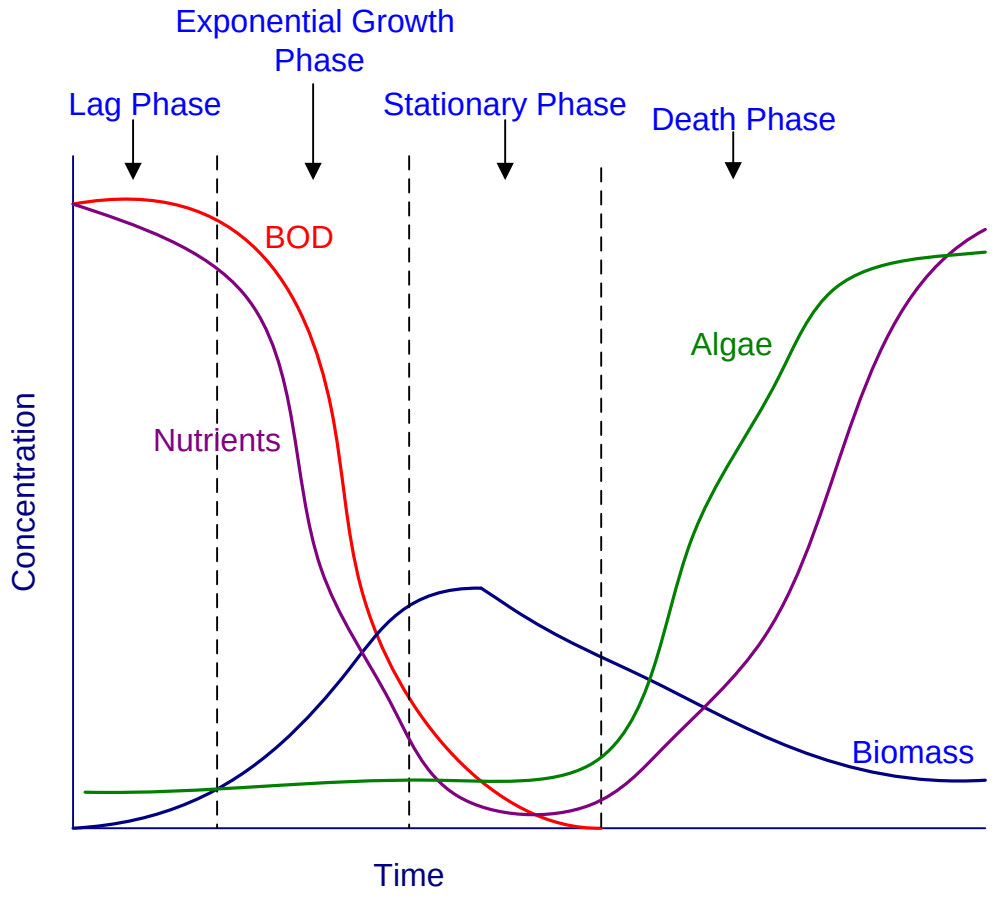
HERITAGE SYSTEMS

Delivering Liquid Solutions



The Lag Phase. Upon addition of the biomass, the lag phase represents the time required for the organisms to acclimate to their new environment before significant cell division and reproduction. During the lag phase enzyme induction may be occurring and/or the cells may be acclimating to changes in salinity, pH or temperature.

The Exponential Growth Phase. During the exponential growth phase, bacterial cells are multiplying at their maximum rate, as there is no limitation in BOD and nutrients. The biomass growth curve increases exponentially during this period. With unlimited BOD and nutrients the only factor that affects the rate of exponential growth is temperature.

The Stationary Phase. During this phase, the biomass concentration remains relatively constant with time. In this phase bacterial growth is no longer exponential and the amount of growth is offset by the death of cells.

The Death Phase. In the death phase, the BOD has been depleted so no growth is occurring and the change in biomass concentration is due to cell death. An exponential decline in the biomass concentration is often observed as an approximate constant fraction of the biomass remaining that is lost each day.

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