A newsletter of the Virginia Household Water Quality Program and Virginia Master Well Owner Network

Well Informed

Volume 4 Issue 2 Winter 2013

Inside this Issue:

Happy New Year! Celebrating Program Successes

Happy New Year! It seems like a good time to reflect on the successes of the past year and look forward to all we have planned in 2014.

In 2013, the Virginia Household Water Quality Program (VAHWQP) conducted 21 drinking water clinics in reaching 2800 Virginians in 27 counties. A total of 1271 household water samples were analyzed for bacteria and 12 chemical constituents on the Virginia Tech campus. About 44% of all household water samples analyzed tested positive for total coliform bacteria, and 9% for E. Coli bacteria. Nearly 20% of samples exceed the recommended maximum level for lead in first draw samples. A phone survey conducted in 2013 of past clinic participants (n=500; RR=30%), indicated people are taking action to improve water quality after attending a clinic. Seventy percent of respondents took one action; 64% took more than one. Most commonly, people had their septic systems pumped (52%), sought additional testing (38%), shock chlorinated (36%), took steps to maintain their wells or installed treatment devices (34% each).

Our capacity to deliver programming through our trained Extension agents and volunteer network continues to grow! In 2013, three VAMWON (Virginia Master Well Owner Network) training workshops were attended by 46 people, increasing our capacity to an amazing 89 volunteers, 59 Extension Agents, and 24 agency collaborators representing 64 Virginia counties and 4 cities. VAMWON agents and volunteers make hundreds of contacts each year, spreading the word about groundwater protection, the importance of routine testing, proper well construction and care, and options for addressing water problems.

Thanks to our collaborating Extension agents and excellent laboratory staff here on campus [Kelly Peeler (lab manager) and Asa Spiller (lab assistant)], we are on track to offer more water testing, interpretation and education than ever before! Drinking water clinics are scheduled in 40 counties in 2014, and for the first time in a long time, will be held in many counties in the Coastal Plain of Virginia, including on the Eastern Shore (Figure 1). See page 4 for a full list. We will be announcing additional VAMWON trainings in the near future. Thanks for all your support and hard work—we hope that 2014 treats you "well"!

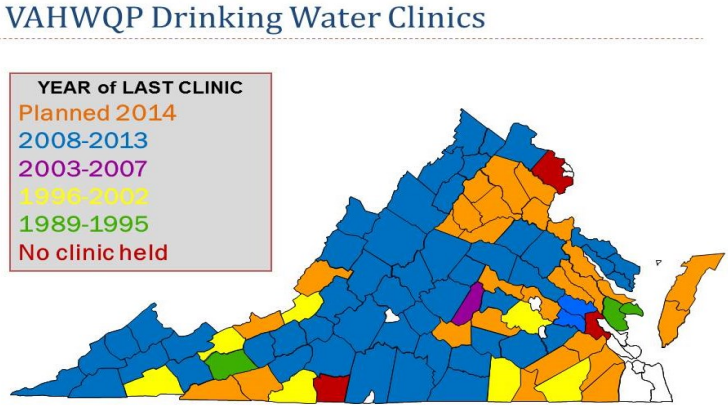

Figure 1. Drinking water clinics held 1989-2013 and planned for 2014

Biological Systems Engineering
Virginia Cooperative Extension
Virginia Tech • Virginia State University
Virginia Tech Invent the Future

Shock Chlorination 101

What is shock chlorination?
Shock chlorination is a process of circulating chlorinated water through a well and plumbing system to eliminate potentially harmful bacteria.

When should shock chlorination be used? Shock chlorination is an effective method of killing bacteria that may be present in a private water supply. At a minimum, test for coliform bacteria annually. Note that although shock chlorination, if done properly, will eliminate bacteria present in the system, steps must also be taken to understand the source of the bacterial contamination and the pathway that is allowing them to get into the supply. To remove possible sources of contamination, have septic systems pumped regularly, and keep livestock and pets away from the wellhead (generally 100' away if possible). In addition, make sure that your well is properly constructed, with an intact casing that is at least 12" above ground, a sealed, sanitary well cap, grout seal, and the ground around the well sloping away from the casing to shed water.

Caution!
If you have any reservations about shock chlorinating your water system, contact a licensed well driller to do it for you. If you do decide to do it yourself, read our entire shock chlorination publication for details. Keep in mind you will need to turn your circuit breaker on and off several times during the process. Concentrated chlorine solutions can be dangerous—mix carefully and according to directions, and always wear protective goggles and gloves. Plan ahead! The chlorine solution will need to be in your system for 12—24 hours, so have another source of water available. Be aware of the chlorination process' affect on water treatment devices—read manuals carefully or consult the manufacturer for advice.

What is the process?
Please refer to our shock chlorination publication for complete details. In short, the process of shock chlorination is as follows:

1. Clean and open the well cap.
2. Calculate, mix and pour the chlorine solution.
3. Circulate water throughout the well and home.
4. Turn off water, and let stand for 12—24 hours.
5. Flush the system, starting with outside faucets.
6. Retest! About 2 weeks after shock chlorination retest for total coliform bacteria at a local certified lab.

Visit our website for more resources; Contact Erin Ling with questions.

A professional well drilling contractor opening the well cap for shock chlorination.

Online Private Well Owner Learning Center Launched

The National Groundwater Association, in coordination with the U.S. EPA, has new resources available for private well users:

1) **Testing Your Well Water: What should I test for?** http://login.icohere.com/registration/register.cfm?reg=796&evt=Water-Testing1

2) **Testing Your Well Water: Getting a Test, Interpreting Results** http://login.icohere.com/registration/register.cfm?reg=912&evt=Mod2treat

3) **Treating Your Well Water: Contaminants That Present a Health Risk and Other Problems** http://login.icohere.com/registration/register.cfm?reg=866&evt=Mod3

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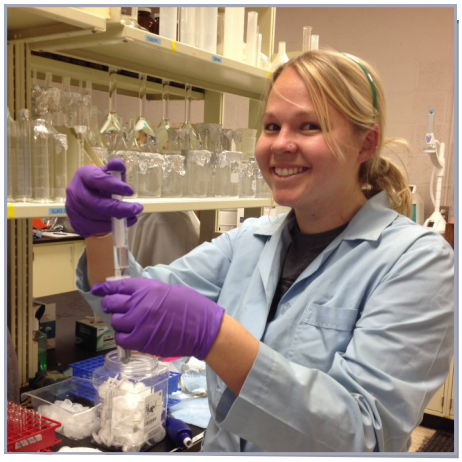
Virginia Tech Graduate Student Focuses on Lead in Private Water Systems

In 2012, the Virginia Household Water Quality Program began measuring lead concentrations in private drinking water systems as part of its drinking water clinics. To date, more than 2,000 homeowners across Virginia have submitted samples for lead analysis. When analyzing for metals commonly found in household plumbing, a *first-draw* and a *flushed* sample are collected. This allows us to compare the levels found in a sample with contact time of about 6-8 hours with the pipes (first draw sample) with a sample with very little contact time with plumbing materials (flushed sample). Preliminary results indicate that about one-fifth of first draw samples from participating households have lead concentrations above the EPA's lead health action level (≥ .015mg/L, or parts per million). Kelsey Pieper, a PhD candidate in the Biological Systems Engineering Department at Virginia Tech, is now conducting an in-depth field study that aims to identify system characteristics such as plumbing age and type of material (e.g., copper, brass, or plastic) that are associated with elevated lead levels in water from the faucet. Kelsey is also working to identify sources of lead release in private systems. She will be doing in-depth plumbing assessments in selected volunteer households to develop an understanding of lead concentrations in different portions of the plumbing networks. This study will help identify sources of potential lead within the systems and improve program recommendations for lead remediation.



About Kelsey (right): Kelsey Pieper is a doctoral student in the Department of Biological Systems Engineering at Virginia Tech. Her research, under Dr. Leigh-Anne Krometis, focuses on linking elevated lead concentrations in samples from private drinking water supplies with plumbing type and markers of corrosion. Kelsey is a College of Engineering Dean's Teaching Fellow. She graduated from Binghamton University with a BS in Mechanical Engineering in 2009 and received her MS in Civil and Environmental Engineering at Virginia Tech in 2011.

Welcome New Virginia Master Well Owner Network Members!

Extension Agents and Staff

Mike Broaddus, Caroline and King George
Kevin Camm, City of Lynchburg
Brittany Council, Greensville
Shelda Daniels, Prince Edward
Rebecca Davis, Culpeper
Crysti Hopkins, Louisa
Laura Maxey, King and Queen/King Wm
Guy Mussey, Stafford
Steve Pottorff, Carroll
Beth Sastre, Loudoun
Rebecca Sheffield, Culpeper
Glenn Slade, Surry and Sussex
Carl Stafford, Culpeper
Glenn Sturm, Gloucester and Essex
Paige Thacker, Prince William
Landre Toulson, Northumberland
Marcus Williams, Suffolk

To access a list of all VAMWON members, please visit here.

Well contractor Wayne Fenton demonstrates pressure tank function.

Agency Collaborators

Department of Conservation and Recreation

Becky Barlow, Augusta County

Virginia Department of Health (VDH)

Ronald Bryant, Fauquier County
Patricia Duttry, Three Rivers Dist.
Lance Gregory, Env. Health Srvcs
Sarah Hinderliter Office Drink. Water
Barrett Hoffman, Chesterfield County
Donald Jeanrenaud, Fauquier County
Marty Shannon, Fairfax County
Nicole Thurston, Chickahominy Dist.
Katherine Williamson, Warren County

Volunteers

Kirk Barley, Va Beach and Augusta Co
Leo Carling, Warren
Dan Daniels, Prince Edward
Mary Loose Deviney, Albemarle
Larry Gross, Spotsylvania
Peter Hauschner, Nelson
George Hearn, Franklin
Nora Lindberg, Va Beach and Augusta Co
Bob Pippin, Albemarle
Michael Winget-Hernandez, Louisa

Coordinator Erin Ling uses groundwater models.

Event	Details/Location		Contact
Virginia Master Well Owner Network Training Workshops	AGENT: Roanoke—March 13 VOL/AGENT: Painter—late summer VOLUNTEER: To be determined		Erin Ling 540-231-9058 Visit wellwater.bse.vt.edu to complete an application!
VAHWQP Drinking water clinics	Charles City Albemarle King George Stafford Prince William Greene Louisa Orange Culpeper Rappahannock Fauquier Suffolk Isle of Wight Sussex Surry Roanoke Allegheny Montgomery Giles Carroll	Grayson Middlesex Essex Northumberland Lancaster Appomattox Campbell Bedford Amherst Lynchburg Buckingham Prince Edward Accomack Northampton Amelia Goochland Greensville/Emporia King William King and Queen	For additional information about specific clinics, contact the appropriate Extension Agent listed here!

For more details, visit our events page: http://www.wellwater.bse.vt.edu/events.php.

If you are a person with a disability and desire any assistive devices, services or other accommodations to participate in this activity, please contact Erin Ling, Coordinator at (540-231-9058/TDD*) during business hours of 9 a.m. and 5 p.m. to discuss accommodations 5 days prior to the event.
*TDD number is (800) 828-1120.

Virginia Household Water Quality Program
Virginia Cooperative Extension

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Website: wellwater.bse.vt.edu

Virginia Master Well Owner Network
Education for Protection of Virginia Private Home Water Supplies

Our objective is to improve the water quality and health of Virginia families reliant on private water supplies.

Visit www.wellwater.bse.vt.edu

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