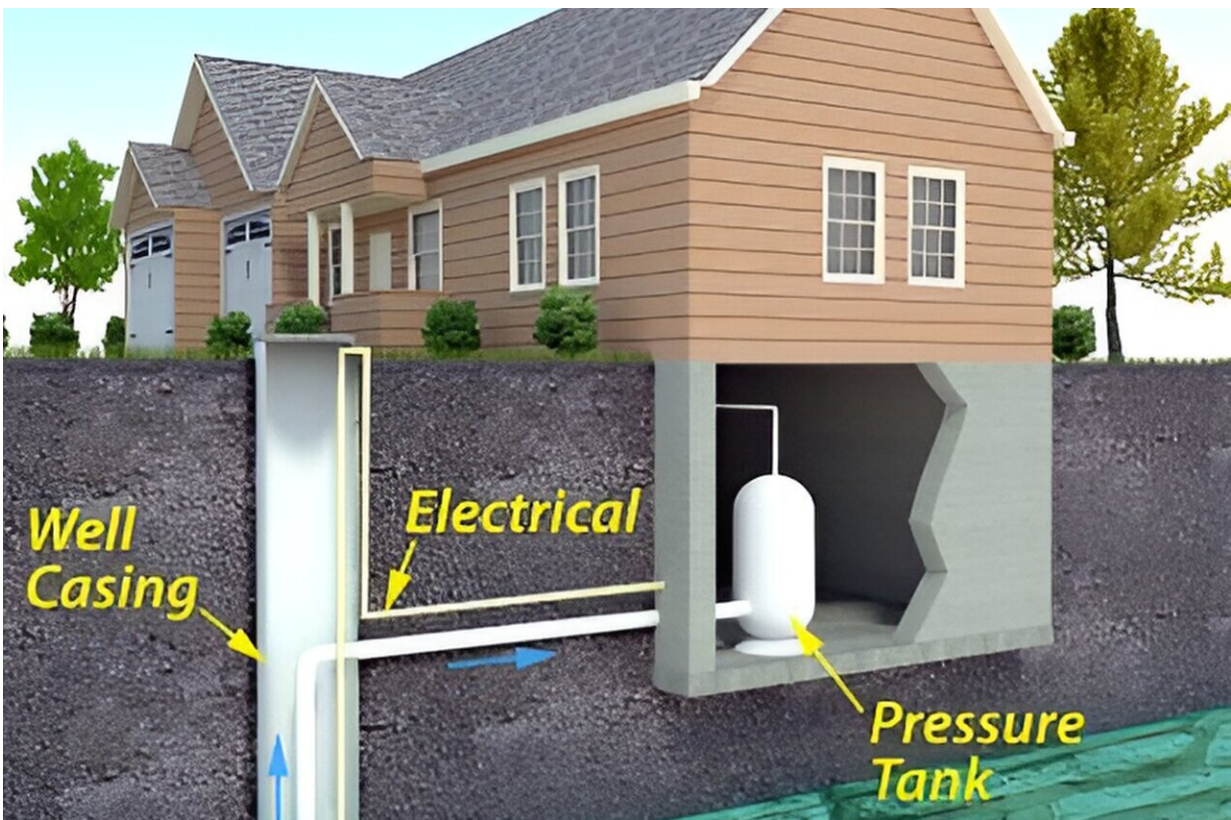


Researchers spot potential hazard with private well water treatment

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Credit: EPA

Systems designed to treat arsenic in private well water may be malfunctioning and endangering the health of people who count on them to keep their water safe, according to Rutgers researchers.

Megan Rockafellow-Baldoni, an assistant professor of environmental and [occupational health](#) and justice at the Rutgers School of Public Health, together with co-authors including Rutgers alum Steven Spayd, a retired research scientist formerly with the New Jersey Department of Environmental Protection, tested the water of 62 New Jersey homes with whole-house [arsenic](#)-removing water treatment systems. Their study was [published](#) in the journal *Water Environment Research*.

Spayd said, "these water treatment systems may be solving one exposure problem by removing dissolved arsenic from the water, but potentially creating a new exposure, the ingestion of arsenic treatment [media](#) with high concentrations of arsenic."

While arsenic is a naturally occurring element, it is a known human carcinogen and dangerous to human health. For this reason, when New Jersey homes with wells are sold, it is required they are tested for arsenic. If the element is found above safe levels for [drinking water](#), an arsenic treatment system can be installed.

In such treatment systems, water from the well flows through a specialized adsorptive filter. When the system functions as intended, the adsorptive media and the filtered arsenic are left behind in the treatment tank while [potable water](#) flows into the home.

However, Rockafellow-Baldoni and co-authors of the study found microparticles of arsenic treatment media in the drinking water at 71% of the tested homes. This media is intended to remain within the treatment tank and never enter a home's drinking water as it likely contains high concentrations of adsorbed arsenic.

Arsenic may not be the only contaminant of concern: When radium, another naturally occurring yet hazardous substance, is detected in well water, it is effectively removed with a water softener.

Through the course of their research, Rockafellow-Baldoni and Spayd detected microparticles of water softener resin in 84% of the homes with water softeners, suggesting that in some homes, microparticles with adsorbed radium might also be present.

They added that further research is needed to determine the reason for malfunction and determine the arsenic and radium concentrations in the escaping media.

Until the problem can be further studied and resolved, the researchers encourage well owners install a 5-micron post-[treatment](#) sediment filter to capture escaping media. Information about obtaining and properly installing the filter is available from the New Jersey Geological and Water Survey.

More information: Megan Rockafellow-Baldoni et al, Microparticles of arsenic water treatment media and water softener resin observed in treated water at private wells, *Water Environment Research* (2024). [DOI: 10.1002/wer.11067](#)

Provided by Rutgers University

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