

ENVIRONMENTAL NEWS



Newsletter of the N.H. Department of Environmental Services

July-August 2014

COMMISSIONER'S COLUMN

NH Envirothon

In 1990, a group of New Hampshire professionals from the environmental and natural resource management fields got together and decided that New Hampshire needed a program to challenge students to embrace and seek solutions to contemporary environmental issues. As a result of that effort, the first New Hampshire Envirothon was held in 1991. Since that time, it has provided both middle- and high-school students with exciting, practical challenges outside of the classroom.

The Envirothon structure is built on teams of five students and presents the teams with the opportunity to compete against teams from their own and other schools to demonstrate their skill and understanding of the environment, its natural processes and the means with which to mitigate environmental or natural resource problems. The active participation of the students, teachers and volunteers begins in September, leads to a Training Day the following April, and culminates in a Competition Day in late May when the students' knowledge is applied.



The student teams study throughout the school year to understand and analyze current issues related to aquatics, forestry, soils and wildlife. They must also polish their presentation skills prior to appearing before a panel of judges who evaluate their solutions to the year's "special topic." For 2014, the special topic of "Sustainable Agriculture in New Hampshire" was particularly timely in view of the growing demand for locally-grown foods.

The Envirothon has been sponsored since its inception by the New Hampshire Association of Conservation Districts, and the winning team serves as the state's
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New Water Division Director Announced

NHDES is pleased to announce the appointment of Eugene (Gene) Forbes, P.E., LEED AP, as the new Water Division Director. He was confirmed unanimously to the post by the Governor and Executive Council on May 23 and his official first day on the job was Monday, June 2.



Director Forbes has a wide range of experience in the fields of civil and environmental engineering, including the design and management of wastewater, stormwater, drinking water, solid waste and utility systems. He most recently worked at Hoyle, Tanner and Associates Inc. as an Executive Vice President and Manager of the company's environmental group. Director Forbes has a strong history of implementing innovative programs, and mentoring and managing the work of staff and multi-disciplined teams. His business management skills and experience include strategic business planning, financial management, budgeting, leadership, marketing and public relations.

Director Forbes holds a Master's in Business Administration from New Hampshire College (currently Southern New Hampshire University), a Master's in Civil Environmental Engineering from UNH and a Bachelor's in Structural Civil Engineering. He is a registered professional engineer in NH, VT, FL, MA, ME, NY and for the National

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official participant in the North American program's national competition (<http://www.envirothon.org>). The New Hampshire Envirothon is currently constructing its new webpage located at <http://nhenvirothon.org> and is using a new email connection (nhenvirothon@gmail.com) to provide students, teachers and volunteers with all of the resources needed to successfully participate in the program.

The Envirothon program offers a unique curriculum option for students, or a supplement to their regular class work, and guides the next generation of environmental stewards on how to extend the outstanding quality of life enjoyed by those who live, work and play in New Hampshire. It nurtures the students' interest in environmental sciences and helps to build the next generation's work force in the field of natural resources management.



AP [advanced placement] classes."

Teachers, students and volunteers are already making plans for the 2015 New Hampshire Envirothon. Teachers interested in coaching a team, professionals interested in volunteering their time, or anyone interested in providing financial support should contact the New Hampshire Envirothon Coordinator by email at nhenvirothon@gmail.com or by U.S. mail at: New Hampshire Envirothon Coordinator, 1197 Route 12A, Surry, NH, 03431. There's no better way to help build a cadre of youth dedicated to addressing New Hampshire's environmental and natural resources challenges than to help foster the future success of the Envirothon movement. ■



NHDES Commissioner Tom Burack with the winning team from Keene High School.



In this year's competition, twenty high school and three middle school teams vied for the year's top prize during the daylong festivities held on May 20, 2014 and hosted by Southern New Hampshire University in Manchester. Keene High School emerged as the overall winner, while two teams from Concord High School took both second- and third-place honors. Although the North American competition will not be held during the summer of 2014, it will resume next summer on the theme of "Urban Forestry" and will be hosted by Missouri State University in Springfield, Missouri.

One recent ConVal High School senior's said of the New Hampshire Envirothon program, "Envirothon has been my favorite activity in high school and I feel privileged to have been a member of four ConVal teams. I have without a doubt learned more through my experiences on Envirothon than I have in many of my

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Council of Examiners for Engineering and Surveying. He has achieved the designation of LEED Accredited Professional by demonstrating the knowledge of green building practice required for successful implementation of the Leadership in Energy and Environmental Design (LEED) green building rating system. ■

NH Coastal Atlas

The New Hampshire Department of Environmental Services (NHDES) is excited to launch the New Hampshire Coastal Atlas. This internet-based product gives people quick access to information on shellfish harvest opportunities and closures, beach swimming advisories, and coastal public access sites. The mobile version includes a geo-location feature to help users get directions to where they want to go.

For more info and to visit the Atlas, go to: <http://xml2.des.state.nh.us/CoastalAtlas/>.



The Coastal Atlas project development was funded in part by a grant from the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service and also with funding from NOAA's Office of Ocean and Coastal Resource Management.

The data presented on this Atlas is from many sources and is available through the cooperation of federal and state agencies such as: the NOAA Coastal Services Center, GRANIT, and the New Hampshire Department of Resources and Economic Development. The Atlas is managed and maintained by NHDES. ■



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Pesticides in Our Soap?



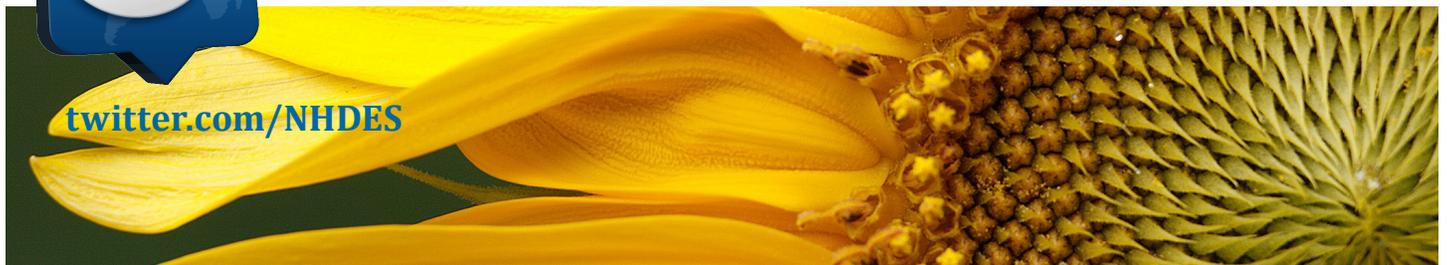
The New Hampshire Department of Environmental Services (NHDES) and Department of Administrative Services (DAS) are working together to eliminate the use of chlorinated chemicals in the hand soap used in all state buildings. There has been a lot of attention drawn recently to antibacterial ingredients in many personal care products. Triclosan is the most prevalent of these chlorinated chemicals. Studies have raised concerns that the use of products containing these

chemicals may contribute to bacterial resistance to antibiotics and possibly disrupt hormones critical for reproduction and development.

DAS previously eliminated products containing Triclosan, but a recent review of the active ingredients in the foaming hand soap currently being used revealed an antimicrobial by another name: Chloroxylenol. This ingredient is registered with EPA as a pesticide and has been found to be highly toxic to fish¹. EPA is in the process of a registration review of Chloroxylenol to determine if this pesticide can perform its intended function without unreasonable adverse effects on human health or the environment.

As a result of this discovery, NHDES searched for a suitable substitution and now DAS is in the process of switching over to an "environmentally safe certified" foaming hand soap. Certification ensures the product has been thoroughly evaluated by a reputable, third-party organization and meets standards for being environmentally preferable. By switching to this soap, DAS has chosen to eliminate the purchase of one more product containing unnecessary and potentially harmful ingredients.

¹ <http://www.epa.gov/oppsrrd1/REDs/factsheets/3045fact.pdf> ■



More Money for Invasive Aquatic Plant Management

Thanks to the efforts of many groups and individuals over the past two years, the pot of money used for invasive aquatic plant management in New Hampshire is now larger.



The Exotic Species Program in New Hampshire is funded through a fee attached to in-state boat registrations. Anyone who registers their boat each year in New Hampshire for use on freshwater systems is charged a fee of \$7.50 as part of their boat registration and that fee is deposited into the Lake Restoration Fund for use in implementing the Clean Lakes and Exotic Species Program. Fifty cents of this fee is allocated towards the Clean Lakes Program to cover half of the salary and benefits of a staff biologist position who works on lake and watershed issues. \$4.00 goes toward invasive aquatic plant prevention and research grants, as well as covering the salary and benefits for the program coordinator. The remaining \$3.00 is awarded as grants to entities for managing existing infestations of exotic plants, and to cover program administrative costs, including the other half of the biologist position in the Clean Lakes Program, who spends half of his/her time on invasive aquatic plant issues.

Integrated management of invasive aquatic plants in New Hampshire lakes, ponds and rivers is easily a one-million-dollar-a-year endeavor. Under the existing program funding, only about \$175,000–\$200,000 a year is available through matching grants for such management. Grants are awarded for 25-50 percent of total management program costs, and oftentimes it is less than 50 percent match. This puts the burden of invasive aquatic plant management on the local entity – either the municipality, the local lake association or other non-profit entity. Clearly more funds for management are needed to support continued management and move some of the burden for managing infestations in state waterbodies off the local entities.

House Bill 292 was originally proposed in the 2013 legis-

lative session to enact a sticker program for out-of-state boaters to garner additional revenues for the management of invasive aquatic plants. Maine has a model program like this, where in-state boaters pay a \$10 fee towards their state invasive species program, and out-of-state boaters pay a \$20 sticker (user) fee, and it is well received. The proposed New Hampshire sticker would have cost \$10 per boat, with \$7.50 going to the Exotic Species program, and the remainder of the revenues going to administrative costs incurred by agents and licensing entities. In-state boaters would not have been required to pay any additional fee. Unfortunately, due to hardships that came out in initial testimony on the bill (costs to implement a new sticker program and lack of appropriate database capabilities at the Department of Safety's Division of Motor Vehicles) this funding mechanism was abandoned, or at least tabled to another time.

Because of the challenges identified with the enactment of a sticker program for out-of-state boaters, and the recognized need for more funds, HB 292 was assigned to a subcommittee to work through the logistics of implementing such a program. State legislators, lake association members, the Marine Trades Association, the New Hampshire Lakes Association, the New Hampshire Rivers Council, the Lakes Management Advisory Committee, the Rivers Management Advisory Committee, as well as other groups and individuals, were involved in a number of meetings of this subcommittee. As a group, it was determined that the most reasonable and expedient approach to increasing revenues for control funds was to add an additional fee to the \$7.50 already collected for implementation of the Exotic Species Program.

Ultimately, House Bill 292 was amended to add an additional \$2 fee to each boat registration, which should yield approximately \$184,000 more (based on an estimated 92,000 registered boats) for control activities each year, increasing the earmark to \$9.50 per boat. This puts the State closer to meeting about half of the costs of invasive aquatic plant control each year.

New Hampshire's freshwater resources are a draw for many, including lake residents, recreationists and tourists. They are a significant source of revenue for the state's economy, and NHDES is charged with their protection and management. The passage of HB 292 gives us a greater ability to meet the challenge of managing and reducing infestations of invasive aquatic plants, and restoring these freshwater resources for enjoyment by state residents and visitors alike. It is clear that invasive species are a significant concern for freshwater stewards across the state. ■

NHDES Launches New Soak Up the Rain Program to Help NH Residents Protect Clean Water

Water pollution comes from everywhere, even your yard. Help is now available to community groups working with homeowners to fix erosion and water pollution problems on their lots caused by stormwater. To address these problems, the New Hampshire Department of Environmental Services (NHDES) is excited to launch the Soak Up the Rain (SOAK) New Hampshire program.

This voluntary program helps property owners reduce pollution running into our local lakes, streams, and coastal waters. By installing rain gardens, which are shallow depressions planted with flowers and attractive shrubs, rain barrels, and other low-cost practices on their properties, the SOAK program helps residents take responsibility for clean water in their communities by literally soaking up the rain.

The SOAK program is managed by the NHDES Watershed Assistance Section. The program trains local organizations to work with property owners to install clean water practices. The new Soak Up the Rain website and Facebook page provide information, resources, and tools for individuals and organizations that want to learn how to soak up the rain on their properties and in their communities.

For more information, go to soaknh.org or facebook.com/SoakNH or contact Jillian McCarthy at 271-8475.

Funding for the Soak up the Rain New Hampshire program is provided by Clean Water Act Section 319 funds from the U.S. Environmental Protection Agency. ■

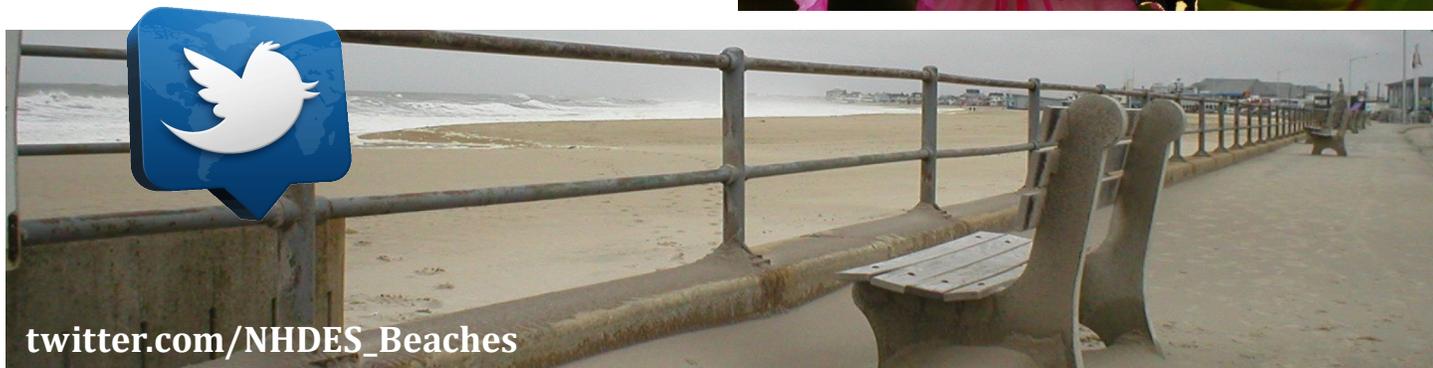
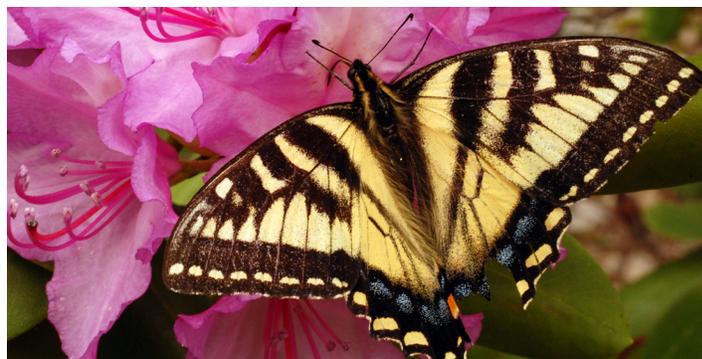


Job Shadowing in Air Resources

The Air Resources Division recently allowed a Bow High School student to job shadow to fulfill a graduation requirement. Lucas Cohen chose Air Resources because he has been interested in atmospheric science since he was 3 years old!

On May 12, 2014, Lucas job shadowed Dave Healy, Jessica Sheldon and Kendall Perkins for a complete atmospheric science experience. Dave is involved with air dispersion modeling for the Division. Jessica manages data that are collected from our air monitoring stations. Kendall oversees all of our air monitoring stations and technical staff that collect air pollution data from our monitoring network which is spread out across the state. The day started with Lucas heading to the field with Kendall and visiting the Nashua and Peterborough air monitoring stations. At the stations, Lucas observed technical work involved with the collection of air quality

data and meteorological information. Upon return to Hazen Drive, Lucas teamed up with Jessica and Dave to see how we utilize the air quality data in models to predict pollution events and to protect public health. Lucas finished the day with a better understanding of how we collect and utilize air quality data; and how these technical data are used to protect our environment and public health! ■



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New Hampshire Geothermal Data Resources Available Online

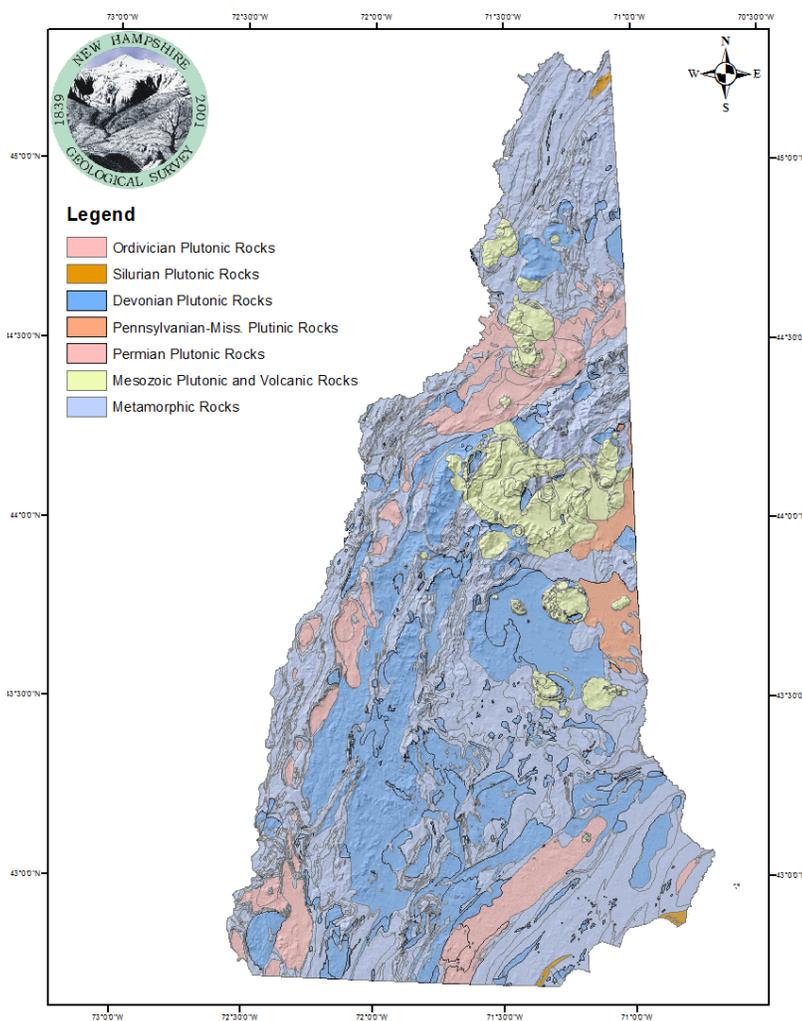
On April 30, 2014, the US Department of Energy (DOE) formally launched the National Geothermal Data System (NGDS), which provides free online access to a wide variety of geologic data across the country. The New Hampshire Geological Survey participated with the other state geological surveys to build the data resources that can be accessed through this website. The NGDS has the potential to fundamentally change America's energy portfolio by driving efficient exploration for clean, renewable energy from Earth's interior. State geological surveys across the country significantly contributed to this effort by digitizing and making available online more than 30 major types of data resulting in the availability of more than 7 million interoperable data points including 650,000 well logs, 530,000 borehole temperatures, and 1.7 million oil and gas, water, and geothermal well headers.

NH Geological Survey's participation in this project has led to preserving and publishing legacy paper data relative to physical geology data collections of geochemical bedrock samples, bore hole temperatures within New Hampshire's bedrock, gravity and aeromagnetic surveys. Additionally, the NH Geological Survey digitized paper bedrock geologic maps and published them to the web. Well locations were georeferenced and depth to bedrock maps were derived from these well data for the Seacoast Region, Winnepesaukee and Merrimack River Basins. NH Geological Survey also collected a new suite of bedrock samples for geochemical and petrographic analysis, borehole temperature and other geophysical data (in collaboration with the US Geological Survey), and groundwater spring temperature data.

While it is clear from these data that development of a centralized, large-scale Enhanced Geothermal System in New Hampshire is unlikely because of costs associated with drilling to the required depths, the state is positioned to better assess the potential of ground source heat pump technologies as a geothermal energy resource. Further, by pushing all these data to the web, the data become more accessible and useful to interested parties such as researchers and geologic and engineering professionals. Each of these datasets is available in a variety of formats, although the best way to interact with the data is through use of a Geographical Information System (GIS).

The state geological surveys' contributions to the NGDS project were funded by a \$21.9 million agreement from the DOE's Geothermal Technologies Office. Scientific American touted the beta form of NGDS in "Heated to the Core" while Sara Pratt, associate editor of EARTH magazine, described NGDS as "one of the most successful programs to date" for data sharing and Big Data in the geosciences ("Digitizing Earth: Developing a cyberinfrastructure for the geosciences").

NGDS is powered by US Geoscience Information Network (USGIN) <http://usgin.org/>, a web-based, data integration framework in which users maintain their data in a distributed system. USGIN and NGDS strive to enable data interoperability, allowing users to be access and read in multiple formats, significantly reducing the time it takes to retrieve and analyze data. The system infrastructure utilizes free and open source software whenever possible and hosts a suite of custom analytical and visualization tools. Additional information on the individual state geological surveys is available at www.stategeologists.org/. ■



*Bedrock geology map of New Hampshire
by Greg Barker, New Hampshire Geological Survey*

Coal Tar Remediation Underway at Lower Liberty Hill Road

After nearly 10 years of extensive site investigations and remediation planning, the first load of coal tar-impacted soil was shipped from the Lower Liberty Hill Road site in Gilford on June 6, 2014. This is the first of an estimated 2,000 loads of contaminated soil that will be excavated and transported off-site for treatment. Contamination of the site dates back to the decommissioning of the Messer Street Manufactured Gas Plant circa 1952-53. Liquid coal tar was removed from equipment at the former plant and disposed of at what was then a gravel pit on Liberty Hill Road. An unknown quantity of coal tar was disposed of at the gravel pit, then backfilled. Sometime in the 1970s, the property and surrounding area began to be developed into a residential neighborhood.

Information regarding the off-site disposal of liquid byproducts from the former Messer Street MGP first came to light in 2004. EnergyNorth (currently d/b/a Liberty Utilities), the successor owner to the company that operated and dismantled the Messer Street MGP, notified NHDES in November 2004 that it believed waste from the former Messer Street MGP was disposed at an off-site location along Liberty Hill Road.

From late 2004 to mid-2006, EnergyNorth conducted a comprehensive site investigation focusing on four impacted properties on Liberty Hill Road and Jewett Brook, which borders these properties to the southwest. EnergyNorth also acquired these properties in 2006. The work performed as part of the site investigation included groundwater monitoring, soil sampling, soil gas testing and indoor air monitoring to determine the nature and extent of contamination.

From 2007 to 2012, NHDES and Liberty Utilities, the current responsible business entity, held numerous public informational meetings with residents and Town officials during the course of investigations and development of the remediation plan. Several remedial action plans were proposed before a final plan was approved by NHDES in December 2012. Additional pre-design site investigation work was performed during 2013 prior to NHDES' approval of the final design and



Workers spray a foam product for odor and emissions control. The predominant constituent in coal tar is naphthalene, which smells like moth balls. The foam will also minimize emissions of the volatile organic compounds such as naphthalene, benzene and other petroleum compounds that make up coal tar.

authorization to proceed with its implementation in December 2013. The remediation plan consists of the excavation of coal tar-impacted soil that serves as a source of groundwater contamination, off-site treatment of impacted soils, and site restoration.

Cleanup of the Lower Liberty Hill Road site will take place over two construction seasons (i.e., 2014-15) under the oversight of NHDES. Approximately 93,000 cubic yards of soil will be excavated, of which 40,000 to 45,000 cubic yards will be shipped off-site for treatment at a thermal desorption facility located in Loudon. Contaminated stormwater and groundwater encountered during the excavation work will be treated onsite to meet NHDES and USEPA standards before being discharged to Jewett Brook. Given the location of this project in a residential neighborhood, considerable effort is being given to ensure the health and safety of adjacent property owners. The site is completely fenced and air monitoring stations have been installed around the perimeter of the site to continuously monitor particulates and contaminant emissions. Vibration monitoring is also being conducted. Treated soil will be returned to the site for backfill of the excavation with full restoration of the site anticipated for late-2015. ■



NH Well Water May Contain Unhealthy Levels of Metals

Nearly three in ten well-water samples tested from southeast New Hampshire contained metals at concentrations exceeding U.S. Environmental Protection Agency (EPA) drinking-water standards and guidelines, according to a recent U.S. Geological Survey study. Water samples from 232 private bedrock wells were tested for levels of arsenic, uranium, manganese, iron and lead during 2012-2013.

Based on results from the wells in the study area, it is estimated that 49,700 people in Hillsborough, Rockingham, and Strafford counties may use drinking water from bedrock wells with arsenic concentrations greater than the maximum contaminant level of 10 micrograms per liter; 7,500 people may use drinking water with uranium concentrations greater than the MCL of 30 micrograms per liter; 14,900 people may use drinking water with manganese concentrations greater than the EPA Lifetime Health Advisory of 300 micrograms per liter; and 8,600 people may have drinking water with lead concentrations greater than 15 micrograms per liter.

EPA's maximum contaminant levels in public water supplies are 10 micrograms per liter for arsenic, and 30 micrograms per liter for uranium. EPA has a Lifetime Health Advisory (http://water.epa.gov/action/advisories/drinking/upload/2004_02_03_support_cc1_magnese_dwreport.pdf)

level of 300 micrograms per liter for manganese. For lead, EPA requires that public water suppliers notify customers when lead exceeds 15 micrograms per liter and implement corrective actions to control corrosion of pipes and plumbing fixtures.

While low levels of naturally-occurring metals is normal in groundwater, in this study 17.2 percent of the water samples exceeded the arsenic MCL of 10 micrograms per liter, 2.6 percent of the water samples exceeded the uranium MCL of 30 micrograms per liter, 5.2 percent of the water samples exceeded the manganese LHA of 300 micrograms per liter, and 3 percent of the water samples exceeded 15 micrograms per liter for lead.

"For individual households, the likelihood of having high arsenic, manganese, or uranium concentrations depends on the types of rocks that the well is drilled into," said hydrologist Sarah Flanagan, lead author of the study. "We know that certain rocks in certain areas are more likely to have higher levels of arsenic or uranium. The likelihood of having high lead concentrations might depend more on the corrosiveness of the water and the plumbing system within the home."

The Fact Sheet and supporting data for this study, done in cooperation with EPA New England, are available online at <http://pubs.usgs.gov/fs/2014/3042>. ■

Rule Transition Complete

Several years ago, the Office of Legislative Services, Administrative Rules office (OLS) notified NHDES that the subtitle designations for NHDES rules (the alphabetical prefix for the rules, such as Env-A, Env-Wt, etc.) did not comply with the required system for rule numbering. NHDES worked with OLS to develop new subtitles and began the process of redesignating its rules. With the recent adoption of 14 packages of drinking water rules, the transition to the new subtitles is complete.

You may still see references to prior subtitles. For example, NHDES may cite a prior rule, such as Env-Ws 364 relative to backflow prevention, as well as the current rule, Env-Dw 505, when identifying potential violations that span the rule's redesignation.

A "Redesignation Chart" showing the prior and current designations is available on NHDES's Certified Rules page (<http://des.nh.gov/organization/commissioner/legal/rules/index.htm>) and its Proposed and Recently Adopted Rules page (<http://des.nh.gov/organization/commissioner/legal/rulemaking/index.htm>). ■



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