

SBR CALCULATOR

	Unit	Value
Design Capacity	m3/day	50
Classification of Effluent Charge	Class C	
Temperature	oC	28

Parameter	Unit	Influent	Effluent
TSS	mg/L	460	100
VSS	mg/L	360	70
BOD5,Total	mg/L	400	50
COD,Total	mg/L	910	100
TKN	mg/L	100	17.5
NH3-N	mg/L	60	0.5
NO3-N	mg/L	10	14
TP	mg/L	9	1
pH	mg/L	7	6-9.5
Alkalinity (as CaCO3)	mg/L	200	-
Oil and Grease	mg/L	110	5
Color	PCU	850	150
Fecal Coliform	MPN/100mL	4.90E+07	400

Design Conditions and Assumption Values

	Unit	Value
Design SRT	day	8
Settled Sludge Conc.	g/m3	5000
No. Trains		2
DO	g/m3	3

Major Phases of SBR Operation Cycle

	Unit	Values
Fill-Mix	hr	2
React	hr	2
Settle	hr	1
Decant	hr	1
Total Number of Cycle	cycles/day	8
Fill Volume per Cycle	m3/cycles	6.25

SBR Design Data Sheet

	Unit	Value
Volume of SBR per tank	m3	20.83
Peak Factor		1.2
Design MLSS	ppm	4639.95
Fill-Pump Rate	m3/hr	3.13
Wasting Pump Rate	m3/d	2.42
Decant Pump Rate	m3/hr	6.25
Aeration Time	hr	1.17
Fill-Mix Time	hr	1.37

Tank Volumes

	Unit	Value
Equalization Tank	m3	2.5
SBR Tank	m3	20.83
Chlorine Tank	L	158.16
Chlorine Contact Tank	m3	3.13
PAC Tank	L	184.35
Methanol Tank	L	452.28
Effluent Holding Tank	m3	25.00
Aerobic Digester Tank	m3	36.25
Tank Holding Time	d	31

Equipment Sizes

	Unit	Value
PAC Dosing Pump	mL/min	74.33
Chlorine Dosing Pump	mL/min	10.63
Aeration Blower Requirement	m3/min	0.72
EQT Pump	m3/hr	2.08
Decant Pump	m3/hr	6.25
EQT Blower Requirement	m3/min	0.042
Digester Blower Requirement	m3/min	0.002
Methanol Pump	L/min	1.26

