

FACT SHEET

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Connecticut Department of Public Health
Environmental Health Section
Environmental & Occupational Health
Assessment Program
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WHAT YOU NEED TO KNOW ABOUT Uranium in Private Well Water

This fact sheet has been prepared by the Connecticut Department of Public Health, Environmental Health Section. It describes what a well owner should know about the health implications of uranium in drinking water.

What is “Natural” Uranium ?

Uranium is an element that has been in rocks since the earth was formed. Not all rocks contain uranium, but there are some places in the world where uranium is in the bedrock. Other related elements that may be found in association with uranium include radium (Ra-226 and 228) and radon (Rn-222). These other elements are part of a sequence formed through a transformation (decay) process that begins with the most prevalent form of “natural” (unprocessed) uranium (U-238). U-238 is not radioactive enough to be useful in nuclear power plants or weapons. In fact, “Enriched” uranium used in power plants, needs to have most of the U-238 taken out.

Is There Uranium in My Well Water?

Uranium occurs naturally in some Connecticut bedrock ground water, therefore deep bedrock wells are susceptible to contamination. Shallow wells that do not reach bedrock are less susceptible to uranium contamination. Wells with high levels of uranium have been found sporadically all around Connecticut. Uranium gets into well water from bedrock that contains uranium. The amount of uranium in bedrock and well water will vary greatly from place to place and without testing, it is not possible to determine if the water can be considered safe for drinking.



How Can Uranium Affect My Health?

The chemical properties of uranium in drinking water are of greater concern than its radioactivity. Most ingested uranium is eliminated from the body. However, a small amount is absorbed and carried through the bloodstream. Studies show that drinking water with elevated levels of uranium can affect the kidneys over time. Bathing and showering with water that contains uranium is not a health concern.

How Can I Make Sure That My Well Water Safe For Drinking ?

Uranium testing should be your first step. Based on the results, your decision will be to either install a treatment system, or do some additional testing for related contaminants. To find out if you have uranium in your drinking water, the Connecticut Department of Public Health recommends that you contact a laboratory and ask for a uranium test using “atomic absorption” or “ICP-MS”. These tests are quicker and cheaper than other alternatives. To obtain a list of State-certified laboratories, go to the DPH home page (<http://www.ct.gov/dph>), click on “Environmental Health”, and then click on “Environmental Laboratories”. Search the document for labs testing “radiochemicals” in drinking water. A uranium test costs about \$50.

If you do have a uranium at a concentration greater than the EPA standard of 30 micrograms per liter (ug/l), CT DPH recommends that you install a “point of use” reverse osmosis system in your home. See the following section for more information on treatment, but this type of system will remove radiological contaminants including uranium and radium.

Testing for radium is an option you should consider only after test results indicate that you do not have a uranium problem. If you decide that you would like to know how much radium is in your well water, then tell the laboratory that you want a test for “combined radium” (Ra-226 plus Ra-228). To obtain a list of State-certified laboratories, go to the DPH home page (<http://www.ct.gov/dph>), click on “Environmental Health”, and then click on “Environmental Laboratories”. Search the document for labs testing “radiochemicals” in drinking water. A radium test costs about \$200. You do not need a radium test if you have already decided to install a reverse osmosis treatment system due to the presence of uranium. This is because the system will remove both uranium and radium.

Why Should I Buy a “Point of Use” Reverse Osmosis System ?

“Point of use” reverse osmosis (RO) treatment will remove many different contaminants from your drinking water, including uranium and radium. The World Health Organization reports that reverse osmosis treatment will remove 90-99 percent of uranium. Point of use RO systems are available from a variety of different sources, and CT DPH recommends that you purchase a unit which is “NSF certified for radium 226/228 reduction”. (NSF does not offer a uranium certification.) For more information, go to the NSF web site (<http://www.nsf.org/certified/dwtu/>). A system typically costs around \$300 and you can save money by doing the installation yourself .

A point of use RO system will typically produce about 7 to 14 gallons a day of drinkable water . This amount of production should meet the cooking and drinking needs of a typical household. To fix a uranium or radium problem it is necessary only to treat the water you drink. Whole house treatment units (ion exchange) are available, but are not necessary because uranium gets into the body through ingestion. (It is safe to take a bath because uranium or radium are not absorbed across your skin. Also, uranium does not “evaporate” from the water into the air you breathe.)

Whom Can I Contact For More Information?

Health Questions	Treatment Questions	Certified Testing Labs
CT Dept. of Public Health Environmental Health Section Environmental & Occupational Health Assessment Program (860) 509-7740 PO Box 340308, MS # 11CHA Hartford, CT 06134-0308 http://www.ct.gov/dph	For technical advice on well water construction, maintenance, quality or treatment contact your Local Health Department or the Department of Public Health, Private Well Program at 860-509-7296 .	First go to the DPH home page (http://www.ct.gov/dph); click on “Environmental Health”, click on “Environmental Laboratories”, and then scroll down to “List of Laboratories”.