



August 2007 Drinking Water Systems Center

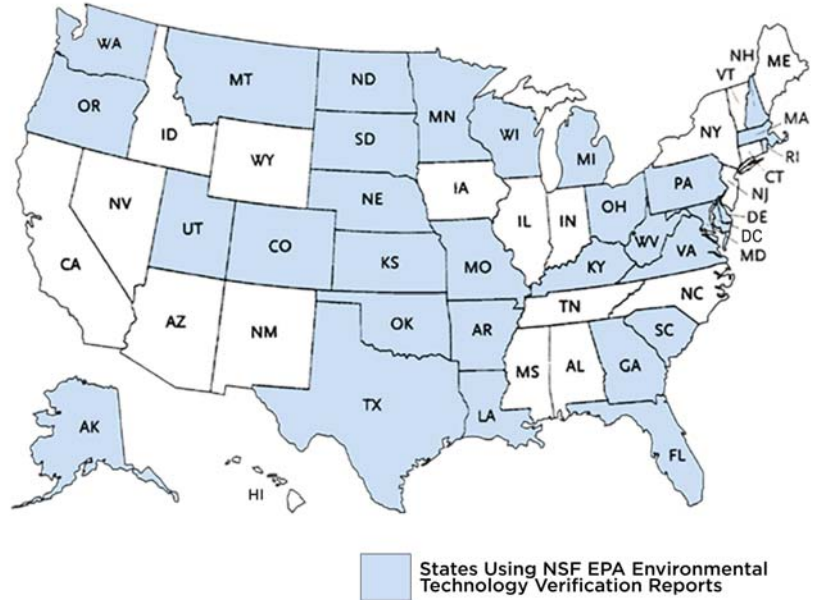
Introduction

The Drinking Water Systems (DWS) Center is one of several US EPA Environmental Technology Verification (ETV) centers dedicated to producing credible environmental performance data. The EPA Office of Research and Development (ORD) supports the ETV Program. The DWS Center is operated through a cooperative agreement with NSF International.

DWS Center Key Features

The DWS Center's activities include development of verification protocols and test plans, independent testing and validation of equipment, conveying and supporting government/industry partnerships to obtain credible performance and cost data, and preparation of product-specific verification reports for broad dissemination. The DWS Center has targeted drinking water concerns such as arsenic reduction, microbiological contaminants, particulate removal, disinfection by-products, radionuclides, and other chemical contaminants. A stakeholder steering committee and technical panels help to advise the DWS Center on verification activities and direction.

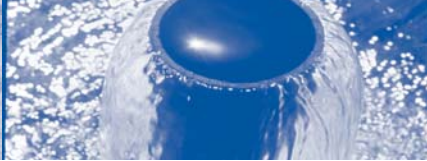
The DWS Center currently has twenty-six test plans that outline testing procedures for various technologies. The Center has prioritized the following technology categories: low pressure membrane filtration, alternative membrane separation processes, adsorptive media and resins, coagulation and alternative filtration processes, UV & ozone disinfection and oxidation, ion exchange, air stripping, cartridge/bag filter processes, and on-site halogen generation systems. The DWS Center has also evaluated residential Point-of Use (POU) devices, Point-of-Entry (POE) whole building systems, and mobile water treatment systems for their ability to remove chemical and biological agents of concern.



EPA/ETV Report Recognition

In a recent NSF survey of ASDWA members, twenty-nine states reported they recognize NSF/EPA ETV reports for drinking water treatment systems. Utah formally references ETV reports in its regulations. In addition, Massachusetts' water permit application mentions ETV and the State of Washington's water system design manual references ETV protocols for surface water treatment. Twenty-four states indicated they would allow for reduced pilot testing, if the ETV report demonstrates adequate performance. Most stated that they would reduce the required pilot testing if source waters were similar to those in the ETV report. In addition, testing protocols under the DWS Center are referenced in SWTR-LT2 Guidance documents.





Recently Completed Verification Tests and Reports

- ▶ Environmental Technology Verification Report: Physical Removal of Microbial Contaminants in Drinking Water: Watts Premier Incorporated, WP-4V Point-of-Use Drinking Water Treatment System
- ▶ Environmental Technology Verification Report: Removal of Chemical and Microbial Contaminants in Drinking Water: Watts Premier Incorporated, M-2400 Point-of-Entry Reverse Osmosis, Drinking Water Treatment System
- ▶ Environmental Technology Verification Report: Removal of Microbial Contaminants in Drinking Water Koch Membrane Systems, Inc., HF-82-35-PMPW Ultrafiltration Membrane
- ▶ Environmental Technology Verification Report: Removal of Chemical Contaminants in Drinking Water, RASco, Incorporated, Hyd-RO-Secure™ Series 2 Anti-Terrorism/Force Protection Drinking Water Treatment System
- ▶ Environmental Technology Verification Report: Removal of Arsenic in Drinking Water, Advanced Remediation Systems USA, LLC, ARS CFU-50 APC Electroflocculation and Filtration Water Treatment System

Current Protocol Activity

- ▶ The ETV membrane protocol is included in the USEPA's Long Term 2 Enhanced Surface Water Treatment Rule's Membrane Filtration Guidance Manual.
- ▶ The USEPA UV disinfection guidance manual will replace the existing ETV UV protocol.

Verification reports and protocols can be found on the EPA and NSF web sites: www.epa.gov/etv and www.nsf.org/info/etv.

Contact the DWS Center

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Future Activities

The DWS Center's future work is based on market interest, as a result of the Center being supported by non-EPA funding sources. Some projects in progress include the following:

Verification Testing

- ▶ Inorganic Chemical Removal for Small Systems:
 - Brimac Environmental Services Inc. for uranium reduction by adsorptive media
- ▶ Emergency Response Water Treatment Systems
 - Department of Defense Expeditionary Unit Water Purification (EUWP): testing at three field locations: Gallup, New Mexico; Selfridge Air National Guard Base, Michigan; and Port Hueneme, California

Test Plans

- ▶ Test plan for uranium removal by adsorptive media
- ▶ Emergency Response Water Treatment System test plan for multiple contaminants