ENVIRONMENTAL HEALTH HANDBOOK

3rd Edition, 2020



PREFACE

The Environmental Health Handbook (EHH) has been a valuable resource for professionals, service providers, and technicians who work with private wastewater and water systems. Users have relied on it for wastewater and water system guidance since the first edition was published in August 1992. Many county sanitary codes revised since it was published refer to the handbook as a reference and as a source of information to supplement their code.

Within a few years after the first edition of the handbook was published, the Kansas Department of Health and Environment (KDHE) updated and made substantial changes to Bulletin 4-2. With the EHH first edition as the starting point, a new KDHE, Bulletin 4-2 *Minimum Standards for Design and Construction of Onsite Wastewater Systems* was developed and adopted in mid-1997.

Onsite wastewater system research, products, and technology have all advanced since the first edition of the EHH was published. The second edition addressed additional topics, incorporated minor improvements, and was expanded to include additional alternative systems. It corrected discrepancies created by the revised Bulletin 4-2 adopted by KDHE. Members of the Kansas Association of Sanitarians (KAS) were the primary authors of both the first and second editions of the EHH. KAS members are field and subject matter experts and their work on the EHH was invaluable.

The private water well section of the handbook, added in 1998, is regarded as satisfying the KDHE requirement for Bulletin 4-1 *A Manual of Recommended Standards for Locating, Constructing, and Equipping Private Water Wells*.

KDHE and the Kansas State University Pollution Prevention Institute (PPI) have updated this third edition of the EHH with a number of changes. First and foremost, the entirety of the manual was converted into a Microsoft Word format from the original PDF files. This change will allow more efficient updating and editing in the future and truly creates a "living document" approach to the EHH. Structurally, all chapters have also been annotated and captioned to take advantage of the built-in Table of Contents tool in Word which allows the reader to have easier access to specific information. Chapters 7, 9, 10, and 11 were reviewed for technical accuracy, and the updates to these four chapters include revisions to the text, redrawn and colorized figures, and the creation of a new and separate bulletin for subsurface drip dispersal information. Subsequent updates and editions of the EHH will continue to be managed by KDHE.

Significant changes continue in the onsite industry with new research, technology development, strengthened state and local regulations, and many new products. For the EHH to meet its primary purpose as a resource manual there is an ongoing need for review and improvement to keep it current with the latest research information and products. Another purpose, as a training manual, requires that the handbook be reviewed and updated on a continuing basis as new information becomes available and shortcomings are identified. KDHE is committed to providing ongoing coordination for needed corrections, improvements, and updates. Users are encouraged to provide feedback about errors, needed additions, and improvements by contacting the Watershed Management Section of the KDHE Bureau of Environmental Field Services. The more specific your recommendations the greater will be their value in providing input for changes.

ENVIRONMENTAL HEALTH HANDBOOK TABLE OF CONTENTS

Chapter I PRIVATE WATER WELLS

Chapter II WASTEWATER CHARACTERISTICS AND HEALTH CONCERNS

Chapter III LEGAL AUTHORITIES FOR POLLUTION CONTROL

> Chapter IV SITE AND SOIL EVALUATIONS

> > Chapter V SEPTIC TANKS

Chapter VI ENHANCED/ADVANCED TREATMENT

> Chapter VII SOIL ABSORPTION SYSTEMS

Chapter VIII WATER CONSERVING TOILETS AND HOLDING TANKS

> Chapter IX WASTEWATER POND (LAGOONS)

> > Chapter X PUMPS AND HYDRAULICS

Chapter XI SEPTAGE MANAGEMENT