

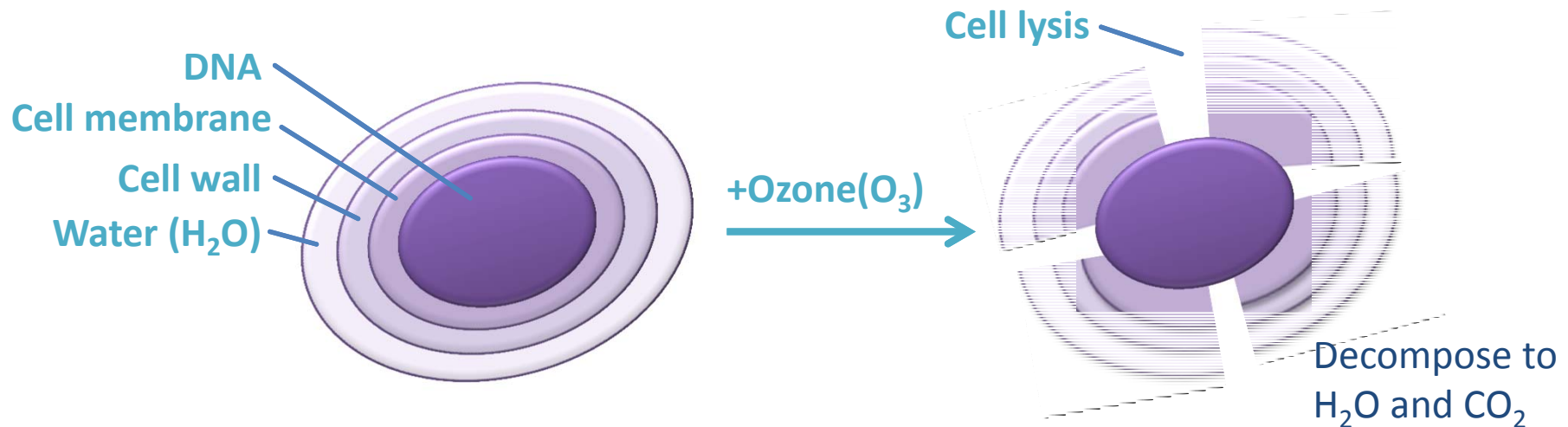
Volume Reduction of Excess Sludge by Ozonation

Ozonation Technology Overview

The treatment and disposal of excess sludge generated through wastewater treatment is a big problem for municipalities.

Ozonation technology aims to reduce excess sludge using strong oxidation ability of ozone. When excess sludge returns to an aeration tank after ozonation, microorganisms in the aeration tank decompose and remove the excess sludge.

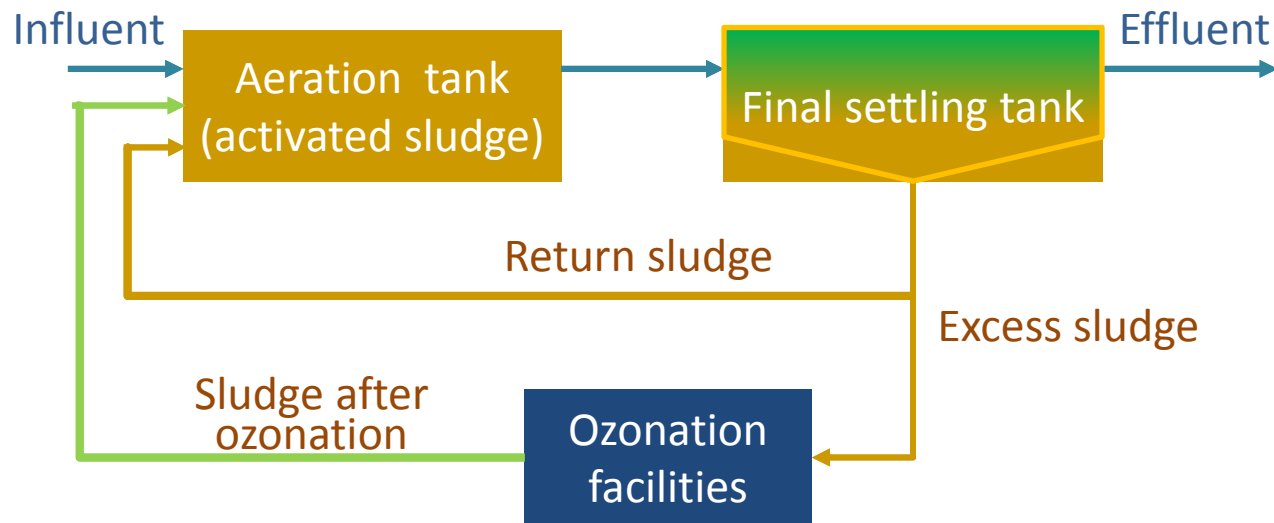
Excess sludge can be decreased by repeating this process until almost zero.



Mechanism of ozonation

Features of Ozonation Technology

1. Can reduce excess sludge at any quantity until zero
2. Effluent quality meets effluent standards even when excess sludge is all removed.
3. However, some attentions are required: when excess sludge is highly decomposed, COD and phosphorus concentration of effluent will increase. Besides, nitrification can be affected in some treatment conditions.
4. No sludge treatment facilities such as a sludge thickening tank and a dehydrator is required or they can be omitted when the performances of ozonation facilities and aeration devices are improved.
5. O&M costs increase because of electricity expenses for ozonation and aeration devices. On the other hands, a chemical cost for dewatering or sludge processing cost decrease because excess sludge is reduced.

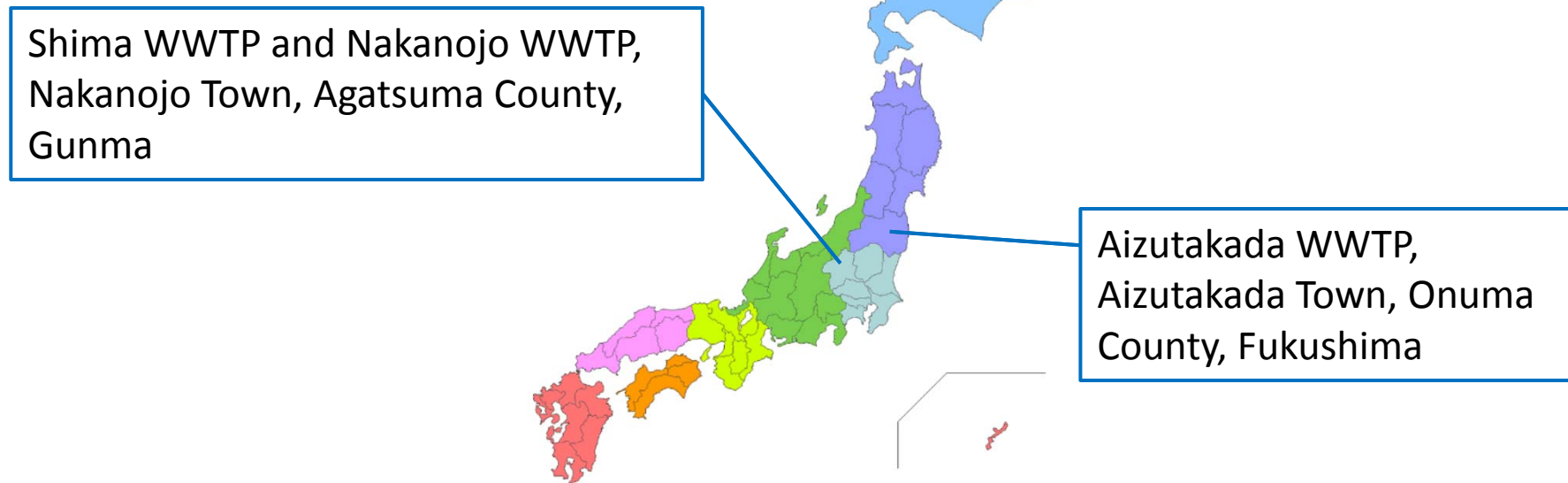


Treatment flowchart of ozonation technology

Scope of Application

1. Applicable to treatment facilities with no primary settling tanks such as OD process or extended aeration process
2. Applicable to WWTP with no effluent standard on COD and/or phosphorus. Another consideration is required for effluent standard on nitrogen.

Application Examples



Flow example of WWTP with Excess Sludge Reduction Technology

