Operating Large Scale Membrane Bioreactors for Municipal Wastewater Treatment

During the last decade membrane bioreactor (MBR) technology has grown up to be state of the art in municipal wastewater treatment. Since 1999 the Erftverband has designed, tendered and commissioned three MBR for municipal wastewater treatment in Germany, with capacities from 3,000 to 45,000 m³/d. The Erftverband was one of the pioneers in the full scale application of the technology regularly hosted training and information workshops for plant designers and operators from all over the world.

The book provides hands-on information on many aspects of MBR technology based on more than ten years of practical experience in the operation of MBR plants with hollow-fiber microfiltration units. It gives details on process configuration, investment and operation costs based on case studies and also in comparison to data from conventional activated sludge (CAS) treatment processes. The book contains the most recent research findings as Erftverband has been collaborating on many of the major European research projects dedicated to MBR technology.

Actual process data from all treatment steps of the plants (mechanical pre-treatment, bioreactors, filtration, membrane cleaning) gives an insight into the long-term performance of the MBR plants and into the possible do’s and dont’s of full scale applications and the potential for further process optimisation. It is a good source of practical advice on tendering and construction, plant management and operation.

This book is essential reading for practitioners and researchers, providing information on many aspects of MBR technology, including actual process data, graphs and pictures that illustrate the challenges of MBR design and operation.

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