CHANGES IN pH DURING MICROBIAL TRANSFORMATION PROCESS IN BULKWATER PHASE UNDER ANOXIC CONDITION

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DECLARATION BY CANDIDATES

I Khairul Amri Bin Sayuti, 2003321481 confirm that the work is my own and that appropriate creadit has been given where reference has been made to the work others.

.....(April 2006)

ABSTRACT

The economic growth in Malaysia country was increase resident population in urban area. That was encourages a lot of settlement establishment which directly effect on wastewater treatment plant capacity. Previously, people focus only on wastewater treatment plant as an agent to reduce the contamination of wastewater, but now they realise that the long sewer network system also can be a part of wastewater treatment in order to reduce the organic loading before it arrive at wastewater treatment plant.

The sewer is an integral part of the urban wastewater system that comprises of the sewer, the wastewater treatment plant and the local receiving waters. The sewer is a reactor for microbial changes of the wastewater during transport, affecting the quality of the wastewater and thereby the successive treatment processes or receiving water impacts during sewer overflow.

The purposes of this study are to establish changes in pH during microbial transformation process in bulk water phase under anoxic condition. This research more focusing on the determination of the minimum and maximum pH, the optimum pH and TCOD during microbial transformation process in bulk water phase under anoxic condition.

This study is based on experimental works on microbial transformation process in bulk water phase under anoxic condition. Test conducted on 7 different bulk water samples taken from inlet of wastewater treatment plant (WWTP) Seksyen 23 Shah Alam, Selangor. Two types of experiment was conducted in this study. The first experiment is Nitrate/Nitrite utilization rate (NUR) without controlling pH to determine the minimum and maximum pH and the second experiments is Nitrate/Nitrite utilization rate (NUR) with pH being controlled where is to determine the optimum pH during microbial transformation process under anoxic condition.

Results has shown that the minimum pH and maximum pH during microbial transformation process under anoxic condition are 7.44 and 8.69 respectively. The optimum pH during microbial transformation process under anoxic condition is in the range pH7 to pH 8.

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