

The Flow

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Water Treatment - Part II

(1) Along the 12-mile path to the from Willisburg Lake to the Water Treatment Plant (WTP), SWSC operators take advantage of the hours of travel time.

(2) At the pump station, very small doses of copper sulfate are added to prevent algal growth.

(3) A short way up the road, permanganate is added to begin oxidizing iron, manganese, and hydrogen sulfide found in the raw water.

(4) At the WTP, carbon is added to adsorb impurities; a positively charged coagulant is added to attract negatively charged contaminants which combine to form a floc particle that looks similar to snowflakes.

(5) Chemicals are mixed thoroughly with the water in the quick mix/flash mix chamber (COAGULATION). Floc particles begin to form and grow in size through the flocculation process which involves slow mixing in (2) 63,000 gallon, 2-stage basins where water takes about an hour to traverse (FLOCCULATION).

(6) The floc particles are then given time (and no mixing) to settle out in the (4) 94,000 gallon sedimentation basins (SEDIMENTATION).

(7) The travel time through these basins is about 3 hrs. Settled water is generally very clear by the time it passes through the basins' tube settlers, and up and over the weirs before travelling back inside to the filters.

(8) Operators add chlorine as the water enters (4) dual media filters to prevent biological growth in the filter media. The settled water passes through anthracite, sand, and gravel (FILTRATION) before collecting in a common pipe where a dose of fluoride is added as well as another dose of chlorine before entering a small low service well.

(9) Low service pumps (2) then push the water to the (2) baffled clearwell tanks behind the WTP. The baffles force the water to follow a particular path, giving the chlorine appropriate time to properly disinfect (DISINFECTION).

(10) High service pumps (2) then push the water to the elevated city storage tanks – Armory Hill, High School, Clearview Commerce Tanks.



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