

Evaluation of the efficiency of the improved technology using ozone-addition

Whole term

1993, 1994, 1997, 2002

(Purpose)

The abnormal scum generation occurred at the Todoroki Treatment Center, Kawasaki City resulting in the treatment deficiency including solid-liquid separation in the final settling tank and MLSS decrease in the aeration tank. The ozone-addition in the return sludge line was proved to be an efficient solution to control scumming, and thus research for utilization of this method has been performed that led to the final evaluation of the treatment efficiency of this method by experiments conducted in this year.

(Results)

1) Amount of scum generation

The scum generation could be controlled under the condition of ozone consumption 5.0 mg-O₃/g-SS/day. After the scumming control, even though the quantity of ozone reduced, the scumming control could be maintained. The ozone consumption at that time was 3.5 mg-O₃/g-SS/day.

2) SVI

The ozone addition improved the solid-liquid separation and concentration as well as controlled the scumming so that the component of sludge became normal and stable.

3) Number of Actinomyces

The number of Actinomyces for the case of ozone addition was smaller than that of the normal case. Especially, the difference was large in the compounds of the reactor.

4) Amount of mycolic acid

The amount of mycolic acid for the case of ozone addition was also smaller than that of the normal case, especially noticeable for the case of scumming control.

5) Treated wastewater quality

The treated wastewater quality was fine as usual without any influence due to the ozone addition.

6) Cost of treatment

The cost of treatment during this research period was equal to or less than that for the research on utilization.

7) Maintenance

Both the operational management and working environment were improved.

8) Design resources

The prevailing design resources were reinvestigated based on this performance evaluation.

(Summary)

The achievement of the fine maintenance of wastewater treatment, which was the objective of this method was confirmed. The method can be applied to the abnormal scum generation due to Actinomyces, bulking and etc., and is expected to be utilized for wider use in the near future.

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Keywords

Scum, Actinomyces, Mycolic acid, Improvement of the performance of solid-liquid separation