

PRIVATE DRINKING WATER IN CONNECTICUT

Publication Date: May 2009

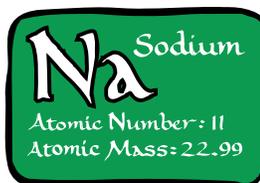
Publication No. 22: Sodium Chloride in Private Drinking Water Wells

The U.S. Environmental Protection Agency (EPA) does not regulate private wells. Private well owners are responsible for the quality of their drinking water. Homeowners with private wells are generally not required to test their drinking water. However, they can use the public drinking water standards as guidelines to ensure drinking water quality. Refer to Publication # 23 *Private Drinking Water Standards* for more information.



The Secondary Maximum Contaminant Level (SMCL) for chloride is 250 milligrams per liter (mg/l) as established by the EPA. There is no standard set for sodium in water. However, EPA has recommended that sodium levels in water not exceed 20 mg/l for individuals on “no salt diets.” Connecticut’s current “notification level” is 28 mg/l for individuals on low sodium diets and receiving water from a community water system. Individuals should notify their physician to assure that the ingested sodium in water has been considered.

Introduction



Sodium and chloride occur naturally in groundwater. However, sources such as road salt storage and application, industrial wastes, sewage, fertilizers, water softener discharge, and proximity to saltwater are usually the cause of elevated levels in drinking water supplies. This can be a concern for people on low-sodium diets.

Elevated levels of sodium and chloride can also interfere with taste, the watering of certain plants, and increase the corrosivity of water, which in turn can affect the household plumbing. Identifying and eliminating the source of contamination is the first step. Installing a new well or purchasing bottled water may be appropriate solutions. Home treatment options include reverse osmosis and distillation.

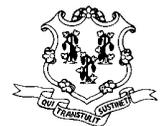
Potential Health Effects

Sodium in our diets results mainly from eating table salt found within many food products. Sodium in drinking water normally presents no health risks, as about 99 percent of the daily salt intake is from food and only about one percent from water. However, elevated sodium in well water may be considered a health concern for those on a salt-restricted diet. Individuals on a low sodium diet due to a high blood pressure or other medical problems are often restricted to water containing less than 20 milligrams per liter of sodium. Consult your physician if your drinking water exceeds such a level.

All ion exchange treatment systems using sodium chloride water softeners will increase the amount of sodium in water. If this type of treatment system is installed in the home, arrange to test the treated tap



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water for sodium levels if people in the household are on low salt diets. Some of these units use potassium chloride rather than sodium chloride. It is also important to monitor potassium levels in the treated water. Consult your physician.

Indications of Sodium Chloride in Drinking Water

High chloride levels cause corrosion and shorten the life of pipes, pumps, hot water heaters, and plumbing fixtures. Chloride concentrations in excess of about 250 milligrams per liter usually produce a noticeable taste in drinking water. An increase in chloride content in well water may indicate possible pollution from a sewage source, particularly if the normal chloride content in surrounding wells is known to be low. In this case, also have your water tested for bacteria. In addition, you may also want to conduct a detergent test.



Testing for Sodium Chloride in Private Drinking Water Wells

To determine if sodium or chloride is present, arrange to test your drinking water at a state certified laboratory. Follow the laboratory's instructions carefully to avoid contamination and to obtain a good sample. Home test kits may not provide accurate results. Refer to Publication # 24 *Residential Well Water Testing* for more information.

Corrective Action



If chloride is present in well water at concentrations above the SMCL, arrange to test the water periodically to determine if any upward trend exists. If concentrations are clearly increasing with time, an effort should be made to define the source of contamination and take steps to eliminate the source. If you cannot locate and remove the contamination source, consider using bottled water for infants in the household. A new well may be the best solution over the long term.

Treatment methods for sodium and chloride include reverse osmosis and distillation. If sodium levels in your well water are moderately high (over 100 milligrams per liter) small treatment units are available that will produce three to ten gallons of water per day (enough for the usual drinking and cooking needs).

For more information on these treatment options, please see Publications:

#7 Distillation Treatment of Drinking water Systems

#21 Reverse Osmosis Treatment of Private Drinking Water Systems

When choosing a treatment method, consider both the initial cost and the operating expenses. Operating expenses include the energy needed to operate the system, additional water that may be needed for flushing the system, consumable supplies and filters, repairs, and general maintenance.

Regardless of the quality of the equipment purchased, it will not operate well unless maintained in accordance with the manufacturer's recommendation. Keep a logbook to record equipment maintenance and repairs. Equipment maintenance may include periodic cleaning and replacement of some components. Also consider any special installation requirements that may add to the equipment costs. For more information, refer to Publication #19 *Questions to Ask When Purchasing Water Treatment Equipment*.

Bottled water is an alternative. Read the label to determine the sodium content in the bottled water. See Publication #5 *Frequently Asked Questions about Bottled Water* for more information.



Protection of Private Drinking Water Supplies

You can protect your private well by paying careful attention to what you do in and around your home as well as your neighbor's activities near your well. Regular testing and adopting practices to prevent contamination can help ensure that your well supplies you and your family with good quality drinking water. For more information on well protection, see Publication #23 *Private Drinking Water Standards*.

For more information please click on the following links:

EPA Office of Groundwater and Drinking Water

<http://www.epa.gov/ogwdw/>

EPA New England

<http://www.epa.gov/region01/>

Adapted from *Healthy Drinking Waters for Rhode Islanders*, University of Rhode Island Cooperative Extension, April 2003.