DESIGN OF STEP AERATOR

Final Treated Water Demand	=	**180,000**	m3/day	
Design Demand	=	189,000	m3/day	
		7,875	m3/hr	OR

Assume	No of Drops	=	**5**	Nr
	Height of Drop	=	**400**	mm
	Flow Rate, q	=	**0.01**	m3/S over m of step
	Cascade Area	=	**2**	m2/m3/min
	width of Step b	=	**400**	mm

Area of Aerator	A	=	**262.50**	m2
Total width of aerator	B	=	**2.00**	m
Length of the aerator	L	=	**131.25**	m
Length of a step	La	=	**26.25**	m
Height of Drop	h	=	**400**	mm
Height of weir	h'	=	**150**	mm
Height of Aerator	H	=	**2.00**	m

FLOW VELOCITY

Flow	Q	=	**2.19**	m3/s
Flow Over weir	Q	=	1.833 x B x H^(3/2)	
	Ho	=	**0.127**	m OR
The velocity of the flow	v	=	**0.654**	m/s
Total Contact Time with Air	T	=	**3.06**	S

131.25 m3/mim OR 2.19 m3/S

Recommended Values			
No of Drops		4-6	Nr
Height of Drops		30-60	cm
Height of Aerator		2-3	m
Flow Rate		0.01	m3/S over m of step
Cascade Area	A/Q	2	m2/m3/min

0.01*

1.3125 m3 over le

127 mm