

Surface water

- * It is naturally replenished by precipitation & ground water recharge
- * It is the water seen in river etc.

Under river flow

It is the water that flows through rock and sedimentation below a river. This flow is often called hyporheic zone

Ground water

Fresh water located in the subsurface space of soil and rocks

Frozen water: In the form of glaciers & ice caps, holds about $\frac{1}{6}$ th of Earth's fresh water

Desalination: saline water \rightarrow fresh water by distillation & reverse osmosis

Disposal of Wastewater in Sea water

- Sea water normally contains 20% less oxygen than fresh water
- Capacity

Disposal of Wastewater on Land

- Sewage effluent either treated or raw is disposed by irrigation and rapid infiltration
- A part of it evaporates & remaining percolates in the soil
- Application of too strong or too hard of sewage will

Waste water quality

i) Physical characteristics

	Fresh sewage	Septic sewage
Temperature	25-30°C approx	>30°C
Turbidity	Less turbid	More turbid
Odour	Musty smell	Foul smell
Colour	Lighter shade (Yellowish, greyish brown)	Darker shade (Black or dark brown)

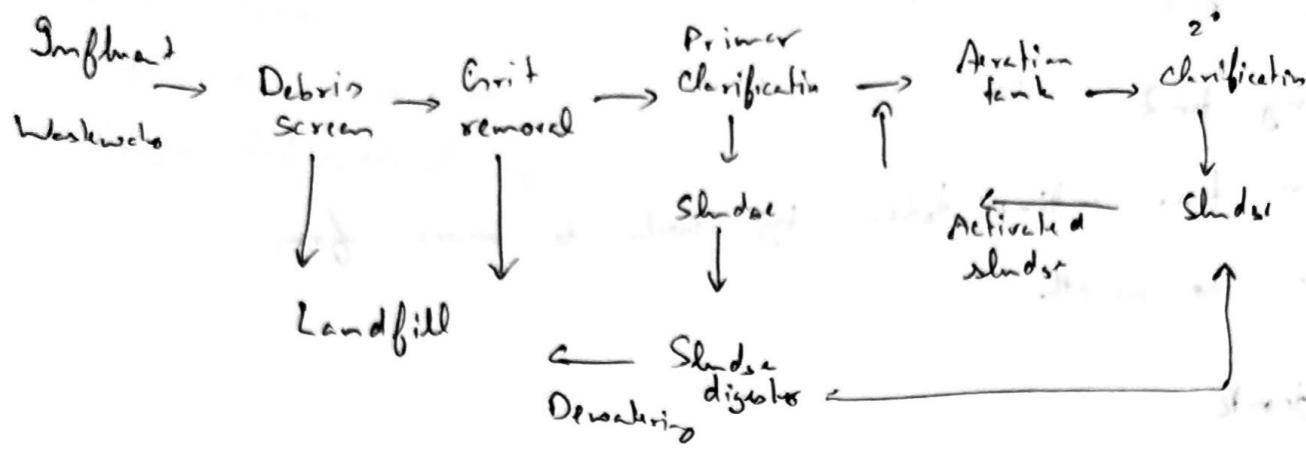
* If pH value is less than 7, the sewage is acidic

* If pH value is more than 7, " alkaline

* Measured using potentiometer

* Fresh sewage is alkaline in nature

* Septic sewage is acidic in nature



Grit Chamber

- Scattering tank
- Detention time - time taken by water to move from chamber to another

Sedimentation tank

- Sedimentation tank
- Used to remove fine particles
- 3-4 min

Skimming tank

- Used to remove grease, oil, fat
- Compressed air from the bottom

1^o treatment - Sedimentation tank

- Used to remove large suspended settleable solids
- 2 hr

2^o or Biological treatment

- Aerobic biological unit
 - o Trick filter
 - * Attached cultural system

b) Aeration tanks

- Activated sludge process
- Suspended cultural system