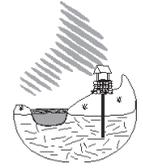




SUPPLY LINES WITH THE SOURCE



Newsletter of the NHDES Drinking Water & Groundwater Bureau
on the web at www.des.nh.gov

Summer 2017

Be Well Informed Goes National!

NHDES' Be Well Informed (BWI) web tool, which helps private well owners identify the best treatment technologies to effectively remove contaminants from their well water, has gone national! On May 3, NHDES was presented with an Environmental Merit Award by EPA Region 1 for developing this innovative, interactive web tool. EPA's new "E-Enterprise for the Environment" web portal recently incorporated BWI, making it available nationally to other state environmental and health agencies.

EPA's E-Enterprise Portal will share BWI code so that other states can download and easily customize the application for their residents' use, saving significant programming time and resources. The E-Enterprise Portal was designed to simplify, streamline and modernize the

implementation of national environmental programs and the exchange of innovative ideas and projects between states, tribes and EPA. NHDES' BWI was selected for the Portal because of its unique design, which relies upon a series of logic models that evaluate multiple contaminants

at varying concentrations to provide information about health and home impacts as well as water treatment options.

According to a 2014 statewide survey, 37% of private well owners in New Hampshire did not

know what treatment actions to take when their well water test results indicated contaminants at levels that could affect their health or home. Nearly 3,000 New Hampshire well owners have used NHDES' BWI since the fall of 2015 but that number will grow exponentially as other states adopt and use a version of the BWI web tool. 💧



Be Well Informed website available at <http://xml2.des.state.nh.us/DWITool/>

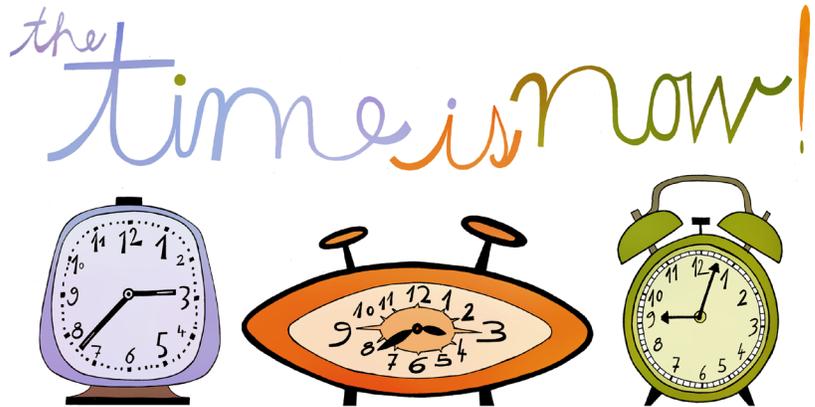


NHDES Be Well Informed design and content development team at the EPA Environmental Merit Award Ceremony.
L-R Paul Susca, Kelsey Vaughn, Pierce Rigrod, Cynthia Klevens, Christine Bowman with Ken Moraff (EPA) and Clark Freise NHDES Assistant Commissioner

Don't Delay - Now Is the Time To Get That Project Done

2017 Drinking Water State Revolving Fund (DWSRF) Pre-Applications Now Available - Due June 30

We know that water systems have projects that need to be done, so what are you waiting for? Take advantage of a low interest loan, while the rates are low, to get that project done. Delaying a project will only cost more later. The DWSRF program is available to community water systems or non-profit, non-community, non-transient water systems to design and/or construct infrastructure projects. Pre-application forms are available at <https://www.surveymonkey.com/r/2017DWSRF> and are due June 30, 2017. There is no commitment to sign up so if you are even thinking about a project, it's worth submitting a pre-application. Projects that are selected for funding will have until June 2018 to submit a final application. Disadvantaged water systems that meet affordability criteria are eligible for principal forgiveness. For more information, visit www.des.nh.gov, A to Z list, then click on "Grants & Loans" or contact Johnna McKenna at (603) 271-7017 or johnna.mckenna@des.nh.gov.



NHDES Working with EPA to Develop Response Plans for Merrimack River

Over 500,000 people in New Hampshire and Massachusetts currently rely upon the Merrimack River as a source of drinking water. The City of Manchester is planning to join that number by tapping into the river through the use of a riverbank filtration system. A large spill or release



Merrimack River

(Merrimack, continued on pg 3)

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(Merrimack, continued from pg 2)

of oil or harmful chemicals into the Merrimack River has the potential to disrupt (e.g., shut down) operations at a water treatment plant. Recently, EPA began work to develop a geographic response plan (GRP) for the river that outlines strategies and tactics for emergency responders to quickly respond (e.g., deploy boom, skimmers, etc.) in the wake of a major release of contaminants.

In 2014, a large storage tank released chemicals into the Elk River. These chemicals entered Charleston, West Virginia's water treatment plant, causing the plant to shut down and prompting the Governor to declare a state of emergency. Approximately 400,000 people were without water for nine days. Here in New Hampshire, there are more than

(Merrimack, continued on pg 4)

DWGB Calendar of Events & Deadlines: June - December 2017

- | | |
|---------|--|
| June 30 | 2017 Drinking Water State Revolving Fund (DWSRF) pre-applications due, contact Johnna McKenna at johnna.mckenna@des.nh.gov or (603) 271-7017 or see http://des.nh.gov/organization/divisions/water/dwgb/capacity/dwsrf.htm |
| June | 2018 Leak Detection Survey Grant application period open, contact Kelsey Vaughn at kelsey.vaughn@des.nh.gov or (603) 271-0659 or see http://des.nh.gov/organization/divisions/water/dwgb/water_conservation/leak-detection.htm |
| June 30 | Permit to Operate application and fees due, contact Jane Murray at jane.murray@des.nh.gov or (603) 271-3544 or see http://des.nh.gov/organization/divisions/water/dwgb/permit_pws_pto.htm |
| July 1 | Consumer Confidence Reports (CCR) due, contact Debra McDonnell at debra.mcdonnell@des.nh.gov or (603) 271-6703 or see http://des.nh.gov/organization/divisions/water/dwgb/capacity/consumer.htm |
| July 7 | 2018 Leak Detection Survey Grant applications due, contact Kelsey Vaughn at kelsey.vaughn@des.nh.gov or (603) 271-0659 or see http://des.nh.gov/organization/divisions/water/dwgb/water_conservation/leak-detection.htm |
| July 10 | Consumer Confidence Report (CCR) Certification due, contact Debra McDonnell at debra.mcdonnell@des.nh.gov or (603) 271-6703 or see http://des.nh.gov/organization/divisions/water/dwgb/capacity/consumer.htm |
| Nov 2 | Asset Management Workshop, contact Luis Adorno at luis.adorno@des.nh.gov or (603) 271-2472 or see https://www.des.nh.gov/organization/divisions/water/dwgb/asset-management/index.htm |
| Dec | Asset Management Grant applications due, contact Luis Adorno at luis.adorno@des.nh.gov or (603) 271-2472 or see https://www.des.nh.gov/organization/divisions/water/dwgb/asset-management/index.htm |
| Anytime | Record Drawing Grant applications accepted http://des.nh.gov/organization/divisions/water/dwgb/capacity/documents/record-drawing-grant-app.doc |
| Anytime | Tank Inspection Grant applications, contact Luis Adorno at luis.adorno@des.nh.gov or (603) 271-2472 or see https://www.des.nh.gov/organization/divisions/water/dwgb/asset-management/index.htm |

To see event calendars for additional opportunities please visit:

Granite State Rural Water Association at <http://www.granitestatewater.org>

New England Water Works Association at <http://www.newwa.org>

New Hampshire Water Works Association at <http://www.nhwwa.org>

(Merrimack, continued from pg 3)

100 large oil and chemical aboveground storage tanks (ASTs) within 1,000 feet of the Merrimack River between Manchester and Nashua. In addition, interstate and state highways, bridges and rail lines often run along and/or cross over the river and accidents have resulted in the release of chemicals and oil into the river. EPA's GRP will help first responders from Hooksett to Nashua coordinate efforts and quickly deploy containment and clean up equipment, and that's an important step forward to protecting this vital source of drinking water. 💧

Operator Profiles: Ian Rohrbacher

Ian Rohrbacher is the Chief Operator for the City of Rochester Water Department. He is responsible for the operation and management of the water treatment, storage, and reservoir systems; cross connection control program; and source water protection. Ian holds grade 4 treatment and grade 3 distribution certifications. He is a certified backflow inspector and tester, and is the current President of the New Hampshire Water Works Association.

Please tell us about your water system.

Rochester is a blended Grade 3 Treatment and Distribution system with both a 4.5 million gallons per day (MGD) conventional surface water treatment facility and a 0.9 MGD groundwater treatment plant. We have full multi-terminal SCADA control and sophisticated telemetry and instrumentation. The system operates 24 hours per day, seven days per week to produce and deliver high quality drinking water through 125 miles of water main, three storage tanks, and six pumping stations to approximately 7,500 service connections and 25,000 customers.

Our primary supply is the Berry River Watershed which comprises approximately 8,000 acres, several ponds, dams and flow control structures, and transmission pipelines in three neighboring communities. Water is harvested from an estimated 6,500 of those acres and stored in either Rochester Reservoir or Round Pond before treatment. The treatment process at the surface water facility removes impurities from the water through oxidation with potassium permanganate, aluminum sulfate coagulation and activated carbon injection, flocculation, settling, and filtration through two traveling bridge filter beds. Treatment at the well consists of aeration to remove dissolved carbon dioxide. Both facilities add chlorine for disinfection, fluoride to promote strong teeth, sodium bicarbonate to increase alkalinity and blended phosphate for corrosion control. Raw surface water quality fluctuates seasonally, with turbidity and color averaging 1.5 NTU and 40 ptcu; TOC from 4-7 mg/L; and pH from 5.5 to 6.5. Raw groundwater quality, specifically dissolved carbon dioxide and manganese, fluctuates based on withdrawal rates. Finished water typically enters the distribution system at less than 0.030 NTU, 0 ptcu, <1.9 mg/L TOC, 7.3 pH, 1.60 mg/L free chlorine, 0.03 mg/L

manganese, and a hardness of 20-30 mg/L.

What was your first-ever job?

Not counting mowing lawns next door, I started (and continue to run) a small custom computer proprietorship during high school, which focused on data recovery and building "bleeding edge" gaming machines for "LAN parties." I know, what a nerd.



Ian Rohrbacher at Mission Control

How long have you been in the profession? Which water system did you start out at?

Sixteen years ago, in 2001, I entered the field as a distribution operator for the Somersworth Water Department, reading and installing meters, tapping and repairing water mains, and testing backflow preventers.

(Rohrbacher, continued on pg 5)

(Rohrbacher, continued from pg 4)

What is your favorite part about being a water works operator?

There are always three answers I give to that question. Foremost, it is the opportunity to serve my community clean and safe drinking water. Cliché, but true. Clean water from our kitchen tap is taken for granted and it is deeply rewarding to know that I am doing my part in ensuring that family, friends and neighbors have it in abundance. To quote Ben Franklin “When the well is dry, we know the worth of water.”

Secondly, this field is so enriching and dynamic you actually have to work harder at being bored than simply doing your job. It’s not just pushing buttons and changing paper recorders, it’s customer service using diverse disciplines. Process control and lab analysis requires chemistry, computer, and math skills - and a sharp pencil; operations and maintenance require electrical and mechanical skills – and no fear of getting dirty; and supply and infrastructure management requires planning and vision – and a long shovel.

Finally, you get to meet a lot of awesome people who are crucial to keeping the headwaters of our industry flowing: customers, colleagues, regulators, consultants, the list could go on. The willingness to share skills and knowledge for mutual professional edification is one of the greatest resources of this field, second only to our tireless commitment to the customers we serve.

What have you learned that you wish you’d known when you first started in the industry?

First, everything we do is as much an art as a science and to succeed you cannot be afraid to mix ½ inspiration, ½ observation, and ½ calculation just because the textbook says otherwise. It’s easy to box yourself into a mindset or routine and forget ingenuity and foresight. Also, this is a very small and close-knit field – strive to make good first impressions and professional bonds.

What advice do you have for new operators?

Get to know your system’s heartbeat – there are sounds, smells, and visual cues everywhere that a human can react to before an instrument does. Treatment begins in your watershed and wellhead protection area and continues to the tap. Strive to be able to close your eyes and envision your treatment process and distribution system. Visit other systems. Take advantage of networking and training opportunities to tap into institutional knowledge and mentorship from seasoned operators. And enjoy every moment. 💧

New Hampshire Source Water Protection Videos Released

NHDES recently supported Pennichuck Water Works’ initiative to develop a series of watershed videos focused on source water protection. Funded in part by the

Local Source Water Protection Grant Program, the series of short videos shows residents what they can do to help prevent water pollution and to highlight key parts of Pennichuck’s watershed protection efforts. The videos represent an alternative public out-



Pennichuck Water Works watershed protection video

reach format with broader appeal, part of a multi-media educational approach. The project included video footage of the Pennichuck Brook Watershed and input from the five watershed communities: Nashua, Merrimack, Amherst, Hollis and Milford. These brief 2-3-½ minute videos highlight potential threats to the Pennichuck watershed and water supply. Focusing on stormwater, they include examples of watershed improvement projects Pennichuck has completed through the years, and provide information on what residents can do to help protect the Pennichuck Brook Watershed and water supply. Produced by

(Pennichuck, continued on pg 6)

(Pennichuck, continued from pg 5)

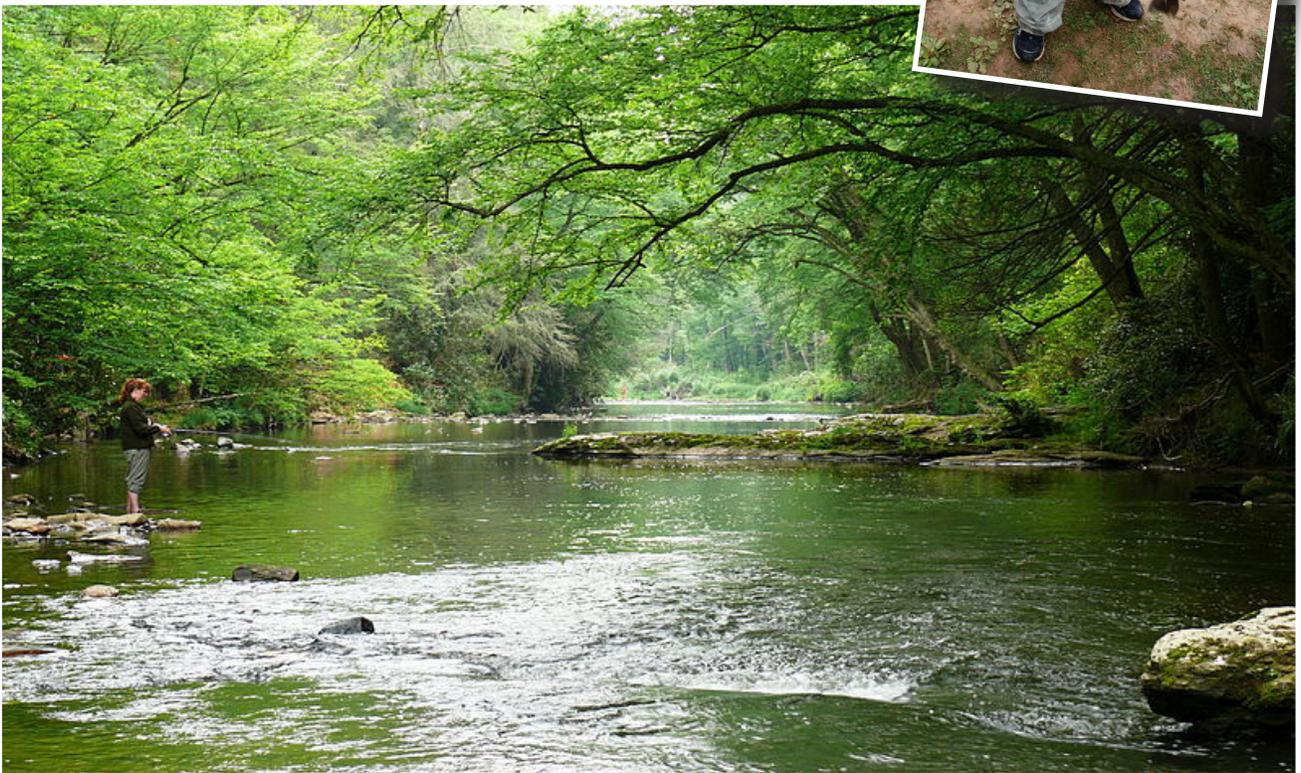
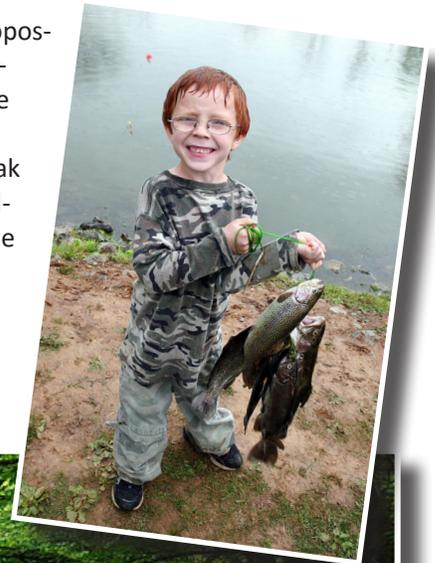
Comprehensive Environmental Inc., each of the four videos (with subtitles) can be viewed at <https://pennichuck.com/source-water-protection/about-pennichuck-watershed/watershed-videos/>. 💧

Water conservation is part of proposed Instream Flow Rules discussion

One purpose of the NHDES Instream Flow Program is to ensure that rivers continue to flow in spite of the uses and stresses that people put on them. Water conservation is an important part of management plans to protect rivers. NHDES and interested parties are currently discussing concepts for new rules to extend that protection to more rivers.

In 2015, the Instream Flow Program successfully completed a pilot program to test methods for calculating protected flows and applying management actions that maintain those flows and ensure water is available for human uses. One of the management actions involves the application of water conservation practices.

Instead of creating a new and separate water conservation process, NHDES is proposing Instream Flow Rules that would apply the existing Env-Wq 2101 water conservation rules. Water users affected by the Instream Flow Program would then have only one set of conservation rules to follow. Examples of conservation practices that may apply to entities regulated under the Instream Flow Program include leak detection, metering, and pressure management. The Drinking Water and Groundwater Bureau will manage the new water conservation plans developed under the Instream Flow Program as they do for those under Env-Wq 2101. Having a single water conservation program will result in a more understandable and consistent water conservation program for regulated water users and program administrators throughout New Hampshire. For more information contact Wayne Ives at (603) 271-3548 or wayne.ives@des.nh.gov. 💧



Water System Sanitary Defects Frequently Identified During Assessment

The new Revised Total Coliform Rule (RTCR) protects public health by ensuring the integrity of drinking water systems and monitoring for the presence of microbial contamination. The RTCR focuses on a “find and fix” approach in response to positive bacteria sampling in public water systems.

As the mainstay of the “find and fix” approach, assessments are required to evaluate the water system and address any sanitary defects. There are two tiers of assessments, Level 1 and Level 2, which are triggered by different circumstances. Since implementation of the RTCR in 2015, the sanitary defects most frequently identified have been:

- 1: Well construction and/or well cap has sanitary seal problems
- 2: Unsanitary pump house conditions
- 3: New equipment installation (well pump or treatment) without proper disinfection
- 4: Atmospheric storage vent unscreened

Other Defects:

- Storage tank deficiency (condition of tank)
- Backflow prevention device needed
- Treatment facility inoperative
- Evidence of flooding at the well and in pump house
- Well physically damaged
- Frost free yard hydrants in distribution (cross connection issue)

In most cases, correction of the sanitary defects and a proper disinfection of the entire system eliminated the



Frost free yard hydrant

presence of bacteria. It is important to note that some assessments did not find any defects. In these cases, either a proper disinfection was all that was needed or permanent chlorination/Ultra-violet (UV) treatment was installed. For more information, please contact Amy Rousseau at (603) 271-0893 or amy.rousseau@des.nh.gov.

Water Works by NHPTV

We tend to take clean, safe drinking water for granted. We turn the faucet on and there it flows. *Water Works* traces water from its source to faucets, and shows the challenges to our water supply like aging infrastructure, drought and pollution. It also examines what's being done to address these issues and how to keep clean water flowing in New Hampshire.

To watch *Water Works* visit

<http://video.nhptv.org/video/2366020875/>

Water Education Resources

<http://www.nhptv.org/water/>

Simple Steps to Combat Drought and Peak Demand

Was your water system prepared for the 2016/2017 drought? If not, it's time to become better prepared. If you have not already, adopt an ordinance which clearly outlines the stages of water restrictions which will be implemented during dry periods. Consider whether there is a benefit to maintaining a permanent restriction limiting lawn watering to even and odd days based on house address. This practice will limit peak demand in the summer and put your system in a better place if dry conditions persist. Draft water restriction ordinances and other drought related information may be found by going to www.des.nh.gov and scrolling through the “A-Z List” to Drought Management. 💧



25th Annual Drinking Water Festival & Water Science Fair

Students from Keene, Manchester, Westmoreland, Marlborough, Surrey and Harrisville schools participated in the New Hampshire Fourth Grade Water Science Fair. Congratulations to Anna Dumond from Keene, who won first prize; Greyson Ansevin-Allen from Keene, who took second prize; Kyleigh Reiss from Manchester, who took third prize and Maia Chretien from Keene, who came in fourth place. Honorable Mentions go out to Oliver Villa from Manchester and Oriah Holmes and Claire Holmes from Keene.

Over 330 students participated in the 25th annual New Hampshire Fourth Grade Drinking Water Festival. Scientists, engineers, consultants, environmental educators, water operators and artists from a wide variety of organizations and agencies from across the state led hands-on activities to share their expertise with students. Students learned about ways to keep water clean, how to test water quality,



how to conserve it, about aquatic insects and animals, and how climate change is affecting water systems. 💧

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