Study suggests Lebanon residents test well water

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LEBANON — A recent study of groundwater conducted by researchers at Eastern Connecticut State University, in conjunction with the state Department of Energy and Environmental Protection, Connecticut Geological Survey, the University of Connecticut and Department of Public Health, should remind residents to have their well water tested for arsenic.

During summer 2014, ECSU assistant professor of Geographic Information Systems Meredith Metcalf conducted a groundwater study to analyze the distribution of arsenic through Lebanon and determine potential sources.

The study was prompted by the detection of arsenic in Lebanon Elementary School water, which happened in October 2013.

The two wells were treated early in 2014 by Millennium Water LLC of Thompson and a filter was replaced. Superintendent Janet Tyler was not available to comment if there are plans to drill new wells.

According to a publication from the state Department of Public Health dated August 2014, arsenic is a tasteless and odorless metal found typically in the bedrock layer of the earth.

The publication states arsenic can seep into the water supply if a private well has been drilled into bedrock containing the arsenic.

Bedrock is at the bottom layer of the alluvial fill of sand and gravel left behind by the glaciers.

In Lebanon, several wells tested for arsenic exceeded federal Environmental Protection Agency drinking water standards of 0.1 milligrams per liter, ranging between .003 and .16 milligrams per liter.

Metcalf sampled 100 dug and bedrock wells to test for arsenic.

The highest concentrations were found at the east end of Lebanon.

While two of the 27 dug wells, wells dug by shovel or machine, tested positive for arsenic, the arsenic concentration did not exceed EPA drinking water standards.

However, bedrock wells, wells that drill into the rock for a water supply, tested for the highest concentrations of arsenic.

Of the 74 bedrock wells tested, 13 wells tested positive for arsenic and seven tested at higher than EPA standards.

The study is not meant to raise any alarm, but to better understand how groundwater moves under soil.

However, the results should encourage residents to test their water for arsenic, which is known to cause bladder, skin and lung cancer in humans if consumed over years.

The only way to determine if wells have arsenic is to have them tested, said the DPH publication.

It is possible for levels of arsenic to fluctuate, so it is recommended that residents test wells every five years. Residents with a water treatment system should have wells tested every year to ensure the treatment system is working.
If the water source is believed to be contaminated, residents should not drink tap water and should opt for bottled water, and have wells tested by a credible and knowledgeable testing firm.

Typically, water tests do not test for arsenic and an arsenic test must be requested.

If arsenic is detected, the DPH publication recommends using a point of use treatment system, such as a distiller, filter or reverse osmosis device, to remove metals and other toxins from tap water.

If levels of arsenic are found greater than 0.1 milligram per liter, a whole house treatment is recommended to treat water used for consumption, as well as water used for bathing.

A list of state recommended laboratories that test well water can be found on the state Department of Public Health’s web site, www.ct.gov/dph.

Analyzing arsenic is not over for Metcalf as the next step will be to apply for a national grant to look at the distribution of arsenic more closely.

“We (ECSU, UConn, DEEP, and USGS) are using the results from this analysis to apply for a national grant to look into this in more detail in hopes of identifying the source that impacts many residents across Connecticut,” wrote Metcalf in an e-mail.