



# SOURCE TO TAP

## How do we make water safe to drink?

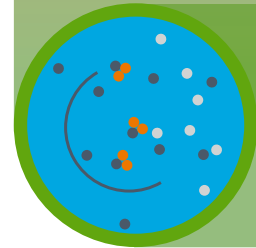


### SOURCE WATER

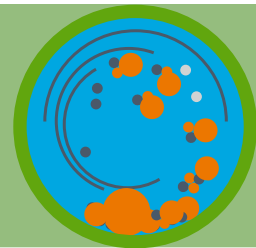


**SOURCE WATER**  
Water supply serving the area. In this case, it is a surface water supply, such as a river, lake or stream.

### WATER TREATMENT



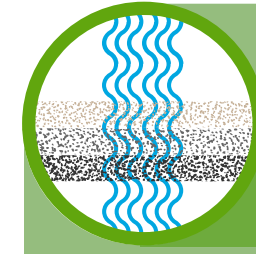
**COAGULATION**  
Coagulation uses iron or aluminum-based chemicals to form “sticky” particles that bind with dirt and organic matter in the water.



**FLOCCULATION**  
Slow mixing is used to cause the coagulated dirt and organic particulates to collide and clump together to form larger “floc” particles that can settle out of the water during clarification/sedimentation.

### FILTRATION

The clarified water passes through filters made of layers of sand, coal, or activated carbon, which help remove smaller particles, including potentially harmful bacteria. Some plants have begun using membranes for filtration in lieu of granular media.



**CLARIFICATION/SEDIMENTATION**  
The heavy particles (floc) settle out and the clear water flows to filtration. The settled solids removed from the process often possess exceptional nutrient and water-retaining properties that allow them to be recycled and used to improve the quality of topsoils.



### DISINFECTION

During the final step of treatment, a small amount of chlorine is added to kill any potentially harmful pathogens that may remain in the water following the prior treatment stages. The water is stored temporarily in a clearwell to give the chlorine time for the disinfection process to occur. Some plants use UV light in addition to chlorine to aid in disinfection.

### DISTRIBUTION



### STORAGE

Pumps are typically used to “push” the water through pipes to homes and businesses in the community. Tanks are often used to provide storage around the distribution system to help maintain pressure and enhance reliability of water service and fire protection.



### 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 [marylandamwater.com](http://marylandamwater.com).

