



At a Glance

Why We Did This Review

We conducted this review to determine whether selected air monitoring data in the U.S. Environmental Protection Agency's (EPA's) Air Quality System (AQS) meet criteria established by the EPA. Specifically, we determined whether ozone data revisions and data exclusions or gaps comply with EPA criteria.

The EPA uses AQS data to determine whether an area's air quality meets National Ambient Air Quality Standards (NAAQS) and to make regulatory decisions regarding acceptable levels of ozone, which is an air pollutant at ground level. State, local and tribal air monitoring agencies should use the EPA's recommended quality assurance (QA) criteria to develop their QA project plans (QAPPs) and report the highest quality of data to AQS.

In February 2017, we issued a [management alert](#) to notify the EPA about time-sensitive findings regarding the data processing practices of two air monitoring agencies. This current report details our comprehensive findings.

This report addresses the following:

- Improving air quality.

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Differences in Processing Practices Could Decrease the Reliability of Ozone Data Used for Assessing Air Quality to Protect Public Health

What We Found

Three of the six air monitoring agencies we reviewed did not consistently use the EPA's recommended QA practices, which are designed to produce data of an acceptable level of quality for the EPA to use in making regulatory decisions about air quality. For

example, three monitoring agencies did not use the recommended quality control checks to validate data. Further, we found that these three monitoring agencies adjusted ozone data from 2012 to 2014 using processes that were inconsistent with EPA guidance. We also noted that, in the process of validating ozone data, some agencies used different shelter temperature range criteria.

The EPA's oversight controls did not always identify when validation and adjustment practices were inconsistent with the EPA's QA Handbook. For example, technical systems audits conducted by the EPA did not always identify or resolve inconsistencies between the monitoring agencies' data processing practices and the EPA's guidance. Improving the EPA's oversight controls can reduce the risk that monitoring data are not processed consistently and in accordance with accepted QA practices. Variation in data processing practices can lead to data quality uncertainty, decrease data reliability, and reduce the comparability of data across monitoring agencies. Since the EPA uses ozone monitoring data to determine whether air quality is healthy (i.e., in compliance with NAAQS), the data must be of known quality and be reliable and defensible.

There is a risk that the state, local and tribal agencies that monitor ambient air quality are not always implementing the EPA's recommended QA practices for validating ozone data. This risk could reduce the quality of the data that the EPA uses to determine whether the air is healthy to breathe.

Recommendations and Planned Agency Corrective Actions

We issued five recommendations to the Assistant Administrator for Air and Radiation: (1) assess the risk of data adjustments impacting the ozone data used in the EPA's NAAQS determinations, (2) issue guidance clarifying the shelter temperature criteria that should be used, (3) strengthen the EPA's oversight of monitoring agencies' data processing practices by completing the QAPP review-and-approval process to confirm that monitoring agencies are including appropriate QA criteria in their QAPPs, (4) use technical systems audits to verify that monitoring agencies are implementing the EPA's recommended QA criteria, and (5) develop a process to confirm that the data reported to the AQS meet the EPA's recommended validation criteria for certain quality control checks. The EPA completed corrective action for Recommendation 4, and the agency's planned corrective actions meet the intent of the remaining recommendations.