

### 3.1 Water Softener Discharges

Water softening or other water conditioning equipment discharges are often directed to the OWTS through the household plumbing. In the majority of these cases, no problems are indicated with the OWTS. There have been some reports of issues, however, related to the discharge of water softener waste brine to septic tanks and specific soil types. Waste brine from household water softener units may have an adverse effect on the operation of a septic tank when the water treatment system is not operating properly and may cause a shortening of the life of an absorption facility, particularly when the system is installed in a structured clay type soil. Therefore, when possible, brine backwash waste from household water softening equipment should be discharged to a separate soil absorption facility such as a trench or shallow pit. Discharging brine backwash waste from household water softening equipment directly into the groundwater or on the surface of the ground is unacceptable. Care must also be taken not to dispose of concentrated backwash discharges containing dissolved sodium and chloride in areas or ways that can impact water supply wells. Separation distances required for conventional absorption facilities shall also be met for the backwash waste absorption facility. When softener discharges must be to the septic tank, the water treatment system should be maintained on a regular basis to ensure that the system is functioning properly. A water softener should be set to reflect the actual hardness, manganese or iron level(s) in the dwelling's water supply. An "as-needed" regeneration softener is recommended over an automatic timer-operated softener to minimize the number of regeneration brine discharges.

### 3.2 Low Flow Fixtures

Prior to 1980 toilets routinely used five (5) gallons per flush (gpf) and faucets and showerheads allowed three (3) to five (5) gallons per minute (gpm). This resulted in residential OWTS designs being based upon a daily design flow of 150 gallons per day per bedroom (gpdpb). This assumed two (2) people per bedroom [75 gallons per day per person (gpdpp)].

In 1980, the New York State Environmental Conservation Law (ECL) required that all sink faucets, lavatory faucets, showerheads, urinals, and toilets manufactured after January 1, 1980 comply with specific water saving performance standards. As a result, toilets manufactured between 1980 and 1991 were required to use no more than 3.5 gpf and faucets and showerheads limited flow to three (3) gpm. OWTSs serving dwellings constructed with 1980-1991 reduced flow-plumbing fixtures were designed based upon a daily design flow of 130 gpdpb (i.e., 65 gpdpp).

In 1992, the USEPA's "Energy Policy Act" required that the manufacture and sale of new water saving fixtures be implemented by 1994. At the time, available data predicted an approximate 15% decrease in water use with the installation of these water saving fixtures. This water saving prediction was applied to develop a daily design flow for OWTSs of 110gpdpb (55 gpdpp). EPA's current water use data confirm this is appropriate for most residences and other states use a similar range of daily design flow rates of 90-120gpdpb. Therefore, for new construction, residential OWTS designs are based upon a design flow of 110 gpdpb.

In 2006, USEPA launched the "Water Sense" program. This USEPA-sponsored partnership program promotes water efficiency and enhancing the market for water efficient products, programs and practices. Products such as shower heads, faucets, clothes washers and toilets (low flow and dual-flush) carrying the Water Sense label are certified to perform well and use less water include faucets: 1.5 gpm, showerheads: 2.0 gpm, toilets: 1.28 gpf, and clothes washers: at least 50% less water per load. For more information and a list of Water Sense products see: <http://www.epa.gov/WaterSense/>

Use of low flow fixtures can help reduce wastewater discharge volumes to the system; however, the biological load to the system will be about the same. Therefore, septic tank size and other certain