



Assuring Accuracy & Reliability

By Emily Bolda

In April 2012, the Water Quality Assn. (WQA) laboratory received third-party accreditation to ISO/IEC 17025 from International Accreditation Services. For many years, WQA's laboratory already has been operating in compliance with this standard.

Laboratory accreditation provides formal recognition to competent laboratories and is highly regarded both nationally and internationally as a reliable indicator of technical competence. ISO/IEC 17025 utilizes criteria and procedures specifically developed to determine technical competence, thus assuring customers that the test data supplied by the laboratory are accurate and reliable.

Standard Basics

ISO/IEC 17025 is the primary International Standardization Organization (ISO) standard used

by testing and calibration laboratories to cover general requirements for competence and has been in publication for many years. It has a lot in common with other ISO standards, but 17025 includes the concept of technical competence.

There are five sections of the ISO/IEC 17025 standard: scope, normative references, terms and definitions, management requirements, and technical requirements. The two major sections are management requirements and technical requirements.

Management requirements are primarily related to the operation and effectiveness of the quality management system used in the laboratory and include the responsibilities of senior management and requirements for continual improvement of the management system itself. Laboratories are required to have a documented quality management system in order to become accredited.

Technical requirements cover many areas that determine the correctness and reliability of the tests and calibrations performed in the laboratory, including:

- Technical competence of laboratory staff;
- Validity and appropriateness of test methods;
- Traceability of measurements and calibrations to national standards;
- Suitability, calibration and maintenance of test equipment;
- Appropriateness of the testing environment;
- Sampling plans and techniques; and
- Quality assurance of test and calibration data, including how data is recorded, compiled and evaluated.

The goal is to implement, follow and continually improve a quality system to foster the ability to consistently produce valid results.

The Audit Process

During an audit, specialist technical assessors conduct a thorough evaluation of all factors in a laboratory that affect the production of test or calibration data. Procedures and processes are reviewed; the laboratory environment is inspected and evaluated; and example files and data are inspected as evidence that the laboratory complies in applicable categories.

Areas for improvement are then identified and discussed and a detailed report is provided at the end of each visit. The audit is not seen as a negative; conversely, laboratories use these audits as opportunities to receive input and evaluate a procedure from a different perspective. Auditors provide a third-party view that may not always be observed from within the laboratory. They observe laboratory staff performing procedures and offer helpful advice on how a task or procedure could be performed more proficiently.

When necessary, follow-up action is monitored by the accreditation body so the laboratory is confident that it has taken the appropriate corrective action. Opportunities for improvement also are provided. These can be addressed on an ongoing basis and usually are incorporated into subsequent audits.

To maintain this recognition, laboratories are re-evaluated regularly by the accreditation body to ensure their continued compliance with requirements and to check that their standard of quality is being maintained. Laboratories also are required to participate in relevant proficiency testing programs between these re-evaluations as a further demonstration of technical competence.

Accredited laboratories usually issue test reports bearing the accreditation body's symbol or endorsement as an indication of their accreditation. The specific tests the laboratory has been approved for are specified in the laboratory's scope of accreditation, issued by the accreditation body.

Third-party accreditation recognizes laboratory's technical competence

Benefits of Auditing

Accreditation benefits laboratories by determining if they are performing their work correctly and to appropriate standards, and providing them with a baseline for maintaining that competence. It can be difficult to obtain independent technical evaluation outside of an audit. A regular assessment by an accreditation body checks all aspects of a facility's operations related to consistently producing accurate and dependable data.

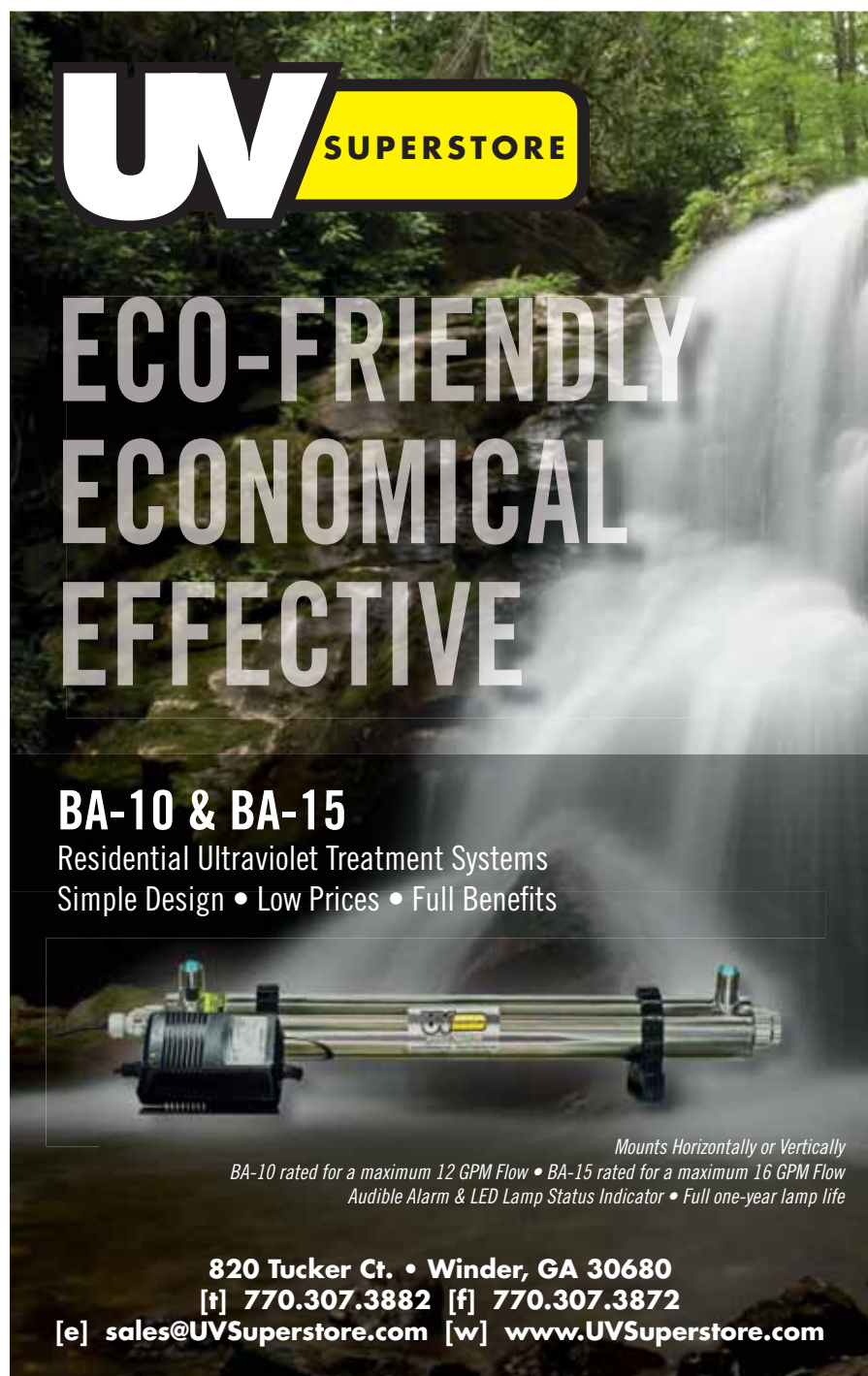
The accreditation is augmented by internal audits. As part of its quality system, WQA ensures that laboratory staff members have access to procedures dictating all types of testing and related activities. These procedures

are designed to take instruction and information from the standards and are tailored to the way each procedure is performed in the WQA laboratory with its equipment. WQA's quality staff routinely audits the laboratory based on these procedures.

The accreditation process and associated audits are an opportunity to demonstrate knowledge and skill, seek guidance and suggestions on improving processes and techniques, and demonstrate to clientele that laboratories are technically competent. By undertaking this accreditation, WQA has demonstrated its laboratory's technical competence in order to provide further service to WQA Gold Seal Product Certification customers. *wqp*

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