

Water Treatment

Producing Safe Drinking Water for Tempe

Water treatment is the process of cleaning water and making it safe for people to drink. The "natural" water found in the Salt and Verde watersheds is not "pure." The water picks up substances during its journey through the rivers, lakes, and canal system. These substances-some harmless and others not- include.

- Organic wastes from animals plants and people
- Dust which is always present in our atmosphere
- Dirt from the rivers and canals
- Microbes such as bacteria and viruses
- Minerals and salts such as calcium, magnesium, and fluoride

The City of Tempe treats the raw water (from the canals) at the South Tempe Water Treatment Plant and at the Johnny G. Martinez Water Treatment Plant in order to meet safe drinking water standards. These are the steps in the treatment process:

- Presedimentation Basin - Canal water begins its treatment path here. These basins slow down the incoming water and allow some of the large particles of dirt, etc. to settle out. Water cascades over weirs at the surface of the water, so that the cleanest water goes through the rest of the process, to the dosing channel where alum (aluminum sulfate) is added to the water. The water and the alum are mixed and any solids which may still be present in the water cling to the alum - a process called coagulation. It causes the particles to clump together and form large particles called floc.
- Flocculation & Sedimentation - Here the heavy floc settles out of the water, and the water continues to the filters.
- Filtration - Chlorine is added to the water to kill bacteria and then the water is filtered through layers of sand, gravel, and carbon to remove all remaining particles in the water.
- Chlorine is added again as the water enters the water reservoirs and distribution system.