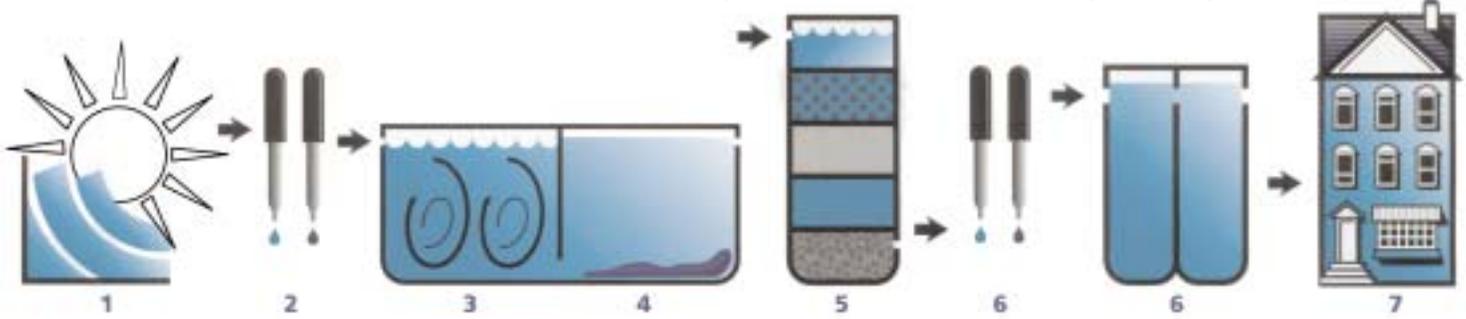


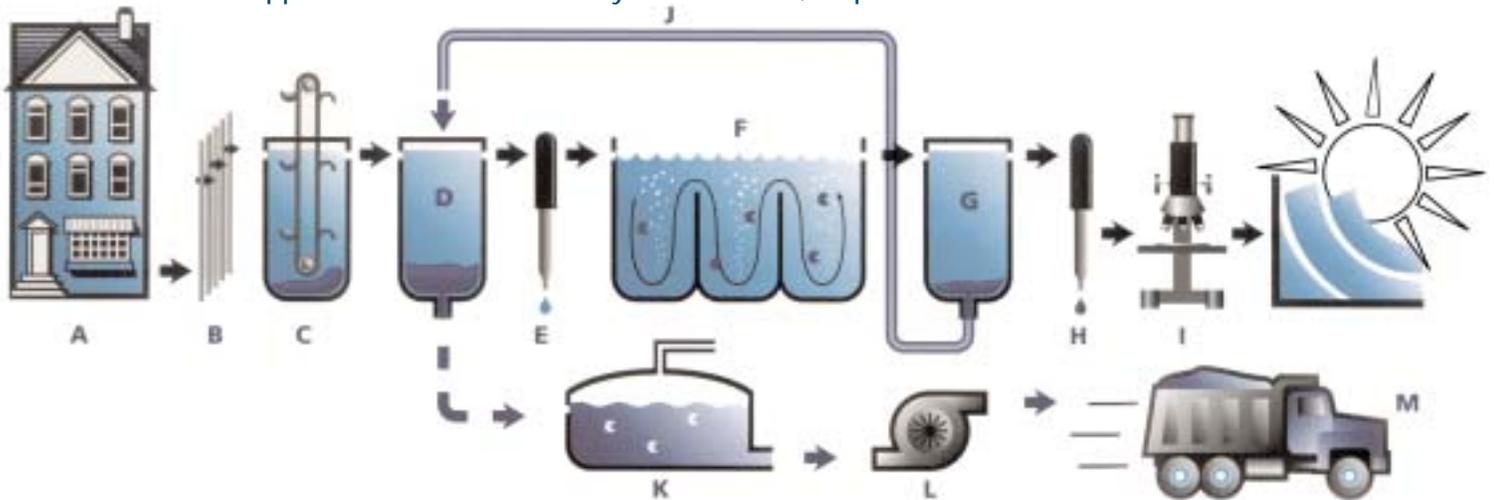
Did you ever stop to wonder...

What happens to untreated water before it reaches your home, so it's safe for you and your family to drink?



1. The water intake pipe extends into the lake, river or well supplying water to the facility. In large lakes, these pipes may extend hundreds of feet from the facility.
2. Chlorine is added to the incoming water to kill micro-organisms. Alum and lime may also be added. Alum concentrates suspended particles such as silt to aid their removal. Lime changes the pH level where required. The Chemicals are mechanically mixed into the water before moving on to the flocculating basin.
3. The flocculating basin stirs the water to concentrate suspended particles. The clumps of particulate which form are known as "floc".
4. Heavy flocs drop out of the water in the settling tank and collect along the bottom. The cleanest water is left at the surface to be drawn off through spillways which lead to filtering basins.
5. The water is already quite clear by the time it reaches the stacked layers of fine sand, activated carbon, gravel and rocks which form the rapid sand filters. The layer of sand removes fine bits of floc, algae and silt. The layer of activated carbon removes taste and odour producing chemicals from the water.
6. The purified water goes into holding basins prior to distribution. Safe levels of chlorine are added to check the growth of algae and micro-organisms.
7. The treated water is tested regularly to ensure quality. Large holding tanks store the water until it is needed in peoples' homes.

What happens to the water after you've used it, to protect our environment?



- A. Waste enters the treatment facility through the sewer system.
- B. Metal bars collect large debris such as rags, wood, plastics, etc.
- C. The wastewater flows through a channel, allowing dense, inorganic material to settle on the bottom. Scrapers and hoppers remove the collected grit.
- D. The wastewater flows into large settling tanks which allow suspended solids and organic material to sink to the bottom. The raw sludge that settles to the bottom of these tanks is removed through hoppers and sent through the digestion process.
- E. Partially treated wastewater is drawn from the top of the settling tanks and chemicals are added to remove phosphorous.
- F. Large aeration tanks mix the partially treated wastewater with oxygen to support bacteria that devour organic waste.
- G. The cleanest wastewater is drawn from the top of the aeration tanks through spillways. By this point the water is already quite clear. Once again, suspended particles settle to the bottom and are removed by scrapers or hoppers.
- H. The cleanest water is drawn from the surface and disinfected with chlorine or ultra-violet light to kill bacteria.
- I. The treated water is tested to ensure it meets Provincial standards and is returned to the original water source.
- J. Sludge from the aeration and final settling tanks is drawn from the bottom of the tanks and pumped to the primary settling tank. This sludge has a high water content and it also contains oxygen and bacteria that improve the efficiency of the treatment process.
- K. Sludge removed throughout the process is pumped to digesters where anaerobic bacteria consume organic waste. This process produces gases which are used to fuel plant boilers and heat facilities.
- L. Vacuum filters or centrifuge systems remove water from the processed sludge to thicken it. The water removed in the process is pumped to the primary settling tank to reenter the treatment process.
- M. The concentrated sludge, or bio-solid waste, is taken away for incineration or conversion into fertilizer.