



**COUNTY OF SANTA CRUZ ENVIRONMENTAL HEALTH SERVICES**

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## The Harmful Effects of Water Softener Discharge on Your Septic System

Maintaining the proper functioning of your septic system is critical to ensure full treatment of your wastewater and prevent groundwater contamination. Water softeners, while tempting for residents with “hard” water, produce a salt-heavy discharge (brine) that can have adverse effects on the septic treatment process, local vegetation, and the water supply if improperly disposed of.

### How do water softening systems work?

“Hard” water is the result of a high concentration of dissolved minerals, primarily calcium and magnesium, which interfere with soap’s ability to clean and cause other undesirable effects. Conventional water softeners work by exchanging the mineral ions with sodium or potassium ions, which do not present these challenges for water use.<sup>1</sup> Brine must then be washed through the device to recharge the beads which contain the sodium ions, and it is this brine which is discharged by the water softening system.

### How do water softeners affect septic systems?

Discharging water softener brine through your septic system can lead to:

- Damage to beneficial bacteria in your septic tank, decreasing wastewater treatment quality
- Reduced tank capacity from brine inflow<sup>2</sup>, leading to more frequent pumping
- Clogged leach field due to sludge buildup
- Increased system hydraulic load leading to surfacing effluent (aka septic system failure)

### What can I do?

**Best solution:** No water softener

- No brine is produced, preventing the need for treatment or disposal
- Cleaning products or natural remedies can be used to remove hard water deposits

### If I already have a water softener or plan on having one installed, what type should I use?

- “Exchange tank” water softeners are connected to a separate tank which stores brine and is replaced on a regular basis
- This is preferable to using a system which requires that the brine be discharged by the property owner

**If I have water softener brine I need to discharge, what should I do?**

**Best solution:** Drywell/Subsurface system (separate from your septic system)

- Allows the brine to drain through the soil in a controlled manner
- Prevents harm to people, animals, and plants from exposure

**Highly discouraged:** Septic system discharge

- Many septic system manufacturers expressly prohibit discharge from a soft water system to enter the septic system's tank, and failure to comply will void any warranties offered by these companies, in addition to the significant repair costs you might incur from a damaged or failing septic system

**Prohibited:** Ground discharge

- This practice presents a serious risk of groundwater pollution, damage to native vegetation, and other environmental harm that violates the Santa Cruz County Code (Sections 7.38, 7.79)

**\*\*If your property is connected to a sewer system, you must discharge water softener waste through your sewer connection\*\***

References:

1. Office of Water Resources, Rhode Island Department of Environmental Management. (2012). Best Management Practices for the Discharge of Residential Water Softener Backwash Brine in Unsewered Areas. Retrieved from <http://www.dem.ri.gov/programs/benviron/water/permits/privwell/pdfs/backwash.pdf>
2. Environmental Health Section, State of Connecticut Department of Public Health. (2009). Hardwater-Softeners Facts and Issues. *Private Drinking Water in Connecticut*, 29. Retrieved from [http://www.ct.gov/dph/lib/dph/environmental\\_health/pdf/Hardwater-Softeners\\_Facts\\_and\\_Issues.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/pdf/Hardwater-Softeners_Facts_and_Issues.pdf)

Resources:

Santa Cruz County Code: <http://www.codepublishing.com/ca/santacruzcounty/>  
Section 7.38: Sewage Disposal  
Section 7.79: Runoff and Pollution Control

County of Santa Cruz Environmental Health Services: <http://www.sceeh.com>