

Aquafacts No.12

Water softeners linked to septic tank sewage disposal systems

In the mid 1970's, the various regulatory agencies were requesting the enactment of regulations to prohibit the discharge of water softener recharge wastes to private sewage disposal systems due to several assumed adverse effects. The most frequently mentioned were as follows:

1. Is the salt-brine discharge from water softener regeneration toxic to the bacteria in the treatment system?
2. Does the flow rate and volume of backwash and regeneration water discharged from a water softener have an effect on the settling and floatation process causing carry-over of solids into the drain field?
3. Does water softener regeneration discharge reduce the percolation of water through the soil in seepage fields by causing swelling of soil particles?

The British Water Research Council (WRC) supported studies conducted by scientists at the University of Wisconsin & Madison, small scale waste management project and the US National Sanitation Foundation, to provide documented answers to these questions. The outcome was as follows:

1. The tests confirmed that water softener waste effluents actually caused no operational problems in the typical anaerobic or the newer aerobic home treatment plants.
2. The volume of wastes from properly installed and maintained water softeners are added to the septic tank slowly and are not of sufficient volume to cause any deleterious hydraulic load problems in septic tank systems. In fact they are lower in volume and rate of addition than wastes from automatic washers.
3. Finally, it was determined that water softener regeneration wastes not only did not interfere with septic tank system drain field soil percolation but actually could, under some circumstances, improve soil percolation particularly in fine-textured soils.

The important and beneficial difference is that septic tank effluents containing water softener effluents contain significant amounts of calcium and magnesium which counteract the effect of sodium and help maintain and sustain soil permeability.

The studies concluded that it is better to discharge water softener wastes to septic tank systems than separate dry wells or ditches. The only disadvantage being that some additional water must pass through the system.

The above information is endorsed by British Water and the United Kingdom Water Treatment Association.

