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Biological Treatment of Industrial Effluents

2017, Pages 161-201

7 - Aerobic Treatment in Cold-Climate Countries

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<https://doi.org/10.1016/B978-0-444-63665-2.00007-2>

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Abstract

Cold-climate wastewater treatment facilities present unique challenges in terms of producing wastewater effluents that continue to meet increasingly stringent discharge regulations. Biological processes are the most severely affected. However, a number of design and operational strategies have evolved to improve the performance of aerobic biological wastewater treatment at conventional and eco-engineered facilities operated under cold-temperature conditions. The effects of cold temperatures on the performance of these systems with respect to constituent removal are presented, with suggestions for climate adaptations to improve treatment effectiveness. In addition, alternative operational and design considerations for enhanced performance under cold-climate operation and implementation are discussed.

Keywords

Aerobic biological treatment; Cold climate; Conventional systems; Design considerations ; Naturalized systems; Treatment efficiency

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