



Project Summary

Technical Assistance Document: Quality Assurance Guideline for Visible Emission Training Programs

Barbara E. Blagun

This document describes procedures and outlines technical guidance for assistance in establishing effective visible emission observer training programs. Smoke generator operating information is presented and appendices give examples of sample classroom training lectures as well as audit forms and statistical techniques used to access the quality of a training program. The adherence of visible emissions training programs to the materials in this document should result in improved and consistent levels of observer training. This documentation will aid enforcement programs in demonstrating that the observers were trained without biases and in a professional manner.

This Project Summary was developed by EPA's Environmental Monitoring Systems Laboratory, Research Triangle Park, NC, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Summary

EPA reference method 9 for visible emission observations requires that field inspectors and observers document their reading skills by periodic participation in a rigorous smoke training and certification program. It is therefore essential that visible emission (VE) observers continue to have the benefit of high quality training and testing. The document described in this summary is intended for individuals responsible for the general conduct of VE

training and certification program, and includes detailed information on recommended Quality Assurance (QA) procedures.

The implementation of these procedures requires an understanding of the elements of an effective QA Program and its relationship to smoke training and certification. By definition, Quality Assurance is the total integrated program that assures reliability and credibility in opacity training and certification. It therefore should be structured into all aspects of the program including the initial planning and execution of the classroom training; the acquisition, calibration, and operation of the smoke generator; the field training and certification; and the reduction of data and maintenance of records.

In concept and implementation, the QA program is a management tool or operational mechanism for assuring credible training and certification. To ensure success, this program must receive the commitment, support, and follow-up of management.

Description of Quality Assurance Program

The QA program consists of two distinct program operations, quality control (QC) procedures and auditing, that are complementary and mutually supportive. The program of QC procedures is operated integrally with the presentation of the smoke school, focusing on the operation of the smoke generator. This program provides the documented procedures which ensure routinely accurate and reliable training and certification including program

planning; preparation, calibration, and operation of the generator; recordkeeping and documentation; and trainee control.

The other important element of a QA program is auditing. AVE program audit is an external review of the program using structured evaluation forms. The audit is usually conducted by supervisory personnel to assure objectivity. Audits are designed to identify program weaknesses and deficiencies that must be addressed and corrected in order to maintain an effective and high quality opacity training and certification program.

The Performance Audit is the structured and routine review of the various steps in the training and certification process. It generally consists of a number of specified checks to insure that proper and accurate procedural activities have been completed. The Performance Audit is conducted by the Training Supervisor and/or designated staff, and is most applicable to fairly specific and routine procedures. Example formats for inspection and operation of the smoke generator/transmissometer unit and the handling of certification test records are included in the report. In any audit situation, checklists should be devised for each specific activity.

Records pertinent to the audit must be completed and maintained as part of the agency's official documentation file. The generator operating log, smoke school file, and other records are also components of the documentation and recordkeeping process. The importance of the Performance Audit as an integral part of the activity cannot be overemphasized as vital to training and certification efforts. This audit provides assurance that the requirements of Method 9 have been fulfilled and that a sound and high quality program has been provided.

Complementary to the Performance Audit is the System Audit. The System Audit is conducted periodically, perhaps on an annual basis, through an onsite comprehensive review of the total smoke school program. This audit should be conducted to assess all aspects of the training activity and should identify problems that can be corrected. The System Audit preferably should be conducted by personnel outside the smoke school staff, i.e., Enforcement Program Manager and/or EPA Regional Office personnel. Participation by the Enforcement Program Manager is preferable because opacity certification directly impacts and supports the day-to-day enforcement/compliance operation; more than 90 percent of particulate emissions compliance is determined and documented by opacity readings. Participation by enforcement management also provides a needed element of management involvement and concern. The smoke school is

typically a service provided by the Technical Support Division.

A System Audit should have a positive impact on the training program and also should provide a mechanism for management to gain needed program familiarization. It can also be used as a planning document to assist agencies in obtaining the support to update training materials and equipment.

To assist in a systematic review, an itemized audit form should be used. An example is included in the report. The checklist approach assures that all aspects of the program are evaluated and lends itself to the expedient preparation of an audit report. The form should be attached to a brief narrative that summarizes the findings, conclusions, and recommendations. Post audit followup on the important recommendations is essential to assure that proper corrective actions have been taken.

Barbara E. Blagun is with PEDCo Environmental, Inc., Durham, NC 27701.

Thomas J. Logan is the EPA Project Officer (see below).

The complete report, entitled "Technical Assistance Document: Quality Assurance Guideline for Visible Emission Training Programs," (Order No. PB 83-193 656;

Cost: \$16.00, subject to change) will be available only from:

National Technical Information Service

5285 Port Royal Road

Springfield, VA 22161

Telephone: 703-487-4650

The EPA Project Officer can be contacted at:

Environmental Monitoring Systems Laboratory

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Research Triangle Park, NC 27711

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