

IMPACT

Agricultural and Natural Resources
Family and Consumer Sciences

Virginia Household Water Quality Program

One in five Virginians, or nearly 1.7 million people, rely on private water supplies such as wells, springs, and cisterns for their household water. In the U.S., municipal systems are regulated under the Safe Drinking Water Act, which requires routine water testing and treatment. However, people with private water supplies are responsible for all aspects of system management, including water testing, interpreting test results, and addressing problems.

Through the Virginia Household Water Quality Program, Virginia Cooperative Extension provides access to affordable and confidential water testing, interpretation of results, and education about system care and dealing with problems. Campus faculty members work with trained Extension agents across the state to offer water testing and education programs in about 40 Virginia counties per year.

Testing includes total coliform and *E. coli* bacteria, nitrate, lead, copper, arsenic, pH, hardness, sulfate, fluoride, iron, manganese, sodium, and total dissolved solids. In 2015, the cost for analysis is \$50 per sample kit. Participants receive their water sample analysis at a meeting where a local Extension agent explains the results and educates participants about maintaining their water systems and addressing any problems identified.

Between 2008 and 2014, VAHWQP well water testing clinics were held in nearly every county across Virginia, and 5,200 water supply systems that serve 11,930 people were analyzed. Since the program originated in 1990, more than 18,000 water samples have been analyzed.

An evaluation is conducted immediately after each clinic to find out what actions, if

any, participants plan to take. According to a phone survey with past clinic participants, 70 percent of respondents took at least one suggested action, and 64 percent took more than one action. Specifically,

- 38 percent sought additional water testing.
- 52 percent pumped out their septic tank.
- 34 percent performed maintenance on their well.
- 36 percent shock chlorinated their well.
- 34 percent purchased water treatment equipment or improved the function of existing equipment.

Groundwater models are used around the state to engage and educate the public about water supplies and the connections between surface and groundwater.



Water samples are analyzed for 14 parameters in labs in the departments of Biological Systems Engineering and Civil and Environmental Engineering at Virginia Tech.

The following personal stories were collected during a 2014 follow-up study focused in the northern Shenandoah Valley area.

"The program was very informative and an excellent value. The results confirmed my suspicion that there was a problem with water purity. A family member had experienced several bouts of gastrointestinal distress, but after identifying and correcting the water problem, there have been no more health issues. Thank you."

"I was very pleased with all the information I received. The testing was easy, and the results came back quickly. I have lived in my home for eight years and never had the water tested. I would recommend this program for anyone on well water. Thank you!"

*"We were not having any problems with our well water. I read about the water clinic at the [Virginia Cooperative Extension office] in Winchester. I had always been curious about the facility and had never had our water tested in 19 years, so we decided to attend. We were shocked to learn that we had *E. coli* in our water. Subsequently, we have installed a UV light system, and a recheck of the water shows no contamination. We are grateful for the services provided by the water clinic."*

For more information about the Virginia Household Water Quality Program and wells and springs in Virginia, please visit www.wellwater.vt.edu, email wellwater@vt.edu, or call 540-231-9058.

For more information, contact your local Extension office or visit us at www.ext.vt.edu.