This is the third volume of the five-volume book series "Engineering Tools for Environmental Risk Management". The book series deals with the following topics:

- Environmental deterioration and pollution, management of environmental problems
- Environmental toxicology – a tool for managing chemical substances and contaminated environment
- Assessment and monitoring tools, risk assessment
- Risk reduction measures and technologies
- Case studies for demonstration of the application of engineering tools

The authors aim to describe interactions and options in risk management by providing a broad scientific overview of the environment, its human uses and the associated local, regional and global environmental problems; interpreting the holistic approach used in solving environmental protection issues; striking a balance between nature's needs and engineering capabilities; understanding interactions between regulation, management and engineering; obtaining information about novel technologies and innovative engineering tools.

This third volume provides an overview on the basic principles, concepts, practices and tools of environmental monitoring and contaminated site assessment. The volume focuses on those engineering tools that enable integrated site assessment and decision making and ensure an efficient control of the environment. Some topics supporting sustainable land use and efficient environmental management are listed below:

- Efficient management and regulation of contaminated land and the environment;
- Early warning and environmental monitoring;
- Assessment of contaminated land: the best practices;
- Environmental sampling;
- Risk characterization and contaminated matrix assessment;
- Integrated application of physical, chemical, biological, ecological and (eco) toxicological characterization methods;
- Direct toxicity assessment (DTA) and decision making;
- Online analyzers, electrodes and biosensors for assessment and monitoring of waters.;
- In situ and real-time measurement tools for soil and contaminated sites;
- Rapid on-site methods and contaminant and toxicity assessment kits;
- Engineering tools from omics technologies, microsensors to heavy machinery;
- Dynamic characterization of subsurface soil and groundwater using membrane interface probes, optical and X-ray fluorescence and ELCAD wastewater characterization;
- Geochemical modeling: methods and applications;
- Environmental assessment using cyclodextrins.

This book series focuses on the state of knowledge about the environment and its conscious and structured application in environmental engineering, management and decision making.

ISBN 978-1-138-00156-5

9 781138 001565

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CRC Press
Taylor & Francis Group
an **informa** business
www.crcpress.com

6000 Broken Sound Parkway, NW
Suite 300, Boca Raton, FL 33487

Schipholweg 107C
2316 XC Leiden, NL

2 Park Square, Milton Park
Abingdon, Oxon OX14 4RN, UK

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