



Wastewater Response Protocol Toolbox: Planning For and Responding To Wastewater Contamination Threats and Incidents

December 2011



Office of Water (Mailcode 4608T)
EPA 817-B-09-001
December 2011
www.epa.gov/safewater

Printed on Recycled Paper



The background of the page is a faded, light-colored American flag, showing the stars and stripes in a soft, translucent manner.

Note to Readers

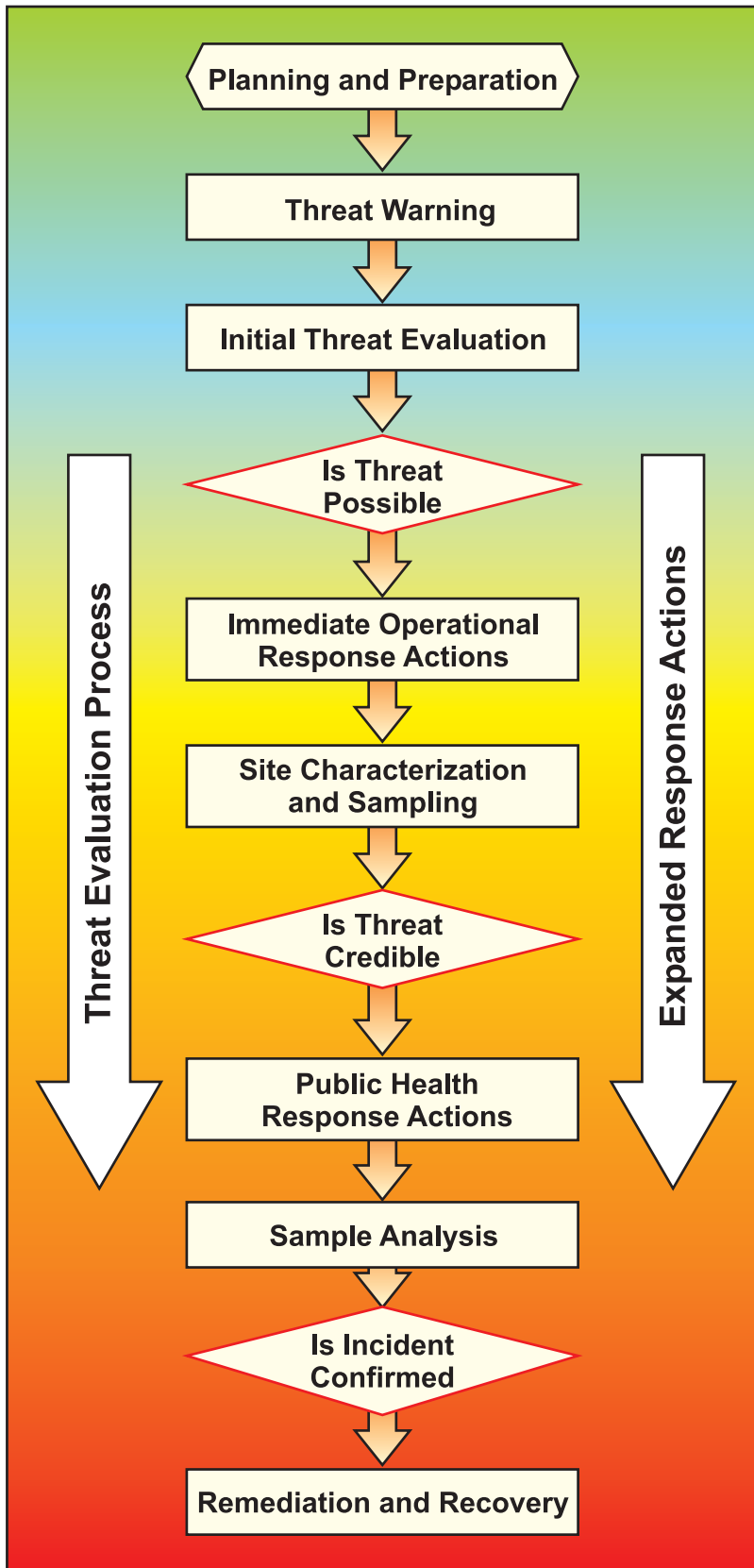
The U.S. Environmental Protection Agency (EPA) prepared the Wastewater Response Protocol Toolbox (WWRPTB) to assist utilities, government agencies, and emergency responders in protecting wastewater systems from contamination events. This document is designed to be a preparedness tool but does not impose legally binding requirements on EPA, states, or utilities. Additionally, the guidance may or may not apply to a particular incident. EPA and state decision-makers retain the discretion to adopt approaches on a case-by-case basis that may differ from these guidelines. Any decisions regarding a particular wastewater system should be made based on the applicable statutes and regulations. Therefore, interested parties are free to raise questions and objections about the appropriateness of the application of this guide to a specific situation, and EPA will consider whether the recommendations or interpretations in this guide are appropriate in that situation based on the law and regulations which are not discussed in this document.

EPA may modify this guide in the future. To determine whether EPA has modified this guide, or to obtain additional copies, visit EPA's Water Security website at <http://www.epa.gov/watersecurity>.

This page intentionally left blank.

Table of Contents

Introduction.....	1
Overview of the Response Protocol Toolbox	3
Module 1: Wastewater Utility Planning Guide	1-1
Module 2: Contamination Threat Management Guide	2-1
Module 3: Site Characterization and Sampling Guide	3-1
Module 4: Analytical Guide.....	4-1
Module 5: Public Health and Environmental Impact Response Guide	5-1
Module 6: Remediation and Recovery Guide.....	6-1



Introduction

In 2004, the United States Environmental Protection Agency (EPA) published guidance on planning for and responding to threats and incidents of intentional contamination of public drinking water supplies. This document is entitled the *Response Protocol Toolbox: Planning for and Responding to Drinking Water Contamination Threats and Incidents* (RPTB) (EPA-817-D-03-007, December 2003). EPA prepared detailed guidance specifically for the intentional contamination scenario because of the scenario's potential for a rapid and direct impact on public health. EPA subsequently released a condensed version of the RPTB, entitled the *Water Security Handbook* (EPA-817-B-06-001, April 2006), to reach a wider audience. While the shorter document does not include all of the details examined in the comprehensive version, it summarizes the most essential information. Additionally, EPA published the *Response Guidelines* (EPA-817-D-04-001, August 2004), a condensed document which includes forms and checklists from the RPTB. The *Response Guidelines* is an easy to use field document for responders managing an ongoing contamination threat or incident. All of these documents are available at EPA's Water Security website www.epa.gov/watersecurity.

Wastewater utilities are also potentially targets of malevolent acts including contamination. They may be a direct target of intentional contamination, or an indirect target by receiving water from a contaminated drinking water system or wash water from decontamination efforts directed toward contaminated people, buildings, etc. The document contained herein, the *Wastewater Response Protocol Toolbox* (WWRPTB), addresses the preparedness and response needs for threats and contamination events



in wastewater systems. These events can include contamination with toxicants as well as infectious, flammable, explosive, or radioactive substances. As an “all hazards” document, the WWRPTB discusses the response to accidental and negligent contamination events in addition to its primary focus on intentional contamination.

Rather than produce both an extended version and a condensed version, an attempt has been made with the WWRPTB to develop a mid-sized document that contains some detailed information but is still of a manageable size. The *Wastewater Response Protocol Toolbox* was developed as a collaborative effort between EPA and the wastewater industry. The following utilities and industry organizations took part in this process:

- Metropolitan Water Reclamation District of Greater Chicago
- New York City Department of Environmental Protection
- Pittsburgh Water and Sewer Authority (PWSA)
- San Antonio Water System (SAWS)
- Water Environment Federation
- Water Environment Research Foundation

In addition, the following individuals assisted with the preparation of this document:

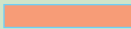

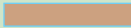
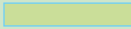


- Jeffrey Brenner - Minnesota Department of Health
- Leonard Casson - University of Pittsburgh School of Engineering
- Homer Emery - San Antonio Water System
- David Goldbloom-Helzner - United States Environmental Protection Agency
- Nancy Love - Virginia Tech University
- Matthew Magnuson - United States Environmental Protection Agency
- Joshua Novikoff - United States Environmental Protection Agency
- John Petito - New York City Department of Environmental Protection
- Anthony Quintanilla - Metropolitan Water Reclamation District of Greater Chicago
- Roy Ramani - Water Environment Research Foundation
- David Soong - United States Environmental Protection Agency
- Stanley States - Pittsburgh Water and Sewer Authority
- James Sullivan - Water Environment Federation
- Rebecca Trenholm - Southern Nevada Water Authority
- Richard Weisman - United States Environmental Protection Agency
- Dennis Wesolowski - United States Environmental Protection Agency
- James Wheeler - United States Environmental Protection Agency
- John Whitley - United States Environmental Protection Agency
- Lawrence Zintek - United States Environmental Protection Agency

Overview of the Response Protocol Toolbox

The format of the *Wastewater Response Protocol Toolbox* is identical to that of its drinking water counterpart. The guidance document is composed of six interrelated modules (Modules 1-6) in addition to this introductory section.



The six modules that constitute the Wastewater Response Protocol Toolbox are:

	<u>Toolbox Module</u>
	1. Wastewater Utility Planning Guide
	2. Contamination Threat Management Guide
	3. Site Characterization and Sampling Guide
	4. Analytical Guide
	5. Public Health and Environmental Impact Response Guide
	6. Remediation and Recovery Guide

Module 2 is considered to be the hub of the Toolbox in that it describes the overall recommended management process for response to a contamination threat.

The WWRPTB is designed to be a planning tool. It is not intended to be a reference document for use during an actual emergency when decisions need to be made rapidly. Rather, it should be read ahead of time and integrated into a utility's Emergency Response Plan. The Toolbox is not prescriptive, but consists of broad guidance that should be adapted to local conditions. Furthermore, the WWRPTB is not based on any statutory authority and, therefore, contains no mandatory requirements. Use of the Toolbox is voluntary. It is merely provided as a tool to aid utilities in planning for contamination threats and events.

The WWRPTB offers recommendations on the following emergency response issues:

- Who to notify
- What actions to take
- How to conduct a threat evaluation
- How to safely collect and ship samples
- How to analyze samples
- Steps to recover from a contamination event



However, the WWRPTB does not attempt to answer questions concerning who will be involved in the various stages of response such as:

- Who should respond
- Who should sample
- Who should conduct analyses
- Who should make public health decisions
- Who should manage remediation and recovery efforts

These questions are best answered by utilities and municipal, county, state, and Federal authorities who have direct knowledge of local and regional capabilities for responding to contamination threats, the scope and extent of the incident, as well as information regarding any applicable legal or regulatory requirements and standard operating procedures.

There are several ways in which utilities can use the information contained in the WWRPTB:

- Planning a utility’s response to contamination threats and incidents
- Revising Emergency Response Plans
- Developing Response Guidelines

An Emergency Response Plan (ERP) is a utility’s overall standard operating procedure for dealing with a variety of emergencies including natural disasters and accidents as well as manmade events. Response Guidelines, also known as Action Plans, are tailored to ERPs that address specific major events. They describe the response actions to take for events that may occur at specific facilities (e.g., treatment plant, lift stations).

In addition to serving as a planning tool for utilities, the WWRPTB can be used as a reference by laboratories, regulatory agencies, health departments, and emergency response organizations when they are preparing their response plans for dealing with wastewater contamination incidents.

