Resources to Support Water Well Owners on Both Private and Public Systems

Steve Wilson
Illinois State Water Survey
Jennifer Wilson
Illinois State Water Survey

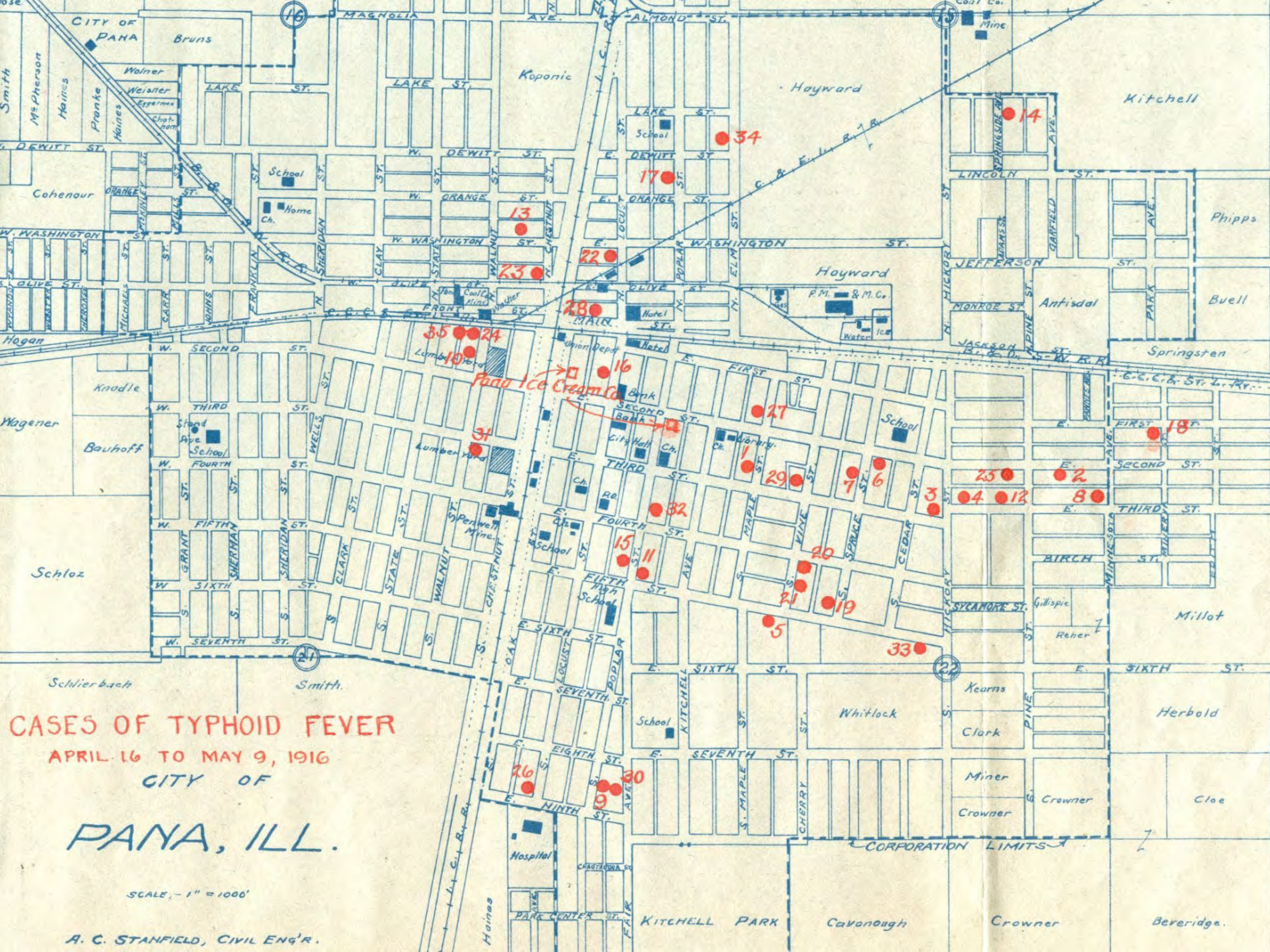
University of Illinois

These Programs are Sponsored, Funded, & Supported By
The Rural Community Assistance Partnership & USEPA


1867
ILLINOIS STATE
WATER SURVEY
FROM 1895 TO 1904, ARTHUR W. PALMER ANALYZED THOUSANDS OF ILLINOIS WATER SAMPLES IN THE NEWLY ESTABLISHED ILLINOIS STATE WATER SURVEY. HE CREATED THE FIRST SYSTEMATIC DOCUMENTATION OF THE QUALITY OF ILLINOIS WATER. THESE DATA BECAME THE BASIS FOR SANITARY AND PUBLIC HEALTH REFORM, STANDARDS OF WATER QUALITY, AND THE SCIENCE OF AQUATIC ECOLOGY.
UNIVERSITY OF ILLINOIS

Research-Service-Data

- Research
  - Regional Water Supply
  - Contaminant Studies
  - Groundwater Modeling
- Public Service
  - Lab Services
  - Private Well Class
  - Requests for Information
- Data Collection
  - House States Well Logs
  - Statewide Ob Well Network
  - 30k Water Quality Samples



CASES OF TYPHOID FEVER
APRIL 16 TO MAY 9, 1916
CITY OF
PANA, ILL.
SCALE, - 1" = 1000'
A. C. STANFIELD, CIVIL ENG'R.
Pana Ice Cream Co.
CORPORATION LIMITS
CITY OF PANA
Hospital
Union Depot
Hotel
Bank
City Hall
Library
High School
Lumber Yard
Penwell Mine
Kitchell Park

Private and Public Wells

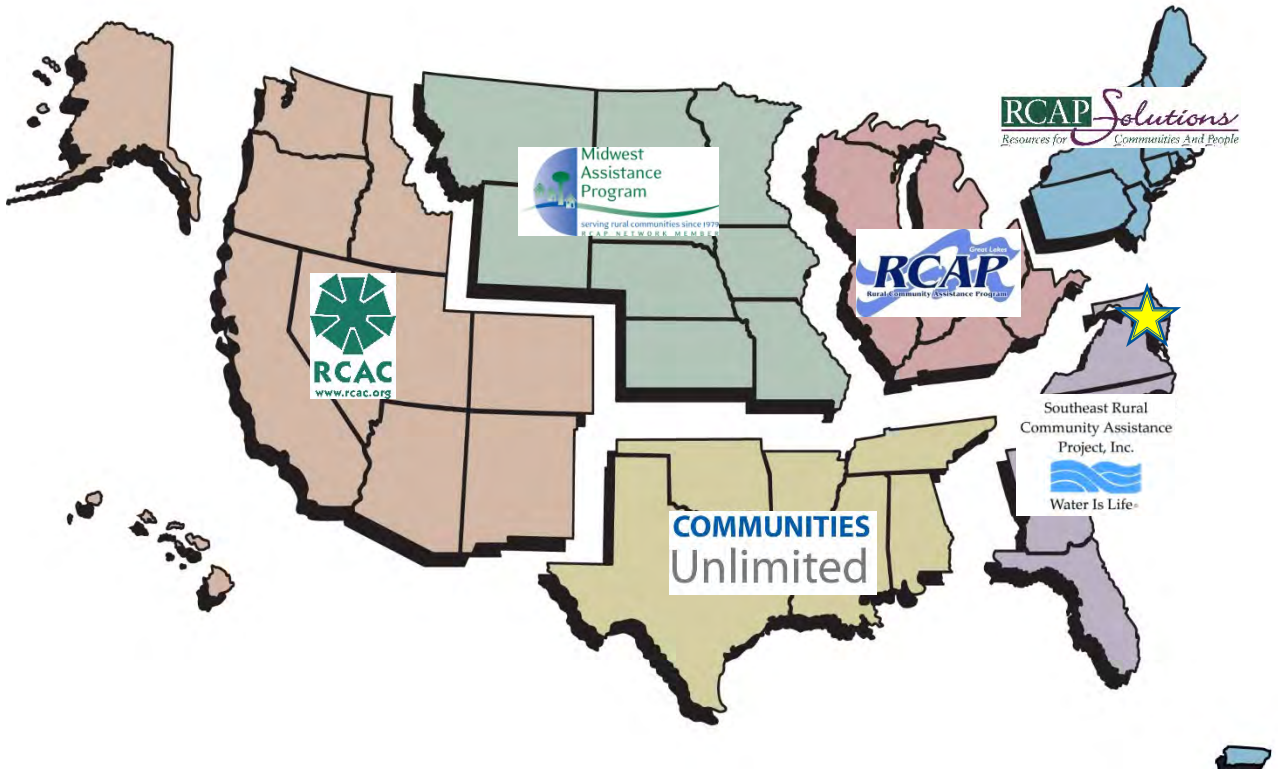
- Presentation mostly about private wells today.
- Non-Community Wells are really private wells in most cases, as far as understanding responsibility for maintaining, being safe, etc.
- Water Operators, especially in smaller communities, are often asked for help from private well owners.
- Enough of an issue that the Illinois EPA allows CEU's for water operators in Illinois for taking our webinars.
- A little today on resources for operators, at the end.

RCAP's Private Well Program

- A national outreach and well owner education program funded by USEPA.
- Being implemented through the Rural Community Assistance Partnership (RCAP) and it's 6 regional affiliates to support private well owners.
- RCAP Partners include www.PrivateWellClass.org at the University of Illinois, NEHA, NGWA, and the WSC. As well as 5 state extension programs (TX, VA, MS, PA, RI).

Rural Community Assistance Partnership

Practical solutions for improving rural communities



RCAP National Office
1701 K St. NW, Suite 700
Washington, DC 20006
(800) 321-7227
www.rcap.org | info@rcap.org

Western RCAP
Rural Community Assistance Corporation
(916) 447-2854
www.rcac.org

Midwest RCAP
Midwest Assistance Program
(952) 758-4334
www.map-inc.org

Southern RCAP
Communities Unlimited
(479) 443-2700
www.communitiesu.org

Northeast RCAP
RCAP Solutions
(800) 488-1969
www.rcapsolutions.org

Great Lakes RCAP
WSOS Community Action Commission
(800) 775-9767
www.glrcap.org

Southeast RCAP
Southeast Rural Community Assistance Project
(866) 928-3731
www.southeastrcap.org

Goal

- Give well owners direct targeted information and advice:
  1. why their well is important,
  2. why they should understand how it works,
  3. how to help protect themselves from risk.

RCAP – Boots On The Ground

- 6 Regions ~ 15 staff working directly with well owners and other professionals:

1. Workshops for Well Owners,
2. Workshops for Sanitarians and other Professionals,
3. One-on-one well assessments (1800 + across the country so far.)
4. Offer financing in about 15-20 states through USDA's household well loan program (growing).

Site Assessments

- The U of I put together a national workgroup of experts from extension and public health; also groundwater hydrologists and drillers, to develop a tool to assess risk of an individual well.
- Goal was to create a tool that can be used by an qualified health, groundwater or extension person to help a well owner understand their potential risks and vulnerabilities
    - Site assessment
    - Well assessment
    - Geologic assessment
    - Recommendations
- Plus opportunity to raise awareness about testing, BMP's understanding vulnerable geologies or well construction

Assessments Provide Support For Well Owners

- Like a Sanitary Survey For Private Wells
- Educate Well Owners About Their Specific Situation and Well
- Promote Best Practices
- Encourage Communication and Increase Well Owner Awareness of Issues

Site Assessment Program

- Over 1800 assessments, many requested by a state or local health agency to support a problem well.
- 36+ workshops led by RCAP staff, 800+ EH professionals trained.
- Developing partnerships, supporting state and local efforts.

NGWA

- Partner for the last 4 years. Grant helps support:
    1. WellOwner.org,
    2. Monthly Tip Sheets,
    3. Online webinars and videos,
    4. Groundwater Awareness Week.
- Upcoming:
    1. Continuing the above programs,
    2. Quarterly Virtual Town Halls,
    3. New Video series with Tips and Best Practices,
    4. New Podcast, "*Well*, Now You Know".

NGWA The Groundwater Association

WellOwner.org

Informing consumers about groundwater and water wells.

Search

- Water Well Basics
- Maintenance
- Water Quality/Quantity
- Water Testing
- Water Treatment
- Find a Contractor
- Geothermal
- Links
- Lessons & Webinars

Well Financing Video

This new video covers financing options including:

- Contractor-offered financing
- Credit cards
- Mortgage options
- and more!

Watch the video.

A modern water well is an expertly engineered and constructed method of delivering groundwater for drinking, irrigation, and other purposes. And Wellowner.org is your one-stop resource for information relating to private water well systems and groundwater.

Learn how to protect this precious resource and safeguard your family's health through properly constructed and maintained water well systems.

NGWA Monthly Tip Sheet

WELL OWNER TIP SHEET

A private well owner newsletter brought to you by NGWA and WellOwner.org

April 2018

As National Prescription Drug Take Back Day approaches this weekend (April 28), NGWA thought it was a great opportunity to use this month's tip sheet to stress the importance of groundwater protection and water testing for private well owners.

According to the Associated Press, tests have detected small concentrations of pharmaceuticals in the **drinking water supply of 41 million Americans**, making this a public health issue of growing concern. Pharmaceuticals enter the water supply via human waste, through medications that are flushed down the toilet, and through agricultural run off at landfills. While a large percentage of medications wind up in septic systems, wastewater treatment plants can't effectively filter all traces of the drugs, allowing the contaminants to eventually infiltrate groundwater.

Any hazardous substance—if spilled on the ground, leaked underground, or poured down an abandoned well or borehole—can infiltrate groundwater, the drinking water source for nearly 35 million Americans using privately owned water wells. As a private well owner, you are the manager of your water system. Your practices as a property owner can directly impact your water quality or that of other well owners in the area.

So how can you help protect your water system from pharmaceuticals? Our partners at the Prevention Action Alliance suggest the following:

WELL OWNER TIP SHEET

A private well owner newsletter brought to you by NGWA and WellOwner.org

October 2018

666,869 private water wells affected by recent Atlantic hurricanes

In last month's *Tip Sheet*, we reminded well owners in the path of the oncoming hurricanes and subsequent flooding how to protect their water systems through the "Hurricane/Flooding Resources" center NGWA created on WellOwner.org. The email contained suggested actions to take before, during, and after the storm to protect your well and water system, and the need to work with a certified professional to repair or disinfect the well.

With that in mind, we wanted to use this month's correspondence to show the potential damage a major flooding event like a hurricane can cause. Below are details from data we compiled for well owners in six states hit by the storms indicating nearly 700,000 private wells could have been comprised by the storms. Why is this relevant? Because it again highlights the need to proactively maintain your well, to prepare for all situations — whether they be flood related, drought related, or long-term use related — and to utilize all the available resources for well owners.

Financing

Rural Housing Repair and Rehabilitation Loan Program

View well financing video

Another program, operated by the federal government, can provide funds for water well improvements. Rural Housing Repair and Rehabilitation Loans are available to very low-income rural residents who own and occupy a dwelling in need of repairs. Funds are available for repairs to improve or modernize a home, or to remove health and safety hazards. This loan is a 1 percent loan that may be repaid over a 20-year period.

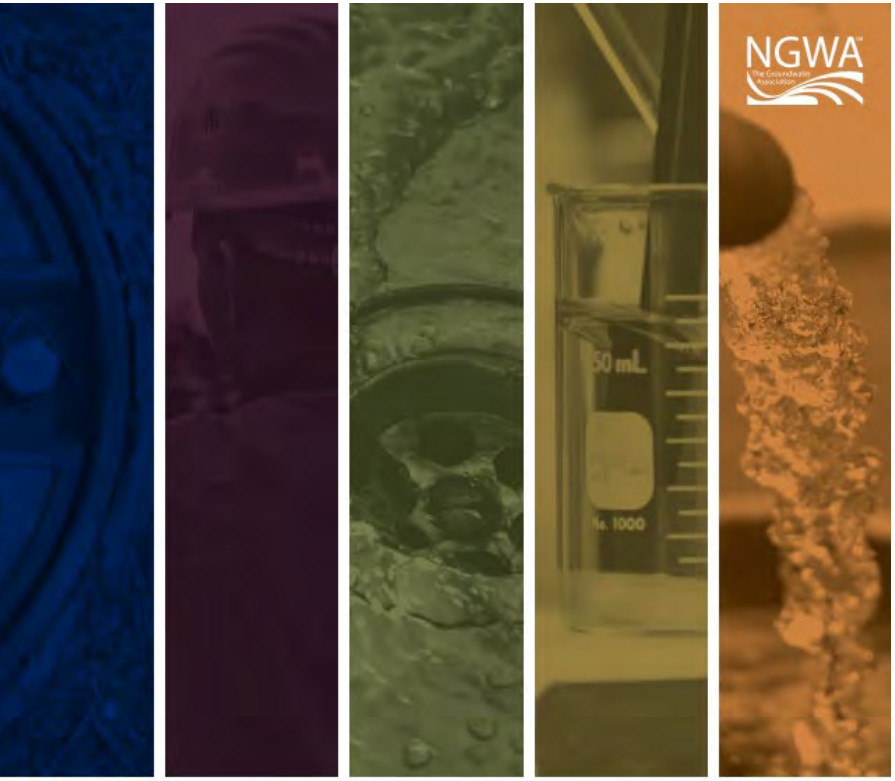
To learn how to apply, click here.

Some state agencies have a mechanism in place to assist homeowners with repair/replacement of failing septic systems, while others do not. For more information, contact your state regulator, and/or read about your state's regulatory program at the National Small Flows Clearinghouse Web site in the National Summary Citations.

Household Water Well Program

The Household Water Well Program is funded by the federal government and administered through qualified non-profit organizations. The program loans up to $11,000 per household for existing home owners to repair or replace wells. The 20-year loans are repaid at 1 percent interest.

State	Counties covered	Program Name	Contact information
Arkansas	Northwest Arkansas (Benton, Crawford, Franklin, Madison, Marion) and Oklahoma (Sequoyah)	Water Well Trust, Inc.	Margaret Martens 202/625.4383



NATIONAL GROUND WATER ASSOCIATION

Well Owners **Guide**

3 CONTAMINANT TESTING

Can there be contaminants locally? If so, for what should I test?

Yes, there can be localized contamination. Such contamination can occur naturally in the geology, such as arsenic or radon. Other local contaminants may be man-made, for instance, toxic substances from former industrial sites, landfills, or chemical spills.

To learn what might be of local concern, start with your county health or environmental health department.

Many county health departments provide water testing and may know about localized groundwater contaminants.

You can also check with drinking water testing laboratories that serve your area to find out about localized groundwater contamination threats.

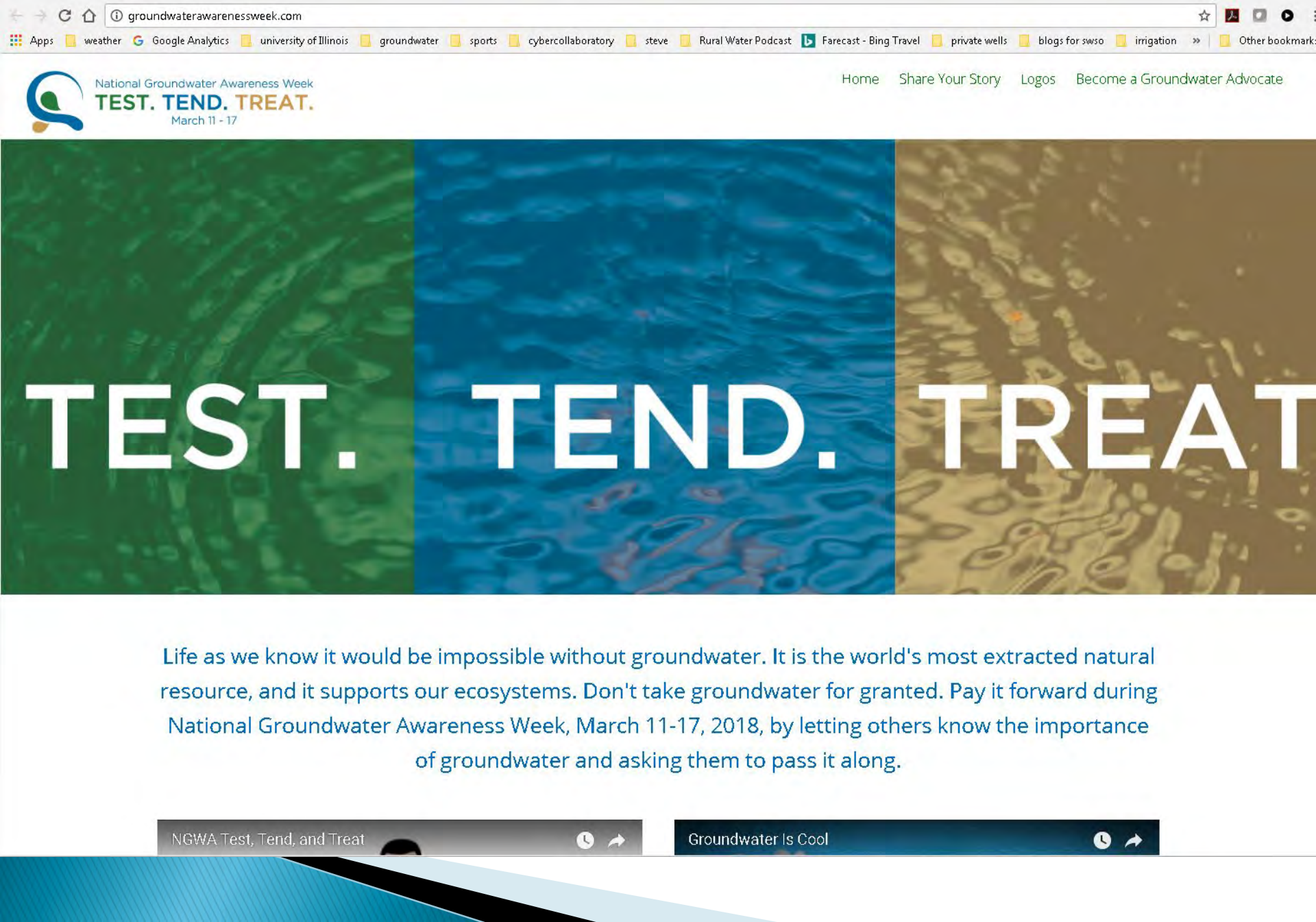
Learn more about *water testing.*

4 TESTING LOCATIONS

How do I find a drinking water testing laboratory?

You can start by checking with your health or environmental health department at the county or state levels. These departments often do some water testing.

Find a Certified Testing Lab.


groundwaterawarenessweek.com
Apps
weather
Google Analytics
university of Illinois
groundwater
sports
cybercollaboratory
steve
Rural Water Podcast
Farecast - Bing Travel
private wells
blogs for swso
irrigation
Other bookmarks
National Groundwater Awareness Week
TEST. TEND. TREAT.
March 11 - 17
Home
Share Your Story
Logos
Become a Groundwater Advocate
TEST.
TEND.
TREAT
Life as we know it would be impossible without groundwater. It is the world's most extracted natural resource, and it supports our ecosystems. Don't take groundwater for granted. Pay it forward during National Groundwater Awareness Week, March 11-17, 2018, by letting others know the importance of groundwater and asking them to pass it along.
NGWA Test, Tend, and Treat
Groundwater Is Cool

NEHA

- Partner for the last 4 years. Grant supports:
  1. Online Class for sanitarians and home inspectors (Private Well Class),
  2. National accreditation for workshops and webinars,
  3. Support for partners with 15,000 Environmental Health Professionals nationwide.
- Upcoming:
  1. Continuing the above programs,
  2. Coordinated outreach for partner products,
  3. Emergency Preparedness and Response Program including website and videos.

NEHA E-Learning

NEHA Online Courses

NEHA is pleased to announce the launch of our new learning management platform. This new platform contains NEHA's entire library of resources including trainings, webinars, and e-learning course catalog, which is free to all active NEHA members and can be used to earn continuing education credits (CEs) towards a NEHA credential.

Our new platform provides members with many benefits, including:

- Improved interface that allows users to easily find and access the resources they need.
- No delays in accessing content. Content can be accessed right away once a NEHA membership is active.
- Members can use their current MyNEHA login credentials to log in to the platform, meaning you only need to remember one username and password!
- For NEHA credential holders, continuing education credits will automatically apply to your account once you've completed the course (no need to self-report your credits).

Resources

Users will find the following resources on our new learning management system:

- **E-Learning Courses**
  Available for NEHA members and attendees of the Annual Educational Conference & Exhibition (AEC). AEC attendees can only access courses for the year they attended the conference.
  Recorded during NEHA's Annual Educational Conference & Exhibition, our e-learning courses reflect current and emerging issues in a variety of environmental health topics ranging from food safety, water quality, climate and health, and much more.
- **Webinars**
  Available for NEHA members and nonmembers.
  Users can access courses from our many webinars and virtual conferences such as the Enhancing Environmental Health Knowledge (EEK): Vectors and Public Health Pests Virtual Conference, IDEA EH Virtual Conference, and our Body Art and Environmental Health webinar.
- **Partner Courses**
  Available for NEHA members and nonmembers.
  NEHA partners with organizations such as the EPA, CDC, and FDA to bring professionals the very best trainings and workshops in a variety of environmental health topics such as private well and water quality, foodborne illness outbreak, emergency response training, and much more.

This new platform will be a highly valuable resource for NEHA members in their professional development.

NEHA CE Guidelines

- An individual that attends the same course with the same core content can only submit for CEs once per credentialing cycle. However, they may attend the course during their next credentialing cycle and have it count.

- Example: If someone attends a class today and their 2-year credentialing cycle started on 7/1/19, then they would not be able to take the same course again before 6/30/21.

- Please email: info@privatewellclass.org

- The Private Well Class can provide:
  - Certificate of attendance
  - Copy of slide deck
  - Completed NEHA forms

Past webinars with the same core content were also delivered on:

- 7/25/17
- 7/17/18

WSC

- Partner for the last 4 years. Grant supports:
  1. WellCare Hotline (EPA sends questions to WSC),
  2. Factsheets, Brochures, print materials,
  3. Well Owner Manual
  4. Lots of other things – HELP Materials, Water Festival, quarterly newsletter.
- Upcoming:
  1. Continuing the above programs,
  2. Developing/updating print materials,
  3. Spanish translations of factsheets and Manual.

Well Owner's Manual

A Water Systems Council Publication

WATER SYSTEMS COUNCIL

wellcare® information for you about

Checklist for Well Owners

Properly constructed private water supply systems require little routine maintenance. These simple steps will help protect your system and investment:

- ☑ Always use a licensed or certified water well contractor and pump installer when a well is constructed, a pump is installed, or the system is serviced.
- ☑ Perform an annual water test for a minimum of bacteria. Check with your local health department for other tests of local concern.
- ☑ Test your water any time there is a change in taste, odor or appearance, or someone is ill or pregnant.
- ☑ Keep hazardous chemicals, such as paint, fertilizer, pesticides and motor oil, far away from your well.
- ☑ Periodically check the well cover or well cap on top of the casing to ensure it is in good repair.
- ☑ Confirm your well is properly separated from buildings, waste systems, or chemical storage facilities.
- ☑ Take care in working or mowing around your well. Damage to your casing can jeopardize the sanitary protection of your well. Don't pile snow, leaves or other materials around your well.
- ☑ Always keep good well records, including using the maintenance and water testing logs in this manual.

Basic Well Information Sheets

- Determining Static Water Level in a Well - pdf (79.4 KiB)
- Determining the Depth of a Well - pdf (75.0 KiB)
- Determining the Yield of a Well - pdf (76.7 KiB)
- Selecting a Well Contractor - pdf (134.0 KiB)
- Sizing a Pressure Tank - pdf (1.1 MiB)
- Sizing a Well Pump - pdf (109.0 KiB)
- Well Contractors - Pressure Tank Pre-charge - pdf (135.6 KiB)
- Wells - pdf (233.8 KiB)
- Where Your Water Comes From - pdf (229.7 KiB)
- Your Septic System - pdf (115.1 KiB)

Component Information Sheets

- Well Components: Pressure Switches - pdf (203.8 KiB)
- Well Components: Valves - pdf (210.7 KiB)
- Well Components: Your Pitless Adapter - pdf (202.6 KiB)
- Well Components: Your Well Cap - pdf (202.1 KiB)
- Well Components: Your Well Casing - pdf (202.0 KiB)
- Well Components: Your Well Pump - pdf (202.5 KiB)
- Well Components: Your Well Tank - pdf (202.4 KiB)

For Home Inspectors

- Home Inspectors Guide to Evaluating Water Wells - pdf (3
- Tips For Your Clients/Customers - pdf (71.4 KiB)
- Well Inspection Checklist - pdf (49.8 KiB)

Maintaining Your Well Information Sheets

- Coping with Low Water Levels - pdf (87.1 KiB)
- Drought and Your Well - pdf (97.0 KiB)
- Emergencies & Disasters and Wells - pdf (126.1 KiB)
- Frequently Asked Technical Questions - pdf (191.8 KiB)
- Managing a Flooded Well - pdf (92.8 KiB)
- Protecting Your Well - pdf (65.0 KiB)
- Protecting Your Wellhead - pdf (144.1 KiB)
- Well Maintenance - pdf (92.0 KiB)
- Wells and Fire Protection - pdf (31.3 KiB)
- Wells: What to Do When the Power Fails - pdf (107.6 KiB)
- What To Do if the Well Runs Dry - pdf (118.2 KiB)
- Winterizing and De-winterizing Your Well - pdf (112.9 KiB)

For Environmental Health Specialists

- Environmental Health Specialists - Inspecting a Well - pdf (562.5 KiB)
- Environmental Health Specialists - Sealing a Well - pdf (493.0 KiB)
- Environmental Health Specialists - Septic Systems - pdf (320.2 KiB)

For Healthcare Professionals

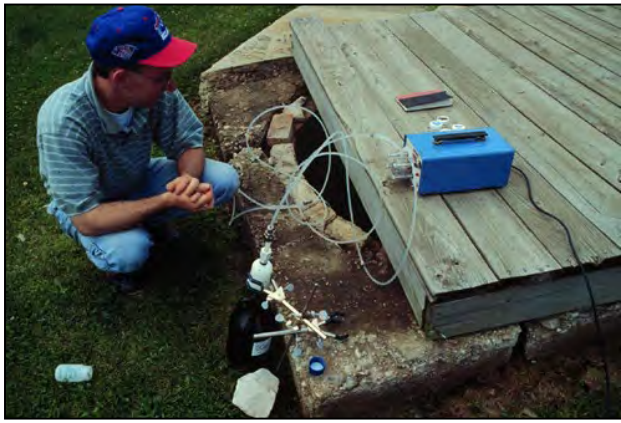
- Drinking Water & Children's Health - pdf (304.7 KiB)
- Drinking Water & Individuals with Compromised Immune Systems - p
KiB)
- Drinking Water & Pregnancy - pdf (218.3 KiB)
- PPCPs and Drinking Water - pdf (248.8 KiB)

The Private Well Class

- A series of 10 lessons sent to participants via email over 10 weeks. Self-paced.
    - Over 7,300 participants so far.
- Webinars that will provide specific information supporting the 10 lessons, giving participants a chance to ask questions.
    - Over 17,000 participants including EHP's, realtors, labs.
- NEHA version of the class on eLearning platform, each lesson worth 1 CEU, also an Illinois LEHP CEU provider.

The Private Well Class

- Multimedia lessons (videos, podcasts, recorded webinars)
- Workshop materials for RCAP staff
    - over 120 completed around the country
- Sanitary Survey-like assessment tool, developed by a committee of 13 experts
    - tablet version and guide available soon
    - RCAP has completed over 1800 individual assessments nationwide



THE PRIVATE WELL CLASS

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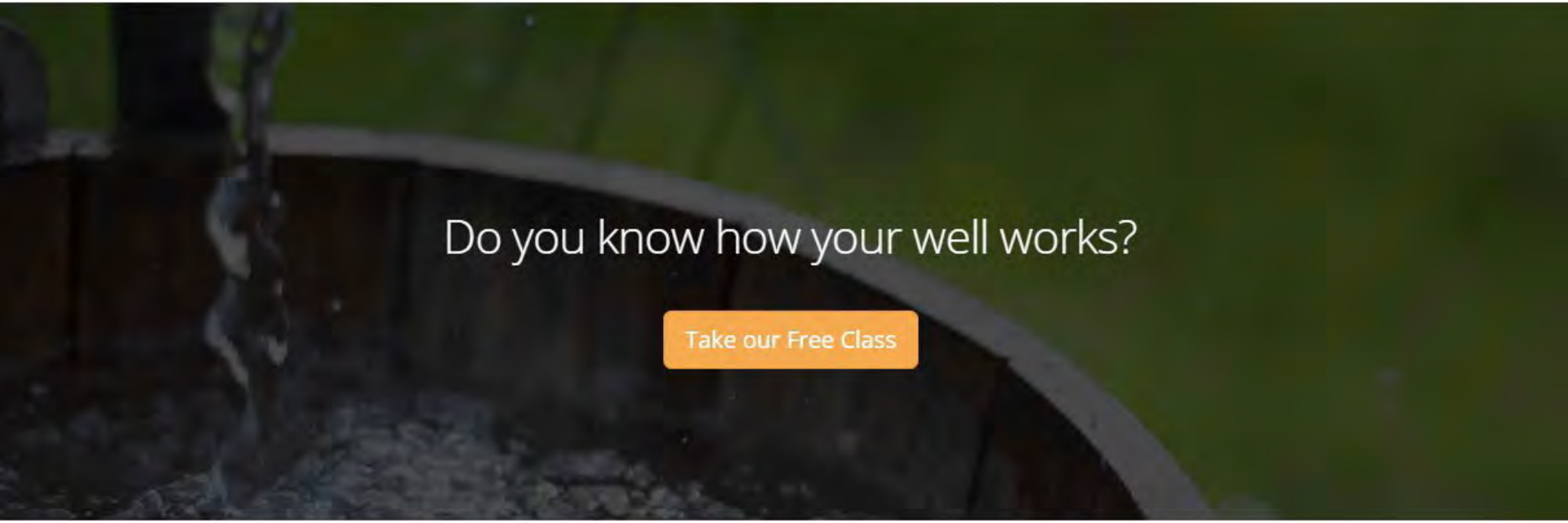

LEARN BY EMAIL

Take our flagship course to get 10 lessons in your email inbox, one per week.

LEARN BY AUDIO

Subscribe to our podcast to learn about private well care while on the go.

LEARN BY VIDEO

Get answers to specific questions with video lessons and webinar recordings.

1. The Science of Groundwater

- Water Quality Information for Consumers, Cornell University Cooperative Extension.
- Well Owner's Guide to Water Supply, Texas Well Owner Network, Texas A & M AgriLife Extension.
- Raymond, Lyle S. What is Groundwater? Bulletin No. 1, July 1988, New York State Water Resources Institute, Cornell University Center for Environmental Research.
- Raymond, Lyle S. Aquifers. Bulletin No. 3, August 1992, New York State Water Resources Institute, Cornell University Center for Environmental Research.
- Well Owner's Handbook, Environmental Health Division, Minnesota Department of Health.
- Waller, Roger M., Ground Water and the Rural Homeowner, USGS, 1994.
- Groundwater Hydrology, National Ground Water Association Website.
- Iowa's Groundwater Basics, Iowa Geological Survey Educational Series 6, Iowa Department of Natural Resources.
- Groundwater in Ohio, Feb 2010, Ohio EPA.

2. Groundwater & Well Contamination

- Gaber, Michael S. Michigan Flowing Well Handbook, March 2005, Michigan DEQ.
- Raymond, Lyle S. Aquifers. Bulletin No. 3, August 1992, New York State Water Resources Institute, Cornell University Center for Environmental Research.
- Raymond, Lyle S. Groundwater Contamination. Bulletin No. 2, November 1988, New York State Water Resources Institute, Cornell University Center for Environmental Research.
- Trautman, N., K. Porter, and R. Wagenet. Groundwater: What It Is and How to Protect It, December 1985, Cornell Cooperative Extension Service.
- Groundwater Study Guide, 2006, Wisconsin Department of Natural Resources.
- Waller, Roger M., Ground Water and the Rural Homeowner, USGS, 1994.
- Water Well Owner's Handbook, March 2010, Oregon Water Resources Department.
- Sources of Groundwater Contamination, The Groundwater Foundation.
- State Water Quality Profiles, WellOwner.org.

CLASE
POZOS PRIVADOS

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La Clase de Pozos Privados es una colaboración entre la Rural Community Assistance Partnership y University of Illinois, a través del Illinois State Water Survey del Prairie Research Institute, con fondos del U. S. EPA.

Contáctenos

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ClasePozosPrivados.org

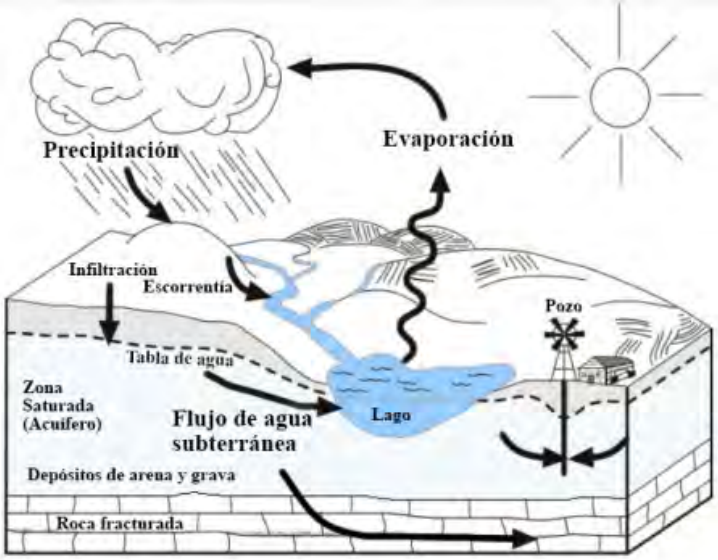

Figura 1.1 El Ciclo Hidrológico. Fuente: Minnesota Department of Health.

El ciclo hidrológico

El agua está en perpetuo movimiento. El agua se mueve por muchos procesos entre los que se incluyen precipitación, evaporación, escorrentía, infiltración, absorción de las plantas, percolación, y transpiración (Figura 1.1). El agua que tomas hoy seguramente ha pasado a través del ciclo hidrológico incontables veces en el pasado. Ha estado en los oceános, en un continente disinto—alguien más quizás ya la ha tomado. Es un continuo y siempre cambiante ciclo.

El agua en el suelo hoy se infiltró desde la superficie. Lo que no fue usado por las plantas o retenido en el suelo migró hacia abajo a través del suelo hasta la tabla de agua para hacerse agua subterránea. Como subterránea, es retenida en los espacios libres (poros y fisuras) entre partículas de suelo y rocas

La tabla de agua o nivel freático es el nivel por debajo del cual los espacios porosos están completamente llenos (saturados) de agua. (Figura 1.2).

Pero no se detiene allí. Porque el agua fluye cuesta abajo, la presión desde arriba "empuja" el agua a través del suelo hacia áreas con menor presión tanto horizontal como verticalmente. Puede seguir migrando hacia abajo a través de distintas unidades geológicas o moverse horizontalemnte a través de un sólo material geológico hasta un punto de descarga. En el ciclo hidrológico, el punto de descarga es generalmente un punto bajo en el terreno donde el agua puede descargar a un lago, un río o al océano (Figura 1.3). Entonces el ciclo empieza de nuevo. Como se muestra en la Figura 1.3, en ocasiones el agua puede pasar miles de años en el suelo antes de completar su camino de regreso a la superficie.

La recarga del agua subterránea es típicamente, aunque no siempre, un proceso local. Primero, la lluvia se infiltra en el suelo y se hace paso a las formaciones geológicas debajo. Allí, es almacenada en los poros, entre los materiales del suelo (arenas no consolidads, arcillas, y limos) o en grietas y fisuras abiertas en el lecho rocoso (material consolidado). Tu pozo penetra es-

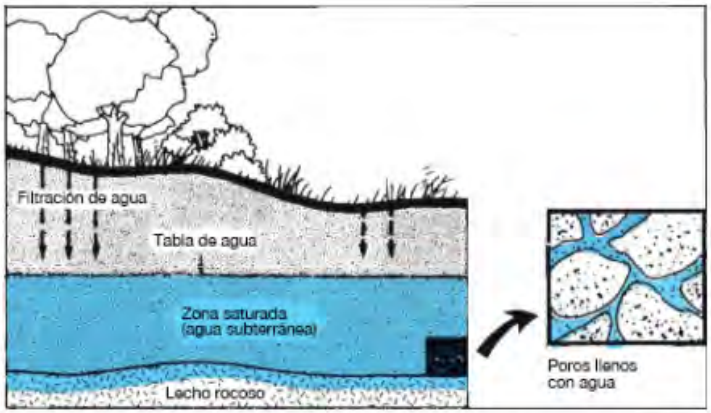

Figura 1.2 La tabla de agua. Fuente: New York State Water Resources Institute.

What Well Owners Need to Know About Lead in Drinking Water - Recorded Live August 22, 2018

In this webinar recording we will cover how lead can enter drinking water in homes with private wells and what to do next if you suspect your family is at risk. The webinar will answer questions such as:

- Sources of lead in the home and consequences of exposure,
- Why and when lead is likely to leach from plumbing materials, and
- Best practices for reducing the risk of lead in drinking water.

PrivateWellClass.org is a service of the University of Illinois at Urbana-Champaign. Funding has been provided by the U.S. Environmental Protection Agency and the Rural Community Assistance Partnership. Click here to sign up for our free well care e-course.

▸ Training Videos (19)

▸ Webinar Recordings (45)

- ▸ For environmental health professionals (5)
- ▸ For laboratory professionals (2)
- ▸ For real estate professionals (4)
- ▸ For septic system owners (5)
- ▸ For well owners (29)

Visit our YouTube channel

Lead in Drinking Water

In addition to working with technical experts, many resources were consulted during preparation of our "What Well Owners Need to Know about Lead in Drinking Water" webinar. These include:

Basic Information about Lead Sources and Health Effects

- Public Health Statement for Lead - CDC's summary of health information
- CDC lead portal - information about all sources of lead
- U.S. EPA lead portal - information about all sources of lead
- What Do Parents Need to Know to Protect Their Children? - information about blood lead levels from CDC

Lead in Drinking Water

- Lead in Private Water Systems - webinar presentation from Dr. Kelsey Pieper
- Basic Information about Lead in Drinking Water - information from U.S. EPA, primarily related to public water systems
- Sources of Lead: Water - information from CDC, primarily related to public water systems
- Drinking Water from Household Wells - 2002 pamphlet from U.S. EPA
- Research on lead in DC water - data and analysis of CDC research in Washington, DC
- Lead in Drinking Water - information from Penn State about lead in drinking water

Water Filters for Lead Reduction

- How to Filter Lead from Your Tap Water - short article from Environmental Working Group
- Point-of-Use Water Treatment Units for Lead Reduction - brochure from Minnesota Department of Health
- Certified Product Lists for Lead Reduction - special consumer guide from NSF
- Search for NSF certified treatment units - searchable database from NSF
- Water Health Series - Filtration Facts - home water treatment facts from USEPA

LIST OF CERTIFIED LABORATORIES

- List of Certified Laboratories

Well Care Videos

What Water Testing Labs Need to Know about Private Wells - Recorded Live June 19, 2018

In this webinar recording we will cover what water testing laboratories need to know to answer questions from well owners that go beyond water quality. We'll also cover examples of successful partnership programs and effective educational and outreach tools. The webinar will answer questions such as:

- The proper care of a private well,
- The importance of testing well water, and
- Deciphering and understanding sample results.

Categories

- Training Videos (19)
- Webinar Recordings (45)
  - For environmental health professionals (5)
  - For laboratory professionals (2)
  - For real estate professionals (4)
  - For septic system owners (5)
  - For well owners (29)

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Increasing Private Well Testing

A COMMUNICATIONS TOOLKIT FOR WATER TESTING LABORATORIES

June 2019

Summary: Increasing Private Well Testing

A COMMUNICATIONS TOOLKIT FOR WATER TESTING LABORATORIES

As a water testing laboratory, you are a key partner in protecting the health of over 43 million people in the United States who get their drinking water from a private well.[1] If you want to expand communication about information private well users are looking for, this toolkit can help.

Why Focus on Private Well Users (PWU)

1. PWU are in every state.

More than **one in eight** people in the United States get their drinking water from a private well.

2. PWU are responsible for testing their well water, but few do.

PWU are responsible for regularly testing their water to ensure it is safe. A 2016 survey of Minnesota PWU found that **less than 20 percent had tested** their well water in the last two years for nitrate or coliform bacteria.[2]

Why Should Laboratories Care

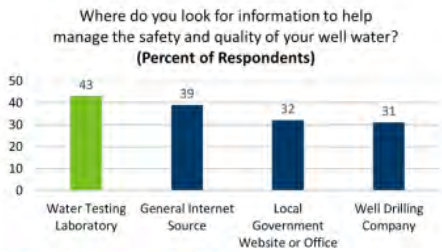
1. Clear communications with PWU improves customer service.

Clear communications can:

- Help **protect** your customer's health.
- **Build trust** with your customer – possibly leading to **more business**.

2. Labs are a trusted source of information.

Forty-three percent of PWU look to laboratories for well and water quality information.[2]



What is in the Toolkit

The toolkit includes 11 recommendations to strengthen communications with PWU to promote private well testing. Each recommendation includes:

- Why the recommendation is important.
- Ways to implement the recommendation.
- An example of the recommendation in action.

Refer to whichever recommendations seem most helpful for your circumstances.

These recommendations do not supersede any federal or state requirements.

Available at Well Partners
(www.health.state.mn.us/wellpartners)
Click on *Accredited Laboratories*

[1] USGS (2017). Private Well Use Across the Nation (https://water.usgs.gov/nawqa/home_maps/private_wells.html).
[2] Minnesota Department of Health (2016). Data Driven Outreach for Private Well Users (PDF) (https://www.health.state.mn.us/communities/environment/water/docs/cwf/hhsurveyreport.pdf).

What Environmental Health Professionals Need to Know about Private Wells - Recorded Live on May 29, 2019

May 29, 2019 By Katie Buckley For environmental health professionals, Webinar Recordings video 0

This webinar recording discusses private well topics that environmental health professionals might encounter in the field. The webinar will answer questions such as:

- Challenges and issues that environmental health professionals face,
- Groundwater, wells, and well owner attitudes, and
- Gaps between groundwater and health professionals.

Categories

- Training Videos (19)
- Webinar Recordings (54)
  - For environmental health professionals (10)
  - For laboratory professionals (2)
  - For real estate professionals (5)
  - For septic system owners (5)
  - For well owners (33)

Visit our YouTube channel

Well Care 101 - Recorded Live on March 15, 2018

March 15, 2018 By Katie Buckley For well owners, Webinar Recordings video 0

In this webinar recording you'll learn well care best practices and how to ensure the water in your well is safe to drink. The webinar will answer questions such as:

- How to determine if your water is safe for drinking,
- Simple best practices for well maintenance, and
- Solutions to the most common well problems.

Categories

- Training Videos (19)
- Webinar Recordings (45)
  - For environmental health professionals (5)
  - For laboratory professionals (2)
  - For real estate professionals (4)
  - For septic system owners (5)
  - For well owners (29)

Visit our YouTube channel

What Should I Know About a Shared Private Well?

January 25, 2016 By Cassia Smith Training Videos video 0

Do you share well water with one or more of your neighbors? This video discusses reasons why wells might be shared, possible downsides, and things to keep in mind if you get water from a shared well.

PrivateWellClass.org is a service of the University of Illinois at Urbana-Champaign. Funding has been provided by the U.S. Environmental Protection Agency and the Rural Community Assistance Partnership. Click here to sign up for our free well care e-course.

Categories

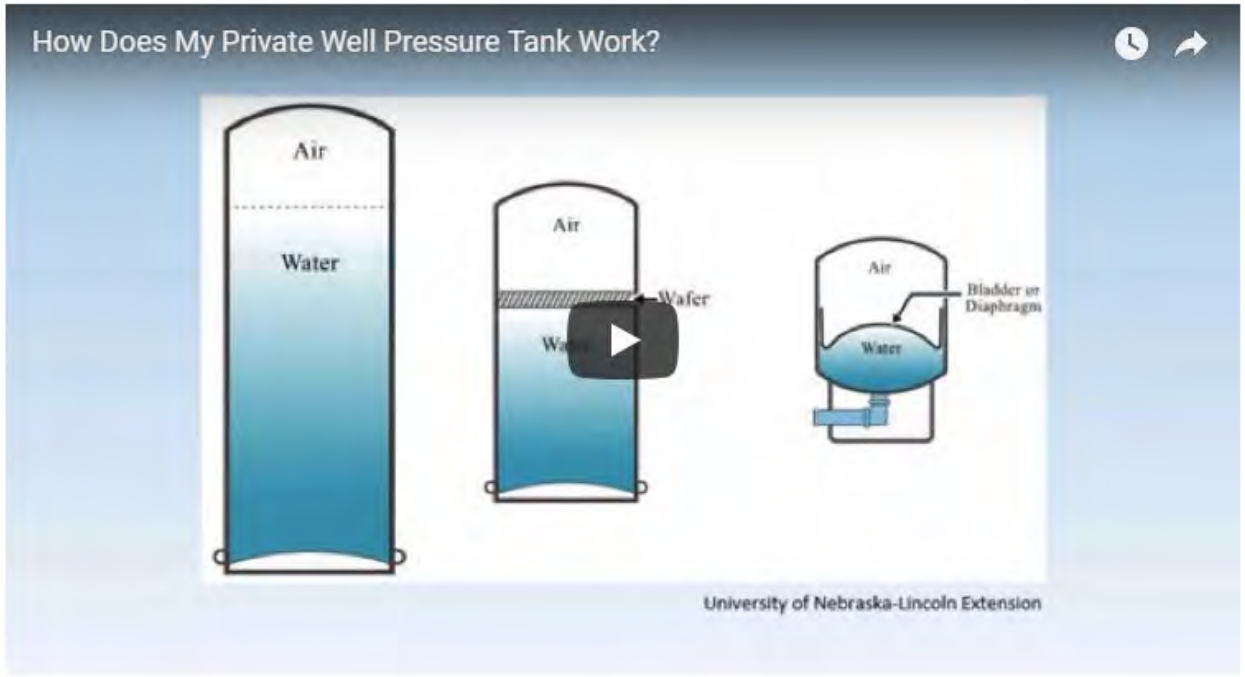
- Training Videos (16)
- Webinar Recordings (36)
  - For environmental health professionals (4)
  - For laboratory professionals (1)
  - For real estate professionals (3)
  - For septic system owners (4)
  - For well owners (24)

Visit our YouTube channel

How Does My Private Well Pressure Tank Work?

anuary 25, 2016 By Cassia Smith Training Videos video 0

Pressure tanks help store water from your well and push it out into the faucets in your home. This video explains how pressure tanks operate and describes the differences between traditional pressure tanks, bladder tanks, and the tanks used in constant pressure systems.



PrivateWellClass.org is a service of the University of Illinois at Urbana-Champaign. Funding has been provided by the U.S. Environmental Protection Agency and the Rural Community Assistance Partnership. Click here to sign up for our free well care e-course.

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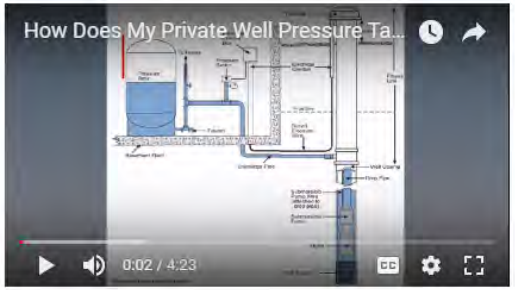

How Does My Private Well Pressure Tank Work?

264,906 views • 3 years ago

Sign up for our FREE well care class at
http://www.privatewellclass.org

PrivateWellClass.org is a free online service of the University of Illinois at Urbana-Champaign. Funding has been provided by the U.S. Environmental Protection Agency and the Rural Community Assistance Partnership.

2017 Private Well Conference ▶ PLAY ALL

1.1 - Barbara Liukkonen - Why Don't People Test their...
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857 views • 2 years ago
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1.2 - Deanna Scher + Frieda von Qualen - Perceptions an...
privatewellclass
145 views • 2 years ago
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1.3 - Karen Bridges - Well Owner Calls to the National...
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1.4 - Kelsey Pieper - What Practitioners Need to Know...
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1.5 - Judy Manners - Springs as Private Water Systems
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1.6 - Tom Christopherson - How Grout (or Lack of Grout...
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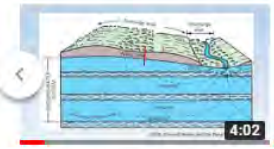
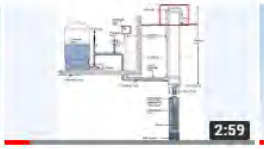
PrivateWellClass.org Training Videos ▶ PLAY ALL



Where Should My New Well Be Located?
privatewellclass
555 views • 3 years ago



How Does My Private Well System Work?
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How Do I Make My Well Safer?
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What Should I Know About a Shared Private Well?
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936 views • 3 years ago

What Can I Do When My Well Goes Dry?
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youtube.com/privatewellclass

How is the podcast different from the lessons?
The *Private Well Podcast* covers the bulk of the Private Well Class lessons in a free multimedia, audio-only format for those who would rather listen and learn. But it is different from the Private Well Class lessons because it includes a laid back, conversational tone between the host, Katie Hollenbeck, and an actual groundwater hydrologist, Steve Wilson. Plus, it is full of stories, examples, and anecdotes for easy listening.

Listen on the Web

1. The Science of Groundwater
2. Groundwater & Well Contamination
3. Well Construction & Related Issues
4. RFD Radio Network Interview
5. RFD Radio Network Interview Continued
6. RFD Radio Network Abandoned Wells

How to Subscribe

When you subscribe to a podcast, new episodes will be downloaded automatically for you. The *Private Well Podcast* is available on iTunes and Stitcher Radio.

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iOS devices: In your Podcasts app, search for "Private Well Podcast" and then click "Subscribe".

Android devices: Use the Stitcher app from the Google Play store. In Stitcher, search for "Private Well Podcast" and click the plus sign (+) to add it to your Favorites List. Now go to the Favorites List and tell it to download new episodes by clicking on the gear icon in the upper right corner.

Newsletter #21 for September 2017

View this email in your browser

THE PRIVATE WELL CLASS Partners

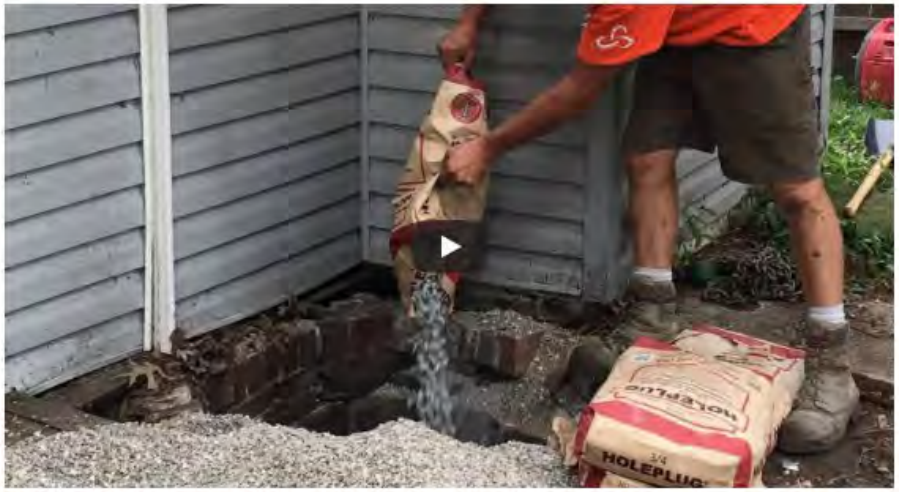
AN OUTREACH NEWSLETTER

Abandoned Well Sealing Video

To celebrate the National Groundwater Association's "Protect Your Groundwater Day" on September 5, the Private Well Class, in collaboration with many local partners, has released a new video to go along with the "Cap It, Plug It" theme. The video explains the process of properly sealing an abandoned well, which that took place during a public demonstration event on August 9, 2016 in Macomb, IL.

Local partners and organizers of the event included the McDonough County Health Department, Western Illinois University Department of Geology, the McDonough County Groundwater Protection Education Committee, and Gingerich Well & Pump Service, LLC.

Click here to watch the video.



Own Your Future: Home Financing from USDA Rural Development

USDA Rural Development has many programs to help rural populations improve their living conditions. For example, the Single Family Housing Repair Loans and Grants Program can provide funding to low-income homeowners for private water well and septic system repair and replacement. These loans or grants can be used to repair, improve, or modernize homes, or remove health and safety hazards. This

The Private Well **Conference**

2017 NATIONAL STAKEHOLDER MEETING

MAY 23-25, 2017

Champaign, IL

Many public health and groundwater experts who work with private well owners do so on a local or regional scale, providing assistance and education directly to consumers.


Pitless or Pointless?
3:06 / 5:43

The Private Well Conference

National workshop unites private well community, emphasizes importance of collaboration and partnerships

The 2017 Private Well Conference, held May 23-25, 2017 in Champaign, IL, was the first of its kind with national scope and exclusive focus on private drinking water supplies. This conference brought together members of the private well community to learn new ideas and share experiences to strengthen outreach, education, and research programs around the country.

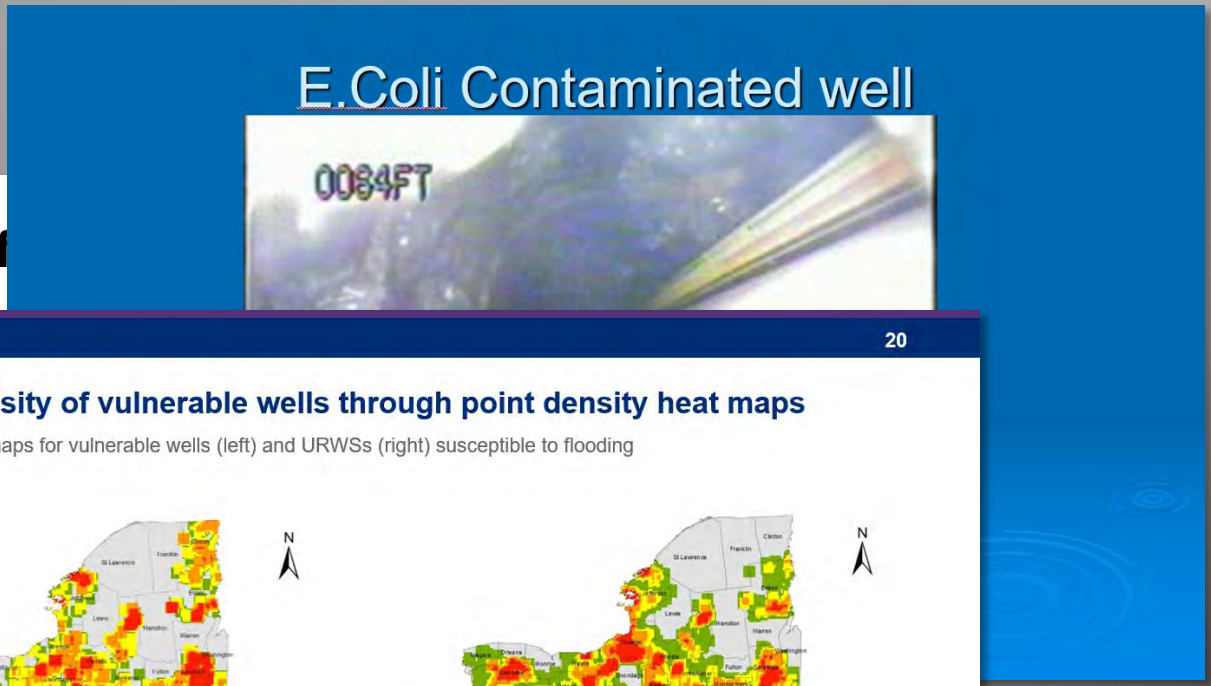
The 2.5 day agenda featured a mixture oral presentations from invited speakers and accepted abstracts, as well as panel discussions, a "lightning session", and opportunities for networking. Funding for this conference was provided by the U.S. Environmental Protection Agency and Rural Community Assistance Partnership (RCAP).

The conference was recorded and the videos are now available on YouTube:

2019 Private Well Conference

- May 2019
- Harrisburg, PA
- Videos available by end of July

2019 Private Well Conference



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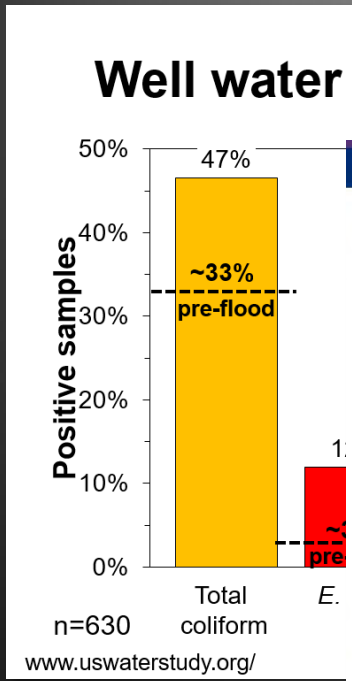
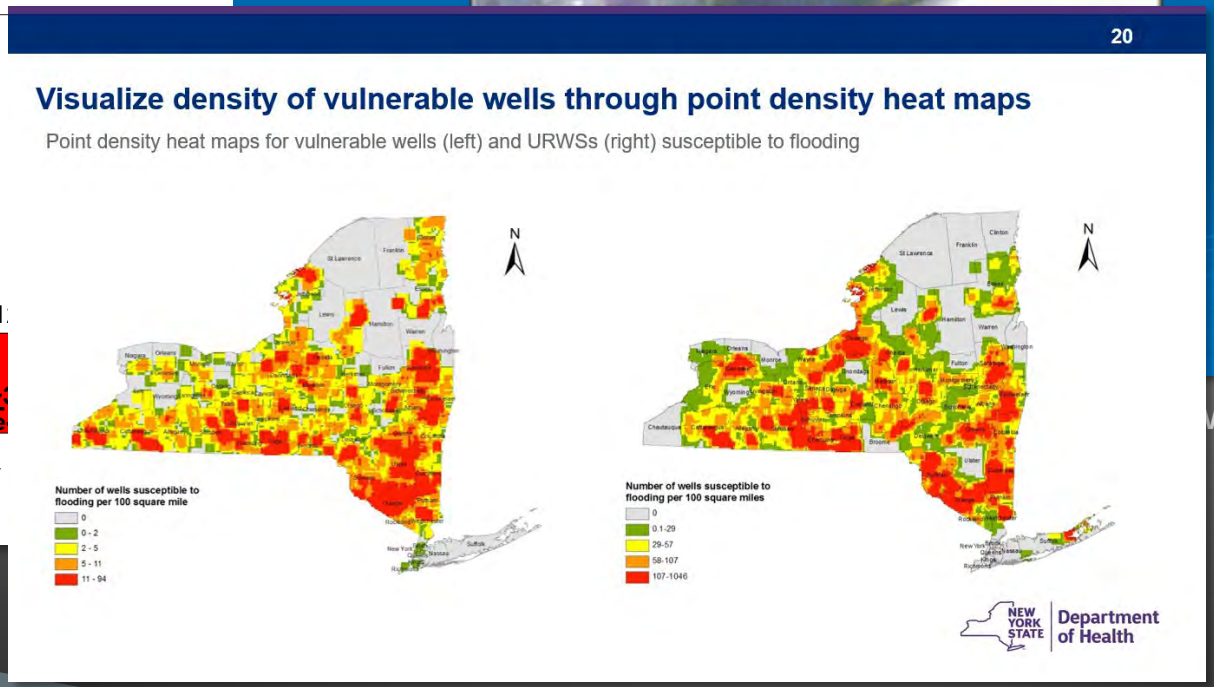


Kelsey Pieper



Caitlin Norton

Are you among the roughly 15 million American households that rely on a private well for drinking water?

If so, you're essentially the operator of your own tiny water system, taking on full responsibility for ensuring that your drinking water is safe and that your well is properly maintained. How can you make sure your water is safe to drink—and that it remains safe to drink?

QUESTIONS?
Contact us:

1-866-522-2681
info@privatewellclass.org
www.privatewellclass.org

THE PRIVATE WELL
CLASS

RCAP
www.rcap.org

ILLINOIS

IS YOUR WELL WATER SAFE?

KEEP YOUR WELL WATER SAFE—FOLLOW THESE 3 STEPS

STEP 1

Get your well water tested

Many well owners just assume their water is safe. To truly have confidence in your well it's recommended that you do a baseline test for environmental contaminants such as arsenic and other metals, as well as annual testing for nitrate and coliform bacteria.

Even if everyone in your home *appears* healthy, well testing is critical to identify contaminants, like lead, that post a heightened risk to young children, as well as those that can build up to cause harm over time.

Ask your local health department where to get your well water tested and if there are other groundwater concerns in your area.

STEP 2

Follow these best practices to protect your well

Even if testing shows that your well water is safe, you still need to maintain the well to ensure the safety of your drinking water over time. Following these simple best practices will help you protect your well, and your family:

- **Test your water** annually, as well as anytime there is a change in taste, odor, or color. You should also test if a member of the household is pregnant or there is a new infant in the home.
- **Visually inspect your well** at the end of every season. Make sure the well remains sealed and clear of debris, including plant material. Look for damage to the wellcap and cracks in the visible portion of the well casing.
- **Keep a file** on your well that includes a well log (if you have it), any service records, emergency instructions, and contact information for your local health department, driller, contractor, etc.
- **Take care of your septic system**, do not dispose of kitchen grease in the sink, do not flush personal hygiene products besides toilet paper, and pump your septic tank every three to five years.

STEP 3

Learn how your well works and how to solve problems

The FREE Private Well Class program will help protect your family's health, avoid costly well problems, and extend the life of your private well. The 10-lesson virtual course can be taken on your own time, at your own pace, from your own home. The class will familiarize you with the basic science of wells and the best practices you can use to maintain your well and protect your water supply.

Since 2012, thousands of homeowners have benefitted from the Private Well Class:

> "This is VERY critical information for the health of homeowners and private well owners, yet so few people understand even the most basic concepts. This was an EXCELLENT course!!

To enroll in the free, 10-lesson Private Well Class, go to privatewellclass.org. You will receive one easy-to-read lesson per week by email, as well as opportunities for additional free learning through online videos and live webinars. To receive your lessons in hard copy, call 1-866-522-2681 or write to info@privatewellclass.org.

¿Hace parte de los 15 millones de hogares americanos que obtienen su agua de un pozo privado?

Si es así, usted es el operador de su pequeño sistema de agua y es el único responsable de garantizar que el agua de su pozo sea de buena calidad y de hacerle un mantenimiento adecuado a su pozo. ¿Cómo puede asegurarse de que su agua es potable y que continúa siéndolo a través del tiempo?

PREGUNTAS?
Contáctenos:

1-866-522-2681
info@privatewellclass.org
www.clasepozosprivados.org

CLASE
POZOS PRIVADOS

RCAP
www.rcap.org

ILLINOIS

¿EL AGUA DE SU POZO ES POTABLE?

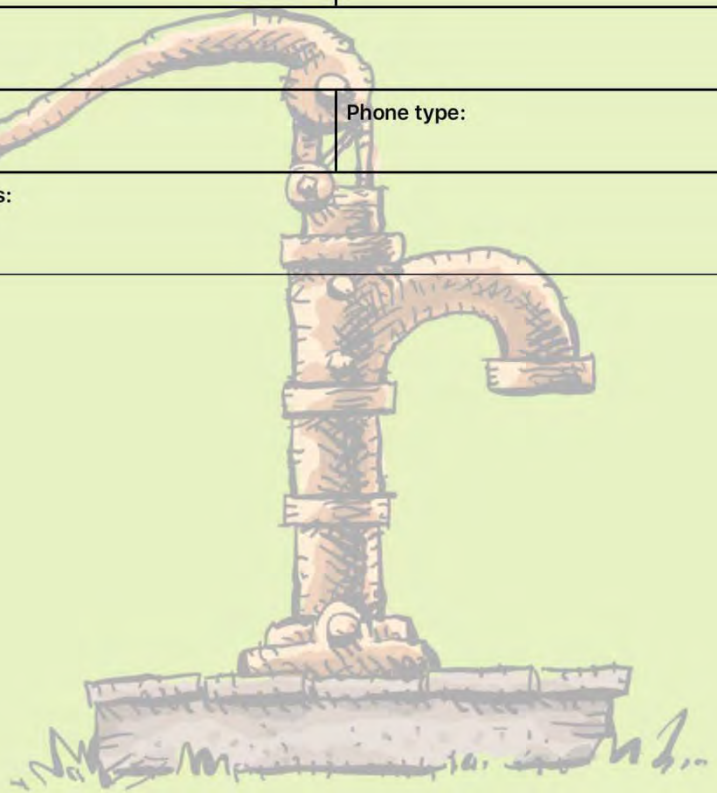
Assessment App (iOS and Android)

TestFlight 7:50 AM Mon Dec 3 100%

Menu | WellSpring - steve

Section 1: Assessor Information | Next

Date:	
Name:	Affiliation:
Email:	
Phone:	Phone type:
Section Notes:	



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Menu | WellSpring - steve

Previous | Section 5: Well Information | Next

Is there a well log or drilling record?		
Is the well log available online?	Agency:	
Well Type:		
Is well screened?		
Depth to top of screened interval (feet below ground surface):	Depth to bottom of screened interval (feet below ground surface):	
If bedrock well, total casing length (ft):		
Driller:	Year constructed:	
Original owner:		
Well depth (ft):	How Detemined	Flowing well?

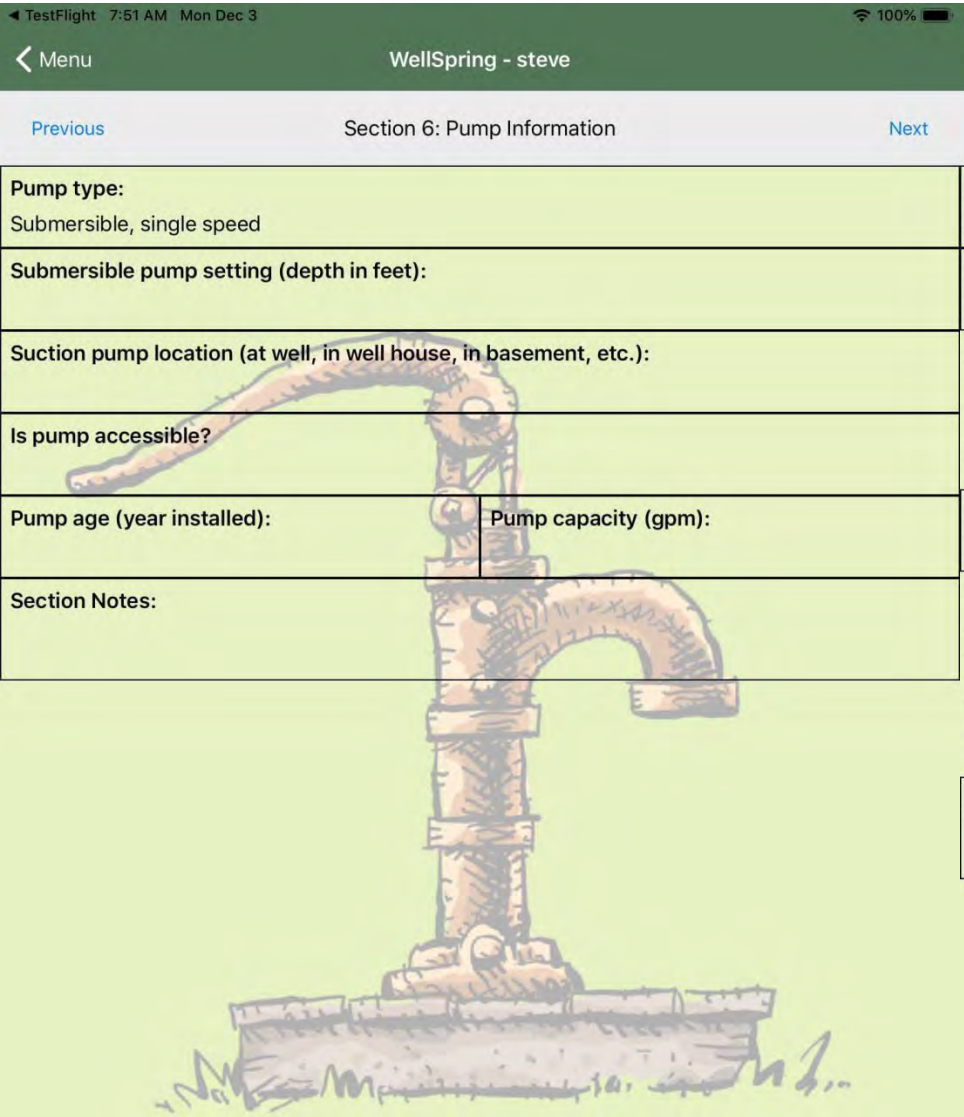
Clear Cancel

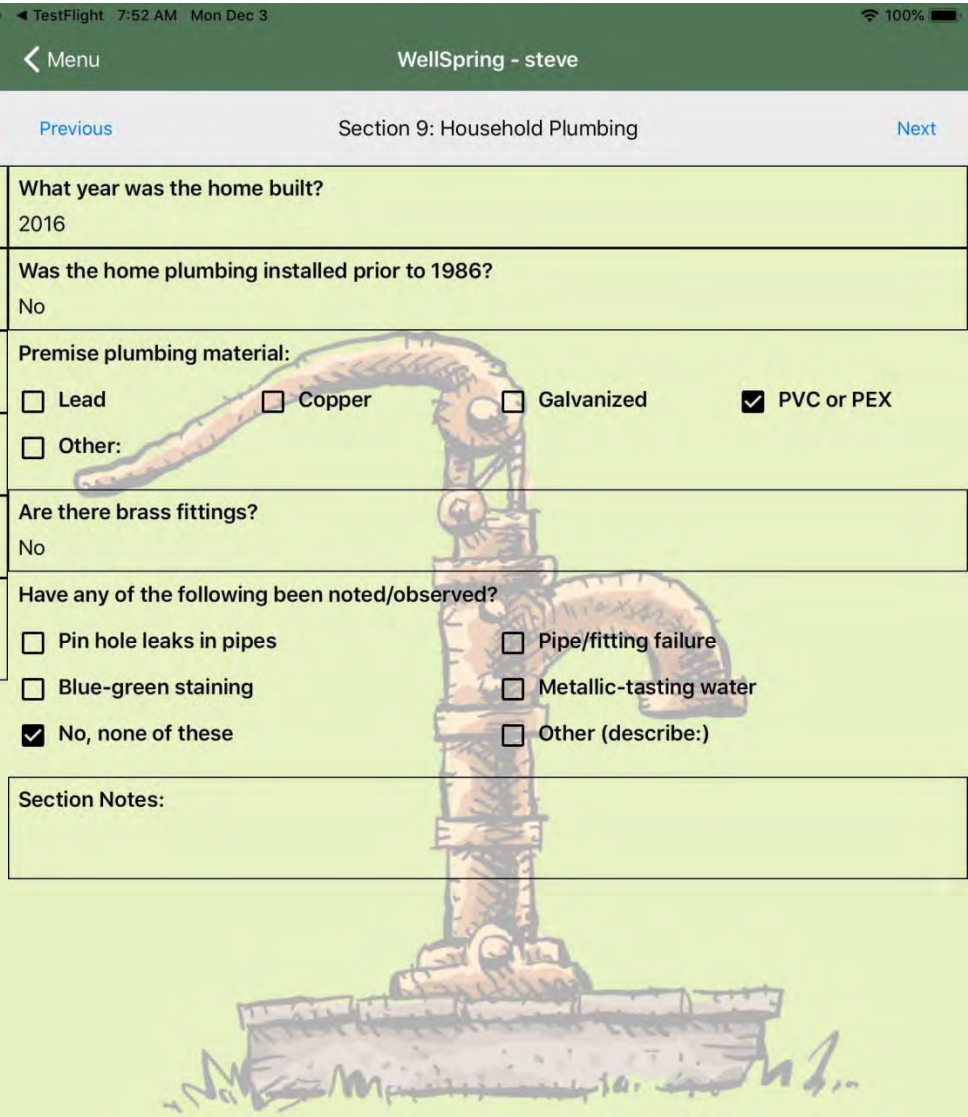
Yes (please attach)

No

Don't Know

Assessment App (iOS and Android)





What We've Learned

- Many well owners are hard to reach/convince.
- Bad information out there making our job harder.
- The message needs to be consistent nationally.
- Partnerships/shared effort are only way to make a dent.
- Our program has a national voice that is building trust and serving as a facilitator for other efforts.

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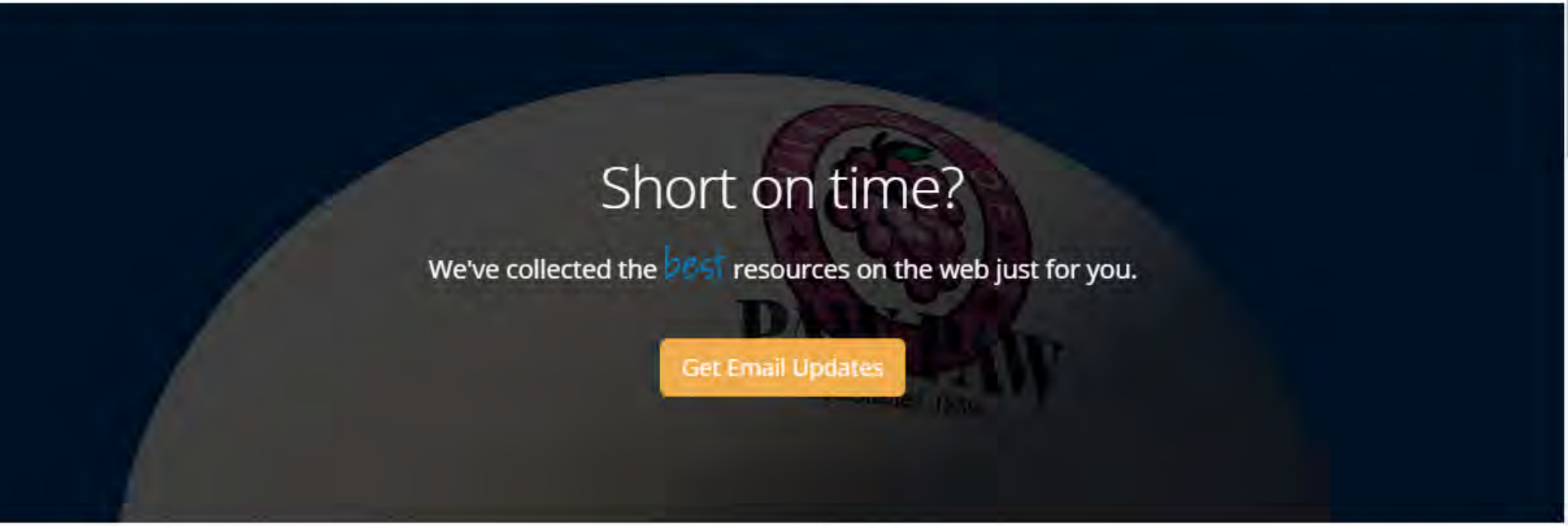


SEARCH THE CALENDAR

Find water operator training events in your location and on the internet.

BROWSE THE RESOURCES

Discover free tools and downloadable documents to make your job easier.

READ THE BLOG

Get quick tips and new insights at your fingertips in our weekly blog posts.

So, What is WaterOperator.org?

- Clearinghouse of information for anything related to wastewater and water operations.
- Legwork has been done for you, easy to use, value-added information.
- An easy to use interface for finding, free, publicly available information on the web.
- Supports operators, can call us, email us, request our help in finding resources or help.

Resource Library

In addition to our comprehensive calendar of operator training events, WaterOperator.org takes pride in being a user-friendly portal for information from across the industry that saves time, answers questions, and provides opportunities for ongoing learning at your own pace.

Search for Documents

- Document Search
- Featured Documents

Resource Topics

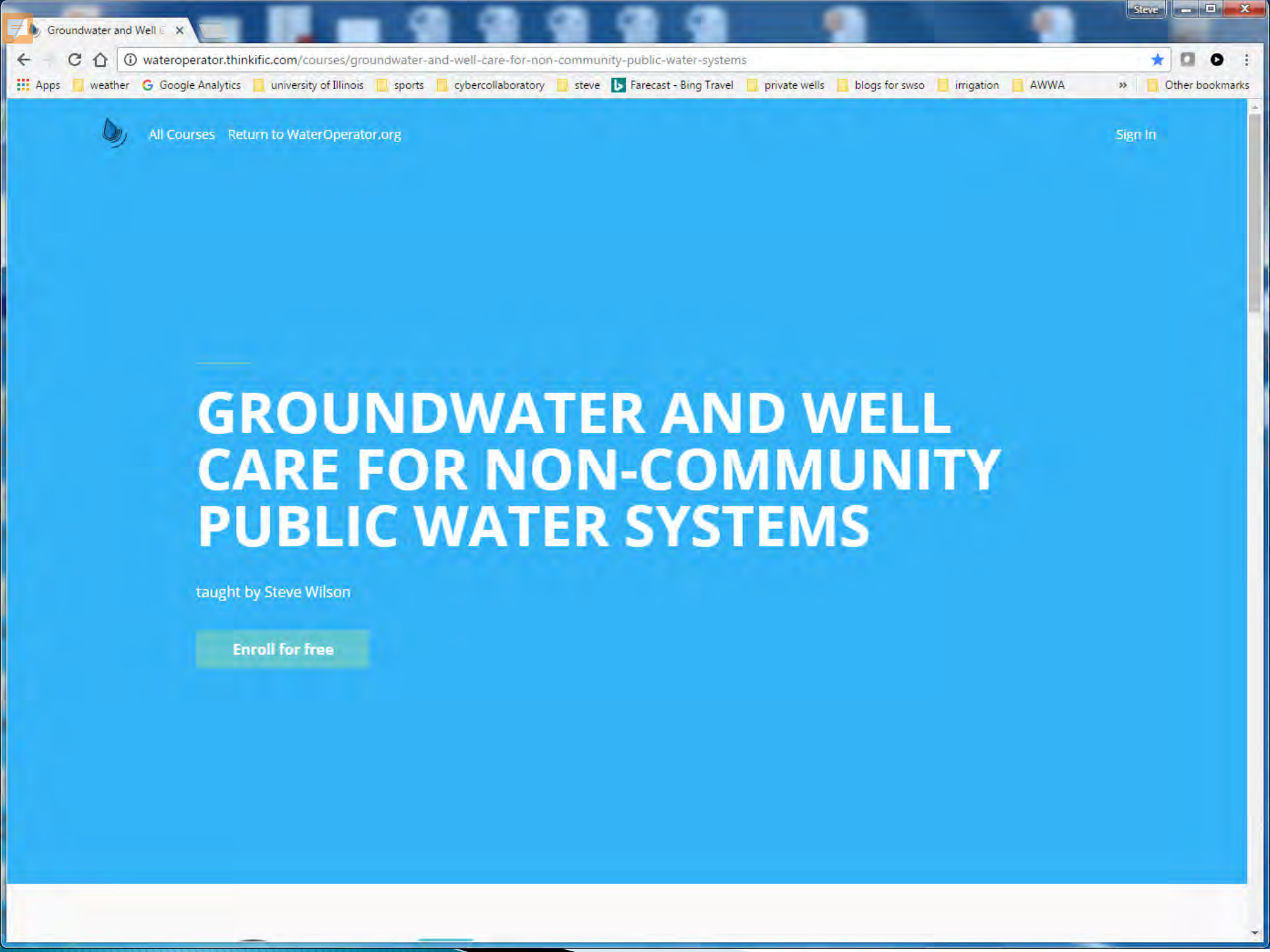
- Browse the Blog
- Innovative Technology
- Operator Careers & Training
- Public Communication

Small System Classes

- Operator Certificate Programs
- CEU Class for NCWS
- The Private Well Class

Tribal Resources

- Tribal Assistance Providers
- Tribal Contact Manager
- NAWMA Working Groups


Steve
Groundwater and Well
wateroperator.thinkific.com/courses/groundwater-and-well-care-for-non-community-public-water-systems
Apps
weather
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university of Illinois
sports
cybercollaboratory
steve
Farecast - Bing Travel
private wells
blogs for swso
irrigation
AWWA
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Return to WaterOperator.org
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GROUNDWATER AND WELL CARE FOR NON-COMMUNITY PUBLIC WATER SYSTEMS
taught by Steve Wilson
Enroll for free

Water is ever-moving. Water moves by many processes, including precipitation, evaporation, runoff, infiltration, plant uptake, percolation, and transpiration (Figure 1.1). The water you are drinking today has likely been through the hydrologic cycle countless times in the past. It's been in the oceans, on a different continent—someone else might've even drunk it before. It's a continuous, ever-changing cycle.

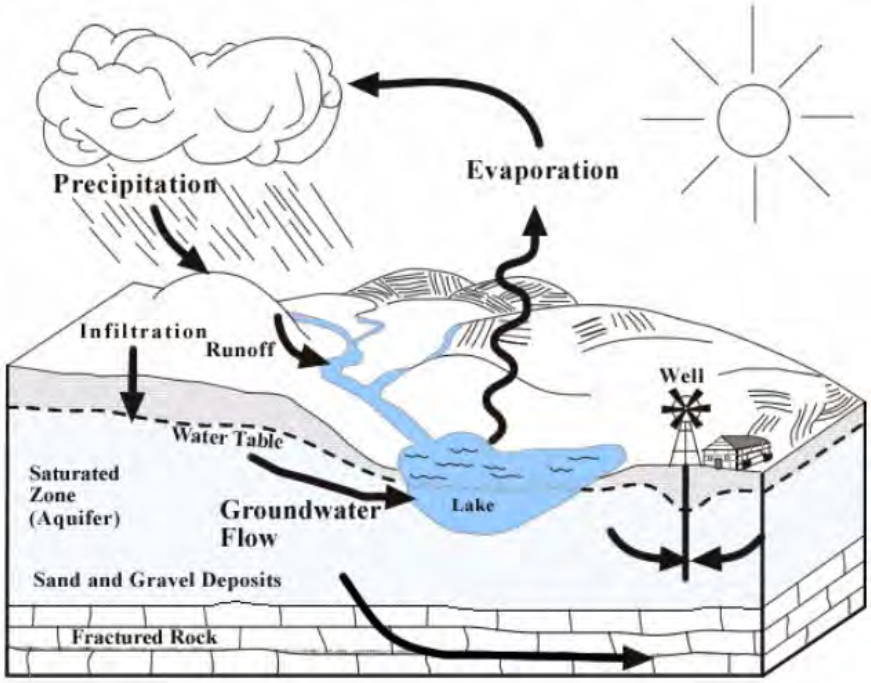

Figure 1.1 The Hydrologic Cycle. Source: Minnesota Department of Health.

The water in the ground today infiltrated into the ground from the surface. What wasn't used by plants or held in the soil migrated down through the soil zone to the water table to become groundwater. As groundwater, it is held in the open spaces (pores and fractures) between soil particles and rock. The water table is the level where the pore spaces are completely filled (saturated) with water (Figure 1.2).

MARK INCOMPLETE NEXT

You Completed Chapter 6: Emergency Situations and Problem Solving!

100% through Groundwater and Well Care for Non-Community Public Water Systems

NEXT

NORTH CAROLINA
Environmental Quality

Search...

Home | Permits & Rules | Outreach & Education | Energy & Climate | Cons

Home » About » Divisions » Water Resources » Operator Certification » Drinking Water Operator

DW Operator Certification: PGH

You may check your current PGH balance here

or

You may check your current PGH hour balance, plus more, on the Operator Portal

*** * * You *MUST* have an *NCID* to access the Operator Portal * * ***

As a certified operator you must obtain 6 hours of NCWTFO board-approved PGH training each year when renewing your license.

The Operator Certification Program does not conduct training classes; however, you may find training opportunities below. *Questions regarding specific locations and dates should be directed to the training provider(s).*

Current Listing of Board-approved classes Board-approved Online Opportunities

Additional Approved Training Opportunities:

As **approved sponsors**, any water-related courses presented as approved courses by any of the following organizations will be deemed approved by the NCWTFOCB:

Additional Approved Training Opportunities:

As **approved sponsors**, any water-related courses presented as approved courses by any of the following organizations will be deemed approved by the NCWTFOCB:

- American Backflow Prevention Association
- CEU Plan
- NC Statewide Safety Conference
- North Carolina American Water Works Association/ Water Environment Association
- North Carolina Rural Water Association
- North Carolina Waterworks Operators Association

Online Courses available for Professional Growth Hours:

- 1 Attempt 877-724-6150
- 360 Water, Inc 866-923-3600
- Approved Environment 317-452-5353
- @HomePrep 800-952-0910
- CEU Plan 352-754-1259
- FirstNet Learning 888-948-4949
- Hach 1-800-227-4224, #2344
- Illinois State Water Survey - WaterOperator.org 866-522-2681
- NC811 (Howard Corey) - 336-317-5999
- NCRWA 336-731-6963
- On Line Environmental, Inc , 803-939-4983
- Target Solutions 858-376-1630
- Water Otter 877-378-8111
- Zarathom 844-927-2846

Event Calendar

We constantly scour the Internet for water operator training events, workshops, classes, conferences, and webinars across the United States and on tribal lands. No longer do you need to visit two, three, or more websites in your area to find available training. We have it all here, in one easily-searchable place.

WaterOperator.org Webinars

In addition to indexing hundreds of free webinars from across the industry on our calendar, we host periodic events to showcase our website and share innovative resources for the small systems community. Upcoming events are listed below.

- *There are no webinars scheduled at this time.*

Search for Events

Use the search tool below to find events based on the criteria you designate.

Instructions: *1) To view events, select one or more filter criteria and/or enter a keyword (press the 'Go' button to apply a keyword filter).*
2) Click on an event to see the details.

Select...

Keyword:

Go

Previous		***May 2018***				*Next*
Sun	***Mon***	***Tue***	***Wed***	***Thu***	***Fri***	***Sat***
		1	2	3	4	5
6	7	8	9	10	11	12

WaterOperator.org Webinars

In addition to indexing hundreds of free webinars from across the industry on our calendar, we host periodic events to showcase our website and share innovative resources for the small systems community. Upcoming events are listed below.

RECENT SERIES: Simplify 2019 with WaterOperator.org

- January 2019 - Operator Certification + Regulations | Recording
- February 2019 - O&M + Treatment | Recording
- March 2019 - Communication + Emergency Response | Recording

Search for Events

Use the search tool below to find events based on the criteria you designate.

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2) Click on an event to see the details.

STATE
New Jersey
New Mexico
New York
North Carolina

Select...

Keyword:
Go
Filters
STATE = 'North Carolina'
Clear Filters | View List

Previous **July 2019** Next

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8 TPC Basic Electricity for the Non-Electrician NCAWWA-WEA 2019 Western Collection & Distribution School [July 8-12]	9 NCRWA NCRWA NCRWA NCRWA	10 UNCEFC Water Allocation Committee MeetingWater Allocation Committee Meeting TPC Electrical Troubleshooting & Preventative Maintenance	11 NCRWA NCRWA NCRWA NCSSC	12	13
14	15 NCRWA BRCC TPC	16	17 TPC Arc Flash Electrical Safety NFPA 70E NCRWA Collections Grade I & II Combined School (WW) [July 17-Aug 7] – Cary	18 NCWOA NCRWA NCAWWA-WEA	19	20
21	22 TPC PLCs for Non-Programmers TPC Basic Electricity for the Non-Electrician	23 TEEX Disaster Management for Public Services NCAWWA-WEA Raleigh Institute Option 1	24 NCRWA NCRWA NCAWWA-WEA TPC	25 BRCC Electrical Fundamentals (W/WW) – 1-Day Course NCAWWA-WEA Drinking Water Rules and Regulations Seminar 2019	26	27
28	29 NCRWA Biological Wastewater Grade II Certification School (WW) [July 29-Aug 2] – Durham TPC Pump Repair & Maintenance	30 NCDEQ Water Operator Exam (computer-based) – MOREHEAD CITY & RALEIGH NCSSC Dual Water/Wastewater Workshop – Mebane	31 NCRWA Current Technologies for the Water & Wastewater Industry – Asheville			

WaterOperator.org Webinars

In addition to indexing hundreds of free webinars from across the industry on our calendar, we host periodic events to showcase our website and share innovative resources for the small systems community. Upcoming events are listed below.

RECENT SERIES: Simplify 2019 with WaterOperator.org

- January 2019 - Operator Certification + Regulations | Recording
- February 2019 - O&M + Treatment | Recording
- March 2019 - Communication + Emergency Response | Recording

Search for Events

Use the search tool below to find events based on the criteria you designate.

Instructions: 1) To view events, select one or more filter criteria and/or enter a keyword (press the 'Go' button to apply a keyword filter)
2) Click on an event to see the details

Previous **July 2019** Next

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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21	22	23	24	25 NCAWWA-WEA Drinking Water Rules and Regulations Seminar 2019	26	27
28	29	30	31			

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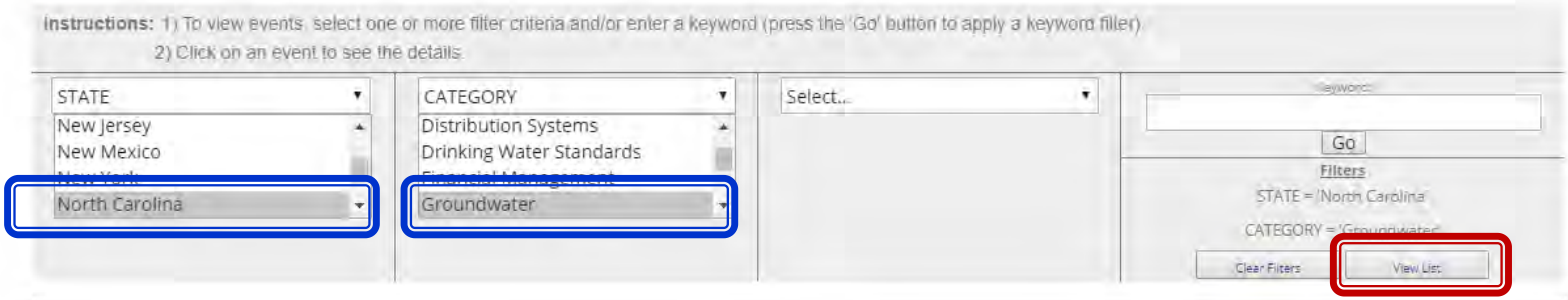

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WaterOperator.org Webinars

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WaterOperator > Event Calendar > Calendar List - Google Chrome

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LOGIN

WaterOperator.org

Filters

STATE = 'North Carolina'

CATEGORY = 'Groundwater'

07/25/2019 **Title:** NCAWWA-WEA Drinking Water Rules and Regulations Seminar 2019

Sponsor(s): Association

City: Raleigh

State: North Carolina

08/20/2019 **Title:** NCWOA Small Systems Seminar – Waynesville

Sponsor(s): North Carolina Waterworks Operators Association

City: Waynesville

State: North Carolina

09/23/2019 **Title:** NCWOA 80th Annual Fall School - A, B, C Surface & A, B, C Well – Raleigh

Sponsor(s): North Carolina Waterworks Operators Association

City: Raleigh

State: North Carolina

11/03/2019 **Title:** NCAWWA-WEA 99th Annual Conference [Nov 3-6]

Sponsor(s): North Carolina American Water Works Association and Water Environment Association

City: Raleigh

State: North Carolina

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STATE = 'North Carolina'

CATEGORY = 'Groundwater'

Clear Filters View List

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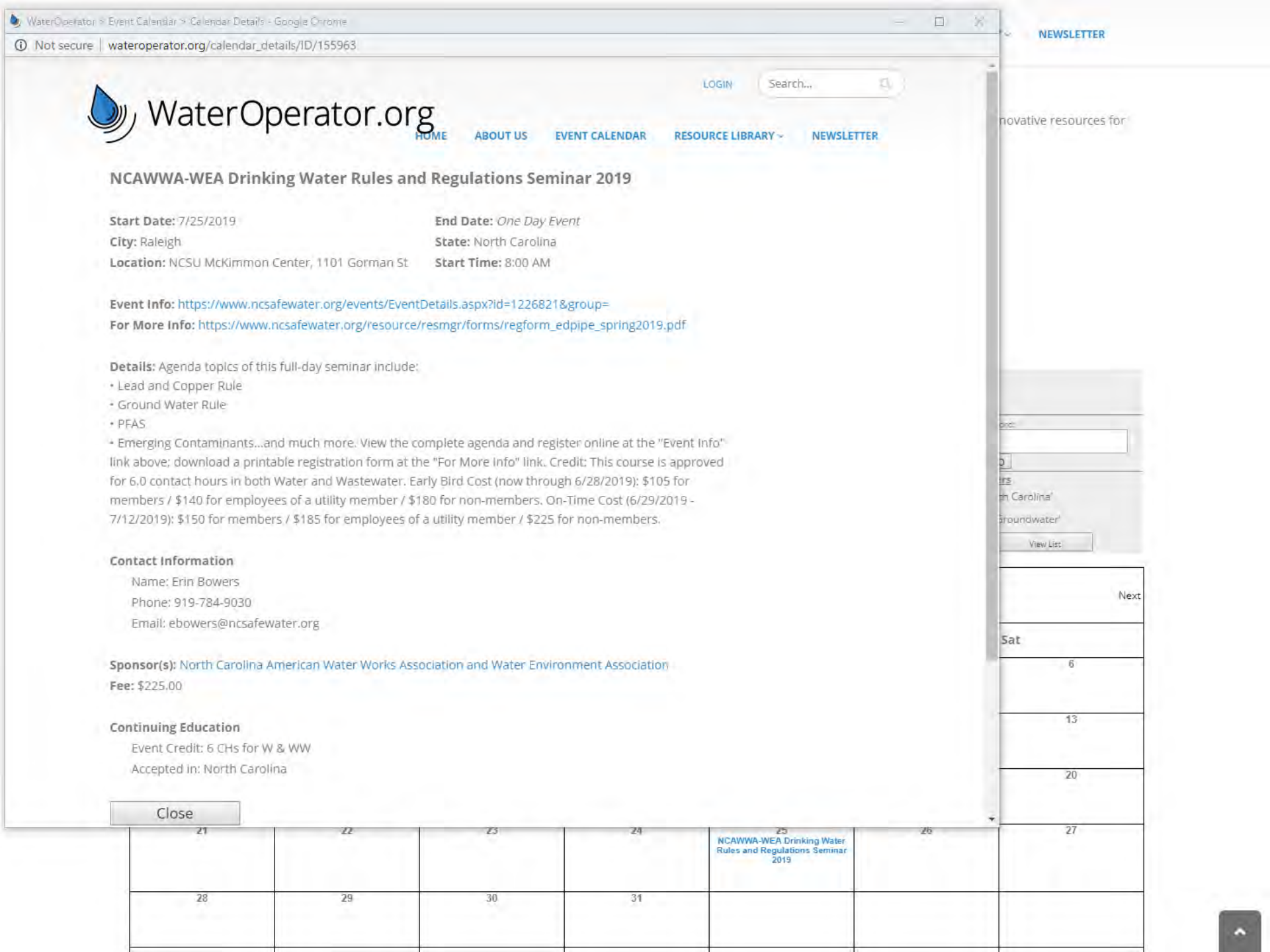
WaterOperator > Event Calendar > Calendar Details - Google Chrome
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WaterOperator.org
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EVENT CALENDAR
RESOURCE LIBRARY
NEWSLETTER
NCAWWA-WEA Drinking Water Rules and Regulations Seminar 2019
Start Date: 7/25/2019
End Date: One Day Event
City: Raleigh
State: North Carolina
Location: NCSU McKimmon Center, 1101 Gorman St
Start Time: 8:00 AM
Event Info: https://www.ncsafewater.org/events/EventDetails.aspx?id=1226821&group=
For More Info: https://www.ncsafewater.org/resource/resmgr/forms/regform_edpipe_spring2019.pdf
Details: Agenda topics of this full-day seminar include:
• Lead and Copper Rule
• Ground Water Rule
• PFAS
• Emerging Contaminants...and much more. View the complete agenda and register online at the "Event Info" link above; download a printable registration form at the "For More Info" link. Credit: This course is approved for 6.0 contact hours in both Water and Wastewater. Early Bird Cost (now through 6/28/2019): $105 for members / $140 for employees of a utility member / $180 for non-members. On-Time Cost (6/29/2019 - 7/12/2019): $150 for members / $185 for employees of a utility member / $225 for non-members.
Contact Information
Name: Erin Bowers
Phone: 919-784-9030
Email: ebowers@ncsafewater.org
Sponsor(s): North Carolina American Water Works Association and Water Environment Association
Fee: $225.00
Continuing Education
Event Credit: 6 CHs for W & WW
Accepted in: North Carolina
Close
NEWSLETTER
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NCAWWA-WEA Drinking Water Rules and Regulations Seminar 2019
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31

Resource Library

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Search for Documents

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Resource Topics

- Browse the Blog
- Innovative Technology
- Operator Careers & Training
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- Operator Certificate Programs
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- The Private Well Class

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- Tribal Assistance Providers
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- NAWMA Working Groups

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CATEGORY

Arsenic
Asset Management
Backflow
Biosolids
Certification/Exam Prep

Select...

Keyword Filter:

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Filters

CATEGORY = 'Arsenic'

*Total Records: **187** - Showing Page: **1** of **19***

First *Previous Page* *Next Page* *Last*

1)
Title: 12 Steps to Arsenic Compliance
Summary: This 1-page document provides helpful resources published by the EPA on how to avoid arsenic contamination. It consists of a 12-step checklist that operators can use to comply with the arsenic rule.
Source: https://www.epa.gov/dwreginfo/arsenic-rule-compliance-community-water-system-owners-and-operators
Host Organization(s): U.S. Environmental Protection Agency

2)
Title: 2009 NSF REU Proceedings of Research in Interdisciplinary Watershed Sciences and Engineering
Summary: This 98-page document is a compilation of the research papers of the 2009 NSF REU program. The goal of the NSF REU program is to expose future water scientists and professionals to critical research related to the sustainable management of water resources. The program provides opportunities for participants to acquire advanced analytical and field measurement experience, strengthen their computational and scientific communication skills, and stimulate their professional curiosity. During the 10-week program, NSF REU fellows conducted individual research under the supervision of their research advisors and graduate student mentors. Topics covered include arsenic bioavailability processes in freshwater clams, ferrous iron flavor intensities, the sensory perception of drinking water hardness, uptake rates of certain nutrients by biofilm in certain surface waters, effects of a hypolimnetic oxygenation system on a drinking water reservoir, fecal indicator bacteria in Chesapeake Bay sand and water, rainwater harvesting, and watershed analysis.
Source: https://vtechworks.lib.vt.edu/handle/10919/49494
Host Organization(s): Virginia Water Resources Research Center

3)
Title: Adsorption Technologies
Summary: This is a 60-slide PowerPoint presentation that discusses Arsenic adsorption technologies. The slides include information on application, system design, system operation, and costs.
Source: http://www.epa.gov/safewater/arsenic/compliance.html#training
Host Organization(s): U.S. Environmental Protection Agency

Instructions: Select one or more filter criteria and then click the 'Retrieve Documents' button.

CATEGORY

Arsenic
Backflow
Biosolids
Certification/Exam Prep

Select...

Keyword Filter:

adsorption

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Filters

CATEGORY = 'Arsenic'

Keyword = 'adsorption'

Total Records: 12 - Showing Page: 1 of 2

First Previous Page Next Page Last

1) **Title:** A Review of Arsenic Removal Technologies and Technology Selection Approach

Summary: This 25-slide presentation offers basic facts about arsenic, health affects, occurrence statistics, and the impact of the arsenic rule in the US. The presentation also covers arsenic removal technologies, capital costs and design considerations for these technologies, and the technology selection (including pilot testing) process.

Source: http://www.swawwa.org/ace-2017-presentations/

Host Organization(s): Southwest Section American Water Works Association

2) **Title:** Adsorption Technologies

Summary: This is a 60-slide PowerPoint presentation that discusses Arsenic adsorption technologies. The slides include information on application, system design, system operation, and costs.

Source:

Host Organization(s): U.S. Environmental Protection Agency

3) **Title:** Arsenic Removal and Disposal for Public Water Systems

Summary: A 3 page factsheet about arsenic removal in the state of New Hampshire, highlighting treatment methods.

Source: http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm

Host Organization(s): New Hampshire Department of Environmental Services

4) **Title:** Arsenic: Municipal Industrial Sources and Biosolids Sinks

Summary: This 37-page slide presentation discusses the topics: Arsenic and Municipal Industrial Sources and Biosolids Sinks. Data, Wastewater Treatment plant remedies, and industrial impacts are also discussed. As presented by Michael Person at the MWEA Biosolids & IPP Joint Conference

Source: http://www.viethconsulting.com/projects/presentations.php?pid=517807

Host Organization(s): Michigan Water Environment Association

5) **Title:** Chlorination and Arsenic Treatment

Summary: This 35-page presentation begins with a basic introduction to chlorination and disinfection, including basic requirements and features of chlorination systems using chlorine gas, sodium hypochlorite, and calcium hypochlorite. From there, the presentation goes on to cover arsenic contamination and compliance. It concludes with discussions of the EPA decision tree, process optimization for arsenic, the iron-based arsenic removal process, ion-exchange arsenic removal, and adsorption

Instructions: Select one or more filter criteria and then click the 'Retrieve Documents' button.

PowerPoint Presentation - Google Chrome

Not secure | wateroperator.org/Portals/1/Documents/1532.pdf

Adsorption Technologies

Presentation by:

Yu Jung Chang – HDR Engineering, Inc.

Slides by:Tom Sorg and Darren Lytle
U.S. Environmental Protection Agency
ORD, NRMRL, WSWRD, TTEB,
Cincinnati, Ohio 45268
Contributions by: Yu Jung Chang – HDR

Presented at the 2005 Arsenic Training Sessions
Sponsored by the USEPA

Source: http://www.vietnconsulting.com/projects/presentations.php?pid=917607

Host Organization(s): Michigan Water Environment Association

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CATEGORY

Select...

Innovative Water Technologies
Lead and Copper
Monitoring
Nitrate
Non-Community Systems

Keyword Filter:

Searches for an exact match.

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Filters

CATEGORY = 'Non-Community Systems'

Total Records: **186** - Showing Page: **1** of **19**

First Previous Page Next Page Last

1) Title: 2009 Capacity Assessment Survey Forms, Guidelines and Survey Summary Results (from the "Fiscal Year 2009 Annual Implementation Report" for Mississippi's Public Water Systems Capacity Development Program)

Summary: This 32-page report describes Mississippi's Capacity Development Program and outlines the implementation results for Fiscal Year 2009 (July 1, 2008 – June 30, 2009). Appendix A includes the three types of Capacity Assessment Forms that must be completed whenever a routine sanitary survey of a public water system is conducted by a regional engineer of the Bureau of Public Water Supply: a Standard Form, a Private Form, and a Non-Transient, Non-Community Form. Completion of these forms results in Capacity Rating Determinations for three areas: Technical Capacity, Management Capacity, and Financial Capacity. An Overall Capacity Rating is also calculated for each form. Appendix B provides bar graphs of Capacity Assessment Ratings that show capacity rating distributions over a 6-year period (2003-2008) for Technical, Managerial, & Financial Capacity, as well as a 5-year Overall Score Distribution. FOR THE MOST CURRENT FORMS, visit the Mississippi State Department of Health (MSDH) website for the most current Capacity Development Program Annual Implementation Reports: http://msdh.ms.gov/, then follow the link to "Water Supply" then "Reports".

Source: http://extension.msstate.edu/library

Host Organization(s): Mississippi State University Extension Service

2) Title: 2017 PISCES Recognition Program Compendium

Summary: This 24-page report presents this year's PISCES projects in an annual compendium, with the hope that reading about successful projects will inspire continued success in the CWSRF.

Source: https://www.epa.gov/cwsrf/cwsrf-2017-pisces-recognition-program-compendium

Host Organization(s): U.S. Environmental Protection Agency

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CATEGORY

Innovative Water Technologies
Lead and Copper
Monitoring
Non-Community Systems

TYPE

Factsheets/Case Studies
Manuals/Handbooks
Newsletters/Magazines

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Filters

CATEGORY = 'Non-Community Systems'

TYPE = 'Factsheets/Case Studies'

Total Records: **40** - Showing Page: **1** of **4**

First Previous Page Next Page Last

1) Title: Are You a Public Water System?
Summary: This 1-page factsheet is an informational document about the function of a public water system. The document breaks down the different types of Public Water Systems: Community water system, Noncommunity water system, a Noncommunity Water System and a Transient Noncommunity Water System.
Source: http://www.in.gov/idem/4522.htm#owq
Host Organization(s): Indiana Department of Environmental Management

2) Title: Bacteriological Sampling Plan Guidance
Summary: This 2-page factsheet provides guidelines for developing a bacteriological sampling plan for non-transient non-community and community water systems. A graph of the frequency of monitoring compared to the size of the community served is also provided.
Source:
Host Organization(s): Vermont Department of Environmental Conservation

3) Title: Clarification of Consecutive System Operator Requirements
Summary: This 1-page memorandum clarifies the requirements for consecutive water systems to retain operators in the state of Wyoming.
Source:
Host Organization(s): Wyoming Department of Environmental Quality

4) Title: Coliform Contamination Response and Prevention For Noncommunity Water Supplies
Summary: This 2 page fact sheet is for a noncommunity water supply, otherwise known as a type II water supply, serves any nonresidential facility that provides water for drinking or domestic purposes to 25 or more persons at least 60 days out of the year, or has 15 or more service connections. Discussed is the purpose of coliform sampling, what the sample results mean, what happens if a sample shows the presence of coliform or fecal coliform bacteria and the causes of a positive result.
Source: https://www.michigan.gov/deq/0,4561,7-135-3313_3675_3692-226407--,00.html
Host Organization(s): Michigan Department of Environmental Quality

5) Title: Drinking Water Facility Specific Operator
Summary: This 2-page document outlines the different systems that can be granted FSO certifications, along with the requirements for a facility specific operator certification and how to become a FSO.
Source: http://www.in.gov/idem/4522.htm
Host Organization(s): Indiana Department of Environmental Management

6) Title: Duties and Responsibilities of a Public Water System's Certified Small Water System Operator

Instructions: Select one or more filter criteria and then click the 'Retrieve Documents' button.

CATEGORY

Innovative Water Technologies
Lead and Copper
Monitoring
Non-Community Systems

TYPE

Factsheets/Case Studies
Manuals/Handbooks
Newsletters/Magazines

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Instructions: Select one or more filter criteria and then click

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Non-Community Systems

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June 20, 2011 - Google Chrome

State of Indiana [US] | https://www.in.gov/idem/files/factsheet_owq_pws_are_you_pws.pdf

June 20, 2011 1 / 2

FACT SHEET

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Are You A Public Water System?

Office of Water Quality

(317) 232-8603 • (800) 451-6027 www.idem.IN.gov 100 N. Senate Ave., Indianapolis, IN 46204

Introduction:
Public Water Systems that supply drinking water must follow certain federal and state safe drinking water regulations. Drinking water is any water supplied for the purpose of human consumption or domestic use. The source of the water can be ground water from wells or surface water from rivers and lakes. The purpose of this fact sheet is to provide the definition of a Public Water System (PWS) and information about different types of Public Water Systems.

What is a Public Water System?	*"A Public Water System is a public water supply for the provision to the public of piped water for human consumption, if such system has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year."*
What does a Public Water System include?	*"A Public Water System includes any collection, treatment, storage, and distribution facilities under control of such system, including the operator or administrator of such system, and is used primarily in connection with such system and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system."*
Are there different types of Public Water Systems?	*Yes, there are two types: Community Water Systems and Noncommunity Water Systems.* *Noncommunity Water Systems are broken down further into two types: Nontransient and Transient systems.*
What do you mean by Community Water System and Noncommunity Water System?	*A Community Water System is a system that serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents.* *A Noncommunity Water System is a system that has at least fifteen (15) service connections used by nonresidents or regularly serves at least twenty-five (25) or more nonresidents individuals daily for at least sixty (60) days per year.*
Can you explain the two types of Noncommunity Water Systems (Nontransient and Transient)?	*A Nontransient Noncommunity Water System (NTNCWS) is a system that is not a Community Water System and regularly serves the same twenty-five (25) or more persons at least six (6) months per year.*

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CATEGORY | TYPE | Select...

Innovative Water Technologies
Lead and Copper
Monitoring
Non-Community Systems

Manuals/Handbooks
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Reports
Videos

Keyword Filter:

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Filters

CATEGORY = 'Non-Community Systems'

TYPE = 'Videos'

Total Records: 7 - Showing Page: 1 of 1

First *Previous Page* *Next Page* *Last*

1) **Title:** Alaska Water-Sewer Challenge

Summary: This 1-hour, 20-minute video is a recording of a webinar that took place on February 9th, 2018. The Alaska Department of Environmental Conservation, in coordination with tribal, state, and federal agencies, developed the Alaska Water and Sewer Challenge in an effort to develop a better and more affordable way to deliver drinking water, hygiene water, and sewage disposal to unserved homes in Alaska. Phases I and II developed concept designs; Phase III included the construction and operation of a prototype system for a period of 9 months. Three teams participated in Phase III using different treatment technologies: UAA, DOWL, and Summit. This video describes the approach, results, challenges and take-aways experienced by the DOWL and Summit teams in developing prototypes to address every use provided by a piped system: a source of potable water for drinking and cooking, a toilet and blackwater system, hygienic water for hand washing, showering, toilet flushing, and cleaning, and a system for treating graywater and reusing for hygiene purposes.

Source: https://www.uaa.alaska.edu/academics/college-of-engineering/community/seminars.cshtml

Host Organization(s): University of Alaska Anchorage College of Engineering

2) **Title:** CampWater Water System

Summary: This 30-second video shows how to assemble a CampWater System for Cold Climate Homes.

Source: http://www.cchrc.org/water-sewer

Host Organization(s): Cold Climate Housing Research Center

3) **Title:** Free Resources for Non-Community Public Water Systems

Summary: This 1-hour, 5-minute video is a recording of a webinar that took place on May 29, 2018. The video introduces a free, 2-hour online course that helps owners and operators of non-community public water systems with a groundwater well better understand how to properly care for their water supply. The course curriculum includes the basic science of groundwater, well mechanics, and source water protection best practices. The webinar also features WaterOperator.org, a free resource portal for the public water system community.

Source: http://wateroperator.org/blog/PostId/1420/free-resources-for-non-community-water-systems-recording-on-may-29-2018

Host Organization(s): WaterOperator.Org

4) **Title:** New Technology to Reach and Regulate Non Community Water Systems

Summary: the 1 hour and 27 minute video is a webinar utilizing four speakers discussing technology for non community water systems. Curtis Stoehr will be discussing improving compliance utilizing the auto dialer program in Idaho. Colt Smith will discuss the utilization of google forms for small water systems. Steve Wilson will discuss education technology for operators and small/private well owners, and Vern Steel will discuss the utilization of Mobile App's to collect information on water systems.

Source: http://www.asdwa.org/index.cfm?fuseaction=Page.ViewPage&PageID=843

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Innovative Water Technologies
Lead and Copper
Monitoring
Nitrate
Non-Community Systems

New Technology to Reach and Regulate Non Community Water Systems - YouTube - Google Chrome

https://www.youtube.com/watch?v=Y8s3-mxr-OM&feature=youtu.be

YouTube Search

New Technology to Reach and Regulate Non Community Water Systems

Unlisted

145 views

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1) Title: Alaska Water-Sewer Challen
Summary: This 1-hour, 20-minute video
with tribal, state, and federal
water, hygiene water, and se
of a prototype system for a p
describes the approach, resu
piped system: a source of po
cleaning, and a system for tr
Source: https://www.uaa.alaska.edu/a
Host Organization(s): University of Alaska Anchora

2) Title: CampWater Water System
Summary: This 30-second video shows
Source: http://www.cchrc.org/water-se
Host Organization(s): Cold Climate Housing Resea

3) Title: Free Resources for Non-Com
Summary: This 1-hour, 5-minute video i
operators of non-community
the basic science of groundw
the public water system com
Source: http://wateroperator.org/blog/
Host Organization(s): WaterOperator.Org

4) Title: New Technology to Reach and Regulate Non Community Water Systems
Summary: the 1 hour and 27 minute video is a webinar utilizing four speakers discussing technology for non community water systems. Curtis Stoehr will be discussing improving compliance utilizing the auto dialer program in Idaho. Colt Smith will discuss the utilization of google forms for small water systems. Steve Wilson will discuss education technology for operators and small/private well owners, and Vern Steel will discuss the utilization of Mobile App's to collect information on water systems.
Source: http://www.asdwa.org/index.cfm?fuseaction=Page.ViewPage&PageID=843
Host Organization(s): Association of State Drinking Water Administrators

Text
TAPWATER
To
444999

WaterOperator.org

U.S. Water and Wastewater Infrastructure Get Near Failing Grades

The national report card on infrastructure from the American Society of Civil Engineers is out, and the news is not good. Released every four years, the report analyzes the state of infrastructure in all 50 states, and American systems received a depressing D+ overall. An estimated $4.59 trillion is needed to bring systems from dams to drinking water up to adequate levels. Water Online's story is here and the full report can be accessed here.

Posts from WaterOperator.org

Featured Video: Coliform Sampling Best Practices
This video from RCAP explains the steps to taking an accurate coliform sample, including selecting a good sample site.

Featured Video: Community Onsite Options
Maintaining septic systems can be challenging, and sometimes a community-level strategy is needed to protect local water quality. This video explains onsite management systems, using a community leach-field.

Questions