

SITE CHARACTERIZATION AND MONITORING TECHNOLOGIES

An ETV Program



About the Site Characterization and Monitoring Technologies Center

The Site Characterization and Monitoring Technologies Center conducts verification testing of commercial-ready environmental monitoring technologies. It is part of the Advanced Monitoring Systems Center, one of the six Centers that constitute the U. S. EPA Environmental Technology Verification (ETV) Program. The U. S. EPA has partnered with Oak Ridge National Laboratory and Sandia National Laboratories to conduct verification testing of new and innovative environmental characterization and monitoring technologies. The Battelle Columbus Laboratory also conducts monitoring technology verification as a member of the Advanced Monitoring Center. Technologies are evaluated to provide potential technology users and permittees with an independent and credible assessment of technology performance. The technology verification process includes test protocol development, field testing, and data analysis and reporting. Testing results are published in short verification statements and detailed reports that are signed by the EPA and the verification organization.

Program Benefits

The Site Characterization and Monitoring Technologies Center benefits technology developers and vendors, purchasers and users, regulators, and the public. Independent, third-party verification testing assures high-quality, consistent, applicable, and widely accepted testing procedures. Specific benefits include:

Developers and Vendors

- ✓ Accelerates the acceptance of innovative, emerging technologies.
- ✓ Provides access to third-party expertise in instrument performance testing.
- ✓ Verification test results can be used as a marketing tool.
- ✓ Increased confidence of investors, stockholders, and lenders.

Technology Users

- ✓ Provides objective, high-quality performance data.
- ✓ Provides the information necessary for evaluating competing technologies.
- ✓ Substantiates and supports technology selection and purchase.
- ✓ Reduces financial risk to purchasing agents and corporations.

Regulators and the Public

- ✓ Increases regulator confidence in innovative technologies proposed for use by site managers.
- ✓ Provides an objective basis for decision-making and a fast track to compliance.
- ✓ Promotes the use of cost-effective technology, thereby saving public funds.

Application Areas

Technology verification activities in this program encompass a variety of environmental applications. Included are:

- ✓ Superfund site characterization and monitoring
- ✓ Long-term, post-redemption environmental monitoring
- ✓ Toxic chemical release emergency response
- ✓ Brownfield site investigations
- ✓ Site characterization associated with real estate transactions
- ✓ Decontamination of buildings
- ✓ Food safety
- ✓ Electric and gas utility network monitoring

Technologies for which Verification Statements have been issued

Verification testing has been completed for a number of environmental monitoring technology categories that include:

- ✓ Cone Penetrometer-Deployed Sensors
- ✓ Decision Support Software Systems
- ✓ Field Portable GC/MS Systems
- ✓ Field Portable Gas Chromatographs
- ✓ Field Portable X-ray Fluorescence Analyzers
- ✓ Immunoassay Test Kits
- ✓ Ion Selective Electrodes
- ✓ Sediment Sampling Technologies
- ✓ Soil/Soil Gas Sampling Devices
- ✓ Photoacoustic Infrared Spectrometers
- ✓ Continuous Flow Immunosensors
- ✓ Groundwater Sampling Technologies

Verification Process

Each technology verification test follows a similar process that includes the steps listed below. To the fullest extent possible, vendor participation is encouraged during the verification test planning stages.

- ✓ User-community needs identification
- ✓ Technology solicitation, application and selection
- ✓ Verification test planning
- ✓ Field verification testing
- ✓ Data analysis and reporting
- ✓ Information outreach

Outreach Activities

The program draws upon the vendor and user community through periodic stakeholder meetings to identify and prioritize present and future technology needs. All test protocols and test results are readily available via the ETV web site (www.epa.gov/etv).

About the ETV Program

The Environmental Technology Verification Program was created to substantially accelerate the entrance of new environmental technologies into the marketplace by supplying technology buyers, developers, consulting engineers, states, and EPA regions with high-quality, credible data on the performance of new technologies verified through neutral, third-party testing organizations under the direction of the EPA. The ETV centers cover the following technology areas:

- ✓ Drinking Water Systems
- ✓ Water Protection Technologies
- ✓ Pollution Prevention, Recycling, and Waste Treatment
- ✓ Advanced Monitoring Systems
 - ◆ Site Characterization and Monitoring
 - ◆ Air and Water Monitoring
- ✓ Air Pollution Prevention and Control
- ✓ Greenhouse Gas Prevention

For more information, point your web browser to:

www.epa.gov/etv

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