

# **BAQP AMBIENT MONITORING GUIDELINES**

## **SUMMARY OF CHANGES**

**The first revision of the Bureau of Air Quality Planning 2006 ambient monitoring guidelines was published on September 17, 2015. Following are the changes to the guidelines from newest to oldest.**

### **Changes in the version published on November 8, 2016**

#### **Section 1, References and Quality Assurance Project Plans (QAPP)**

This section requires ambient monitoring by sources to be in accordance with these guidelines and U.S. Environmental Protection Agency (EPA) regulations and, generally, EPA guidance, with exceptions including gaseous quality control check tolerances designed for use with trace gas monitors and inconsistent EPA pollutant and meteorological monitoring guidance, rather than be in accordance with these guidelines and the applicable guidance and procedures published by the EPA.

#### **Section 5.3.3, Gaseous Monitoring Audits**

This subsection has a new beginning paragraph and a new ending paragraph. The beginning paragraph explains why the BAQP uses a linear regression to evaluate gaseous criteria pollutant audit results instead of the EPA Quality Assurance Handbook for Air Pollution Measurement Systems, Vol. II, Appendix D, Measurement Quality Objectives and Validation Templates. The ending paragraph recommends adding to gaseous monitoring audits the regulatory optional fourth audit point at the higher end of the operational range for use in the linear regression evaluation of the audit points. Also recommended is the selection of required audit points at the high end of each audit level concentration range to make the audit points more suitable for standard gas analyzers as opposed to trace gas or lower range analyzers.

#### **Section 5.3.4, Gaseous Monitoring Quality Control Checks**

This subsection explains why the BAQP does not adopt the EPA Quality Assurance Handbook for Air Pollution Measurement Systems, Vol. II, Appendix D, Measurement Quality Objectives and Validation Templates zero drift data validation tolerances: these are trace gas analyzer tolerances, where trace gas analyzers are not required and standard analyzers are in widespread, if not exclusive, use in Nevada source monitoring. Instead, the BAQP adopts the following zero drift tolerances: for O<sub>3</sub>, the EPA 2008 tolerance of 10 ppb; for CO, the EPA 2008 tolerance of 1.0 ppm; for NO<sub>2</sub> and SO<sub>2</sub>, the EPA 2008 tolerance of 15 ppb is reduced to 10 ppb.

This subsection also explains why the BAQP does not adopt the Appendix D 7% tolerance for biweekly ozone precision ("one point QC check") and span checks, instead using a 10% tolerance.

## Changes in the version published on March 15, 2016

### Section 2, Highlights, No. 8

Hourly *shelter* temperature or instrument rack temperature shall be reported for gaseous analyzers.

### Section 5.3, Gaseous Monitoring

The *shelter* temperature or instrument rack temperature shall be monitored and reported quarterly as hourly averages, with the analyzer model and EPA-designated temperature range for that analyzer to be operated as a Federal Reference or Equivalent Method.

## Changes in the version published on October 27, 2015

### Section 3.2, Wind Direction

There is further discussion about the algorithms used to calculate mean wind direction. NDEP strongly recommends the use of the unit vector calculation vs. the scalar approach (also known as single-pass procedure developed by Mitsuta). Also, for the unit vector calculation of mean wind direction, which the *Quality Assurance Handbook, Vol. IV, Meteorological Measurements, Version 2.0 (Final)* (2008) concludes should be used, the *Meteorological Monitoring Guidance for Regulatory Modeling Applications* (2000) recommends a sampling rate of one to five seconds. The single-pass procedure developed by Mitsuta to compute scalar mean wind direction requires a sampling rate of at least once per second to ensure that consecutive values do not differ by more than 180 degrees.

### Section 3.6, Sampling Frequency

The BAQP reserves the right to reject wind direction measurements obtained using the scalar Mitsuta method with a sampling interval greater than one second.

### Section 5.1, High-Volume PM<sub>10</sub> Sampling

Reweighed unexposed filters should be within  $\pm 2.8$  mg of original values. If reweighed exposed filters differ by more than 5.0 mg from original values, the laboratory supervisor should investigate why.