

WHAT DO YOU KNOW ABOUT WATER TREATMENT?

Water treatment is the process of cleaning water. Treatment makes the water safe for people to drink. Because it is a good solvent, water picks up all sorts of natural pollutants. In nature, water is not always clean enough for people to drink. When the microscope was invented in the 1850s, germs could be seen in water for the first time. In 1902, Belgium was the first country to use chlorine to clean or treat water in a public water supply. Today, almost every city in the world treats their drinking water. Treatment includes **disinfection** with chlorine or other chemicals to kill any germs in the water.

A Treatment Plant

- 1. Intake:** Water is taken from the source. Logs, fish and plants are screened out at the intake and then the water is drawn into the treatment plant. If the source is groundwater, the "screening" is done by the soil as the water travels under the earth's surface. Sometimes very little treatment is required for groundwater.
- 2. Chemical Addition:** Aluminum sulfate (alum), polymers and/or chlorine are added to the water. These kill germs, improve taste and odor, and they help settle solids still in the water. The water and these chemicals are then mixed together.
- 3. Coagulation and Flocculation:** Here, the alum and other chemicals from the chemical addition step cling to particles in the water. This is called **coagulation**. It causes the particles to stick together and form larger particles called **floc**.
- 4. Sedimentation:** The water and the floc particles flow into a sedimentation basin. Here the floc settles to the bottom and is removed from the water.
- 5. Filtration:** From the sedimentation basin, the water flows through filters. Filters are made of layers of sand and gravel. The filters are used to remove any remaining particles left in the water.
- 6. Disinfection:** A small amount of chlorine, or other disinfecting chemicals, is added. This is used to kill any remaining germs and to keep the water safe as it travels to the public. In some water systems, especially those with groundwater sources, this is the only treatment provided.
- 7. Storage:** The water is placed in a closed tank or reservoir called a clear well. This allows time for the chlorine to mix throughout the water in order for disinfection to take place. The water then flows into the distribution system.

Water Treatment

Place the correct number of the step on the line.

