

Wastewater Reuse and Watershed Management

Engineering Implications for Agriculture, Industry, and the Environment



◀ **Ajai Singh**
Editor

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CRC Press

Taylor & Francis Group

Apple Academic Press Inc.
3333 Mistwell Crescent
Oakville, ON L6L 0A2
Canada

Apple Academic Press Inc.
1265 Goldenrod Circle NE
Palm Bay, Florida 32905
USA

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Exclusive worldwide distribution by CRC Press, a member of Taylor & Francis Group

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International Standard Book Number-13: 978-1-77188-746-5 (Hardcover)

International Standard Book Number-13: 978-0-42943-398-6 (eBook)

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Library and Archives Canada Cataloguing in Publication

Title: Wastewater reuse and watershed management : engineering implications for agriculture, industry, and the environment / edited by Ajai Singh, PhD, FIE.

Names: Singh, Ajai, 1970- editor.

Description: Includes bibliographical references and index.

Identifiers: Canadiana (print) 20190071753 | Canadiana (ebook) 2019007177X | ISBN 9781771887465 (hardcover) | ISBN 9780429433986 (PDF)

Subjects: LCSH: Water reuse. | LCSH: Watershed management.

Classification: LCC TD429 .W37 2019 | DDC 628.1/62--dc23

Library of Congress Cataloging-in-Publication Data

Names: Singh, Ajai, 1970- editor.

Title: Wastewater reuse and watershed management : engineering implications for agriculture, industry, and the environment / editor: Ajai Singh.

Description: Palm Bay, Florida : Apple Academic Press, 2019. | Includes bibliographical references and index.

Identifiers: LCCN 2019006910 (print) | LCCN 2019008242 (ebook) | ISBN 9780429433986 (ebook) | ISBN 9781771887465 (hardcover : alk. paper)

Subjects: LCSH: Water reuse. | Watershed management.

Classification: LCC TD429 (ebook) | LCC TD429 .W353 2019 (print) | DDC 628.1/62--dc23

LC record available at <https://lcn.loc.gov/2019006910>

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CHAPTER 23

DELINEATION OF GROUNDWATER POTENTIAL ZONES IN HARD ROCK TERRAIN USING REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM (GIS) TECHNIQUES

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ABSTRACT

Integration of Remote Sensing data and the Geographical Information System (GIS) for targeting of groundwater resources has become an advanced technique in the field of hydrological research, which assists in measuring, monitoring, and conserving groundwater resources. In the present chapter, various groundwater potential zones in Rairangpur block have been delineated using Remote Sensing and GIS techniques. Survey of India (SOI) toposheets and LISS-III satellite imageries are used to preparing various thematic layers viz. Lithology, slope, landuse, lineament, drainage, soil, and geomorphology and were transformed to raster data using the feature to raster converter tool in ArcGIS. The raster map of these factors is allocated a fixed score and weight computed from Multi Influencing Factor (MIF) technique.

Moreover, each weighted thematic layer is statistically computed to get the potential groundwater potential zones. Thus, five different groundwater