U.S. Environmental Protection Agency
Office of Inspector General

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At a Glance

Why We Did This Review

In the process of evaluating whether selected ozone air monitoring data meet the criteria established by the U.S. Environmental Protection Agency (EPA), we found two state monitoring agencies that do not use EPA-recommended data processing practices. We are issuing this report to alert the EPA about these issues before the agency starts using the data to determine whether air quality meets the National Ambient Air Quality Standard (NAAQS) for ozone.

The EPA uses Air Quality System (AQS) data to determine whether an area's air quality meets the NAAQS. A nonattainment designation means that an area's air contains unhealthy levels of pollution, and the state must develop a plan to identify enforceable measures to improve air quality in that area. The EPA plans to designate areas for the new ozone NAAQS in 2017.

This report addresses the following EPA goal or cross-agency strategy:

- *Addressing climate change and improving air quality*.

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Listing of OIG reports.

Management Alert: *Certain State, Local and Tribal Data Processing Practices Could Impact Suitability of Data for 8-Hour Ozone Air Quality Determinations*

What We Found

There is a risk that multiple air-monitoring agencies are not always implementing the EPA's recommended quality assurance practices for ozone data. This could lessen the quality of data the agency uses to determine and inform the public as to whether the air is healthy to breathe.

Air monitoring data the EPA received from Georgia and South Carolina were not always processed according to recommended practices in the EPA's 2013 *Quality Assurance Handbook for Air Pollution Measurement Systems* (Quality Assurance Handbook). Georgia and South Carolina adjusted ozone data based on the results of quality control checks known as "zero checks" before reporting the data to the AQS. According to the Quality Assurance Handbook, zero check adjustments, although an accepted practice under certain conditions, should not be necessary and may lead to more data quality uncertainty. While Georgia stopped adjusting its data in 2015, South Carolina continued the practice.

Georgia and South Carolina were not implementing critical criteria as recommended in Appendix D of the Quality Assurance Handbook. In Appendix D, the EPA establishes three critical quality control checks ("zero," "one-point quality control," and "span checks") to validate data. Georgia uses the three quality control checks to validate its data, but the acceptance criteria that the state uses for these checks are less stringent than what the EPA recommends. South Carolina does not use zero checks to validate ozone data. South Carolina applies the one-point quality control check to validate ozone data, but its acceptance criteria are less stringent than the EPA's recommended critical criteria. South Carolina conducts span checks, but does not follow EPA-recommended practices. Variation in the use of acceptance criteria and critical quality control checks can impact the integrity of data the EPA uses to make designation decisions.

We analyzed 2012–2014 ozone data across the country and determined that about 26 percent of the hourly data reported in real time were different than corresponding data reported to the AQS. While not all of the differences are indicative of data adjustment practices, there is a risk that other air-monitoring agencies are improperly adjusting their data before reporting it to the AQS. These adjustments could impact the quality of data the EPA plans to use to determine whether ozone levels present an adverse health risk to the public (i.e., the designation process). Designation determinations can have significant implications for public health and an area's economy. Therefore, it is important that the EPA has assurance that its designation decisions are based on data that has undergone a known, consistent and accepted quality control process.

Pending completion of our ongoing work, we are making no recommendations. We are alerting the EPA to a potential risk in the use of ozone data for its designations in 2017, so that the agency can take steps to further assess and mitigate risks as needed. The agency has initiated actions to assess these risks.