AMBIENT AIR QUALITY STANDARDS FOR LEAD**

**PURPOSE OF NOTICE**

The Indiana Department of Environmental Management (IDEM) has developed draft rule language for amendments to [326 IAC 1-3-4](#) concerning the national ambient air quality standards for lead. IDEM is soliciting written comment on the draft rule language and will schedule a public hearing before the Air Pollution Control Board (board) for consideration of adoption of these rules.

**CITATIONS AFFECTED:** [326 IAC 1-3-4](#).

**AUTHORITY:** [IC 13-14-8](#); [IC 13-17-3-4](#); [IC 13-17-3-11](#).

**STATUTORY REQUIREMENTS**

[IC 13-14-9-8](#) recognizes that under certain circumstances it may be appropriate to reduce the number of public comment periods and public hearings routinely provided. In cases where the commissioner determines that there is no anticipated benefit from a second public comment period and first public hearing, IDEM may forgo these opportunities for public comment and proceed directly to the public hearing and board meeting at which the draft rule is considered for adoption. Two opportunities for public comment (with this notice and at the public hearing prior to adoption of the rule) remain under this procedure.

If the commissioner makes the determination of no anticipated benefit required by [IC 13-14-9-8](#), the commissioner shall prepare written findings and publish those findings in the Indiana Register prior to the board meeting at which the draft rule is to be considered for adoption and include them in the board packet prepared for that meeting. This document constitutes the commissioner's written findings pursuant to [IC 13-14-9-8](#).

The statute provides for this shortened rulemaking process if the commissioner determines that:

(1) the rule constitutes:

(A) an adoption or incorporation by reference of a federal law, regulation, or rule that:

(i) is or will be applicable to Indiana; and

(ii) contains no amendments that have a substantive effect on the scope or intended application of the federal law or rule;

(B) a technical amendment with no substantive effect on an existing Indiana rule; or

(C) a substantive amendment to an existing Indiana rule, the primary and intended purpose of which is to clarify the existing rule; and

(2) the rule is of such nature and scope that there is no reasonably anticipated benefit to the environment or the persons referred to in [IC 13-14-9-7\(a\)\(2\)](#) from:

(A) exposing the rule to diverse public comment under [IC 13-14-9-3](#) or [IC 13-14-9-4](#);

(B) affording interested or affected parties the opportunity to be heard under [IC 13-14-9-3](#) or [IC 13-14-9-4](#); and

(C) affording interested or affected parties the opportunity to develop evidence in the record collected under [IC 13-14-9-3](#) and [IC 13-14-9-4](#).

**BACKGROUND**

The Clean Air Act requires the United States Environmental Protection Agency (U.S. EPA) to set primary and secondary National Ambient Air Quality Standards (NAAQS) for the six common air pollutants considered harmful to public health and the environment including lead, ground-level ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. For each of these pollutants, the Clean Air Act requires U.S. EPA to set the health-based or "primary" standards at a level judged to be "requisite to protect the public health with an adequate margin of safety" and establish secondary standards that are requisite to protect public welfare from "any known or anticipated effects associated with the pollutant in the ambient air" including effects on crops, vegetation, wildlife, buildings and national monuments, and visibility. The law requires U.S. EPA to review these standards once every five years to determine whether revisions to the standards are appropriate. In 2008, U.S. EPA issued revised primary and secondary NAAQS for lead in the November 12, 2008, Federal Register published at 73 FR 66964.

Lead is a metal found naturally in the environment as well as in manufactured products. More than 1,300 tons of lead are emitted each year from about 16,000 sources, many of which emit a fraction of a ton. Larger industrial

sources of lead emissions currently include metals processing, particularly primary and secondary lead smelters. Lead is also emitted from industries such as iron and steel foundries; primary and secondary copper smelting; industrial, commercial, and institutional boilers; waste incinerators; glass manufacturing; and cement manufacturing.

Lead can be emitted into the air in the form of particles small enough to stay suspended in the air. Lead particles emitted into the air from sources can end up in water, soil, and dust, and the particles can be inhaled directly or ingested after it settles onto surfaces or soils. Once in the body, lead is rapidly absorbed into the bloodstream and can affect many of the body's organs. Exposure to lead pollution is associated with a broad range of health effects, including damage to the central nervous system, cardiovascular system, kidneys, immune system, and red blood cells. Children are more likely to be exposed to lead because they exhibit greater hand-to-mouth activity and because their bodies are developing rapidly. Exposures to low levels of lead early in life have been linked to effects on IQ, learning, memory, and behavior that may persist into adulthood.

Lead also impacts plants and animal species by persisting in the environment for decades. Lead damages the reproduction and growth of birds, mammals, and organisms living in the soil. Studies have shown that lead buildup in ecosystems may be linked to reduced species diversity, damage to vegetation, reduced ecosystem productivity, and the increased number of invasive species. Lead from the air continues to deposit in aquatic and terrestrial ecosystems, contributing to lead in soils and sediments.

The U.S. EPA measures lead air pollution with monitors that capture suspended particles, known as total suspended particles or TSP. The NAAQS for lead have been set at 1.5 micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ) since 1978. More than 6,000 new studies on the health effects of lead have been published since 1990. Evidence from these health studies shows that adverse effects occur at much lower levels of lead in the blood than previously thought. The U.S. EPA has determined, based on the review of these studies, that the 1978 primary lead standard of 1.5  $\mu\text{g}/\text{m}^3$  is not adequate to protect public health with an adequate margin of safety. Therefore, with the final rule published in the November 12, 2008, Federal Register, U.S. EPA strengthened the NAAQS for lead by 90 percent to a level of 0.15  $\mu\text{g}/\text{m}^3$  to increase protection of public health and the environment. The U.S. EPA used a framework as a guide in its decision-making based on IQ loss in relation to children's exposure to lead in the air. This framework helped U.S. EPA consider the relationship between the lead in the air and lead in children's blood (air-to-blood ratio), and the relationship between lead in children's blood and IQ loss (concentration response (C-R) function) in an integrated manner. The U.S. EPA also strengthened the secondary standard to be identical to the primary standard of 0.15  $\mu\text{g}/\text{m}^3$  to protect public welfare.

The U.S. EPA also revised the averaging time and form used to determine whether an area meets the standard. The U.S. EPA will use a maximum (not-to-be-exceeded) rolling three-month average evaluated over a three-year period. This replaces the current approach of using calendar quarters. A rolling three-month average considers each of the 12 three-month periods associated with a given year, not just the four calendar quarters within that year.

In this rulemaking, IDEM is proposing to amend [326 IAC 1-3-4](#) to incorporate by reference sections of the November 12, 2008, Federal Register, 73 FR 66964, to revise the primary and secondary NAAQS for lead. By incorporating the federal regulation to revise the primary and secondary NAAQS for lead, this rulemaking helps to ensure that state rules are consistent with federal regulations.

#### **[IC 13-14-9-4](#) Identification of Restrictions and Requirements Not Imposed under Federal Law**

No element of the draft rule imposes either a restriction or a requirement on persons to whom the draft rule applies that is not imposed under federal law. This draft rule imposes no restrictions or requirements because it is a direct adoption of federal requirements that are applicable to Indiana and contains no amendments that have a substantive effect on the scope or application of the federal rule.

#### **Potential Fiscal Impact**

Because this is an incorporation of existing federal law, no impact beyond that already imposed by the federal law is imposed by this rulemaking. Therefore, there will be no fiscal impact from the implementation of this rulemaking.

#### **Public Participation and Workgroup Information**

At this time, no workgroup is planned for the rulemaking. If you feel that a workgroup or other informal discussion on the rule is appropriate, please contact Manda Clevenger, Rule and State Implementation Plan Development Section, Office of Air Quality at (317) 232-8229 or (800) 451-6027 (in Indiana).

#### **Small Business Assistance Information**

IDEM established a compliance and technical assistance (CTAP) program under [IC 13-28-3](#). The program provides assistance to small businesses and information regarding compliance with environmental regulations. In accordance with [IC 13-28-3](#) and [IC 13-28-5](#), there is a small business assistance program ombudsman to provide a point of contact for small businesses affected by environmental regulations. Information on the CTAP program, the monthly CTAP newsletter, and other resources available can be found at:

<http://www.in.gov/idem/4108.htm>

Small businesses affected by this rulemaking may contact the Small Business Regulatory Coordinator:  
Alison Surface

IDEM Compliance and Technical Assistance Program - OPPTA  
MC 60-04 IGCS W041  
100 North Senate Avenue  
Indianapolis, IN 46204-2251  
(317) 232-8172 or (800) 988-7901  
ctap@idem.in.gov

The Small Business Assistance Program Ombudsman is:  
Brad Baughn  
IDEM Small Business Assistance Program Ombudsman  
MC 50-01 IGCN 1307  
100 North Senate Avenue  
Indianapolis, IN 46204-2251  
(317) 234-3386  
bbaughn@idem.in.gov

## FINDINGS

The commissioner of IDEM has prepared findings regarding this rulemaking on the incorporation of federal regulations that amends [326 IAC 1-3-4](#) concerning the national ambient air quality standards for lead as required by federal law. These findings are prepared under [IC 13-14-9-8](#) and are as follows:

- (1) This rule is the direct adoption of federal requirements that are applicable to Indiana, and it contains no amendments that have a substantive effect on the scope or intended application of the federal rule.
- (2) Indiana is required by the Clean Air Act to adopt these requirements as state rule.
- (3) The public will benefit from prompt adoption of this rule because it will ensure that state rules are consistent with federal regulations.
- (4) I have determined that under the specific circumstances pertaining to this rule, there would be no benefit to the environment or to persons to be regulated or otherwise affected by this rule from the first public comment period and first public hearing.
- (5) The draft rule is hereby incorporated into these findings.

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Thomas W. Easterly  
Commissioner  
Indiana Department of Environmental Management

## REQUEST FOR PUBLIC COMMENTS

This notice requests the submission of comments on the draft rule language, including suggestions for specific revisions to language to be contained in the rule. Mailed comments should be addressed to:

#10-127(APCB) Lead NAAQS  
Manda Clevenger Mail Code 61-50  
Rule and State Implementation Plan Development Section  
Office of Air Quality  
Indiana Department of Environmental Management  
100 North Senate Avenue  
Indianapolis, Indiana 46204

Hand delivered comments will be accepted by the receptionist on duty at the tenth floor reception desk, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana.

Comments may be submitted by facsimile at the IDEM fax number: (317) 233-5967, Monday through Friday, between 8:15 a.m. and 4:45 p.m. Please confirm the timely receipt of faxed comments by calling the Rule and State Implementation Plan Development Section at (317) 234-6530.

## COMMENT PERIOD DEADLINE

Comments must be postmarked, faxed, or hand delivered by April 16, 2010.

Additional information regarding this action may be obtained from Manda Clevenger, Rule and State Implementation Plan Development Section, Office of Air Quality, (317) 232-8229 or (800) 451-6027 (in Indiana).

## DRAFT RULE

SECTION 1. [326 IAC 1-3-4](#) IS AMENDED TO READ AS FOLLOWS:

### [326 IAC 1-3-4](#) Ambient air quality standards

Authority: [IC 13-14-8](#); [IC 13-17-3-4](#); [IC 13-17-3-11](#)

Sec. 4. (a) All measurements of air quality that are expressed as mass per unit volume, other than for the particulate matter (PM<sub>2.5</sub>) standards contained in subsection (b)(8) **and lead (Pb) standards contained in subsection (b)(6)**, shall be corrected to a reference temperature of twenty-five (25) degrees Celsius and a reference pressure of seven hundred sixty (760) millimeters of mercury (one thousand thirteen and two-tenths (1,013.2) millibars), as micrograms per cubic meter (µg/m<sup>3</sup>). Measurements of PM<sub>2.5</sub>, for purposes of comparison to the standards contained in subsection (b)(8), **and Pb, for purposes of comparison to the standards contained in subsection (b)(6)**, shall be reported based on actual ambient air volume measured at the actual ambient temperature and pressure at the monitoring site during the measurement period.

(b) Ambient air quality standards are as follows:

(1) Sulfur oxides as sulfur dioxide (SO<sub>2</sub>) requirements are as follows:

(A) For primary standards, the following values shall represent the maximum permissible ambient air quality levels:

(i) Eighty (80) µg/m<sup>3</sup> (three-hundredths (0.03) parts per million (ppm)) annual arithmetic mean not to be exceeded in a calendar year.

(ii) Three hundred sixty-five (365) µg/m<sup>3</sup> (fourteen-hundredths (0.14) ppm) maximum twenty-four (24) hour average concentration not to be exceeded more than once per calendar year. The twenty-four (24) hour averages shall be determined from successive nonoverlapping three (3) hour blocks starting at midnight each calendar day.

(B) For secondary standards, the following value shall represent the maximum permissible ambient air quality levels: one thousand three hundred (1,300) µg/m<sup>3</sup> (five-tenths (0.5) ppm) maximum three (3) hour concentration not to be exceeded more than once per year. The three (3) hour averages shall be determined from successive nonoverlapping three (3) hour blocks starting at midnight each calendar day.

(C) SO<sub>2</sub> values may be converted to ppm using the conversion factor two thousand six hundred twenty (2,620) µg/m<sup>3</sup> = one (1) ppm.

(2) Total suspended particulates (TSP) requirements are as follows:

(A) For primary standards, the following values shall represent the maximum permissible ambient air quality levels:

(i) Seventy-five (75) µg/m<sup>3</sup> annual geometric mean.

(ii) Two hundred sixty (260) µg/m<sup>3</sup> maximum twenty-four (24) hour average concentration not to be exceeded more than one (1) day per year.

(B) For secondary standards, the following value shall represent maximum permissible ambient air quality levels: one hundred fifty (150) µg/m<sup>3</sup> maximum twenty-four (24) hour average concentration not to be exceeded more than one (1) day per year.

(3) Carbon monoxide (CO) requirements are as follows:

(A) For primary and secondary standards, the following values shall represent the maximum permissible ambient air quality levels:

(i) Ten (10) milligrams per cubic meter (mg/m<sup>3</sup>) (ten thousand (10,000) µg/m<sup>3</sup>) (nine (9) ppm) maximum eight (8) hour average concentration not to be exceeded more than once per year.

(ii) Forty (40) mg/m<sup>3</sup> (forty thousand (40,000) µg/m<sup>3</sup>) (thirty-five (35) ppm) maximum one (1) hour average concentration not to be exceeded more than once per year.

(B) CO values may be converted to ppm using the conversion factor one thousand one hundred forty-five (1,145) µg/m<sup>3</sup> = one (1) ppm.

(4) Ozone (O<sub>3</sub>) requirements are as follows:

(A) For the one (1) hour ozone standards, the level of the one (1) hour primary and secondary ambient air quality standards for ozone measured by a reference method based on 40 CFR 50, Appendix D\* and designated in accordance with 40 CFR 53\* is twelve-hundredths (0.12) ppm (two hundred thirty-five (235) µg/m<sup>3</sup>). The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above twelve-hundredths (0.12) ppm (two hundred thirty-five (235) µg/m<sup>3</sup>) is equal to or less than one (1) as determined by 40 CFR 50, Appendix H\*.

(B) For the eight (8) hour ozone standards, the:

(i) level of the eight (8) hour primary and secondary ambient air quality standards for ozone, measured by a reference method based on 40 CFR 50, Appendix D\* and designated in accordance with 40 CFR 53\*, is eight-hundredths (0.08) ppm, daily maximum eight (8) hour average; and

(ii) eight (8) hour primary and secondary ozone ambient air quality standards are met at an ambient air quality monitoring site when the average of the annual fourth highest daily maximum eight (8) hour average ozone concentration is less than or equal to eight-hundredths (0.08) ppm as determined in accordance with

40 CFR 50, Appendix I\*.

(C) O<sub>3</sub> values may be converted to ppm using the conversion factor one thousand nine hundred sixty-five (1,965)  $\mu\text{g}/\text{m}^3 = 1.0$  ppm.

(5) Nitrogen dioxide (NO<sub>2</sub>) requirements are as follows:

(A) For primary and secondary standards, the following value shall represent the maximum permissible ambient air quality level: one hundred (100)  $\mu\text{g}/\text{m}^3$  (fifty-three thousandths (0.053) ppm) annual arithmetic mean concentration in a calendar year.

(B) NO<sub>2</sub> values may be converted to ppm using the conversion factor one thousand eight hundred eighty (1,880)  $\mu\text{g}/\text{m}^3 =$  one (1) ppm.

(6) Lead Pb: For primary and secondary standards, the following value shall represent the maximum permissible ambient air quality level: ~~one and five tenths (1.5) micrograms lead per cubic meter of air ( $\mu\text{g}$  of Pb/ $\text{m}^3$ ), averaged over a calendar quarter and measured as elemental lead.~~ **fifteen-hundredths (0.15)  $\mu\text{g}/\text{m}^3$ , arithmetic mean concentration over a three (3) month period. The standards are attained when the maximum arithmetic three (3) month mean concentration for a three (3) year period is less than or equal to fifteenth-hundredths (0.15)  $\mu\text{g}/\text{m}^3$ , as determined in accordance with 40 CFR 50, Appendix R\* and measured in the ambient air as Pb by either:**

**(A) a reference method based on 40 CFR 50, Appendix G\*, and designated in accordance with 40 CFR 53\*; or**

**(B) an equivalent method designated in accordance with 40 CFR 53\*.**

(7) PM<sub>10</sub>: For primary and secondary standards, the following values shall represent the maximum permissible ambient air quality levels:

(A) Fifty (50)  $\mu\text{g}/\text{m}^3$  annual arithmetic mean. The standards are attained when the expected annual arithmetic mean concentration, as determined in accordance with 40 CFR 50, Appendix K\*, is less than or equal to fifty (50)  $\mu\text{g}/\text{m}^3$ .

(B) One hundred fifty (150)  $\mu\text{g}/\text{m}^3$  maximum twenty-four (24) hour average concentration. The standards are attained when the expected number of days per calendar year with a twenty-four (24) hour average concentration above one hundred fifty (150)  $\mu\text{g}/\text{m}^3$ , as determined in accordance with 40 CFR 50, Appendix K\*, is equal to or less than one (1).

(8) PM<sub>2.5</sub>: For primary and secondary standards, the following values shall represent the maximum permissible ambient air quality levels:

(A) Fifteen (15) micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) annual arithmetic mean concentration. The standards are attained when the annual arithmetic mean concentration is less than or equal to fifteen (15)  $\mu\text{g}/\text{m}^3$ , as determined in accordance with 40 CFR 50, Appendix N\* and measured in the ambient air as PM<sub>2.5</sub> by either:

(i) a reference method based on 40 CFR 50, Appendix L\*, and designated in accordance with 40 CFR 53\*; or

(ii) an equivalent method designated in accordance with 40 CFR 53\*.

(B) Sixty-five (65)  $\mu\text{g}/\text{m}^3$  twenty-four (24) hour average concentration. The standards are attained when the ninety-eighth percentile twenty-four (24) hour concentration is less than or equal to sixty-five (65) micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), as determined in accordance with 40 CFR 50, Appendix N and measured in the ambient air as PM<sub>2.5</sub> by either:

(i) a reference method based on 40 CFR 50, Appendix L\*, and designated in accordance of 40 CFR 53\*; or

(ii) an equivalent method designated in accordance with 40 CFR 53\*.

\*These documents are incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center-North, Tenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204.

*(Air Pollution Control Board; [326 IAC 1-3-4](#); filed Mar 10, 1988, 1:20 p.m.: 11 IR 2378; filed Apr 13, 1988, 3:35 p.m.: 11 IR 3020; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477; filed May 21, 2002, 10:20 a.m.: 25 IR 3055; filed Mar 9, 2004, 3:45 p.m.: 27 IR 2224; filed Dec 20, 2004, 2:15 p.m.: 28 IR 1471; filed Mar 6, 2006, 3:00 p.m.: 29 IR 2179)*

### [Notice of Public Hearing](#)

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