



1 ENERGY AND ENVIRONMENT CABINET

2 Department for Environmental Protection

3 Division for Air Quality

4 (Amendment)

5 401 KAR 53:010. Ambient air quality standards.

6 RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120, 40 C.F.R. Parts 50, 51, 52, 53,  
7 58, 75, 81, 42 U.S.C. 7401-7671q

8 STATUTORY AUTHORITY: KRS 224.10-100(5), 42 U.S.C. 7401-7671q

9 NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100(5) requires the  
10 cabinet~~[Environmental and Public Protection Cabinet]~~ to promulgate~~[prescribe]~~ administrative  
11 regulations for the prevention, abatement, and control of air pollution. This administrative  
12 regulation establishes~~[is to fix]~~ ambient air quality standards necessary for the protection of the  
13 public health, the general welfare, and the property and people in the~~[this]~~ Commonwealth of  
14 Kentucky.

15 Section 1. Ambient Air Quality Standards. The primary and secondary ambient air quality  
16 standards for sulfur oxides, particulate matter, carbon monoxide, ozone, nitrogen dioxide, lead,  
17 hydrogen sulfide, gaseous fluorides, total fluorides, and odors are specified in Appendix A of this  
18 administrative regulation. Measurements shall~~[will]~~ be made by methods and frequency specified  
19 in Section 2 of this administrative regulation.

1 Section 2. Methods of Measurement. For those air contaminants for which there are state  
 2 ambient air quality standards that are the same as the national ambient air quality standards,  
 3 measurements shall be made in accordance with 40 C.F.R. Parts 50 and 53~~[according to reference~~  
 4 ~~methods, or their equivalent methods]~~. For other air contaminants for which there are state  
 5 ambient air quality standards, measurements shall be according to methods established in 401  
 6 KAR 50:015, this administrative regulation, or as prescribed by the cabinet. The frequency of  
 7 measurements for all air contaminants shall be prescribed by the cabinet, in accordance with 40  
 8 C.F.R. Parts 50 and 53, 401 KAR 50:015, or this administrative regulation.

9 Section 3. Within sixty (60) days of promulgation or revision of any primary or secondary  
 10 ambient air quality standard by the U.S. EPA, the cabinet shall initiate proceedings to promulgate  
 11 or review this administrative regulation in conformance with the federal ambient air quality  
 12 standards.

APPENDIX A TO 401 KAR 53:010

AMBIENT AIR QUALITY STANDARDS

The following air contaminant concentrations shall apply to any single point location:

<u>Pollutant</u>	<u>Primary Standard</u>	<u>Secondary Standard</u>
<u>Carbon Monoxide</u>		
<u>Eight (8) hour average</u>	<u>9 ppm<sup>(1)</sup> (10 mg/m<sup>3</sup>)</u>	--
<u>One (1) hour average</u>	<u>35 ppm<sup>(1)</sup> (40 mg/m<sup>3</sup>)</u>	--
<u>Lead</u>		
<u>Rolling three (3) month mean</u>	<u>0.15 µg/m<sup>3</sup></u>	<u>Same as primary</u>
<u>Nitrogen Dioxide</u>		

<u>Annual arithmetic mean</u>	<u>53 ppb (100 <math>\mu\text{g}/\text{m}^3</math>)<sup>(2)</sup></u>	<u>Same as primary</u>
<u>One (1) hour average</u>	<u>100 ppb</u>	<u>--</u>
<u>Ozone</u>		
<u>One (1) hour average</u>	<u>0.12 ppm<sup>(3)</sup></u>	<u>Same as primary<sup>(3)</sup></u>
<u>Eight (8) hour average</u>		
<u>2015 standard</u>	<u>0.070 ppm</u>	<u>Same as primary</u>
<u>2008 standard</u>	<u>0.075 ppm</u>	<u>Same as primary</u>
<u>1997 standard</u>	<u>0.08 ppm<sup>(4)</sup></u>	<u>Same as primary<sup>(4)</sup></u>
<u>Particulate Matter, measured as PM<sub>10</sub></u>		
<u>Twenty-four (24) hour average</u>	<u>150 <math>\mu\text{g}/\text{m}^3</math></u>	<u>Same as primary</u>
<u>Particulate Matter, measured as PM<sub>2.5</sub></u>		
<u>Annual arithmetic mean</u>		
<u>2012 standard</u>	<u>12.0 <math>\mu\text{g}/\text{m}^3</math></u>	<u>(5)</u>
<u>2006 standard</u>	<u>15.0 <math>\mu\text{g}/\text{m}^3</math></u>	<u>Same as primary</u>
<u>1997 standard</u>	<u>15.0 <math>\mu\text{g}/\text{m}^3</math></u>	<u>Same as primary</u>
<u>Twenty-four (24) hour average</u>		
<u>2012 standard</u>	<u>35 <math>\mu\text{g}/\text{m}^3</math></u>	<u>(5)</u>
<u>2006 standard</u>	<u>35 <math>\mu\text{g}/\text{m}^3</math></u>	<u>Same as primary</u>
<u>1997 standard</u>	<u>65 <math>\mu\text{g}/\text{m}^3</math></u>	<u>Same as primary</u>
<u>Sulfur Dioxide</u>		
<u>Annual arithmetic mean</u>	<u>0.030 ppm<sup>(1)(6)</sup></u>	<u>--</u>
<u>One (1) hour average</u>	<u>75 ppb</u>	<u>--</u>
<u>Three (3) hour average</u>	<u>--</u>	<u>0.5 ppm<sup>(1)</sup></u>

<u>Twenty-four (24) hour average</u>	<u>0.14 ppm<sup>(1)(6)</sup></u>	--
<u>Gaseous Fluorides - (expressed as HF)</u>		
<u>Annual arithmetic mean</u>	<u>400 µg/m<sup>3</sup> (0.5 ppm)</u>	--
<u>One (1) month average</u>	--	<u>0.82 µg/m<sup>3(1)</sup> (1.00 ppb)</u>
<u>One (1) week average</u>	--	<u>1.64 µg/m<sup>3(1)</sup> (2.00 ppb)</u>
<u>Twenty-four (24) hour average</u>	<u>800 µg/m<sup>3(1)</sup> (1.0 ppm)</u>	<u>2.86 µg/m<sup>3(1)</sup> (3.50 ppb)</u>
<u>Twelve (12) hour average</u>	--	<u>3.68 µg/m<sup>3(1)</sup> (4.50 ppb)</u>
<u>Hydrogen Sulfide</u>		
<u>One (1) hour average</u>	--	<u>14 µg/m<sup>3(1)</sup> (0.01 ppm)</u>
<u>Odors</u>	--	<u>A mixture of one (1) volume of ambient air and seven (7) volumes of odorless air shall have no detectable odor at any time.</u>
<u>Total Fluorides</u>		
<u>Dry weight basis (as fluoride ion) in and on forage for consumption by grazing ruminants:</u>		
<u>Average concentration of monthly samples over growing season (not to exceed six (6) consecutive months)</u>	--	<u>40 ppm</u>
<u>Two (2) month average</u>	--	<u>60 ppm</u>
<u>One (1) month average</u>	--	<u>80 ppm</u>

1 Footnotes:

2 <sup>1</sup> Average is not to be exceeded more than once per calendar year.

3 <sup>2</sup> The official level of the annual NO<sub>2</sub> standard is 0.053 ppm, equal to fifty-three (53) ppb,

4 which is shown for the purpose of clearer comparison to the one (1) hour standard.

1           <sup>3</sup> The U.S. Environmental Protection Agency revoked the one (1) hour ozone standard in  
 2 all areas in 2005. However, some areas have continuing obligations under the standard.

3           <sup>4</sup> The U.S. Environmental Protection Agency revoked the 1997 eight (8) hour ozone  
 4 standard in 2015. However, some areas have continuing obligations under the standard.

5           <sup>5</sup> The secondary ambient air quality standard was not adjusted from the previously  
 6 established standard.

7           <sup>6</sup> The 1971 sulfur dioxide standards remain in effect until one (1) year after an area is  
 8 designated for the 2010 standard, except that in areas designated nonattainment for the 1971  
 9 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the  
 10 2010 standards are approved.

[APPENDIX A TO 401 KAR 53:010		
AMBIENT AIR QUALITY STANDARDS		
The following air contaminant concentrations shall apply at any single point location:		
CONTAMINANT	PRIMARY STANDARD	SECONDARY STANDARD
Sulfur Oxides (Sulfur Dioxide) $\mu\text{g}/\text{m}^3$	-	-
Annual Arithmetic Mean, not to exceed	80 (0.03 ppm)	-
Maximum Twenty-Four Hour Average	365 (0.14 ppm) <sup>†</sup>	-
Maximum Three-Hour Average	-	1300 (0.50 ppm) <sup>†</sup>
Particulate Matter, measured as PM <sub>10</sub>	-	-
$\mu\text{g}/\text{m}^3$	50 <sup>2</sup>	50 <sup>2</sup>
Annual Arithmetic Mean, not to exceed	150 <sup>3</sup>	150 <sup>3</sup>

Maximum Twenty Four Hour Average		
Carbon Monoxide—mg/m <sup>3</sup>	-	-
Maximum Eight Hour Average	10 (9 ppm) <sup>†</sup>	Same as primary
Maximum One Hour Average	40 (35 ppm) <sup>†</sup>	Same as primary
Ozone—μg/m <sup>3</sup>	-	-
Maximum Average	235 (0.12 ppm) <sup>†</sup>	Same as primary
Nitrogen Dioxide—μg/m <sup>3</sup>	-	-
Annual Arithmetic Mean, not to exceed	100 (0.05 ppm)	Same as primary
Lead—μg/m <sup>3</sup>	-	-
Maximum Arithmetic Mean averaged over a calendar quarter	1.5	Same as primary
Hydrogen Sulfide—μg/m <sup>3</sup>	-	-
Maximum One Hour Average	—	14 (0.01 ppm) <sup>†</sup>
Gaseous Fluorides—(expressed as HF)—μg/m <sup>3</sup>	-	-
Annual Arithmetic Mean, not to exceed	400 (0.5 ppm)	—
Maximum One Month Average	—	0.82 (1.00 ppb) <sup>†</sup>
Maximum One Week Average	—	1.64 (2.00 ppb) <sup>†</sup>
Maximum One Hour Average	800 (1.0 ppm) <sup>†</sup>	2.86 (3.50 ppb) <sup>†</sup>
Maximum Twenty Four Hour Average	—	3.68 (4.50 ppb) <sup>†</sup>
Maximum Twelve Hour Average		
Total Fluorides—ppm	-	-
Dry weight basis (as fluoride ion) in and on	-	-

forage for consumption by grazing ruminants	-	-
The following concentrations are not to be exceeded:	-	-
Average concentration of monthly samples over growing season (not to exceed 6 consecutive months)	-	40 ppm (w/w)
Two Month Average	-	60 ppm (w/w)
One Month Average	-	80 ppm (w/w)
Odors	-	At any time when 1 volume unit of ambient air is mixed with 7 volume units of odorless air, the mixture must have no detectable odor.

1 Footnotes:

2 <sup>1</sup>This average is not to be exceeded more than once per year.

3 <sup>2</sup>The standard is attained when the expected annual arithmetic mean concentration, as determined  
4 in accordance with Appendix K to 40 CFR 50, is less than or equal to fifty (50) mg/m<sup>3</sup>.

5 <sup>3</sup>The standard is attained when the expected number of days per calendar year with a twenty four  
6 (24) hour average concentration above 150 mg/m<sup>3</sup>, as determined in accordance with Appendix K  
7 of 40 CFR 50, is equal to or less than one (1).

1 ~~<sup>4</sup>The standard is attained when the expected number of days per calendar year with maximum~~  
2 ~~hourly average concentrations above 0.12 ppm (235 mg/m<sup>3</sup>) is equal to or less than one (1), as~~  
3 ~~determined by Appendix H of 40 CFR 50.]~~

401 KAR 53:010 approved for filing.

4/14/16  
Date

Charles G. Snavely  
Charles G. Snavely, Secretary  
Energy and Environment Cabinet

## **PUBLIC HEARING AND PUBLIC COMMENT PERIOD**

A public hearing on this administrative regulation will be held on May 26, 2016, at 10:00 a.m. (Eastern Time) in Conference Room 201B of the Division for Air Quality at 200 Fair Oaks Lane, 1<sup>st</sup> Floor, Frankfort, Kentucky. Individuals interested in being heard at this hearing shall notify this agency in writing by May 19, 2016, five workdays prior to the hearing of their intent to attend. If no notification of intent to attend the hearing is received by that date, the hearing shall be cancelled, and notification of the cancellation shall be posted at <http://air.ky.gov/pages/publicnoticesandhearings.aspx>. A transcript of the public hearing will not be made unless a written request for a transcript is made. If you do not wish to be heard at the public hearing, you may submit written comments on the proposed administrative regulation. Written comments shall be accepted until May 31, 2016. Send written notification of intent to be heard at the public hearing or written comments on the proposed administrative regulation to the contact person.

The hearing facility is accessible to persons with disabilities. Requests for reasonable accommodations, including auxiliary aids and services necessary to participate in the hearing, may be made to the contact person at least five (5) workdays prior to the hearing.

### **CONTACT PERSON:**

Cassandra Jobe, Policy Analyst  
Division for Air Quality  
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## REGULATORY IMPACT ANALYSIS AND TIERING STATEMENT

Administrative Regulation: 401 KAR 53:010

Contact person: Cassandra Jobe

**(1) Provide a brief summary of:**

**(a) What this administrative regulation does:**

This administrative regulation establishes the ambient air quality standards (standards) for carbon monoxide, nitrous oxides, ozone, particulates, and sulfur dioxide, which are necessary to protect public health and welfare in the Commonwealth of Kentucky. This regulation also establishes additional standards for hydrogen sulfide, fluorides, and odor.

**(b) The necessity of this administrative regulation:**

This administrative regulation is necessary to establish the standards to protect public health and welfare in the Commonwealth of Kentucky.

**(c) How this administrative regulation conforms to the content of the authorizing statutes:** KRS 224.10-100(5) requires the Energy and Environment Cabinet to promulgate administrative regulations for the prevention, abatement, and control of air pollution. This administrative regulation establishes the standards necessary to protect public health and welfare in the Commonwealth of Kentucky.

**(d) How this administrative regulation currently assists or will assist in the effective administration of the statutes:** This administrative regulation establishes the standards necessary to protect public health and welfare in the Commonwealth of Kentucky.

**(2) If this is an amendment to an existing administrative regulation, provide a brief summary of:**

**(a) How the amendment will change this existing administrative regulation:** This amendment updates the standards to reflect changes to the National Ambient Air Quality Standards (NAAQS) that have been promulgated by U.S. EPA since this administrative regulation was last amended.

**(b) The necessity of the amendment to this administrative regulation:** This amendment is necessary to ensure consistency between the state and federal rulemaking.

**(c) How the amendment conforms to the content of the authorizing statutes:** 42 U.S.C. 7410(a)(1) requires states to adopt and submit a plan to U.S. EPA that provides for implementation, maintenance, and enforcement of the NAAQS.

KRS 224.100(5) authorizes the Energy and Environment Cabinet to promulgate administrative regulations for the prevention, abatement, and control of air pollution. The Cabinet complies with this mandate by implementing and enforcing the standards of this administrative regulation.

- (d) **How the amendment will assist in the effective administration of statutes:** This amendment assists the cabinet in fulfilling its statutory obligation to prevent, abate, and control air pollution by adopting updated NAAQS that have been promulgated by U.S. EPA since this administrative regulation was last amended.
- (3) **List the type and number of individuals, businesses, organizations, or state and local governments affected by this administrative regulation.** This regulation establishes standards that apply to all sources that emit criteria pollutants, odor, fluorides, or hydrogen sulfide.
- (4) **Provide an analysis of how the entities identified in question (3) will be impacted by either the implementation of this administrative regulation, if new, or by the change, if it is an amendment, including:**
  - (a) **List the actions that each of the regulated entities identified in question (3) will have to take to comply with this administrative regulation or amendment:** Sources must install and operate pollution control devices that prevent the source from emitting pollutants above the standards established in this administrative regulation.
  - (b) **In complying with this administrative regulation or amendment, how much will it cost each of the entities identified in question (3):** The cost of pollution control technologies varies depending on what the source chooses to install to mitigate emissions.
  - (c) **As a result of compliance, what benefits will accrue to the entities identified in question (3):** Compliance with the standards in this administrative regulation will provide air quality that is at a level determined by U.S. EPA and Kentucky to protect human health and the environment.
- (5) **Provide an estimate of how much it will cost to implement this administrative regulation:**
  - (a) **Initially:** The Division will not incur any additional costs for the implementation of this administrative regulation.
  - (b) **On a continuing basis:** The Division will not incur any additional costs for the implementation of this administrative regulation.

- (6) **What is the source of the funding to be used for the implementation and enforcement of this administrative regulation:** The Division's current operating budget will be used for the implementation and enforcement of this administrative regulation.
- (7) **Provide an assessment of whether an increase in fees or funding will be necessary to implement this administrative regulation, if new, or by the change if it is an amendment.** No increase in fees or funding is necessary to implement this amendment.
- (8) **State whether or not this administrative regulation establishes any fees or directly or indirectly increases any fees.** This administrative regulation does not establish any fees, nor does it directly or indirectly increase any fees.
- (9) **TIERING: Is tiering applied? (Explain why tiering was or was not used.)**  
Yes, tiering is applied. Standards for pollutants are established as either primary or secondary standards. They are also tiered based on averaging time.

## FISCAL NOTE ON STATE AND LOCAL GOVERNMENT

Administrative Regulation: 401 KAR 53:010

Contact person: Cassandra Jobe

Phone number: (502) 564-3999

- 1. What units, parts or divisions of state or local government (including cities, counties, fire departments, or school districts) will be impacted by this administrative regulation?**

The Division for Air Quality will continue to enforce the national ambient air quality standards (NAAQS). State and local governments constructing or modifying a source will have to meet these standards.

- 2. Identify each state or federal statute or federal regulation that requires or authorizes action taken by the administrative regulation.**

KRS 224.10-100(5), KRS 224.20-110, 40 C.F.R. Part 50, 42 U.S.C. 7401-7671q

- 3. Estimate the effect of this administrative regulation on the expenditures and revenues of a state or local government agency (including cities, counties, fire departments, or school districts) for the first full year the regulation is to be in effect.**

- (a) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for the first year?**

The proposed administrative regulation will not generate revenue in the first year.

- (b) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for subsequent years?**

The proposed administrative regulation will not generate revenue in subsequent years.

- (c) How much will it cost to administer this program for the first year?**

The Division for Air Quality's current operating budget will be used to administer this program for the first year.

- (d) How much will it cost to administer this program for subsequent years?**

The Division for Air Quality's operating budget will be used to administer this program for subsequent years.

**Note: If specific dollar estimates cannot be determined, provide a brief narrative to explain the fiscal impacts of the administrative regulation.**

**Revenues (+/-):** There is no known effect on current revenues.

**Expenditures (+/-):** There is no known effect on current expenditures.

**Other Explanation:** There is no further explanation.

## FEDERAL MANDATE ANALYSIS COMPARISON

Administrative Regulation: 401 KAR 53:010

Contact person: Cassandra Jobe

### **1. Federal statute or regulation constituting the federal mandate.**

The U.S. EPA promulgated the federal regulations found in 40 C.F.R. Part 50 pursuant to 42. U.S.C. 7410(a)(1).

### **2. State compliance standards.**

This administrative regulation establishes the ambient air quality standards in the Commonwealth of Kentucky.

### **3. Minimum or uniform standards contained in the federal mandate.**

40 C.F.R. Part 50 is the federal rule where the national ambient air quality standards are established for criteria pollutants.

### **4. Will this administrative regulation impose stricter requirements, or additional or different responsibilities or requirements, than those required by the federal mandate?**

Yes. The ambient air quality standards for lead, sulfur dioxide, nitrogen dioxide, particulate matter, carbon monoxide, and ozone in this administrative regulation are identical to the NAAQS established 40 C.F.R. Part 50. The Kentucky specific ambient air quality standards are in addition to the federal standards. However, these requirements were not changed as part of this regulatory amendment.

### **5. Justification for the imposition of the stricter standard, or additional or different responsibilities or requirements.**

Stricter standards or requirements are not imposed on the federal standards. The Kentucky specific standards in this administrative regulation are established to comply with KRS 224.10-100(5) which states the Cabinet shall “provide for the prevention, abatement, and control of all water, land, and air pollution, including but not limited to that related to particulates, pesticides, gases, dust, vapors, noise, radiation, odor, nutrients, heated liquid, or other contaminants.”