

Sewage Treatment and Recycle



INDUS ECOWATER

Innovative & Affordable Sewage Solutions

What is sewage?

Sewage is the wastewater originating in homes from

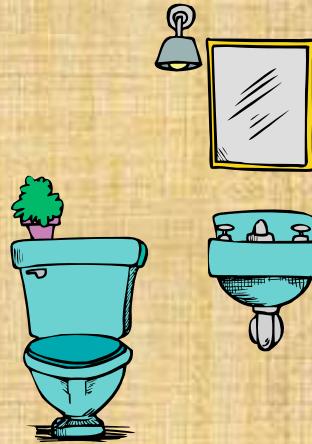
- Kitchen
- Laundry
- Wash Basins
- Bath rooms & Toilets
- Floor Wash

In one word, it is all the wastewater that comes out of homes / human use

Where does it all go!



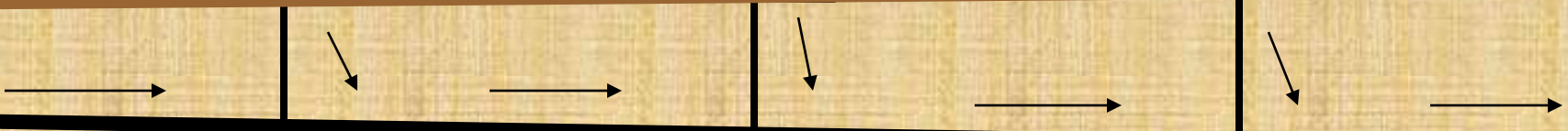
Where does the water from the washer go?



When you flush the toilet where does the contents go?



By gravity flow, the waste is on its way to your local wastewater treatment plant!



Sewage composition

- Solids like vegetable peelings, rice, plastic covers etc
- Oil & Grease from Kitchen / Laundry
- Suspended solids from kitchen
- Chemicals from detergents
- Mild colors from laundry / food
- Pathogenic microbes from fecal matter

Physical impurities, dissolved chemical impurities & Microbiological impurities

Wastewater Composition

99.95% Water

+

0.05% Impurities

?

Why treat wastewater?

Hazards of wastewater?

- 34 Lakh children die every year due to water borne diseases. 99% of this are from developing countries
- That is every one child every 21 seconds
- Water borne diseases originate from human excrete



**Un-treated Sewage is
a time bomb that can't
be de-fused**

Why treat wastewater?

- Causes a demand for dissolved oxygen (lowers DO levels of streams)
- Adds nutrients (nitrate and phosphate) that cause excessive growth
- Stinks otherwise
- Increases suspended solids or sediments in streams (turbidity increase)
- To comply with Environmental norms

**Less than 10%
of the sewage
only is treated**

**How is Sewage
treated?**

Levels of Treatment

Primary

- removal by physical separation of grit and large objects (material to landfill for disposal)

Secondary

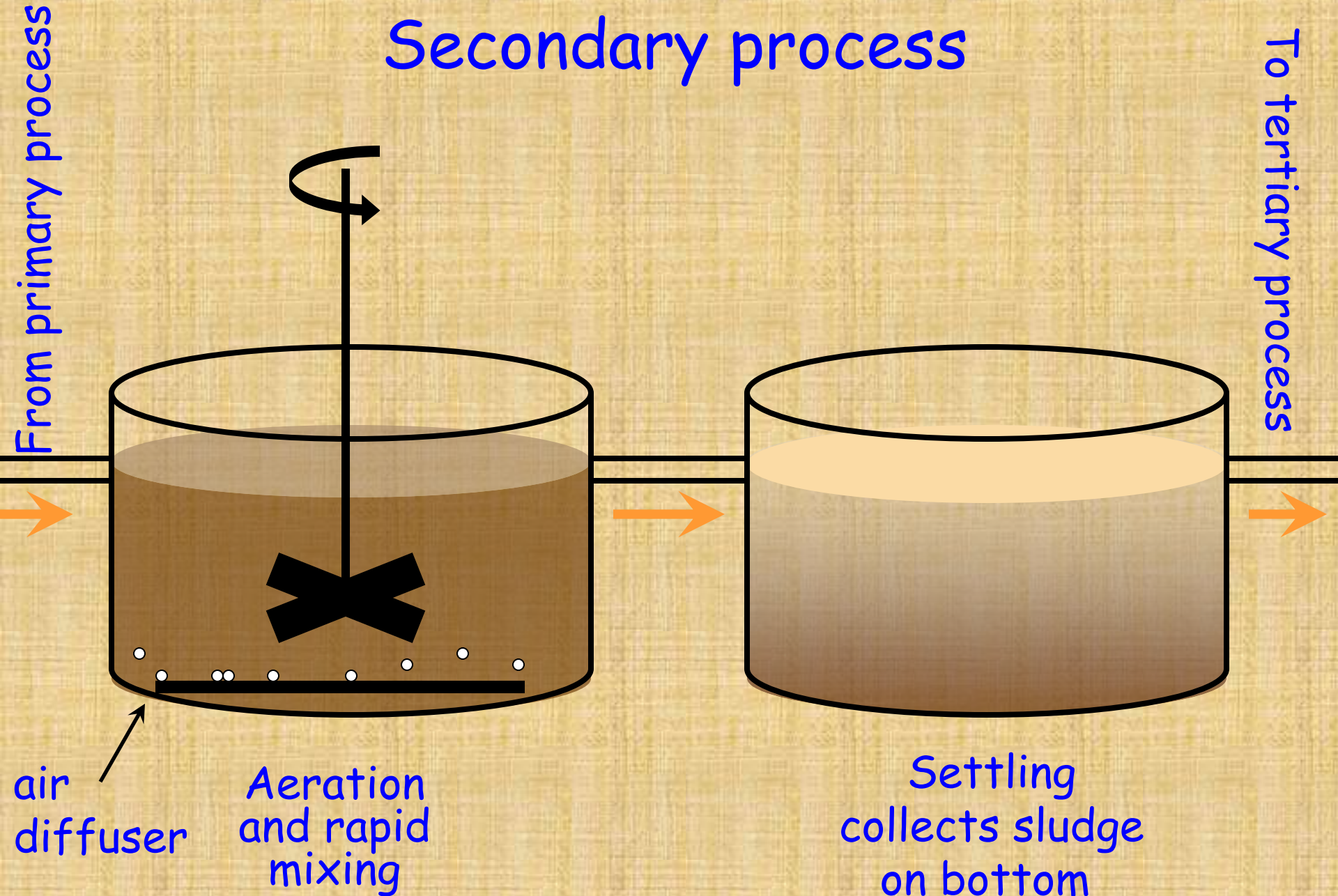
- aerobic microbiological process (sludge)



Mostly dead
microbes

- lowers suspended solids content (into sludge)

Secondary process



Levels of Treatment continued

Tertiary (advanced)

- anaerobic microbiological process with a different microbe where O_2 is toxic (more sludge)

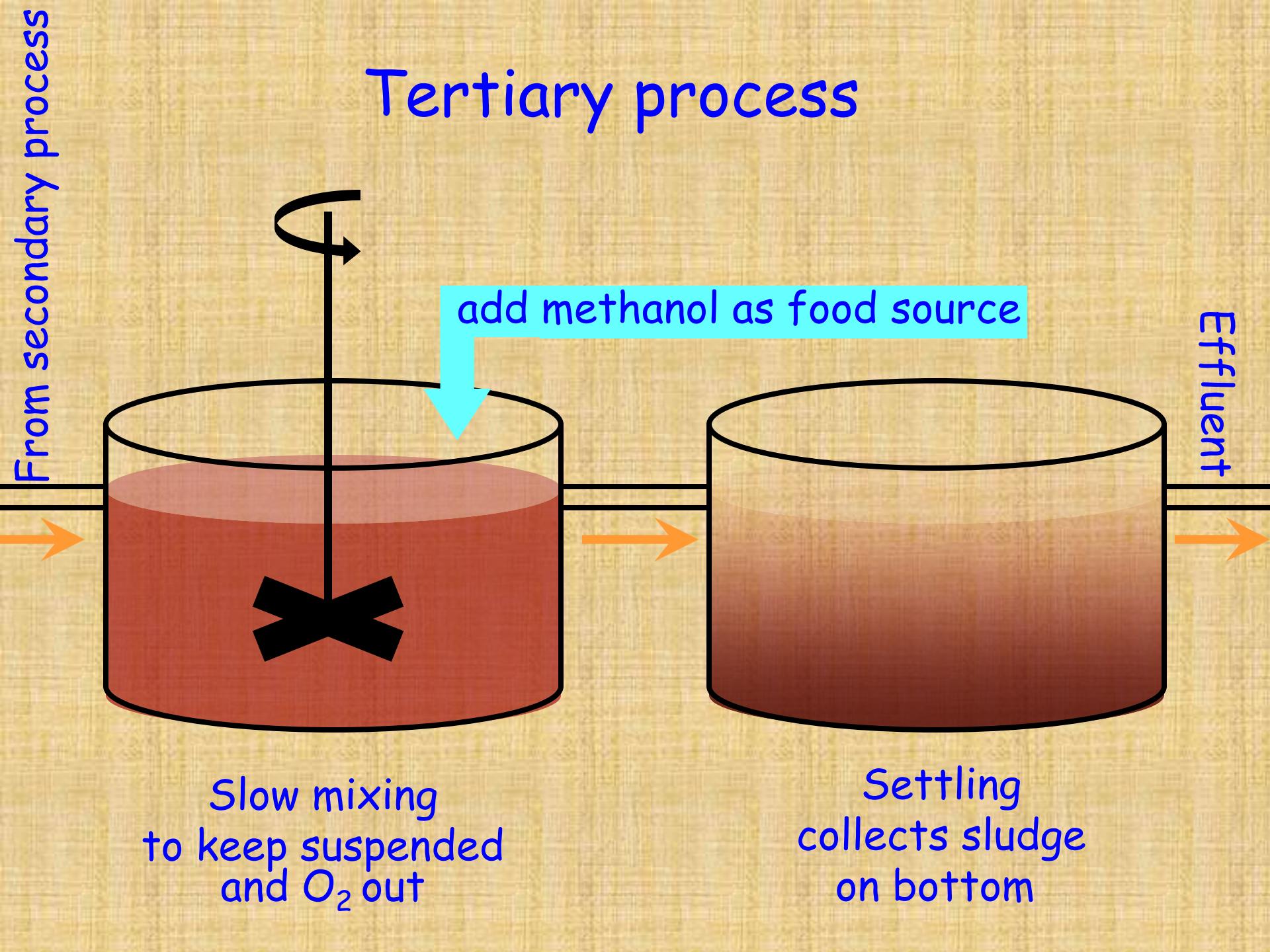


- PO_4^{-3} if not removed in sludge in secondary process



- aeration to strip N_2 and re-oxygenate (add DO)

Tertiary process



From secondary process

add methanol as food source

Effluent

Slow mixing
to keep suspended
and O_2 out

Settling
collects sludge
on bottom

When the treatment is done...

- Effluent back to stream after
 - Chlorination / de-chlorination and
 - a final carbon filtration
- For re-use advanced filtration methods
Ultra-Filtration
- Sludge - very nutrient rich
 - applied directly to land as fertilizer
 - incinerated (good fuel after drying)
 - composted (good manure)



Why Recycle Sewage?

Treated Sewage
is the most
reliable source
of water



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Packaged Sewage Treatment Plants

5, 10, 15, 20, 25, 30, 40,
50, 75, 100, 125 & 150
KLD



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Custom Designed STP

50 KLD & Above



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Sewage Recycling Plants (UF)

25, 50, 75, 100KLD &
Custom Designed



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Innovative & Affordable Sewage Solutions

Zero Discharge STP & Effluent Treatment Plants

For more information

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