

			Qr	436	1559	
				1st Anoxic	Oxic	21
				19250	53200	
Influent Values			Effluent Values			52800
Parameter	mg/L	Load kg/d	Parameter	mg/L	Load kg/d	P
Q.m3/d=	8000		PF=	1.43		Y
BOD5=	350	2800	BOD5(Soluble+)	20	160	k:
SS=	350	2800	SS=	20	160	ki
TKN=	60	480	TKN=	5.79	46.3	K
NH4No=	40	320	NH4Ne=	3.79	30.3	K
			NO3N=	10	80	K
TP=			OrgN=	2.00	16	K
X=	5000	mg/L	BOD5(particulat	20	160	f
VSS/SS=	0.75					D
XL=Inert in Influent	350	mg/L				D
tCmin=	27	C	TP=			S
ALKo=	350	mg/LCaCO3	Xe=	50	mg/L	S
						pl
AEROBIC ZONE CALCULATIONS			ANOXIC ZONE CA			
WEF Method			Metcalf & Eddy			First Anoxic Zone
muMax at tC=	0.99		muMax=	0.5		Select IR=
muMaxA=	0.77		muMAXdes	0.82		NO3NinIR=
muA=	0.73		SRTmin=	1.32		NO3NRem1stAr
SRTminAerb=	1.42		SRTdesAer=	4.71		NO3eqofDO=
SRTdesAer=	3.56					Vanoxic1=
						tR in anoxic1=
			SRTdesChoser	3.56		rDNpre=
			Fanoxic=	0.44		Second Anoxic 1
muMAXNS=	0.76	1/day	MF=	1.79		NO3NtobeReduc
SRTmin=	1.43	days	SRTdesAer=	6.35		rDNpost=
SRTdes=	5.10	days				Vanoxic2=
						SpOUR=An/Yob
						Last Vol=
						TotVanox2=
Se=	4.69	mg/L	Px=	1791.2		tR in Anoxic2=
NH4Ne=	3.792	mg/L	Nitrogen Balance			ReaeratnTank
NO (N to be oxid)=	46.87		NinWAS=	94.038		Vtotal=
Yobs(calculated)=	0.49		NinInfluent=	480		Vanox1/Vtotal=
Yobs(empirical)=	0.80		NO3Neff=	80		Vanox/Vtotal=
Yobs(Chosen)=	0.83		NH4Neff=	30.3		tR in overall=
Voxic=	1559	m3	OrgNeff=	16		SRToverall=
tR in oxic tank=	4.7	hrs	ParticOrgNeff=	21		Check rDNpost=
			TotTKNOxidize	238.6		
RAS based on SVI			OXYGEN			ALKALINITY
Xr=	11314	mg/L	O2BOD=	2248		ALKe=
R=	1.23		O2Nitrif=	1714		
RASsvi=	9874	m3/d	O2DN=	843.6689		
			O2=	3118		

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nd Anoxic Reaertr

Biokinetic Constants

Parameter	Heterotrophs	Nitrosomonas
μ_{max}	0.6 kgVSS/kgBOD5	0.15 kgVSS/kgNH4N
μ_{min}	5 1/day	3 1/day
μ_{dmax}	0.06 1/day	0.03 1/day
K_s	60 mg/LBOD5	1.694 mg/L NH4N
K_{do}	1.3 mg/L	
K_{doWEF}	0.15	
$K_{inh(NH3H)}$	0.5 mg/L	
μ_{N}	0.1 (.05-.12)NinVSS	
K_{NO}	2 mg/L	
$K_{NOinAnoxi}$	0.5 mg/L	
μ_{F}	2.5	
μ_{VI}	125	
H_{min}	7	

ALCULATIONS

e
2
7.04 mg/L
211.45 kg/d
2.80 kg/d
436 m3
1.3 hrs
0.098 kgN/d/kgMLSS

Tank
-52.83 kgNO3N/d
0.0400 kgNO3N/d/kgMLSS
-264 m3
51 mgO2/h/L
3 m3
-261 m3
-0.8 hrs

250 m3
1985 m3
0.22 m3
0.09 m3
6.0 hrs
5.5 days
0.0441

144 (Should be 50-100)