

<sup>8</sup> Collocated monitors must be within 4 meters of each other and at least 2 meters apart for flow rates greater than 200 liters/min or at least 1 meter apart for samplers having flow rates less than 200 liters/min to preclude airflow interference, unless a waiver is in place as approved by the Regional Administrator pursuant to section 3 of Appendix A.

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- 25. Appendix G to part 58 is amended as follows:
- a. By revising section 9.
  - b. By revising section 10.
  - c. By revising paragraphs 12.1 introductory text and 12.1.a, and table 2.
  - d. By revising section 13.

#### Appendix G to Part 58—Uniform Air Quality Index (AQI) and Daily Reporting

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#### 9. How does the AQI relate to air pollution levels?

For each pollutant, the AQI transforms ambient concentrations to a scale from 0 to 500. The AQI is keyed as appropriate to the national ambient air quality standards (NAAQS) for each pollutant. In most cases, the index value of 100 is associated with the numerical level of the short-term standard (i.e., averaging time of 24-hours or less) for each pollutant. The index value of 50 is associated with the numerical level of the annual standard for a pollutant, if there is one, at one-half the level of the

short-term standard for the pollutant, or at the level at which it is appropriate to begin to provide guidance on cautionary language. Higher categories of the index are based on increasingly serious health effects and increasing proportions of the population that are likely to be affected. The index is related to other air pollution concentrations through linear interpolation based on these levels. The AQI is equal to the highest of the numbers corresponding to each pollutant. For the purposes of reporting the AQI, the sub-indexes for PM<sub>10</sub> and PM<sub>2.5</sub> are to be considered separately. The pollutant responsible for the highest index value (the reported AQI) is called the “critical” pollutant.

#### 10. What monitors should I use to get the pollutant concentrations for calculating the AQI?

You must use concentration data from State/Local Air Monitoring Station (SLAMS) or parts of the SLAMS required by 40 CFR 58.10 for each pollutant except PM. For PM, calculate and report the AQI on days for which

you have measured air quality data (e.g., from continuous PM<sub>2.5</sub> monitors required in Appendix D to this part). You may use PM measurements from monitors that are not reference or equivalent methods (for example, continuous PM<sub>10</sub> or PM<sub>2.5</sub> monitors). Detailed guidance for relating non-approved measurements to approved methods by statistical linear regression is referenced in section 13 below.

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#### 12. How do I calculate the AQI?

i. The AQI is the highest value calculated for each pollutant as follows:

- a. Identify the highest concentration among all of the monitors within each reporting area and truncate as follows:
  - (1) Ozone—truncate to 3 decimal places
  - PM<sub>2.5</sub>—truncate to 1 decimal place
  - PM<sub>10</sub>—truncate to integer
  - CO—truncate to 1 decimal place
  - SO<sub>2</sub>—truncate to integer
  - NO<sub>2</sub>—truncate to integer

(2) [Reserved]

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TABLE 2—BREAKPOINTS FOR THE AQI

These breakpoints							Equal these AQI's	
O <sub>3</sub> (ppm) 8-hour	O <sub>3</sub> (ppm) 1-hour <sup>1</sup>	PM <sub>2.5</sub> (µg/m <sup>3</sup> ) 24-hour	PM <sub>10</sub> (µg/m <sup>3</sup> ) 24-hour	CO (ppm) 8-hour	SO <sub>2</sub> (ppb) 1-hour	NO <sub>2</sub> (ppb) 1-hour	AQI	Category
0.000–0.059 .....	.....	0.0–12.0	0–54	0.0–4.4	0–35	0–53	0–50	Good.
0.060–0.075 .....	.....	12.1–35.4	55–154	4.5–9.4	36–75	54–100	51–100	Moderate.
0.076–0.095 .....	0.125–0.164	35.5–55.4	155–254	9.5–12.4	76–185	101–360	101–150	Unhealthy for Sensitive Groups.
0.096–0.115 .....	0.165–0.204	<sup>3</sup> 55.5–150.4	255–354	12.5–15.4	<sup>4</sup> 186–304	361–649	151–200	Unhealthy.
0.116–0.374 .....	0.205–0.404	<sup>3</sup> 150.5–250.4	355–424	15.5–30.4	<sup>4</sup> 305–604	650–1249	201–300	Very Unhealthy.
(2) .....	0.405–0.504	<sup>3</sup> 250.5–350.4	425–504	30.5–40.4	<sup>4</sup> 605–804	1250–1649	301–400	Hazardous.
(2) .....	0.505–0.604	<sup>3</sup> 350.5–500.4	505–604	40.5–50.4	<sup>4</sup> 805–1004	1650–2049	401–500	

<sup>1</sup> Areas are generally required to report the AQI based on 8-hour ozone values. However, there are a small number of areas where an AQI based on 1-hour ozone values would be more precautionary. In these cases, in addition to calculating the 8-hour ozone index value, the 1-hour ozone index value may be calculated, and the maximum of the two values reported.

<sup>2</sup> 8-hour O<sub>3</sub> values do not define higher AQI values (≥301). AQI values of 301 or greater are calculated with 1-hour O<sub>3</sub> concentrations.

<sup>3</sup> If a different SHL for PM<sub>2.5</sub> is promulgated, these numbers will change accordingly.

<sup>4</sup> 1-hr SO<sub>2</sub> values do not define higher AQI values (≥ 200). AQI values of 200 or greater are calculated with 24-hour SO<sub>2</sub> concentrations.

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#### 13. What additional information should I know?

The EPA has developed a computer program to calculate the AQI for you. The program prompts for inputs, and it displays all the pertinent information for the AQI (the index value, color, category, sensitive group, health effects, and cautionary language). The EPA has also prepared a brochure on the AQI that explains the index in detail (The Air Quality Index), Reporting Guidance

(Technical Assistance Document for the Reporting of Daily Air Quality—the Air Quality Index (AQI)) that provides associated health effects and cautionary statements, and Forecasting Guidance (Guideline for Developing an Ozone Forecasting Program) that explains the steps necessary to start an air pollution forecasting program. You can download the program and the guidance documents at [www.airnow.gov](http://www.airnow.gov). Reference for relating non-approved PM measurements to approved methods

(Eberly, S., T. Fitz-Simons, T. Hanley, L. Weinstock., T. Tamanini, G. Denniston, B. Lambeth, E. Michel, S. Bortnick. Data Quality Objectives (DQOs) For Relating Federal Reference Method (FRM) and Continuous PM<sub>2.5</sub> Measurements to Report an Air Quality Index (AQI). U.S. Environmental Protection Agency, Research Triangle Park, NC. EPA-454/B-02-002, November 2002) can be found on the Ambient Monitoring Technology Information Center