For Infrastructure Master Program

Civil Engineering

Treatment of waste water

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**Definition of Wastewater**

"Wastewater in simply that part of the water supply to the community or

to the industry which has been used for different purposes and has been

mixed with solids either suspended or dissolved."

Wastewater is 99.9% water and 0.1% solids. The main task in treating the wastewater is simply to remove most or all of this 0.1% of solids.



**Goals of Wastewater Treatment**

**The main goals of wastewater treatment are:-**

**1- Protecting the public health**

**-** Wastewater (WW) contains pathogenic microorganisms which

lead to dangerous diseases to humans and animals.

**-** Hazardous matter such as heavy metals are toxic.

**-** Produces odorous gases and bad smell.

 

**2- Protecting the environment:-**

Raw (untreated) WW leads to septic conditions in the environment and

Consequently leads to the deterioration of surface and ground water quality and pollutes the soil.

**-** Raw WW is rich with nitrogen and phosphorus (N,P), and leads to

The phenomena of "Eutrophication" if disposed in surface water

Which. Eutrophication is the growth of huge amounts of algae and

other aquatic plants leading to the deterioration of the water quality.

**-** Raw WW is rich with organic matter which consumes oxygen

When disposed in rivers leading to killing aquatic creatures such asfish.

**-** Raw WW may contain toxic gases and volatile organic matter

(VOCs) and toxic air contaminants (TACs).

3- **Reuse of the treated WW and solids**:-

Treated water is reused for Agriculture , industry ,Recharge to ground water.

Separated and treated solids are reused for solids Agriculture ,Landfill

Energy source.





