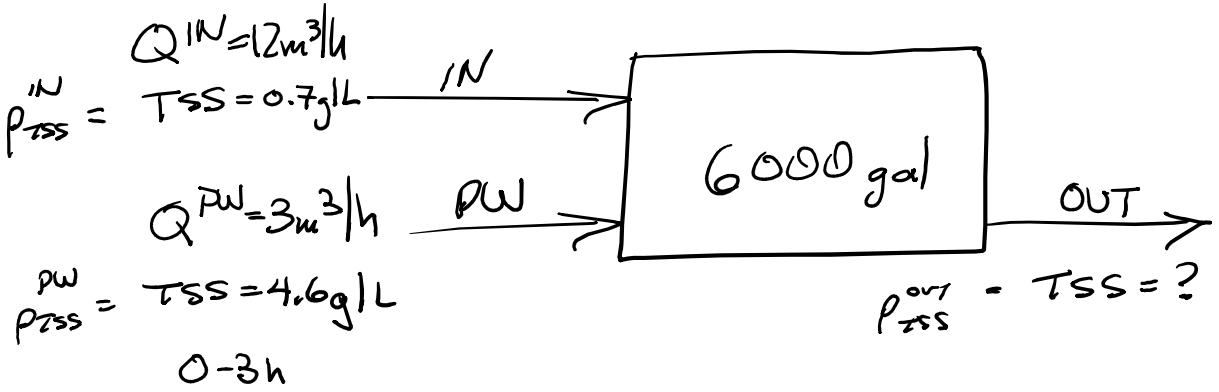


i) TOTAL VOLUME OF WASTE

$$\left(12\ m^3/h\right)\left(\frac{24h}{d}\right) + \left(3\ m^3/h\right)\left(\frac{3h}{d}\right) = 297\ m^3/d$$

ii) TOTAL SOLIDS GENERATED

$$\left(\frac{Kg\ L}{g\ m^3}\right)\left[\left(12 m^3/h\right)\left(\frac{24h}{d}\right)\left(0.7\frac{g}{L}\right) + \left(3 m^3/h\right)\left(\frac{3h}{d}\right)\left(4.6\ g/L\right)\right] = 243\ Kg/d$$

ii) AVERAGE CONC.

$$\frac{243\ kg/d}{297\ m^3/d} = 0.818\ kg/m^3$$

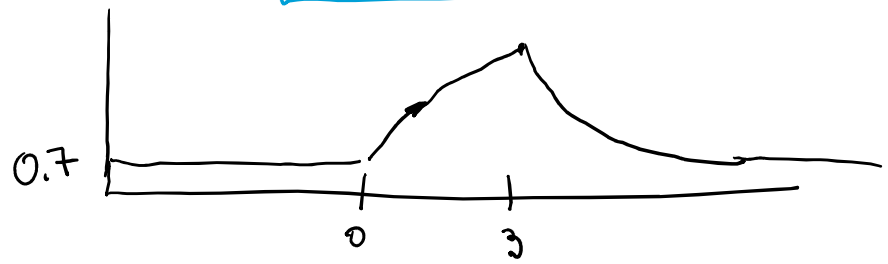
iv) BETWEEN 0-3h

ACC = IN - OUT + GEN

$$\frac{d(\rho_{TSS} V)}{dt} = (12\ m^3/h)(0.7\ g/L)\left(\frac{kg\ L}{g\ m^3}\right) + (3\ m^3/h)(4.6\ g/L)\left(\frac{kg\ L}{g\ m^3}\right) - Q^{OUT} \rho_{TSS}^{OUT}$$

$V = 6000\ gal = 22.712\ m^3$

$$22.712 \frac{d\rho_{TSS}}{dt} = 22.2 - 15\ \rho_{TSS}$$



INITIAL CONDITION:

$t = 0$

$\rho_{TSS} = 0.7\ g/L$

v) 3 am

$$22.712 \int_{0.7}^{\rho_{TSS}} \frac{d\rho_{TSS}}{22.2 - 15\rho_{TSS}} = \int_{0}^{3} dt$$

INITIAL CONDITION.

$$\frac{22.712}{-15} \ln\left[\frac{22.2 - 15\rho_{TSS}}{22.2 - 15(0.7)}\right] = t = 3$$

$$\rho_{TSS} = 1.37 \text{ g/L}$$

vi) 8:00 am? 3-8 h

ACC = IN - OUT + GEN

$$22.712 \frac{d(\rho_{TSS})}{dt} = (12)(0.7) - 12\,\rho_{TSS}$$

INITIAL CONDITION

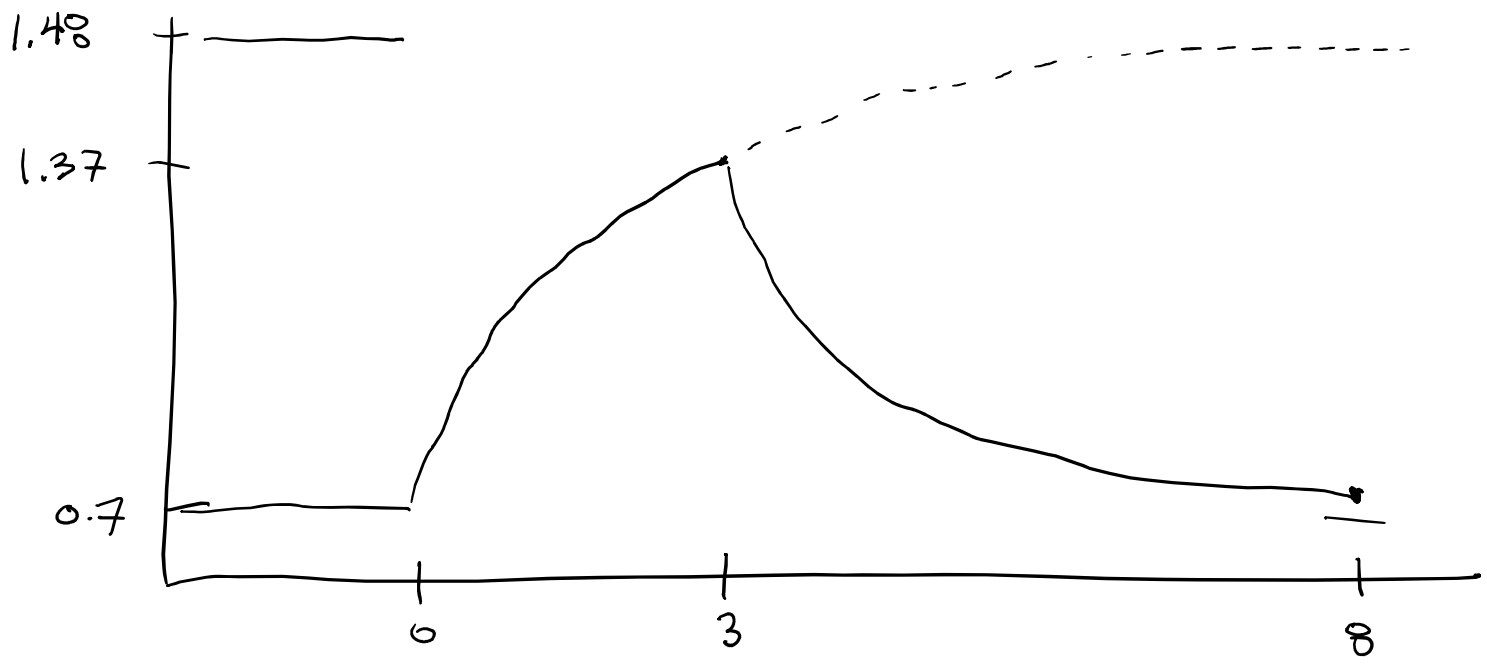
t = 3

$\rho_{TSS} = 1.37$

$$22.712 \frac{d\rho_{TSS}}{dt} = 8.4 - 12\rho_{TSS}$$

$$\int_{1.37}^{\rho_{TSS}} \frac{d\rho_{TSS}}{8.4 - 12\rho_{TSS}} = \int_{3}^{8} dt$$

$\rho_{TSS} = 0.748\ g/L$


1.48
1.37
0.7
6
3
8