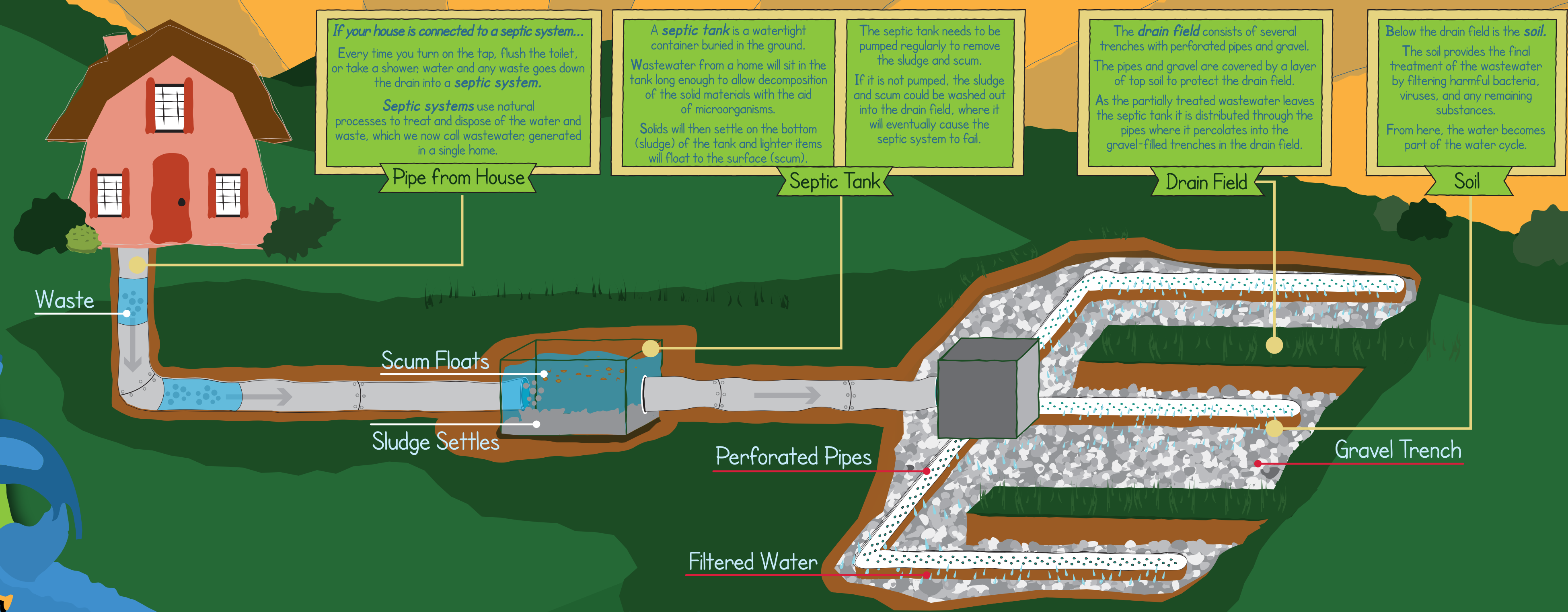


Septic System

1

Methods of Wastewater Treatment



If your house is connected to a septic system...
 Every time you turn on the tap, flush the toilet, or take a shower, water and any waste goes down the drain into a **septic system**.
Septic systems use natural processes to treat and dispose of the water and waste, which we now call wastewater, generated in a single home.

A **septic tank** is a watertight container buried in the ground. Wastewater from a home will sit in the tank long enough to allow decomposition of the solid materials with the aid of microorganisms. Solids will then settle on the bottom (sludge) of the tank and lighter items will float to the surface (scum).

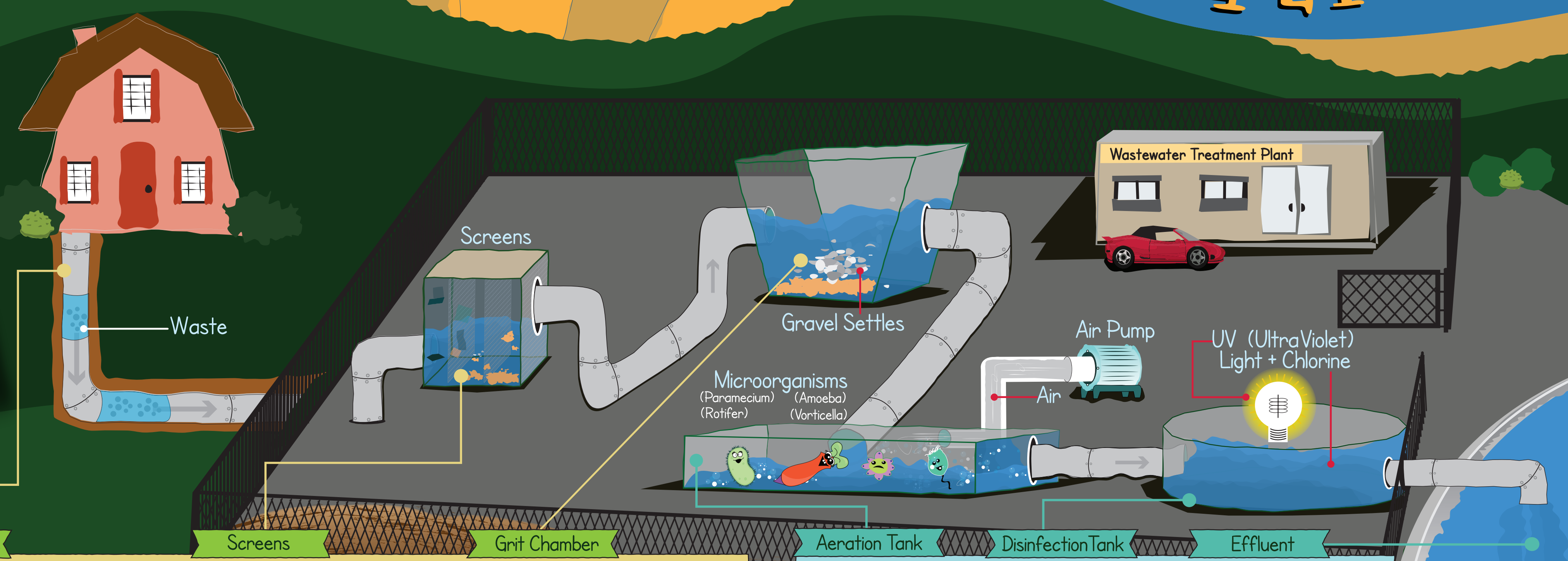
The septic tank needs to be pumped regularly to remove the sludge and scum. If it is not pumped, the sludge and scum could be washed out into the drain field, where it will eventually cause the septic system to fail.

The **drain field** consists of several trenches with perforated pipes and gravel. The pipes and gravel are covered by a layer of top soil to protect the drain field. As the partially treated wastewater leaves the septic tank it is distributed through the pipes where it percolates into the gravel-filled trenches in the drain field.

Below the drain field is the **soil**. The soil provides the final treatment of the wastewater by filtering harmful bacteria, viruses, and any remaining substances. From here, the water becomes part of the water cycle.

Wastewater Treatment Plant System

2



If your house is connected to a wastewater treatment system...
 Every time you turn on the tap, flush the toilet, or take a shower, the water and any waste goes down the drain into a **sewer system**. The sewer takes the water and waste, which we now call wastewater, from all the homes and buildings to a **wastewater treatment plant**.

When the wastewater from homes and buildings first enters the wastewater treatment plant, it flows through **screens**. The screens separate objects out of the water. Rags, hair, sticks and plastic are examples.

Next, the water is sent to a large tank called a **grit chamber**. The speed of the water is slowed and heavier materials, including sand and gravel, settle to the bottom of the tank from where they are occasionally pumped out. Lighter items such as, grease and oil, will float to the top of the water. These items are skimmed off and the heavier items are left in the tank as the wastewater flows to secondary treatment.

Air is pumped into the water to create an environment where microorganisms can live (**aeration**). The microorganisms will eat the pollutants in the water.

The final step is to add chlorine or use ultraviolet (UV) light to disinfect the water and kill germs.

Water is tested to make sure it is safe to reintroduce back into the environment. The water (**effluent**) is discharged into a local river or stream. From here, the water becomes part of the water cycle.

PRELIMINARY TREATMENT

SECONDARY TREATMENT