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Section C

Assignment 01

Subject Waste water Engineering

The basic design parameters of Wastewater Treatment System are hydraulic Retention Time (HRT) and (Solids Retention Time (SRT)

(1) Briefly describe each one of those parameters?

The Basic design parameters of Wastewater Treatment plant System We need Some Important parameter Such amount of BOD, COD, TSS, VSS TKN Total phosphorous and also an inlet flow to the facilities and the Temperature and pH of Wastewater to be treated.

One parameter:

PH: Generally the Waste Water Collect the monitored Site is Slightly alkaline the PH varies b/w 6.8 and 8.3 average value thus the P.H values are within the accepted range for 6.5 and 9.0 for Waste Water this parameter $[H^+]$ ion Concentration.

Hydraulic retention Time :-

- [HRT] in Waste Water Treatment plant measure at an average length of Time holding the Waste water in a Tank. it is also known as the hydraulic retention Time.

Solid retention Time :-

(SRT) is a critical activated Sludge design and operation parameter the Traditional method for Control SRT is To manually adjust the Sludge Wasting hate bade on the food to micro organisms ratio as mixed liquer Suspended Solids Concentration.

(2) What are the method used for decoupling SRT from HRT?

Ans Method decoupling SRT from HRT:

Hydraulic rentention Time (SRT) from (HRT) Reduces the Capital expenditure and increases Biogas production and for CHP utilization.

The decoupling of SRT from HRT not only incrdased glucose at organic loading ratio of 6.5 - 42.8 of CoD and HRT of 8-12 hr the SRT to 99.8% in the IBRoss from 0.65 - 1.8 in the CSTRS To 2.4 - 9.6 SRT from HRT to ensure Sufficient reactor biomass.

(3) What are the advantages of decoupling SRT from HRT?

Ans Advantages of decoupling SRT from HRT :-

(1) Good Contact blw biomass and substrate efficency.
(2) Required Small area.
(3) Stable Sludge
(4) Long Service Time.
(5) Simple design.
(6) Relatively low Cost.
(7) low excess Sludge production
(8) High bio mass retention
(9) High organic loading.
(10) High Contact blw Sludge and Wastewater.
(11) Improve mixing those advantages SRT from HRT