



COST EFFECTIVE WASTEWATER TREATMENT SYSTEM INTEGRATED WETLAND ECOSYSTEM : JAKKUR LAKE

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Level of treatment at various stages of integrated wetland

Sewage treatment plant (STP)			
Influent Characteristics	Surface Clarification	Settling basin/Algal pond	Lake Outlet
COD = 300-400 mg/l	COD = 30 mg/l	COD = 40 mg/l	COD = 20 mg/l
BOD = 150-200 mg/l	BOD = 4-45 mg/l	BOD = 10 mg/l	BOD = 10 mg/l
TSS = 150-200 mg/l	TSS = 20 mg/l	TSS = 10 mg/l	TSS = 10 mg/l
NO ₃ = 3.0 mg/l	NO ₃ = 8.0 mg/l	NO ₃ = 8.0 mg/l	NO ₃ = 0.20 mg/l
PO ₄ = 0.4 mg/l	PO ₄ = 0.20 mg/l	PO ₄ = 0.20 mg/l	PO ₄ = 0.05 mg/l



CONCEPTUAL DESIGN OF WETLAND

Area required to treat 1 MLD influent:

$$A = Q_d (\ln C_o - \ln C_i) / K_{BOD}$$

where A = Area; Q_d = average flow (m³/day);

C_o & C_i = Influent & Effluent BOD (mg/L); K_{BOD} = Constant (0.10)



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