



What is ETV?

The U.S. Environmental Protection Agency (EPA) established the Environmental Technology Verification (ETV) Program in 1995 to verify the performance of innovative technical solutions to problems that threaten human health or the environment.

ETV's mission is to accelerate the use of new environmental technologies in the domestic and international marketplace.

ETV provides third-party, quality-assured performance data so buyers and users of environmental technologies can make informed purchase and application decisions.

ETV works through public/private testing partnerships (called Centers) to evaluate the performance of environmental technologies.

The program

The Safe Buildings Monitoring and Detection Technology Verification Program is part of the U.S. EPA's National Homeland Security Research Center (NHSRC). The program operates under the auspices of ETV to verify technologies that monitor and detect chemical and biological contaminants in buildings and public places.

The Safe Buildings Monitoring and Detection Technology Verification Program develops test plans and protocols, conducts verification tests, and reports the technologies' performance.

For further information, contact Helen Latham at Battelle, 505 King Ave., Columbus, OH 43201-2693; phone 614-424-4062; fax 614-424-5601; or e-mail lathamh@battelle.org.



Discussing the installation of two ChemPro 100 instruments to be tested (bottom, right) are Rolf Meinholtz (center), a representative of Environics USA, Inc., and two Battelle laboratory staff members, Peter Bujnak (left) and Dale Folsom (right). A close-up of the test chamber is on page 2.

Two IMS Technologies Are Next for Verification Testing

Two portable ion mobility (IMS) spectrometers have been submitted by Environics USA, Inc., for testing by Battelle under the U.S. EPA's ETV Safe Buildings Monitoring and Detection Technology Verification Program. IMS instruments are portable, lightweight devices designed to rapidly detect toxic industrial chemicals (TICs) and chemical warfare (CW) agents.

IMS devices operate by drawing in air with an internal pump, ionizing the contaminants in the air, then separating the ions by their speed of drift in an electric field and detecting them.

The two IMS instruments are the ChemPro 100, which is being tested with TICs, and the M-90 Chemical Warfare Agent Detector,

which is being tested with hydrogen cyanide gas and two CW agents (sarin and sulfur mustard). TICs being used include hydrogen cyanide, chlorine, and phosgene.

The verification tests began in late July and are expected to take two months. The objective of the tests is to assess the performance of these commercially available, portable IMS technologies to detect toxic chemicals or chemical agents in indoor air.

The instruments will be challenged with TICs and CW agents under conditions and practices that mimic the real-world use of these instruments.

Interference effects will also be evaluated, using latex paint fumes,

(See IMS Technologies on Page 2)

IMS Technologies (from Page 1)

floor cleaner vapors, engine exhaust hydrocarbons, etc.

The tests will focus on each instrument's use by first responders to identify contaminants and guide emergency response activities after a building is contaminated.

For example, the first responders will need instruments that can give a rapid indication of a building's chemical concentration, helping them assess the potential hazard.

The ChemPro 100 and M-90 will be tested for response and recovery time, response threshold, accuracy, repeatability, temperature and humidity effects, interference effects, and the battery life of the instruments.

Also being evaluated are operational factors such as cold/hot start behavior, cost, ease of use, and data output capability.

Upcoming Events

September

14-16 ORNL Conference on Detector/Sensor Research and Technology for Homeland and National Security, Gatlinburg, TN.

27-29 Joint DOJ-DHS Conference: Technologies for Public Safety in Critical Incident Response.

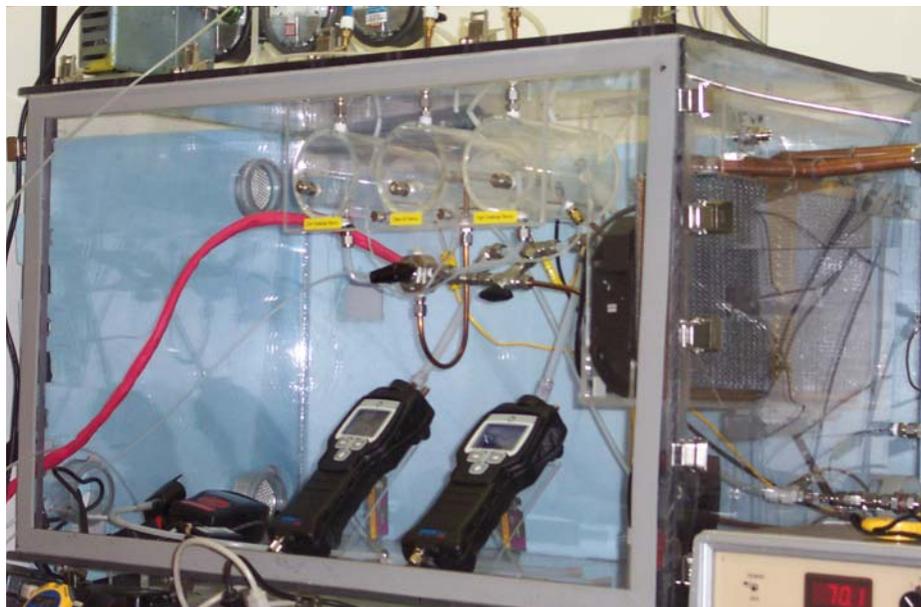
October

5-6 Bay Area 2nd Annual Pacific Security Expo, Oakland, CA.

13-14 Securing New Ground, Annual Security Conference 2004, New York, NY.

November

15-18 2004 Scientific Conference on Chemical and Geological Defense Research, Hunt Valley, MD.



This expanded view shows the test chamber containing the two ChemPro instruments submitted by Environics USA, Inc., for verification testing.

Take 'Refresher Course' in Safe Buildings Detection Technologies

This issue of *The Detector* newsletter completes the first year of providing information about the progress in testing technologies under the Safe Buildings Monitoring and Detection Technology Verification Program, which is part of the U.S. EPA's National Homeland Security Research Center (NHSRC). Here is information about the program's purposes and progress:

- **Objective:** to generate credible third-party performance data so buyers and users of detection technologies can make informed purchase, application, and permitting decisions.
- **Priority technologies:** current focus on technologies for first responders.

➤ **Tests conducted:** with toxic industrial chemicals (e.g., cyanogen chloride, chlorine, hydrogen cyanide, phosgene) and chemical warfare agents (e.g., sarin, sulfur mustard) and realistic conditions and interferences.

➤ **First test completed:** a portable IMS called the Rapid Alarm & Identification Device-Mobile (RAID-M), manufactured by Bruker Daltonics.

➤ **More tests underway:** HAZMATCAD Plus instrument from Microsensor Systems, Inc., was the second technology tested; two additional technologies (see lead article) began testing this month.

➤ **Additional information:** is available on the ETV Web site (www.epa.gov/etv).