Safe Well Water RI

Trusted, expert information

Tip Sheet 2

Arsenic in Drinking Water Wells

"Tip sheets helped us learn about our well water."

Get Tip Sheets at www.riwelltesting.org:

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

Well water is groundwater, meaning that it comes from the water stored in the earth and rocks below ground. Even though groundwater is *under* the surface, substances *on* the surface, such as gas from a lawnmower or animal waste, can seep down and pollute it. Some natural substances stored in rocks and soil can also affect the smell, taste, color, and safety of well water.

Arsenic: A toxic metal not common in Rhode Island groundwater, but sometimes found in private well water

Arsenic is a poison. In some states it occurs naturally in the soil and bedrock, and seeps into groundwater. In Rhode Island, arsenic is **not** common in groundwater. However, past use of arsenic to kill pests in fruit orchards, to preserve wood, and for use in certain industries (past and present), can lead to pollution of well water.

What health problems can arsenic cause?

Increased chances of cancer and other diseases: Arsenic in drinking water may cause skin cancer and increase chances of these other cancers—bladder, lung, kidney, liver, colon, and prostate. Arsenic may also increase chances of heart and lung diseases and more.

Signs of arsenic poisoning can include: Thick discolored skin, stomach pain, nausea, vomiting, diarrhea, numbness in hands and feet, partial paralysis, and blindness.

Poisoned food or drinking water are the major causes of arsenic poisoning and the illnesses that result.

How does arsenic get into well water?

In Rhode Island, arsenic is not likely to come from the rocks or soil. More likely, your property and your well are located near a site where arsenic was or is used for industry. See the locations of greatest concern in the next section. Arsenic could pollute the soil and then soak into the groundwater below.

How will I know if I have arsenic in my well water?

You won't know unless you have your water tested. Arsenic has no smell or taste. And, your water will look the same as usual.

Be sure to test your water if you live close to:

- An existing or former fruit orchard
- A factory that makes or has made paints or dyes, soaps, metals, drugs, pesticides, or chemicals
- A waste-burning treatment plant

Soil near these locations may be polluted with arsenic that has soaked into the groundwater and spread. We advise testing your soil along with your water.

Use a State-certified lab to test your water. Find a list here: www.health.ri.gov/find/labs/privatewelltesting.

Compare the numbers and letters on your lab test results with the standards (limits) set by the United States Environmental Protection Agency (EPA).

The EPA standard for arsenic is a Maximum Contaminant Level (MCL). MCL is a water quality standard for substances that can harm health.

EPA limit (MCL) for arsenic:
10 µg/L (micrograms per liter)
10 ppb (parts per billion)

What can I do about arsenic in my well water?

First—Call us for help.

- We can help you consider treatment choices that work best for the amount of arsenic in your water.
- We may suggest a whole-house system so water used for all purposes is treated.
- We may also suggest that you talk with your doctor about possible health issues.

Three possible solutions if your well water tests high for arsenic:

1. Use another source of water for drinking and cooking, like bottled water.
2. Connect to a public water supply if available.
3. Use a home treatment method. Methods that remove arsenic include:
   - Distillation—Tip Sheet 20
   - Ion exchange—Tip Sheet 21
   - Reverse osmosis—Tip Sheet 24
   - Activated alumina—Call us

Important: Before you install a treatment system, call us for expert advice. *Before* you buy a system, ask how it will be installed and whether this costs extra. Get at least 3 price quotes. Learn the questions to ask. See Tip Sheet 16. *After* you buy a system, be sure to:

1. Keep all the paperwork and directions.
2. Learn what you must do to maintain the system and do it.

Learn more

Get Tip Sheets about choosing and buying water treatment systems at www.riwelltesting.org.

Call us! University of Rhode Island Water Quality Program (401) 874-5398
Rhode Island Department of Health (401) 222-5960

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