

EVALUATION OF ARSENIC REMOVAL TECHNOLOGY: ARSENIC DEMONSTRATION PROGRAM



IMPACT STATEMENT

The objective of this research project is to support the U.S. Environmental Protection Agency's (EPA) commitment to develop affordable treatment technologies for small systems to meet the revised arsenic standard. This project will conduct full-scale arsenic treatment technology demonstration studies on the removal of arsenic from drinking water at various locations throughout the U.S.

BACKGROUND:

In October 2001, EPA announced an initiative that would provide a total of \$20 million (M) in fiscal years 2002 and 2003 for research and development of more cost-effective technologies to help small systems meet the new arsenic standard and to provide technical assistance to operators of small systems to reduce compliance cost. The major portion of the overall research effort is the arsenic full scale demonstration program that consists of three rounds of demonstration projects: Round 1, Round 2, and Round 2a. In addition to EPA program funds, Congress provided \$5M in Fiscal Year (FY) 2003, \$5M in FY 2004, and \$3.5M in FY 2005, to support EPA's arsenic research program, and encouraged EPA to use a significant portion of the funding to carry out the demonstration program.

DESCRIPTION:

Specific objectives of this program are to evaluate the reliability of the arsenic technologies of small scale systems; to gauge the simplicity of system operations, maintenance and operator skill; to determine the cost-effectiveness of the treatment technologies; and to characterize treatment residual produced by the technologies.

The arsenic demonstration program consists of three rounds of projects that have resulted in the funding of fifty small, full-scale arsenic removal systems in twenty-seven different states under Cooperative Research and Development Agreements (CRADAs) with the small water systems. In all cases, the State drinking water agencies provided support in the selection and permitting of the technology being demonstrated.

Once the treatment system is installed, the utility operates it under normal operating conditions for a minimum of one year, and assists EPA in the collection of the performance and cost data. The data from each project will be utilized in the preparation of a final report that documents the performance of the full scale system.

EPA GOAL: Goal #2 - *Clean & Safe Water*; Objective 2.1.1- *Water Safe to Drink*

ORD MULTI YEAR PLAN: Drinking Water (DW), Long Term Goal - DW-2 *Control, Manage, and Mitigate Health Risks*

RESEARCH PARTNERS:

Collaborators: Fifty water systems under Cooperative Research and Development Agreements (CRADAs)

Contractors: Battelle Memorial Institute

EXPECTED OUTCOMES AND IMPACTS:

The information and data developed on the cost and performance of full scale arsenic treatment technologies will enable water utilities, state agencies and consulting firms to make informed decisions on the selection, design and operation of the treatment systems to bring water systems into compliance with the EPA revised arsenic drinking water standard of 10 ug/L.

OUTPUTS:

Current outputs consist of twenty-six, six-month performance evaluation reports and twenty final performance evaluation reports on the demonstration project studies.

(EPA Publications: <http://epa.gov/nrmrl/wswrd/dw/arsenic/publications.html>)



RESOURCES:

EPA Arsenic Research: <http://www.epa.gov/nrmrl/wswrd/dw/arsenic/>

NRMRL Treatment Technology Evaluation Branch: <http://www.epa.gov/ORD/NRMRL/wswrd/tteb.htm>

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Drinking Water