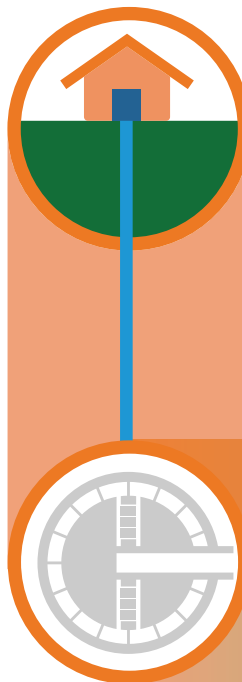


# FLUSH TO FINISH

## How do we process wastewater?

### COLLECTION



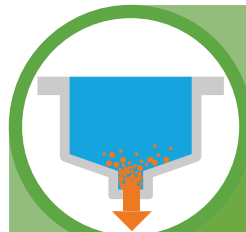
#### WASTEWATER ENTERS THE COLLECTION SYSTEM...

If your home is connected to a public sewer system (versus a septic tank), your wastewater line is connected to a sewer pipe. This is just the beginning of a complex collection system that can transport thousands or even millions of gallons of wastewater every day.

### PROCESSING

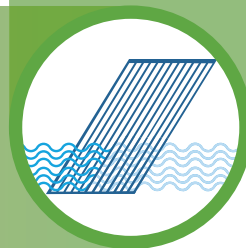
#### ...THEN, IT'S DELIVERED TO A WASTEWATER TREATMENT PLANT

The job of the treatment plant is to remove contaminants and harmful substances from wastewater so that it can be safely returned to the environment. There are six major steps commonly used in this process.



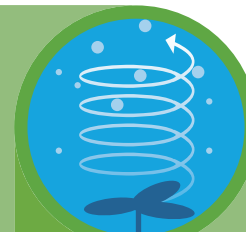
#### STEP 2: GRIT REMOVAL

Sand and grit that can damage pumps and other equipment in the treatment system are removed by allowing these heavier solids to settle.



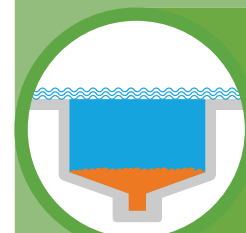
#### STEP 1: SCREENING

All kinds of objects can be washed or flushed into sewer systems. As the wastewater enters the treatment plant, it passes through screens that remove untreatables like plastic, trash, rags and other large debris.



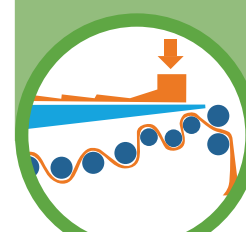
#### STEP 3: BIOLOGICAL TREATMENT

Biological treatment is one of the major unit processes used in wastewater treatment. The process uses bacteria to breakdown and remove organic wastes and grow new bacteria to sustain the process.



#### STEP 4: CLARIFICATION

Bacteria and other solids are removed from the liquid stream in clarifiers, and the clear liquid flows to the next stage for further treatment. Most of the settled bacteria are recycled to the biological treatment basin to breakdown more incoming wastes. The remaining biosolids are removed from the process.



#### STEP 6: DEWATERING

Excess solids from the clarifiers may receive further treatment to inactivate pathogens before being dewatered. High quality biosolids have excellent nutrient qualities that can allow them to be beneficially reused as fertilizer for crops and landscaping.



#### STEP 5: DISINFECTION

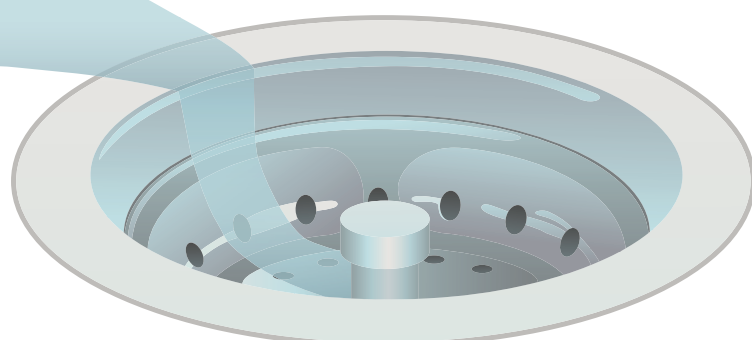
Any harmful or disease causing bacteria or microorganisms that have survived the previous steps are disinfected by adding chlorine to the water or exposing it to ultra-violet light.



### DISCHARGE

#### EFFLUENT DISCHARGE

With the water cleansed and purified to meet state and federal standards, it is recycled back into the environment — typically a natural body of surface water like a stream, river, or lake; or into the ground through subsurface groundwater recharge fields.



### WANT TO KNOW MORE ABOUT WATER?

For more information about water and the water industry—including fascinating facts you may not know, visit our online Learning Center at [virginiaamwater.com](http://virginiaamwater.com).



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