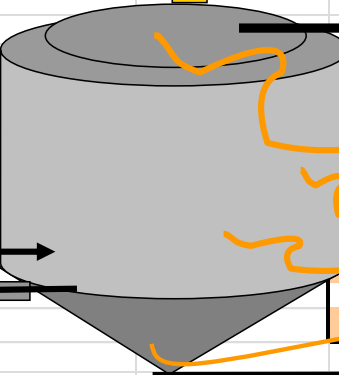
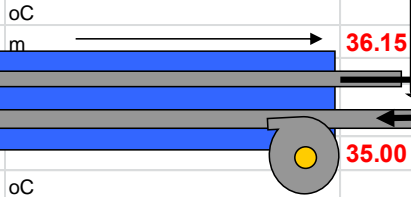
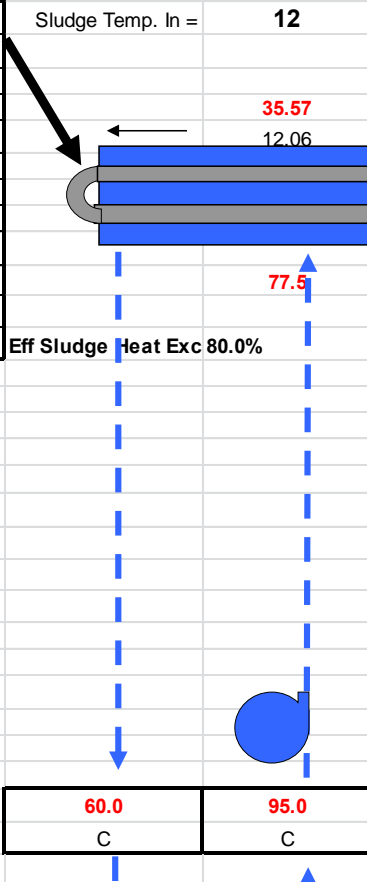


Feed
11,400
224
5.0%
1020
7,410
3,990
3,990
385
105
65.0%
36.5%



	J/d/dig	kW/dig
Heat loss from roofing	9,307,306,440	107.7
Heat loss from side wall	4,263,679,072	49.3
Heat loss from buried wall	501,609,303	5.8
Heat loss from Cone	2,785,504,283	32.2
Total Heat Loss from all diges	24,444,243,691	282.9

Sludge Recirc. Pumps	
No of Sludge Recirc Pumps	1
DiamofSludge RecircPipe,in:	15
Velocity in the recir pipe, m/s	1.2
Recir Pump Rate, m3/h	493
TemperatureRise of Sludge, oC	1.15
Temp of Sludge leaving the H/E,oC	36.15

TOTAL HEAT REQUIRED FOR SLUDGE HEATING & HEAT LOSSES	
Tot (SensibleSlgd Heatg + dig Surf Losses)	46,469,044 kJ/d
Tot (SensibleSlgd Heatg + dig Surf Losses)	1,936,210 kJ/h
Total heat req./digester.	1,936,210 kJ/h/dig

Water Recirculation Pumps	
HotWaterRecircRate	16 m3/h
TotHeat Radiated FromHeatWater	4.02.E+06 kJ/d/m2
Surface of Pipe	14.43 m2
Length of Pipe	12.06 m

$$= \text{TotHeatReqd} * 1000 / ((95\text{C} - 60\text{C}) * 4200\text{kJ/kg}) / 1000$$

$$= (77.5 - 35.9) * 4000\text{ kJ/h} / (\text{m}^2 * \text{C}) * 24$$

$$= \text{TotHeat/dig} * 24 / (\text{kJ/d/m}^2)$$