



RAW WATER ENTERS THE PLANT

Water from Barkhamsted and Nepaug flows through a tunnel in Talcott Mountain to Reservoir #6. From the reservoir it enters the plant's intake house, where it travels by gravity through a large concrete pipe to the aerator.



AERATION

The aerator's turbulent, bubbling action releases concentrated gasses in the water, improving its taste.



FLASH MIXING/COAGULATION

Aerated water then flows to the flash mixing tank, where Aluminum Sulfate is added and thoroughly blended. Powdered Activated Carbon is added seasonally to reduce seasonal taste and odor.



FLOCCULATION

Mixing continues in the flocculation chamber, where the aluminum sulfate causes the small, suspended particles within the water to stick together and sink to the bottom of the chamber. These particles are called floc.



SEDIMENTATION

The water gradually moves to the neighboring sedimentation basin, where the heavy floc and powdered activated carbon settles out. The settled solids are sent to another part of the plant for disposal, while the remaining water goes on to the sand filters.



FILTRATION

Remaining particles are removed in the six filter beds. Each 1,260 square foot bed holds 60,000 gallons of water. Water enters the beds and gradually passes through 30 inches of sand and 12 inches of stone, where remaining impurities are removed.



CHEMICALS

As the filtered water travels to storage, 4 chemicals are added.

- Fluoride (**F**) – to help prevent tooth decay
- Sodium Hydroxide (**NaOH**) – to reduce the water's natural acidity which, in turn, protects pipes in the distribution system from corrosion.
- Orthophosphate (**PO₄**) – to reduce corrosion.
- Chlorine (**Cl₂**) – in the form of liquid Sodium Hypochlorite, to kill any remaining bacteria.



STORAGE

Up to 10 million gallons of filtered water are stored in two underground concrete basins that are continuously replenished as the water is withdrawn by gravity to the distribution system and to consumers' faucets.

CLEANING THE FILTERS

Each filter bed is backwashed as needed to remove material trapped in the sand. Water from two 500,000 gallon tanks located above the plant – is forced through the bottom of the filter, stirring the sand which washes away the trapped materials removed during the filtration process. Each filter takes only 15 minutes to clean.