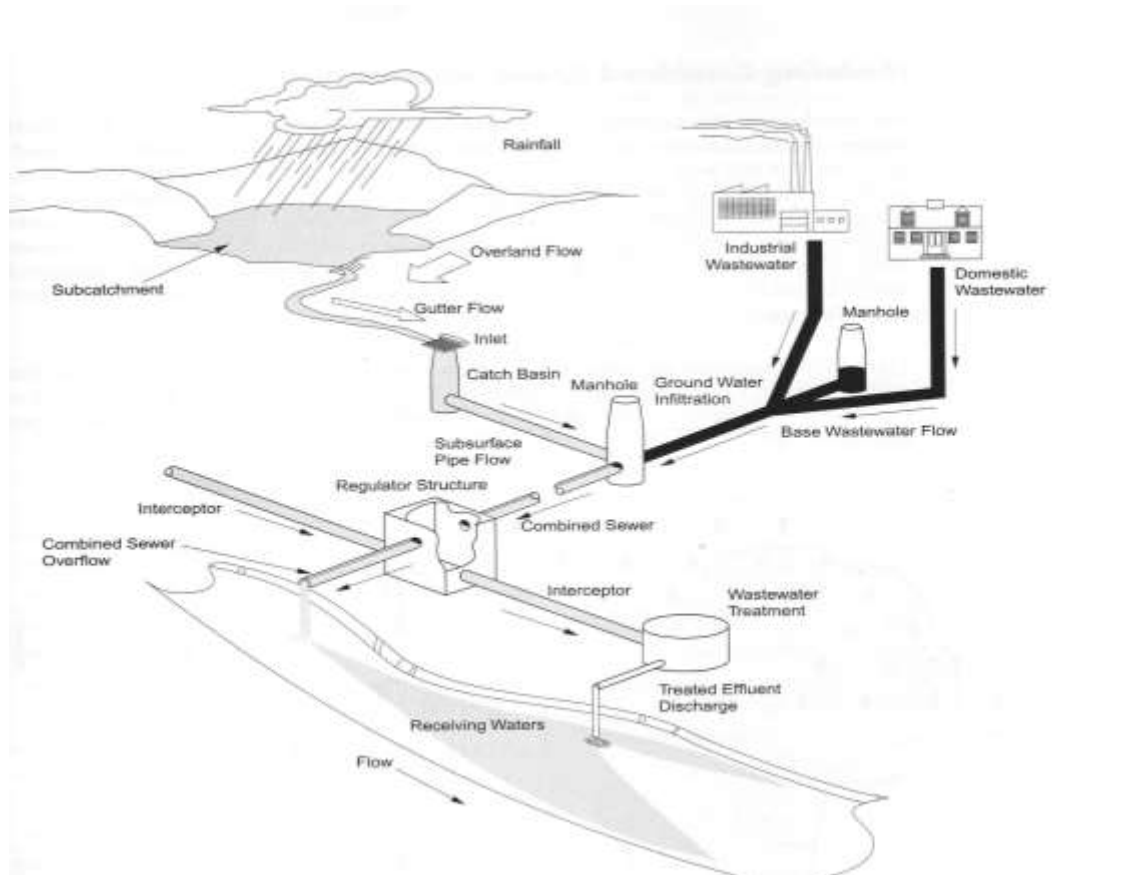


Wastewater

Sources of wastewater:

- 1- Domestic wastewater.
- 2- Industrial wastewater.
- 3- Storm water.
- 4- Infiltration water.
- 5- Commercial and governmental

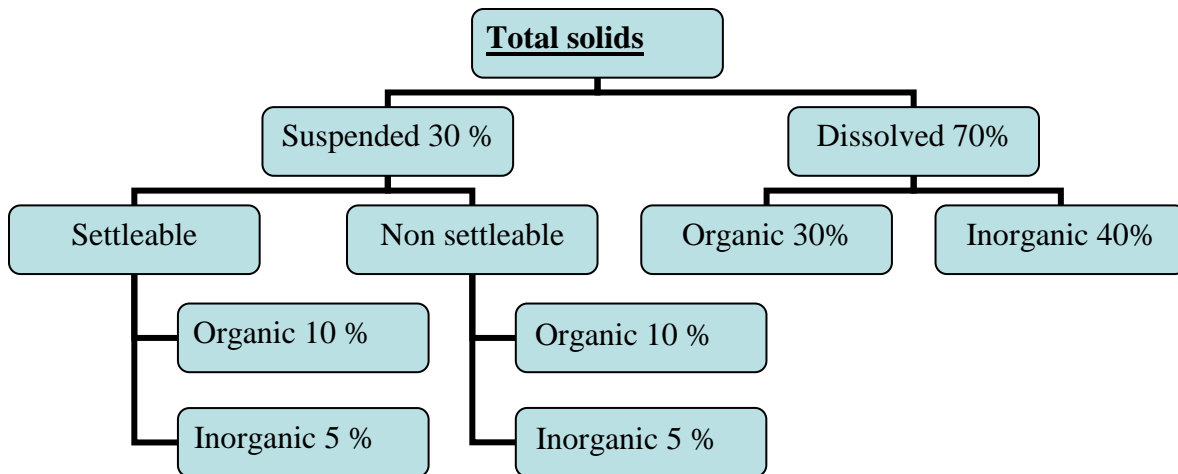


Schematic diagram of a typical combined sewerage system

Composition and characteristics of wastewater:

Physical characteristics:

- 1- Total solids.
- Sewage is 99.9% water and 0.1% solids.



- 2- Color: Gray tends to black.
- 3- Temperature: from 15 to 25 °C.
- 4- Odor: offensive.

Odor of domestic wastewater caused by gases produced due to the decomposition of organic matter. The most odorous gas in septic wastewater hydrogen sulfide (H₂S).

- 5- Density: 1.02 – 1.05 t/m³.
- 6- Turbidity.

Chemical characteristics:

- 1- pH : 6 – 8.
- 2- Biological oxygen demand (BOD):
It is the amount of oxygen required by the bacteria to stabilize the organic matter in wastewater, under standard conditions of incubation at 20 °C for five days.

- 3- Chemical oxygen demand (COD):
It is the amount of oxygen required to stabilize all organic matter (bio-degradable and non biodegradable) chemically by strong chemical oxidizing agent.

COD : BOD

3 : 2

- 4- Ammonia- nitrogen
- 5- Nitrites and nitrates
- 6- Chlorides

7- Hydrogen sulfide

Biological characteristics:

Wastewater contains bacteria, fungi, algae, protozoa, viruses and pathogen bacteria.

Pathogen indicator:

E-coli, coli form, and fecal coli form.

