

0. Introduction

0.1 Intent of the Handbook

This document is Volume II of a five-volume quality assurance (QA) handbook series dedicated to air pollution measurement systems. Volume II is dedicated to the Ambient Air Quality Surveillance Program and the data collection activities inherent to that program. This guidance is part of a quality management system designed to ensure that the Ambient Air Quality Surveillance Program: (1) provides data of sufficient quality to meet the program's objectives and (2) is implemented consistently across the Nation.

The purpose of the Handbook is twofold. First, the document is intended to assist technical personnel at tribal, state and local monitoring organizations¹ develop and implement a *quality system* for the Ambient Air Quality Monitoring Program. A quality system, as defined by *The American National Standard-Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs(ANSI/ASQ E4)*,² is “a structured and documented management system describing the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an organization for ensuring the quality in its work processes, products, and services. The quality system provides the framework for planning, implementing, and assessing the work performed by the organization and for carrying out required quality assurance (QA) and quality control (QC) activities”. A monitoring organization's quality system for the Ambient Air Quality Surveillance Program is described in its quality assurance project plan (QAPP). Second, the Handbook provides additional information and guidance on the material covered in the Code of Federal Regulations (CFR) pertaining to the Ambient Air Quality Surveillance Program.

The Handbook has been written in a style similar to a QA project plan as specified in the document *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations (EPA QA/R5)*³. Environmental data operations (EDO) refer to the work performed to obtain, use, or report information pertaining to natural surroundings and conditions. The information in this Handbook can be used as guidance in the development of detailed monitoring organization QAPPS.

Earlier versions of the Handbook focused on the six criteria pollutants monitored at the State and Local Ambient Monitoring Stations (SLAMS) and National Ambient Monitoring Stations (NAMS). In 2006, the term NAMS was discontinued and a new national monitoring concept-the National Ambient Air Monitoring Strategy- was adopted. Although the focus will remain on the criteria pollutants, this edition is expanded to cover quality assurance guidance for:

- Photochemical Assessment Monitoring Stations (PAMS);
<http://www.epa.gov/ttn/amtic/pamsmain.html>;
- Open path monitoring (<http://www.epa.gov/ttn/amtic/longpath.html>);
- PM_{2.5} Chemical Speciation Network (<http://www.epa.gov/ttn/amtic/speciepg.html>);

¹ Monitoring organization will be used throughout the handbook to identify any tribal, state or local organization that is implementing an ambient air monitoring program, especially if they are using the data for comparison to the National Ambient Air Quality Standards (NAAQS).

² <http://webstore.ansi.org/RecordDetail.aspx?sku=ANSI%2fASQ+E4-2004>

³ http://www.epa.gov/quality1/qa_docs.html

- National Air Toxics Trends Network (NATTS) <http://www.epa.gov/ttn/amtic/airtoxpg.html>; and
- NCore Network (<http://www.epa.gov/ttn/amtic/ncore/index.html>)

This Handbook is not intending to supplant the detailed guidance provided by the programs listed above but to provide general information and pointers, in the form of hyperlinks, where one can go for more detailed information. Extensive use of hyperlinks will be used throughout the document.

0.2 Use of the Terms Shall, Must, Should and May

The intent of this handbook is to provide additional guidance on the ambient air monitoring requirements found in the Clean Air Act and 40 CFR Parts 50, 53 and 58. In order to distinguish requirements from guidance, the following terms will be used with consistency.

- < *shall, must-* when the element is a requirement in 40 CFR and the Clean Air Act
- < *should-* when the element is recommended. This term is used when extensive experience in monitoring provides a recommended procedure that would help establish or improve the quality of data or a procedure. The process that includes the term is not required but identifies something that is considered important to data quality that may have alternative methods that can be implemented to achieve the same quality results.
- < *may-* when the element is optional or discretionary. The term also indicates that what is suggested may improve data quality, that it is important to consider, but it is not as important as those that have been suggested using the term “should”.

0.3 Use of Footnotes

This document will make extensive use of internet links that will provide the user with access to more detailed information on a particular subject. Due to the limitations of Adobe, full URL addresses must be provided in order for the links to work. Rather than clutter the body of the document with long URL addresses, footnotes will be used to direct the interested reader to the correct link.

0.4 Handbook Review and Distribution

The information in this Handbook was revised and/or developed by many of the organizations responsible for implementing the Ambient Air Quality Surveillance Program (see Acknowledgments). It has been peer-reviewed and accepted by these organizations and serves to promote consistency among the organizations collecting and reporting ambient air data.

This Handbook is accessible as a PDF file on the Internet under the AMTIC Homepage:

[\[http://www.epa.gov/ttn/amtic/qabook.html\]](http://www.epa.gov/ttn/amtic/qabook.html)

Recommendations for modifications or revisions are always welcome. Comments should be sent to the appropriate Regional Office Ambient Air Monitoring contact or posted on AMTIC forum⁴. The Handbook Steering Committee will meet quarterly to discuss any pertinent issues and proposed changes.

⁴ <http://yosemite.epa.gov/oar/Forums.nsf/Forum%5CAMTICByTopic?OpenView&CollapseView>