

Safe Well Water RI

Trusted, expert information

Tip Sheet 25



“Tip sheets helped us learn about our well water.”

Get Tip Sheets at www.rivelltesting.org:

- 14 Tip Sheets about harmful substances
- 10 Tip Sheets about treatment choices
- 3 Tip Sheets about other topics of concern

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Look for the NSF seal on water treatment devices.

NSF International is a non-profit group that sets performance standards for water treatment devices. Learn about NSF here: www.nsf.org

Ultraviolet (UV) Radiation Water Treatment Systems

Test and talk before you treat!

Use a State-certified testing lab. Find a list of certified labs here: www.health.ri.gov/find/labs/privatewelltesting.

Call and talk with a State water quality expert.

We can review your water test results with you and suggest ways to treat problems.

- » University of Rhode Island Water Quality Program
Direct line to water expert: 401-874-5398
- » Rhode Island Department of Health
Ask for the Private Well Program: 401-222-5960

If you decide to buy a treatment system, work with a water treatment professional. They can help design a system to fit your needs. Before you buy a system, get a least 3 price quotes. Learn the questions to ask. See Tip Sheet 16.

CAUTION: Be aware that sometimes more than one system is needed to treat water. Consider whether using an alternative water supply such as putting in a new well, using public water if available, or using bottled water may be a better long-run solution.

When would I need an ultraviolet (UV) treatment system?

Commonly used to treat a variety of disease-causing ‘germs’, including:

- ▶ Bacteria
- ▶ Viruses
- ▶ Giardia
- ▶ Cryptosporidium
- ▶ Other disease-causing germs

Usually combined with other treatment methods. Treatment systems listed below are often used first, to help remove particles before UV treatment. Other tip sheets explain these systems.

- ▶ Microfilters or carbon filters — Tip Sheets 22 or 17
- ▶ Ion exchange units — Tip Sheet 21
- ▶ Reverse osmosis systems — Tip Sheet 24



How ultraviolet (UV) systems work

A system may be either:

- Whole-house (treats all household water), or
- Point-of-use (treats water from a single tap)

The major part of an ultraviolet (UV) water treatment system is a special lamp that gives off rays that disable or kill germs. There are **no** harmful effects for humans when a UV water treatment system is properly installed and used. Volume of germs harmed or killed depends on the intensity of the UV light, contact time of water with the light, and amount of solids in the water.

Issues to think about before buying an ultraviolet treatment system

Advantages: A UV system adds nothing to the water, produces no tastes or odors, and usually needs only a few seconds to do the job.

Disadvantages: UV treatment may hide serious problems with your well, such as animals or insects in the well.

Ask before buying a system:

- What is required to maintain it?
- Special requirements that may add to the equipment cost, such as changes to household plumbing?

If I have an ultraviolet treatment system, how do I maintain it?

All water treatment systems must be maintained according to the instructions that come with the unit.

- **Keep all paperwork and instructions** that come with the unit.
- **Keep records and receipts** of equipment maintenance and repairs.
- **Have your water checked** for coliform bacteria at a State-certified lab every month for the first 6 months of system use.
- **Be aware of these requirements** to maintain a UV system:
 - ▶ Housing for the light must be kept clean.
 - ▶ System should be shut down only if treatment is not needed for several days. When restarted, lamp requires a few minutes to warm-up.
 - ▶ After a shutdown, entire plumbing system should be treated (disinfected or ‘shocked’) with chlorine before depending on the UV system.
 - ▶ UV lamps must be cleaned and replaced according to unit instructions.

What else do I need to know about an ultraviolet treatment system?

- Make sure it’s installed and operated according to instructions.
- Make sure it works. After installing the system, have your water tested at a State-certified lab.
- Be aware that the following affect how well the system does its job:
 - ▶ Contact times and flow rate
 - ▶ Depth of water being treated
 - ▶ Cleanliness of the lamp and casing
 - ▶ Kinds and amounts of germs, and how much they ‘clump’ together
 - ▶ Water color, and kinds and amounts of other particles in it
 - ▶ How well electric current travels through the water