

Chapter – 18

Wastewater Story

- **Wastewater:** Rich in lather, mixed with oil, black-brown water that goes down the drains from skins, showers, toilets, laundries is called wastewater.
 - Wastewater is generated in homes, industries, agricultural fields and in other human activities. This is called sewage.
 - Sewage is a liquid waste which causes water and soil pollution.
 - Wastewater is treated in a sewage treatment plant.
 - Treatment plants reduce pollutants in wastewater to a level where nature can take care of it.
 - Where underground sewerage systems and refuse disposal systems are not available, the low cost on-site sanitation system can be adopted.
 - By-products of wastewater treatment are sludge and biogas.
 - Open drain system is a breeding place for flies, mosquitoes and organisms which cause diseases.
 - We should not defecate in the open. It is possible to have safe disposal of excreta by low cost methods.
 - **Sewage Treatment:**
 - (i) **Aeration:** Air is bubbled through the wastewater while it is continuously stirred.
 - (ii) **Filtration:** Aerated water passes through a deep filter of layered sand, fine gravel and medium gravel.
 - (iii) **Chlorination:** To the filtered water chlorine is added and mixed until water is clear.
 - **Wastewater Treatment Plant (WWTP):**
 - (i) Wastewater passes through screens to remove large objects.
 - (ii) It goes to a grit and sand removal tank at low speed.
 - (iii) Water is allowed to settle in large tank.
 - (iv) Floating solids are removed with skimmer. Settled solids (sludge) are removed with scraper.
 - (v) Clear water is called clarified water.
 - (vi) Water is then decomposed by anaerobic bacteria in a tank and air is passed.
 - (vii) Microbes settled at bottom as activated sludge and water from top is removed.
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