Chapter VI

CONCLUSION

From the experiment with the sludge blanket clarifier of Thonburi Water Treatment Plant, the following conclusions could be drawn:

1. To obtain well prepared clarified water for the filter, the sludge blanket depth should be controlled between 1.50-1.85 meters below the surface water.

2. The sludge concentrations about 15-25% for 5 minutes settling are the optimum range for efficiency clarified water.

3. Most of the flocs were dispersed when the upflow velocity at the top of the sludge blanket exceeded 1.730 gal/min/ft^2, so the upflow velocity should be controlled under this value with speed of rotor between 3-4 rpm.

4. Sludge blanket clarifiers are not suitable for rapid changes in quantity or quality of raw water. These tanks are sensitive to such changes and hence under such condition more skilled attention is called for.

RECOMMENDATIONS FOR FUTURE WORKS

For further research on performance criteria of sludge blanket clarifier, the following studies are recommended:

1. Studies should be performed by using a pilot plant with actual raw water. In the study with full-scale tank many difficulties were encountered because the full-scale tank must supply the water continuously to the public, so it could not be shut down for a long time when needed. In cleaning the accelator clarifier it usually takes about 2 days.

2. In the experiment, upflow velocity was found by calculation. In further study, the upflow velocity should be directly measured from the tank, and also the flow pattern of water in the tank determined.

3. Sampling techniques should be developed so that sludge at various parts including in the primary zone of the tank could be easily obtained. To do so, the sampling tubes should be located at definite depths of the tank.

4. Studies should be carried out to investigate the effect of polyelectrolytes on alum coagulation. Polyelectrolyte as coagulant aid should be used to make the sludge blanket tough enough to withstand higher upflow velocity.

5. The effect of sludge blowoff on the operation of sludge blanket clarifier.