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# **Onsite Wastewater Treatment Systems Manual**

Office of Water  
Office of Research and Development  
Environmental Protection Agency



## Notice

This document has been reviewed in accordance with U.S. Environmental Protection Agency policy and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

## Foreword

The U.S. Environmental Protection Agency is pleased to publish the “Onsite Wastewater Treatment Systems Manual”. This manual provides up-to-date information on onsite wastewater treatment system (OWTS) siting, design, installation, maintenance, and replacement. It reflects significant advances that the expert community has identified to help OWTSs become more cost-effective and environmentally protective, particularly in small suburban and rural areas.

In addition to providing a wealth of technical information on a variety of traditional and new system designs, the manual promotes a performance-based approach to selecting and designing OWTSs. This approach will enable States and local communities to design onsite wastewater programs that fit local environmental conditions and communities’ capabilities. Further details on the proper management of OWTSs to prevent system failures that could threaten ground and surface water quality will be provided in EPA’s forthcoming “Guidelines for Management of Onsite/Decentralized Wastewater Systems”. EPA anticipates that the performance-based approach to selecting and managing appropriate OWTSs at both the watershed and site levels will evolve as States and communities develop programs based on resources that need protection and improvement.

Robert H. Wayland III, Director  
Office of Wetlands, Oceans and Watersheds

E. Timothy Oppelt, Director  
National Risk Management Research Laboratory



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The information in the chapters that follow is provided in response to several calls for a more focused approach to onsite wastewater treatment and onsite system management. Congress has expressed interest in the status of site-level approaches for treating wastewater, and the Executive Branch has issued directives for moving forward with improving both the application of treatment technologies and management of the systems installed.

The U.S. Environmental Protection Agency (USEPA) responded to this interest by convening a team of subject matter experts from public agencies, private organizations, professional associations, and the academic community. Two representatives from the USEPA Office of Water and a representative from the Office of Research and Development coordinated the project team for this document. Close coordination with the USEPA Office of Wastewater Management and other partners at the federal, state, and local levels helped to ensure that the information in this manual supports and complements other efforts to improve onsite wastewater management across the nation.

The principal authors of the document are Richard Otis of Ayres Associates; Jim Kreissl, Rod Frederick, and Robert Goo of USEPA; Peter Casey of the National Small Flows Clearinghouse; and Barry Toning of Tetra Tech, Inc. Other persons who made significant contributions to the manual include Robert Siegrist of the Colorado School of Mines; Mike Hoover of North Carolina State University; Jean Caudill of the Ohio Department of Health; Bob Minicucci of the New Hampshire Department of Environmental Services; Tom Groves of the New England Interstate Water Pollution Control Commission; Tom Yeager of Kennedy/Jenks Consultants; Robert Rubin of North Carolina State University; Pio Lombardo of Lombardo Associates; Dov Weitman and Joyce Hudson of USEPA; Lisa Brown, Seldon Hall, Richard Benson, and Tom Long of the Washington Department of Health; David Pask and Tricia Angoli of the National Small Flows Clearinghouse; James Davenport of the National Association of Counties; Jim Watson of the Tennessee Valley Authority; John Austin of the U.S. Agency for International Development; Pat Fleming of the U.S. Bureau of Land Management; James Jacobsen of the Maine Department of Human Services; Richard Barror of the Indian Health Service; Glendon Deal of the U.S. Department of Agriculture; Lisa Knerr, Jonathan Simpson, and Kay Rutledge of Tetra Tech; Kenneth Pankow of Pankow Engineering; Linda Stein of Eastern Research Group; Robert Adler, Charles Pycha, Calvin Terada, and Jonathon Williams of USEPA Region 10; Richard Carr of the World Health Organization; Ralph Benson of the Clermont County, Ohio, General Health District; Rich Piluk of the Anne Arundel, Maryland, county government; Jerry Nonogawa of the Hawaii Department of Health; Tony Smithson of the Lake County, Illinois, Health Department; Conrad G. Keyes, Jr., and Cecil Lue-Hing of the EWRI of ASCE; Robert E. Lee of the National Onsite Wastewater Recycling Association; Anish Jantrania, private consultant; Larry Stephens of Stephens Consultants; Bruce Douglass and Bill Heigis of Stone Engineering; Alan Hassett of Oak Hill Co.; Steven Braband of Biosolutions, Inc.; Matt Byers of Zoeller Co.; Carl Thompson, Infiltrator Systems, Inc.; Alex Mauck of EZ Drain; Bob Mayer of American Manufacturing; Rodney Ruskin of Geoflow; Fred Harned of Netafim; Don Canada of the American Decentralized Wastewater Association, and Michael Price, Norweco, Inc.

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## Review Team Members for the Onsite Wastewater Treatment Systems Manual

Robert Goo, USEPA, Office of Wetlands (OW), Oceans and Watersheds  
Rod Frederick, USEPA, OW, Oceans and Watersheds  
Eric Slaughter, USEPA, OW, Oceans and Watersheds  
Jim Kreissl, USEPA, Office of Research and Development (ORD)  
Don Brown, USEPA, ORD  
Robert Bastian, USEPA, Office of Wastewater Management (OWM)  
Charlie Vanderlyn, USEPA, OWM  
Steve Hogye, USEPA, OWM  
Joyce Hudson, USEPA, OWM  
Joel Salter, USEPA, Office of Science and Technology  
Philip Berger, USEPA, Office of Ground Water and Drinking Water (OGWDW)  
Howard Beard, USEPA, OGWDW  
Robert Adler, USEPA Region 1  
Charles Pycha, USEPA Region 5  
Ernesto Perez, USEPA Region 6  
Calvin Terada, USEPA Region 10  
Danny Averett, U.S. Army Corps of Engineers  
Ed Smith, USACE Research Laboratory  
Rick Scholz, USACE Research Laboratory  
John Austin, U.S. Agency for International Development  
Patrick Fleming, National Park Service  
Rick Barror, U.S. Public Health Service  
Gary Morgan, USDA Rural Development Administration  
Andree Duvarney, USDA Natural Resources Conservation Service  
Phil Mummert, Tennessee Valley Authority  
Raymond Reid, Pan American Health Organization  
Homero Silva, Organización Mundial de la Salud, Costa Rica  
Dennis Warner, World Health Organization  
Tom Groves, New England Interstate Water Pollution Control Commission  
Paul Chase, DuPage County (Illinois) Health Department  
Douglas Ebelherr, Illinois Department of Public Health  
Randy Clarkson, Missouri Department of Natural Resources  
Anish Janrania, Virginia Department of Health  
Steve Steinbeck, North Carolina Department of Health and Natural Resources  
Ron Frey, Arizona Department of Environmental Quality  
Mark Soltman, Washington State Department of Health  
Alex Campbell, Ontario Ministry of Environment and Approvals  
Jerry Tyler, University of Wisconsin

Mike Hoover, North Carolina State University  
Ruth Alfasso, Massachusetts Department of Environmental Protection  
Jerry Nunogawa, Hawaii Department of Health  
Robert Siegrist, Colorado School of Mines  
Rick Piluk, Anne Arundel County (Maryland) Health Department  
Gary Eckler, Erie County (Ohio) Sanitary Engineering Department  
Janet Rickabaugh, Clermont County (Ohio) Health District  
Jay Harrell, Mohave County (Arizona) Environmental Health Division  
Dan Smith, Coconino County (Arizona) Environmental Health Services  
Tom Yeager, Kennedy/Jenks Consultants  
Richard Otis, Ayres Associates  
Robert Mayer, American Manufacturing Co.  
Hamilton Brown, National Association of Towns and Townships  
Larry Markham, National Environmental Health Association  
Robert Rubin, Water Environment Federation  
Thomas McLane, American Society of Civil Engineers  
Dan MacRitchie, American Society of Civil Engineers  
Don Canada, American Decentralized Wastewater Association  
Naomi Friedman, National Association of Counties  
Peter Casey, National Small Flows Clearinghouse  
Tricia Angoli, national Small Flows Clearinghouse  
Thomas Bruursema, National Sanitation Foundation







