1. Project Name

1.3.17 Technical Development of an MBR system Equipped with Sludge Fracturing Device

2. Objectives

The biological treatment method (active sludge method) is a method widely used by food products, fabrics, paper pulp, chemicals, and in many other fields. The method is a wastewater treatment method by the compression of the inflow organic matter into sludge and extracting the sludge. Due to this reason, the generation of sludge is an absolute requirement as the dehydrated sludge is then dried and incinerated for treatment. However this process requires a large amount of energy and costs. The process is also problematic in the sense of odors, hygiene and labor power. Due to the above reasons, the decreasing of waste sludge is a process required for the establishment of a water cycling environment, as the reservation of waste sludge dumps are becoming a problem.

3. Contents

It was made apparent that when the mechanical active sludge fracturing method and the standard active sludge method is combined, the maintenance is simple, efficient in power use and other consumables, with the ability to solute most of the waste sludge, significantly decreasing the costs of treatment.

A research was done for the possible use of the pilot plant combining the mechanical sludge fracturing technology and the membrane separation sludge fracturing technology in 2005.

With an experiment with the membrane separation active sludge method using row A equipped with the mechanical sludge fracturing device and row B without it, row B resulted in a 25% more decrease in sludge in comparison to row A.

4. Results

From these results, the sludge fracturing is highly effective by the combined use of the membrane separation active sludge method and the mechanical sludge fracturing machine. The further investigation of better operational conditions is required.

5. Reference

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