

COMMISSIONER'S COLUMN

Earth Day challenge for private well users

It should come as no surprise that the New Hampshire Department of Environmental Services (NHDES) regulates public water systems and requires routine testing and monitoring for contaminants. However, testing and monitoring of private wells are the responsibility of the homeowner. So my Earth Day message this year is directed solely to the private well owners – know what is in your drinking water by testing your well.

Unhealthy levels of contaminants are common in many private wells in New Hampshire. Some of these contaminants have been linked to cancer and other diseases. Most have no taste, smell or color. It is important to periodically test well water to ensure it is safe to drink.

Nearly half (42%) of New Hampshire residents rely upon a private well as a primary source of drinking water. In some communities, the entire population relies upon private well water as a primary source of drinking water. Survey data collected from New Hampshire residents suggest that many are not regularly testing their well water. According to the 2014 Behavioral Risk Factor Surveillance System (BRFSS) survey conducted by New Hampshire's Department of Health and Human Services (NHDHHS), only 44% of private well owners had tested their well water within the last three years, and according to a study conducted by Dartmouth College for NHDES, one in five had never had their water tested. Failure to test and then properly treat private well water to remove contaminants can put the homeowner/

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Seacoast landowners connected with flood prevention resources

Following another Nor'easter season, storm surge and erosion are fresh in Seacoast residents' minds.

Throughout the seasons, coastal flooding has inflicted considerable damage in Hampton Beach (and elsewhere along New Hampshire's seacoast) and has residents searching for ways to protect and continue enjoying their properties for years to come. The question for many, especially those with homes near the back barrier marsh, has become not whether they will experience flooding, but how to prevent future flood damage.

The NHDES Coastal Program, in partnership with the Seabrook-Hamptons Estuary Alliance, hosted the first-in-NH "Building a Flood Smart Seacoast" workshop series focused on helping property owners make better-informed decisions about how to make their properties more flood resilient. The three workshops featured presentations by local experts on a wide range of topics including trends in high tide flooding, the protective role sand dunes and salt marshes play, flood insurance, and various strategies to "keep water out," "live with water," and "get out of the water's way." Attendance averaged about 45-50 people per workshop.

Two follow-up opportunities to the workshops are now being offered. The Seabrook-Hamptons Estuary Alliance is holding Flood Smart Seacoast roundtable sessions to further discuss local property owners' specific flooding issues of interest in greater detail. In addition, the NHDES Coastal Program and NH Sea Grant

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family at risk of exposure to contaminants that can impact their health both in the short-term and the long-term. The good news is that the first step to eliminating this risk is simply getting your well water tested at an accredited laboratory for the 14 parameters NHDES recommends.

In New Hampshire, there has been plenty of media attention on per- and polyfluoroalkyl substances (PFAS) in groundwater and drinking water. PFAS have been used to make carpets, clothing, fabrics for furniture, paper packaging for food and other materials (e.g., cookware) that are resistant to water, grease or stains. They are also used in certain firefighting foams and in a number of industrial processes. PFAS first showed up in a well serving the Pease Tradeport water system in May 2014 and in the Merrimack Village District water system in February 2016. The latter triggered an ongoing statewide investigation, and led to legislation directing NHDES to establish drinking water standards for several PFAS. Again, these drinking water standards will apply to public water systems and not to private well owners. While PFAS are man-made contaminants that should not be in our groundwater, New Hampshire unfortunately also has widespread problems with contaminants that are naturally occurring.

Thirty percent of domestic private wells in New Hampshire are estimated to have unhealthy levels of inorganic arsenic, which is known to cause cancer. Arsenic is present naturally in the geologic formations that underlie much of New Hampshire and is associated with elevated levels of bladder cancer, non-melanoma skin cancers as well as a variety of other diseases. Also naturally occurring, NHDES estimates that 24% of bedrock wells have radon levels at or above 10,000 picoCuries per liter (pCi/L), the level at which treatment of water is recommended in conjunction with mitigation of indoor air radon. Testing wells for arsenic and radon is the only way to know what the levels of those contaminants are.

I am sure that many of you have heard of the problem of lead in Flint, Michigan's public water supply, but for New Hampshire's private well users, lead is no less of a problem. A U.S. Geological Survey study released in July of 2016 identified New Hampshire as one of 12 states (and the District of Columbia) with a "very high prevalence of potentially corrosive groundwater." Corrosive water can cause leaching of lead from old pipes and fittings. Results from private well samples analyzed by the NHDHHS Public Health Laboratory show how widespread the problem of corrosive well water is. Of more than 10,000 samples of "stagnant" (left sitting overnight) tap water, 70% had detectable amounts of lead and 15% had lead over the "action level" that requires public water systems to control corrosion. Keeping in mind that EPA's stated goal for lead in drinking water is zero – if that 15% exceedance rate is true of private wells statewide, then roughly 90,000 Granite Staters are living in homes with potentially high

levels of lead in their home plumbing.

NHDES recently mailed *What's In Your Water?* brochures to every town in New Hampshire to help get the word out in the community to remind private well users that it is important to test their well water. The flyer (available here: https://www.des.nh.gov/organization/divisions/water/dwgb/well_testing/documents/well-testing.pdf) provides a series of pointers to information that can help private well owners test their well water at an accredited lab and then effectively treat common contaminants, when necessary. Additionally, NHDES' Be Well Informed (BWI) tool is an online, interactive guide that provides specific water treatment recommendations based upon water quality results reported within a lab report, and then entered into BWI by a private well user.

Without significant changes from the status quo, a large percentage of New Hampshire residents will continue to take their drinking water for granted and be exposed to harmful levels of contaminants – mostly of natural origin – in their private well-based water supplies. Private well owners need to take action and test their well water. Drinking water quality is an important public health issue in New Hampshire, and private well owners need to educate themselves about the water quality in their own wells to help protect themselves and their family. This year, one of the most significant ways you can help celebrate Earth Day, is to pledge to test your private well water. ■



ENVIRONMENTAL NEWS

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are teaming up to develop a program to assist and empower coastal landowners. Staff is offering to conduct onsite assessments to help homeowners learn about potential actions that they can take to manage their own properties to minimize storm and flood impacts. Potential landowner actions will also support dune and salt marsh habitats and the many benefits that they provide, including habitat, flood mitigation and stabilizing eroded areas.

A summary of key takeaways from the Flood Smart Seacoast workshops is available at <http://www.nhcaw.org/key-takeaways-from-flood-smart-workshops/>. ■



Image of the Henniker Covered Bridge by Grace Dunklee Cohen from #ThisIsNH Storymap



Notice of Public Hearings

NHDES is proposing to amend the Maximum Contaminant Levels (MCLs) and Ambient Groundwater Quality Standards (AGQS) in Env-Dw 700-800, Env-Or 603.03, and Env-Wq 402. The Initial Proposal and Rulemaking Notice (including the Fiscal Impact Statement) for the rules are available online at:

<https://www.des.nh.gov/organization/commissioner/legal/rulemaking/index.htm#pdrinking>

<https://www.des.nh.gov/organization/commissioner/legal/rulemaking/index.htm#poil>

<https://www.des.nh.gov/organization/commissioner/legal/rulemaking/index.htm#pwaterq>

Three public hearings are scheduled:

- **Monday, March 4, 2019, 5:30 PM;** All Purpose Room, James Mastricola Upper Elementary School, Merrimack, NH
- **Tuesday, March 5, 2019, 1:00 PM;** Auditorium, NHDES Offices, 29 Hazen Drive, Concord, NH
- **Tuesday, March 12, 2019, 5:30 PM;** NHDES Pease Field Office, Room A, 222 International Drive, Suite 175, Portsmouth, NH

You may submit written comments even if you do not attend a public hearing.

LAST DAY TO FILE WRITTEN COMMENTS: Friday, April 12, 2019 (4 PM)

For Drinking Water Standards (MCLs) (Env-Dw 700-800) – Submit comments to: Chip Mackey, DWGB Drinking Water Quality Manager: Harrison.Mackey@des.nh.gov

For Ambient Groundwater Quality Standards (AGQS) (Env-Or 603.03) – Submit comments to: Lea Anne Atwell, Haz. Waste Remediation Bureau, Emerging Contaminants Coordinator: LeaAnne.Atwell@des.nh.gov

For Discharges to Groundwater of Wastewater Containing Certain Perfluorochemicals (Env-Wq 402) – Submit comments to: Stephen Roy, DWGB Technical Section Manager, Groundwater Permitting: Stephen.Roy@des.nh.gov



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NHDES proposes to lower arsenic standard to 5 ppb

NHDES has recommended a new limit of five parts per billion (ppb) for the amount of arsenic in groundwater and in drinking water provided by public water systems, down from the current 10 ppb limit that was established by the U.S. Environmental Protection Agency (EPA) in 2001. Before 2001, the limit was 50 ppb.

In 2001, when the EPA adopted a drinking water maximum contaminant level (MCL) for arsenic of 10 micrograms per liter (or ppb), the increased cancer risk from drinking water with arsenic at the 10 ppb level was known to be orders of magnitude higher than the risk from drinking water with other cancer-causing contaminants at their respective MCLs. However, in setting the MCL at 10 ppb, the EPA sought to balance the value of the reduced risk of bladder and lung cancers with the cost and technical limitations of detecting and treating water for arsenic. Since then, a great deal of research has shed light on the health risks of drinking water at levels below the standard. In proposing to lower the MCL to 5 ppb, NHDES cited more recent data on the increased risk of death from cardiovascular disease, the risk of adverse birth outcomes, and possible effects on IQ in children.

If New Hampshire adopts the lower MCL, which would be accompanied by a reduction in the ambient groundwater quality standard (AGQS) to five ppb, it will be only the second state to adopt an arsenic MCL lower than the federal standard. New Jersey has been successfully implementing an MCL of five ppb since 2006.

NHDES' proposal to lower the standard follows a review that was prompted by legislation enacted in 2018. HB 1592 directed NHDES to review the arsenic standard, taking into account the extent to which arsenic occurs in New Hampshire, the ability to test for it, treatment technology, impact on public health, and costs and benefits to affected entities. NHDES' findings are presented in the report, "Review of the Drinking Water Maximum Contaminant Level (MCL) and Ambient Groundwater Quality Standard (AGQS) for Arsenic."

The total added cost for all public water systems to treat the water is estimated to be approximately \$1 million in capital costs and \$4 million in annual operating costs. The change in the AGQS would affect some landfills, sewage lagoons and other facilities with groundwater discharge permits. NHDES concluded that the added costs would not be excessive in light of the avoided adverse health effects.

Private wells will not be required to comply with the lowered standard. NHDES estimates that 65,000 private wells in New Hampshire exceed five ppb arsenic. Outreach to private well owners will continue with new messaging regarding the importance of treating drinking water for arsenic.

Pending anticipated legislative action, NHDES has recommended that rulemaking proceed to lower the arsenic standard in 2019. NHDES also recommended compliance with the new standards (MCL and AGQS) take effect in 2021, allowing time for public water systems and other facilities to budget for and install necessary treatment infrastructure. ■

New Hampshire hosts 30th annual NPS conference in Portsmouth



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New England Interstate Water Pollution Control Commission (NEIWPCC), NHDES Watershed Assistance Section, and EPA Region 1 are hosting the 30th annual Nonpoint Source Conference (NPS) in Portsmouth, New Hampshire.

This conference brings together all those in New England and New York State involved in the management of NPS pollution, including participants from state, federal, and municipal governments, the private sector, academia, and watershed organizations. This conference only comes to New Hampshire once every seven years!

To commemorate its 30th year, the conference theme – *30/30 Vision – Breaking through 30 years of barriers, behaviors, and*

budgets, to blaze the path to the next 30 years of NPS management! – focuses on the obstacles that have been overcome in the past thirty years and the challenges that the NPS community is tasked with for the next thirty years.

When: April 18 and 19, 2019

Where: Sheraton Harborside Hotel, 250 Market Street Portsmouth, NH

Visit the conference website at <http://neiwpc.org/our-programs/nps/annual-nps-conference/>

Contact: James Plummer, NEIWPCC, (978) 349-2520 or jplummer@neiwpc.org. ■

Steps forward for the Instream Flow Program

In 1990, the New Hampshire Legislature created the Instream Flow Program which applies additional protections to the state's designated rivers. A designated river is managed and protected for its outstanding natural and cultural resources in accordance with RSA 483, The Rivers Management and Protection Act, adopted in 1988. There are currently 19 designated rivers in New Hampshire including 1,010 total designated miles, 125 participating communities, and five unincorporated places and state parks.

Under natural conditions, contributing source waters to rivers (such as lakes, ponds, streams, wetlands, and groundwater) allow them to maintain a certain amount of flow even throughout the hot, dry, summer months. As water levels naturally vary and fluctuate throughout the seasons, native plants, insects, and fish species have adapted to higher water levels during the spring and lower water levels during the summer. However, under human influences, river flow can change more drastically than natural seasonal changes. These human influences can include water withdrawals for drinking water and irrigation, dams that can restrict the amount and timing of water flowing downstream, land use changes, and wetland loss due to development which can reduce the amount of water that would normally augment rivers during dry periods. These changes in flow can impair river habitat and stress native species. The purpose of the Instream Flow Program is to ensure that rivers continue to flow in spite of the uses and stresses that people place on them and, by doing so, balance the needs of humans and wildlife that depend on them.

Target Fish Communities

On February 21, 2018, NHDES hosted an informational meeting describing the development of Target Fish Communities (TFCs) on designated rivers in New Hampshire. The TFCs are the fish species population distributions that should be found in a designated river. The TFCs are used to identify the habitat needs, including flow, of the fish species in the river and to evaluate whether the existing population is adjusting toward or away from the target community after instream flow management is applied. On August 27, 2018, NHDES held a public meeting to discuss the conclusions of the TFCs Assessments of designated rivers in New Hampshire. A TFC assessment report was created for each designated river. The reports describe the three steps required to define TFCs for each river: (1) division of the designated rivers into segments having distinct fish communities, (2) identification of reference rivers with similar characteristics for each segment, and (3) calculation of the TFC comprised of, for each river segment, the percent of each fish species in the community. The reports can be found by visiting the Rivers Management Advisory Committee forum.

Administrative Rules

On December 22, 2018, the state adopted new rules governing how instream flow is applied to New Hampshire's

designated rivers. The adoption of these rules completes a decades-long effort for instream flow protection to meet provisions of the Rivers Management and Protection Program Act. The rules incorporate the lessons learned during the pilot program on the Lamprey and Souhegan designated rivers, where the proposed methods of developing protective river flow levels and defining water management plans were tested, as well as comments from the public. The newly adopted rules apply to all designated rivers.



Low flow in the Exeter River, 2016

New Rivers to Study

These newly-adopted rules allow NHDES to prioritize designated rivers for instream flow studies and water management plans. As such, NHDES evaluated all of the rivers and identified three as the best candidates based on stream gages, length, regional development pressure, and other factors. After review of these nominations, and NHDES receiving additional comments from the Rivers Management Advisory Committee, the Lakes Management Advisory Committee, the local river advisory committees of each of the three nominated rivers, and other interested parties, NHDES confirmed the Cold River, Warner River, and upper Ashuelot River as the top priorities for the next instream flow studies. In December 2018, NHDES published a Request for Proposals to conduct instream flow studies on the Cold and Warner Rivers with the intention of beginning work on the Cold and Warner river protected flows by the end of June 2019.

Looking Forward

With all of the necessary preparatory work completed in 2018, the Instream Flow Program is ready to "dive in" during the spring and summer of 2019 to develop protected flows for the Cold River and Warner River. The program will also continue to work with the U.S. Geological Survey to develop ways to measure stream flows in those streams that currently do not have stream gages and gaging stations. Lastly, the program anticipates beginning development of water management plans for the Cold River and Warner River. It will be a busy year, so stay tuned. ■

NHDES Snapshot: Air Emissions Inspector

NHDES staff can't fulfill the agency's mission only from our desks. To protect environmental quality and public health in New Hampshire, we are out in the field every day: testing water quality in our ponds and lakes, sampling private well water, monitoring air emissions, assessing storm damage, responding to oil and chemical spills, training water works and solid waste operators, and so much more. "NHDES Snapshot" is an occasional series that takes a quick look inside the day of one of those employees.

Tom Guertin pulls up to the field site in a plug-in hybrid-electric car in typical NHDES style. Today, he will be inspecting a contaminated soil treatment plant in Loudon, NH.

Tom is the Compliance Assessment Section Supervisor for the NHDES Air Resources Division. His team's main responsibility is to inspect the approximately 400 New Hampshire factories, power plants and other commercial and industrial facilities that fall under their jurisdiction, which they do on a rolling basis. Major Sources need to be inspected every two years; other sources are inspected on a five-year basis. This amounts to about 80 inspections a year for the bureau. During these inspections, the inspectors check emissions reports for permit compliance and for recordkeeping accountability to ensure that facilities are adequately managing air pollution emissions in compliance with state law and the Clean Air Act, federal legislation that establishes National Ambient Air Quality Standards for common pollutants.

These common pollutants include the six Criteria Pollutants, identified by the EPA as some of the most abundant pollutants that threaten air quality and public health: carbon monoxide, lead, ground-level ozone, nitrogen dioxide, particulate matter and sulfur dioxide. More difficult to enforce are the ambient air limits for the 700 toxic air pollutants regulated by the State of New Hampshire.

Today's meeting begins in an office, reports spread on the conference table. Thumbing through charts crowded with rows of percentages and chemical compounds, Tom checks with the business owner and makes sure that regulations are being followed and discharge levels are being closely tracked.

Like most New Hampshire businesses, this company keeps strict track of its numbers. Different meters measure the particulate matter, toxins and other pollutants discharged through stacks. Numbers and estimates are recorded to reflect the air pollution discharged. According to the records and calculations, this company's emission levels are below permitted limits, meaning they discharge little pollution – a good sign.



After wrapping up the office meeting, the visit moves outside into the treatment facility. This particular facility processes about 180,000 tons of contaminated soil each year from states all across the Northeast, from Rhode Island to Massachusetts to Vermont. Mainly removed from car accidents, underground leakage and construction sites, this soil contains petroleum products and other chemicals. It is funneled through a series of heating and cooling tanks to treat the harmful chemicals.

After a walk through the facility, a warehouse filled with piles of dust and dirt, trucks and conveyor belts, Tom checks on various monitors, discussing pollution emission points with the company owner.

The business is in compliance and Tom's work is done. Sit-

Snapshot, cont. page 7



Air Monitoring Program completes station swap at Camp Dodge

During a couple of wintery-like days in October, NHDES' Ambient Air Monitoring Program (AMP) personnel braved heavy snow and icy conditions to put the finishing touches on an air monitoring station building installation at Camp Dodge in Greens Grant. This work marked the completion of a coordinated plan between AMP, the Dam Bureau, and partners at Camp Dodge – the United States Forest Service (USFS) and the Appalachian Mountain Club (AMC) – to relocate this air monitoring station in conjunction with a larger construction project at the site. Overall, this effort allowed for minimal air sampling downtime, more savings in heating and cooling costs, and relocation of the station out of a critical construction area.



James Poisson (AMP) working through ice and snow to get the job done.

This monitoring station installation project had a multifaceted construction sequence which centered on moving an energy efficient structure, already owned by NHDES, from Laconia to Camp Dodge. The old monitoring “shed” at Camp Dodge was in disrepair, not very well insulated and located directly under the drip edge of another building. The new structure, from Laconia, measures eight feet wide by 10 feet long with a gabled roof. To prepare the new structure for the trip to Camp Dodge, AMP personnel had to raise it off its foundation and perform minor exterior work in Laconia. Concurrently, AMP personnel had to prepare the foundation for the new structure at Camp Dodge. Many thanks to NHDES' Dam Bureau, which, in yet another cooperative

effort, provided the muscle and expertise to load, haul and unload the structure. AMC deserves credit for helping to unload the structure at Camp Dodge as well. Once in place, AMP staff, under wintery conditions, had to finish construction, connect electricity, establish communications, and move equipment into the new structure.

Camp Dodge is located near base of Mt. Washington in the White Mountain National Forest (WMNF). USFS, AMC and NHDES have worked together on air monitoring activities at Camp Dodge for decades. The AMC operates an organizational camp for volunteers working on projects in the WMNF at Camp Dodge and is planning to commence major renovations at Camp Dodge this coming summer. Moving the air monitoring station was a critical component to those renovations. For more information on the Camp Dodge renovation plans visit: http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/104647_FSPLT3_3992860.pdf.

The Greens Grant, Camp Dodge ozone monitor is the primary monitor representing the northern portion of New Hampshire. This monitoring location is also important since it represents two federally recognized Class I airsheds which require IMPROVE visibility monitoring. IMPROVE stands for Interagency Monitoring of Protected Visual Environments, a federally funded program. Personnel from the USFS' WMNF operate the IMPROVE sampler. NHDES tracks particle pollution (PM_{2.5}) levels measured by the IMPROVE monitor for the purpose of estimating current exposures and the demand for more comprehensive PM_{2.5} monitoring.

Key individuals who worked diligently to make this happen and deserve acknowledgment are: Robert Gordon (NHDES Dam Bureau), Ralph Perrin (USFS), Chris Fithian (AMC), James Poisson (NHDES AMP), Marcus Chase (NHDES AMP) and the rest of the AMP staff who took on an extra workload to free others up to work on this project. They are: Tim Verville, Craig Thoroughgood, Tom Fazzina and Lara Hrobak. ■

Snap Shot *continued from page 6*

ting in the hybrid-electric car on the way back to NHDES headquarters, Tom explains why he thinks his work is so important, and why he wants businesses to know he has their best interests in mind.

“We aren’t out to get companies; we want to support the New Hampshire economy and ensure a level playing field for everyone,” he said. “But a functioning and healthy economy also relies on a clean and safe environment, and that’s what the Air Resources Division does; we make sure that healthy business and healthy air can go hand in hand.” ■



New Station at Camp Dodge (Old “shed” in background on right).



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Nonpoint Source Management Program Plan to be updated

The goal of New Hampshire's Nonpoint Source Pollution (NPS) Program is to protect and restore surface water in the state's rivers, lakes, estuaries and other waters from the negative impacts of nonpoint source pollution. Specifically, the NPS Program works toward improving land management practices such that water quality in impaired watersheds is restored and water quality in healthy watersheds is not degraded as a result of land use activities. The NHDES Watershed Assistance Section (WAS) is updating its 2014 Nonpoint Source Management Program Plan (Plan). The Plan serves as a non-regulatory roadmap to address NPS management activities and guides Section 319 of the Clean Water Act program implementation efforts. NHDES is required by EPA to update the Plan every five years.

During this 2019 Plan revision, WAS staff will be working with partners to update:

- Priorities for addressing NPS pollution sources in New Hampshire.
- Long-term goals for protecting and restoring waters from NPS pollution.
- Specific short-term objectives and measurable milestones to be accomplished over the next five years.

New Hampshire is one of over 40 states required to update NPS Management Program Plans in 2019. This provides an invaluable opportunity for NPS program staff to review what worked well over the past five years, what did not and what revisions are necessary going forward through the next five years to adapt and be best positioned to protect high-quality waters and restore those that do not meet designated uses in New Hampshire.

If you would like more information about the NPS Management Program Plan, or if you are interested in participating in the update, please contact: Wendy Waskin at wendy.waskin@des.nh.gov or (603) 271-8861.

If you're interested in viewing the 2014 NPS Management Program Plan, you can find it at <https://www.des.nh.gov/organization/divisions/water/wmb/was/nps-plan.htm>. ■

