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# **The Superfund Innovative Technology Evaluation Program**

Annual Report to Congress  
FY 2001

Office of Research and Development  
U.S. Environmental Protection Agency  
Washington, DC 20460

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## **Notice**

The U.S. Environmental Protection Agency, through its Office of Research and Development, partially funded and collaborated in the research described here under our contract No. 68-C-00-186 to Environmental Quality Management, Inc. It has been subjected to the Agency's peer and administrative review and has been approved for publication as an EPA document. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

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## **Foreword**

The U.S. Environmental Protection Agency (EPA) is charged by Congress with protecting the Nation's land, air, and water resources. Under a mandate of national environmental laws, the Agency strives to formulate and implement actions leading to a compatible balance between human activities and the ability of natural systems to support and nurture life. To meet this mandate, EPA's research program is providing data and technical support for solving environmental problems today and building a science knowledge base necessary to manage our ecological resources wisely, understand how pollutants affect our health, and prevent or reduce environmental risks in the future.

The National Risk Management Research Laboratory (NRMRL) is the Agency's center for investigation of technological and management approaches for preventing and reducing risks from pollution that threaten human health and the environment. The focus of the Laboratory's research program is on methods and their cost-effectiveness for prevention and control of pollution to air, land, water, and subsurface resources; protection of water quality in public water systems; remediation of contaminated sites, sediments and ground water; prevention and control of indoor air pollution; and restoration of ecosystems. NRMRL collaborates with both public and private sector partners to foster technologies that reduce the cost of compliance and to anticipate emerging problems. NRMRL's research provides solutions to environmental problems by: developing and promoting technologies that protect and improve the environment; advancing scientific and engineering information to support regulatory and policy decisions; and providing the technical support and information transfer to ensure implementation of environmental regulations and strategies at the national, state, and community levels.

This publication has been produced as part of the Laboratory's strategic long-term research plan. It is published and made available by EPA's Office of Research and Development to assist the user community and to link researchers with their clients.

Hugh W. McKinnon, Director  
National Risk Management Research Laboratory



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## Acronyms

ANSI/ASQC	American National Standard Institute, Assistance for Environmental Data Collection and Environmental Technology Programs
DNAPL	Dense non-aqueous phase liquids
DOD	Department of Defense
DOE	Department of Energy
ECOS	Environmental Council of States
EPA	Environmental Protection Agency
ESTCP	Environmental Security and Technology Certification Program
ETV	Environmental Technologies Verification
FY	Fiscal year
GPR	Ground penetrating radar
IDC	Interagency DNAPL Consortium
ITRC	Interstate Technology and Regulatory Cooperation
MHI	Mitsubishi Heavy Industries
MMT	Monitoring and Measurement Technologies
NELP	Navy Environmental Leadership Program
NPL	National Priorities List
NRC	National Research Council
ORD	Office of Research and Development
PAHs	Polynuclear aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
REACHIT	Remediation Characterization Innovative Technologies
RCI	White House Rapid Commercialization Initiative
SITE	Superfund Innovative Technology Evaluation
TIO	Technology Innovation Office
TPH	Total petroleum hydrocarbon
VOC	Volatile Organic Compound

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## **Executive Summary**

The Superfund Innovative Technology Evaluation (SITE) Program has successfully promoted the development, commercialization and implementation of innovative hazardous waste treatment technologies for 16 years. SITE offers a mechanism for conducting joint technology demonstration and evaluation projects at hazardous waste sites involving the private sector, EPA, and other federal and state agencies. The program provides environmental decision-makers with relevant data on new, viable remediation technologies that may have performance or cost advantages compared to conventional treatment technologies. Since the initiation of the SITE Program in 1986, cleanup of contaminated sites through the use of innovative technologies has resulted in an estimated total inflated cost savings of over \$2.6 billion. The basis for estimation of cost savings is discussed on page 5 of this report.

The SITE Program focuses on the remediation needs of the hazardous waste remediation community through program planning; matching priority sites with innovative cleanup solutions; technology field demonstrations; and information dissemination. The SITE Program's vision is to remain the premier organization in enhancing the credibility and implementation of effective innovative remediation options.

The SITE Program continues to earn recognition as a leader in advancing innovative technology development and commercialization. The program is participating with 145 remediation technology vendors. Through FY 01, the SITE Program has successfully demonstrated 137 technologies, 16 of which were demonstrated during FY 01. Emphasis formerly placed on technologies requiring the removal of soil or groundwater (ex situ) has gravitated nearly exclusively to in situ technologies that treat contamination in place.

To ensure that the program continues to meet the needs of the remediation community, the SITE Program established a remediation stakeholder group. This group, which is composed of such agencies as EPA, the Department of Defense, and the Department of Energy, reviews innovative technology applications and develops an environmental emphasis area list, which ensures that the most pressing issues are prioritized and addressed.