## Extended Aerations Process Description

The activated sludge process involves the production of an activated mass of organisms capable of stabilizing waste aerobically. This is achieved by introducing organic waste into a reactor where an aerobic bacterial culture is maintained in suspension. The aerobic environment in the reactor is achieved by use of diffused aeration or mechanical aerators, which also serves to maintain the mixed liquor in a completely mixed regime. After a specified period of time, the mixture of new cells and old cells is passed into a settling tank, where the cells are separated from the treated wastewater. A portion of the settled sludge is recycled to maintain the desired concentrations of organisms in the reactor, and a portion is wasted to maintain the mass balance.

Many versions of the activated sludge process including conventional activated sludge process and extended aeration process.

The Extended Aeration process is similar to conventional activated sludge process except that it operates in the endogenous respiration phase of the growth curve, which requires a low organic loading and long aeration time. The system produces high MLSS concentration, high RAS pumping rate and low sludge wastage. It also incorporates complete-mix reactors.

The advantage of having long hydraulic retention time is that it allows the plant to operate effectively over widely varying flow and waste loadings. Secondary clarifiers are required and must be designed to the variations in hydraulic loadings and high MLSS concentrations associated with this process.

T & T Pacific Sdn. Bhd. has vast experiences in many turnkey design and construction of Extended Aeration plant projects for municipal sewage treatment. With the increasing demand of higher effluent discharge quality, TTP, through our experiences, is able to provide innovative solutions adapted to customer's specific needs. In addition, with TTP's direct licensing and agency with worldwide reputable wastewater equipment's manufacturers, we are able to offer wide solutions catering to the needs of customers.

## Flowchart of Typical Extended Aeration Process