



# SUPPLY LINES WITH THE SOURCE



Newsletter of the NHDES Drinking Water & Groundwater Bureau  
on the web at [www.des.nh.gov](http://www.des.nh.gov)

Fall 2011

## Pesticides in Drinking Water at New Hampshire's Schools and Daycares—2010

DES and the U.S. Department of Agriculture recently completed a study to determine the occurrence of pesticides in 49 schools and daycares throughout New Hampshire. The purpose of the study was to obtain groundwater samples from schools and daycares that utilize an onsite well. The schools and daycares were recruited in areas where nearby pesticide use was likely. The samples were analyzed for the presence of 92 pesticides and degradates of pesticides, i.e., less complex compounds resulting from chemical breakdown. The analyses included substantially more pesticide constituents than what public water

systems typically monitor. The analyses were able to determine the presence of these compounds at parts-per-trillion concentrations, which is up to ten times lower than the detection limit typically applied when public water systems monitor for pesticides.

At least one pesticide was detected in water samples collected from 12 of the 49 facilities sampled. Fourteen of the 92 analyzed compounds were detected at at least one facility. Analyzed pesticide compounds were detected a total of 29 times for the sampling program. However, **all concentrations detected were much lower than associated drinking water stan-**

**dards or estimated health guidance levels.** The concentrations of detected pesticides were found at levels ranging from 0.1 percent to 11 percent of the applicable drinking water standard or estimated health guidance standard.

Three pesticides—atrazine, metolachlor and alachlor—represent almost half the total reported herbicide use in New Hampshire. Their greatest use is controlling weed growth in the production of corn for dairy operations. Only people who possess a pesticide applicator's license can purchase and use these pesticides. These pesticides or their degradates represented 23 of the 29 instances that pesticides were detected in water samples. Vegetation growth control pesticides available for purchase by the public represented five of the six remaining pesticide detections. There was only one occurrence of an insecticide being detected in groundwater.

A summary of this study and information regarding the regulatory requirements associated with the use of pesticides in public settings, including schools, is available at <http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/r-wd-11-20.pdf>. Contact Brandon Kernen at (603) 271-0660 or [brandon.kernen@des.nh.gov](mailto:brandon.kernen@des.nh.gov) for more information about this study. •

### State Police Emergency Phone Number Change for Reporting Major After-Hours Drinking Water Emergencies

The number for reporting major after-hours drinking water emergencies with the New Hampshire State Police has been changed to (603) 223-4381.

State Police dispatchers receive many calls, so it is important to ask for the "on-call person at DES." This will put you in touch with the on-call DES Spill Response and Complaint Investigation Section staff person, who will contact the DWGB.

Remember to update all copies of your system's emergency plan and notification cards. Updated notification cards can be downloaded at [http://des.nh.gov/organization/divisions/water/dwgb/wseps/documents/pws\\_emerg\\_card.pdf](http://des.nh.gov/organization/divisions/water/dwgb/wseps/documents/pws_emerg_card.pdf). •



## SPOTLIGHT ON GUNSTOCK ACRES, GILFORD

# Reducing the Response Time to Leaks— A Case Study of Gunstock Acres Village District

Leak detection and repair is a vital component of any effective water conservation program. The volume of water lost to a leak is not only a function of the size of the leak, but also the time necessary to identify, locate and repair the leak. Large leaks are usually identified quickly, located easily and repaired promptly to avoid a water supply emergency. By contrast, smaller leaks may often go unnoticed or not repaired for long periods of time. Typically, smaller leaks require a comprehensive acoustic leak detection survey. In some instances this may take years, losing countless gallons of high quality drinking water in the process.

Wade Crawshaw of C&C Water Services Inc. recently instituted a SCADA (supervisory control and data acquisition) leak notification program at Gunstock Acres Water System in Gilford, N.H. He was awarded the Source Water Sustainability Award by DES at DES's annual Drinking Water Source Protection workshop on May 10, 2011.

In late 2009, electromagnetic flow meters were installed on six distribution system zones. The meters record a flow rate every 10 seconds during low water use periods (12 a.m. to 5 a.m.) and automatically capture the minimum flow rates for each hour. The recordings are tied directly to the water system's SCADA system and a report is produced for Wade to review the minimum hourly flows within each zone. The minimum flow rates represent a combination of water loss and actual use by system connections.

The following steps were performed in order to differentiate between real losses and consumption.

- A comprehensive leak detection survey was conducted using an outside consultant. The entire distribution system was acoustically surveyed for leaks and any leaks that were discovered were immediately repaired. This step removed any recoverable losses in the system.
- Water system customers were notified that nighttime water use in the system would be closely scrutinized and were requested to refrain from discretionary water use from 12 a.m. to 3 a.m. every day. For example, connections were specifically requested to refrain from programming water softeners and irrigation systems to run during this period. This step helped to ensure the reduction of noise in the data to assist with accurate analysis.

Following completion of the above steps, baselines were quantified over the next year to determine the average minimum flow rates within each zone. The baselines represent a combination of legitimate consumption and unavoidable real losses, i.e., leaks that cannot be located. In theory, minimum flow rates above the established baseline that are persistent represent leaks in that zone that need to be pinpointed and repaired.

Should an increase in minimum flows occur, Wade continues to review data for a period of days before taking action. Increases in minimum flows may be the result of increased consumption as opposed to an actual leak. If the minimum flow rates do not decline back to baseline levels, he initiates leak detection activities. The amount of time for additional analysis depends on the magnitude of the minimum observed flows above baseline.

Considering that the system is segregated into six zones, part of the leak locating effort has already been conducted. Wade initiates valving exercises to further isolate the potential leak within the zone. When the general location is identified, the leak is pinpointed using various acoustical methods including ground microphones and correlation devices.

The approach has already proven successful, assisting with the identification and repair of multiple leaks over the previous winter. Wade's approach will undoubtedly result in the savings of millions of gallons of water. The approach may potentially serve as a model for many small- and medium-sized water systems in New Hampshire. •

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# Taking Steps Locally To Minimize Leaks from Underground Storage Tanks

While modern underground storage tank (UST) leak-detection technologies, improved tank design and best management practices work to minimize leaks and spills, local water suppliers and municipalities have in many cases adopted additional local protection measures. In fact, approximately 62 municipalities in New Hampshire limit the siting of new USTs—primarily within aquifers or wellhead protection areas. Underground storage of gasoline, diesel fuel, waste oil, hazardous waste or other potentially hazardous substances inherently presents risks to drinking water resources primarily through vapor leaks and spills. Of the 3,939 USTs in use throughout the state, most are used for storing gasoline, diesel fuel or heating oil that contain a variety of volatile organic compounds.

DES guidance recommends municipalities adopt UST restrictions, e.g., UST prohibitions or setbacks to water wells, within wellhead protection areas and high-value stratified-drift aquifers. For example, DES's Model Groundwater Protection Ordinance includes language to prohibit the installation of new gasoline stations—the most common use of USTs—within wellhead protection areas and stratified drift aquifers. Local zoning regarding USTs should include UST definitions consistent with state UST regulations (Env-Wm 1400) that include the tank(s), piping and other system components.

## DES UST Definitions

*“UST facility” means a facility or facility component that is 10 percent or more below the surface of ground and is not fully visible for inspection.*

*“Underground storage tank system” means an underground storage tank(s) and all connected piping that routinely contains a regulated substance or vapors of the regulated substance.*

Under RSA 674:43, Power to Review Site Plans, local planning boards have the authority to consider additional UST technologies and management practices to minimize spills or releases associated with the activity. Below are several examples that planning boards could consider but that are not required under state regulations.

- **Require double-walled vent and vapor piping and collared sumps on the UST system.** Double-walled (versus single-walled) vent and

vapor piping and “collared” sumps mounted at the top of a tank riser (versus sumps mounted on a riser or no sump at all) to provide containment for all tank top connections.

- **Require regular inspection of UST spill buckets.** A spill bucket is installed just below ground level on top of the fill pipe of a UST to contain drips and spills of fuel that can occur when a fuel truck’s delivery hose is uncoupled from the fill pipe after delivery. The cover of a spill bucket (at ground level) is a tank’s front line of defense against vehicular traffic. Repeated hits from snow plows and car and truck tires passing over the spill buckets can cause degradation of the surrounding concrete, damage to the spill bucket/concrete support ring, as well as the spill bucket and riser. Leaks from spill buckets and spills around the spill buckets then have a direct route into the tank bedding.
- **Inspect condition and require maintenance of fueling pad and positive limiting barrier.** Local plans could include conditions for owners/operators to inspect fueling pads to make sure they remain impervious (free of cracks or holes) and that positive limiting barriers, i.e., grooves around the edge of the fueling pad, are not filled with sand or other materials that reduce the capacity to contain spills.
- **Require a canopy to reduce fuel mixing with stormwater.** Canopies serve as a means to limit precipitation from accumulating on the dispensing pad and washing gasoline or diesel fuel into swales or trenches designed for clean stormwater but not designed to remove and treat organic constituents such as benzene, toluene or other organic compounds found in gasoline and diesel fuel.

Other DES guidance concerning local UST planning and management is available in DES fact sheet WD-DWGB-22-20, Preventing Groundwater Contamination at Gas Stations—What Municipalities and Water Suppliers Can Do (2010).

For more information concerning UST design options, contact Mike Juranty at (603) 271-6058. Additional information, including rules, publications and related documents, are available online at <http://des.nh.gov/organization/divisions/waste/orcb/ocs/ustp/index.htm>.

## More Changes to DWGB Staff

Due primarily to numerous retirements in the DWGB, there are a number of new staff and changes in staff responsibilities that we want to let you know about. We are very fortunate in having been able to fill vacancies with highly qualified people who are eager to keep drinking water safe and work in this gratifying field. We are also fortunate to have dedicated and experienced staff to train and encourage the “new hires” so that, we hope, the transition will be seamless for you.

To start, there have been numerous changes and new staff in the Engineering and Survey Section. Rick Skarinka now heads the section and continues to perform large system sanitary surveys in the eastern half of the state. Dan Dudley has been hired to do large system surveys on the west side of New Hampshire, and he will manage the Drinking Water State Revolving Fund (DWSRF). Adam Torrey has moved into this section to assist with the DWSRF and to promote asset management. Susan Willoughby is now the lead engineer on Lead and Copper and will perform surveys at medium-sized (e.g., smaller municipal) systems. Jen Mates has been hired to do engineering reviews and survey assistance for small public water systems. Finally, Wade Pelham, who has been performing small system sanitary surveys for many years, is now responsible for operator training and oversight as well as the Cross Connection Program.

Allyson Gourley will handle licensing of certified public water system operators.

There have also been changes in the Monitoring and Enforcement Section. Leah McKenna is now in charge of enforcement and Chip Mackey has taken her position as head of Monitoring. Eric Skoglund joined the bureau to assist with enforcement. Jocelyn Weldon replaced Adam Torrey in the bacteria program and Deb McDonnell has been hired to do Consumer Confidence Reports, chemical monitoring/reporting violations and data tracking.

Stacy Herbold has been hired to assist with the Water Conservation and Water Use Reporting Program. Genevieve Al-Egaily has come from the N.H. Geological Survey to assist with source water protection and the Water Well Program. Jenn Rowden joins us from the Watershed Management Bureau to assist with rulemaking and special projects.

Last but not least, we have a new executive secretary, Lisa Fortier, who will work with Kathy Drake to direct your calls and provide staff with administrative support.

Please join us in welcoming our new staff. We are providing a phone list with the direct phone number for each staff member on page 5. Contact Sarah Pillsbury, DWGB Administrator, at (603) 271-1168 with any concerns or questions regarding the bureau. •

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## Arsenic Consortium Focuses on Public Health and Drinking Water

Arsenic in private well water is a public health issue of significant concern in New Hampshire. An estimated 20 percent of private wells in New Hampshire have naturally occurring concentrations of arsenic that are greater than the 10 ppb limit set by the U.S. Environmental Protection Agency for public water systems.

Arsenic in drinking water and food—particularly rice—is a key focus of the Dartmouth Toxic Metals Superfund Research program. This past February, the program hosted a meeting of the Northeast Regional Arsenic Consortium, which was formed in 2001 and currently includes representatives of DES, N.H. Department of Health and Human Services, N.H. Geological Survey, Dartmouth College, U.S. Geological Survey and the National Ground Water Association.

Presentations at the meeting covered the effects of low doses of arsenic on the immune system, arsenic exposure in pregnant women, arsenic doses from dietary sources such as rice, and overviews of state programs that address arsenic in drinking water. The consortium’s efforts focus on sharing research and coordinating public outreach and education efforts with a view to getting private well users to test their water and treat it where appropriate to limit arsenic exposure.

For more information, a link to a short movie about the health effects of low doses of arsenic and to view slide presentations, visit [www.dartmouth.edu/~toxmetal/program-resources/research-translation/arsenicconsortium.html](http://www.dartmouth.edu/~toxmetal/program-resources/research-translation/arsenicconsortium.html). •

# DWGB Staff Phone List

<b>Name</b>	<b>Responsibilities</b> Note: <b>Bold</b> signifies section managers.	<b>Phone Number</b> <b>(603) 271-xxxx</b>
<b>Sarah Pillsbury</b>	<b>Drinking Water and Groundwater Bureau Administrator</b>	<b>1168</b>
Lisa Fortier	Executive Secretary	5447
Jane Murray	Executive Secretary	3139
<b>Selina Makofsky</b>	<b>Monitoring and Enforcement Section Supervisor, Radionuclides</b>	<b>4109</b>
<b>Leah McKenna</b>	<b>Enforcement Section Supervisor</b>	<b>2854</b>
Emily Jones	Enforcement Assistance, File Reviews	0713
Eric Skoglund	Enforcement Assistance	5109
<b>Chip Mackey</b>	<b>Monitoring Section Supervisor</b>	<b>0655</b>
Tricia Madore	Chemical Monitoring Data, Schedules & Results	3907
Deb McDonnell	Monitoring & Reporting Violations, Consumer Confidence Reports	6703
Jocelyn Weldon	Bacteria Monitoring & Enforcement	0672
Barbara Davis	Bacteria Monitoring, Youth Camps	2542
Donna Jones	Confirmation Samples, Private Lab Chemical Data	0893
<b>Rick Skarinka</b>	<b>Engineering and Survey Supervisor, Large System Survey</b>	<b>2948</b>
Dan Dudley	Municipal Systems, Surface Water Filtration, State Revolving Fund	2953
Wade Pelham	Operator Certification Program, Cross Connection Control	2410
Allyson Gourley	Transient System Technical Assistance, State Revolving Fund Environmental Review	0867
Cindy Klevens	Small System Design Approvals and Technical Assistance, Arsenic	3108
Susan Willoughby	Small and Medium System Design Approvals and Survey, Lead & Copper	2952
Joan Fitzsimmons	Lead & Copper Monitoring, Public Notice & Education	2516
Adam Torrey	State Revolving Fund, Asset Management,	2950
Jennifer Mates	Non-Community System Design Approvals, Small System Technical Assistance	2949
Kevin Riel	Small Water Supply System Inspections (North)	2539
Mary Clairmont	Small Water Supply System Inspections (East)	6603
David Kelly	Transient Systems Technical Assistance, Seasonal Systems	2472
<b>Laurie Cullerot</b>	<b>Data Management Supervisor</b>	<b>2954</b>
Gail Dailey	Data Management, Water Quality Freedom of Information Requests	2972
Linda Thompson	Application/License Permit to Operate, Public Water System Verification	3544
Kathy Drake	Program Assistant/Support Staff	2513
<b>Brandon Kernen</b>	<b>Hydrology &amp; Conservation Supervisor</b>	<b>0660</b>
<b>Stephen Roy</b>	<b>Manager of Groundwater Permitting Technical Group</b>	<b>3918</b>
Mitch Locker	Groundwater Discharge Permitting, Non-Domestic Wastewater Disposal	2858
Christine Bowman	Permitting: Large Groundwater Withdrawals, Large Community Wells, Bottled Water Sources	8866
Diana Morgan	Small Community Well and Best Management Practices Programs	2947
Rick Schofield	Water Well Board, Well & Pump Contractor Licensing, Construction Standards	1974
Derek Bennett	Water Use Registration & Reporting, Water Conservation	6685
Stacey Herbold	Water Conservation: Plan Review, Compliance, Outreach & Advocacy	0659
Helen Vezina	Water Completion Report Inquiries	3209
<b>Paul Susca</b>	<b>Planning, Protection &amp; Assistance Supervisor</b>	<b>7061</b>
<b>Bill Hall</b>	<b>N.H. Environmental Laboratory Accreditation Program Manager</b>	<b>2998</b>
Knatalie Vetter	N.H. Environmental Laboratory Accreditation Program	3303
Johnna McKenna	Source Water Protection Grants, Emergency Planning, Security, Well Siting Maps	7017
Pierce Rigrod	Reclassification Program, Best Management Practices Training, Technical Assistance	0688
Genevieve Al-Egaily	Water Well Board, GPS/GIS Data Collection, OneStop GIS	1973
Debra Sonderegger	Chemical Monitoring Waivers	2862
Holly Green	Water Supply Land Protection Grant Program	3114
Jennifer Rowden	Source Water Protection Technical Assistance	0657
Alicia Carlson	Publications, N.H. Project WET (Water Education for Teachers)	4071

# Manchester Water Works' Water Education Program

by Cheryl Wood, Laboratory Manager, Manchester Water Works

The Manchester Water Works' (MWW) Water Education Program has been part of the Manchester School District's curriculum since 1994. Our goal in providing this service is to reach out to our customers through an educational program within the local elementary schools. This can only be accomplished with MWW working hand-in-hand with the school system. We are expanding this partnership to reach all the third and fourth graders in the Manchester area, to teach students about the importance of clean and safe drinking water, water conservation and the importance of protecting the environment. We believe that by educating the children, we reach out to and educate our customers also.

By continuing this program each year, we hope to build environmental awareness of drinking water among students and make drinking water a priority in their education. The program takes place each spring and includes water treatment plant tours, a fourth grade poster contest and a fourth grade water science fair. Dedicated MWW staffers promote and

run this program each year.

We have worked with the schools to separate each grade level presentation to target specific New Hampshire science standards. The third grade program focuses on water treatment, the water cycle and water science. The fourth grade program builds on the water cycle theme, and targets water pollution, water conservation and the water in the world.

The success of this program has been evident based on our experience with our customers and positive feedback from children, parents, teachers and community members over the years. Each year approximately 700 posters and 600 science fair projects are completed by students through this program. Promoting the education program allows MWW employees to go out into the community and interact with our younger customers. Educating tomorrow's consumers today is a proactive way to promote the MWW's goal of providing the highest quality drinking water to all of our customers. •

## Emergency Generators: Does Yours Require a Permit?

More and more water systems of all sizes are installing emergency generators to ensure consumers have access to clean water even during power outages. Certain sized emergency generators require an air permit from DES in order to operate. Those water systems that already have emergency generators must also obtain a General State Permit Registration if the generator:

- Combusts liquid fuel oil for which the combined total design gross heat input for all such engines is greater than or equal to 1.5 million Btu/hr (approximately 200 horsepower); or
- Combusts natural gas or liquefied propane gas for which the combined total design gross heat input of all such engines is greater than or equal to 10.0 million Btu/hr.

The General State Permit Registration requires submission of two forms available online: the GSP-1 form for facility information and GSP-2 form for generator information. To download these forms, go to <http://des.nh.gov/organization/divisions/air/pehb/apps/categories/forms.htm> and scroll to "General State Permit Registration Information." This registration can be completed online through DES's OneStop Data and Information System. Instructions for registering for the General State Permit through OneStop are

available at [http://des.nh.gov/organization/divisions/air/pehb/apps/documents/online\\_instructions\\_gsp\\_eg.pdf](http://des.nh.gov/organization/divisions/air/pehb/apps/documents/online_instructions_gsp_eg.pdf).

New Hampshire Administrative Rule Env-A 101.671 limits the operation of emergency generators to periods when:

- The primary power source for a facility is lost during an emergency, such as a power outage.
- The facility is conducting normal maintenance and testing of the generator.
- The regional electric grid operator, ISO New England (ISO-NE), declares the implementation of Action 12 of ISO-NE Operating Procedure 4 (OP4), "Action During a Capacity Deficiency." (More information regarding ISO-NE operating procedures can be found at [www.iso-ne.com](http://www.iso-ne.com).)

There are limits to using emergency generators expressed within the General State Permit. For example, emergency generators cannot be used for any other purposes except for those described above and are limited to 500 hours of total operation during any 12-month period. Water systems required to obtain a permit must also pay the annual emissions-based fee of \$148.60 (2010) or \$148.60 per ton of emissions, whichever amount is higher.

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# Changes to the Comprehensive Shoreland Protection Act Effective July 1, 2011

Earlier this year the New Hampshire Legislature amended RSA 483-B, the Comprehensive Shoreland Protection Act through passage of House Bill 2. The most significant changes to the Comprehensive Shoreland Protection Act, now called the Shoreland Water Quality Protection Act, affected the minimum standards relative to vegetative buffers and impervious surface limitations and established a new permit-by-notification process.

Since July 1, 2008, trees and saplings within 50 feet of a lake or river—the waterfront buffer—protected under the act have been managed based on a “grid and point” system. With this system, trees and saplings are awarded points based on tree trunk diameter, resulting in a cumulative point score for the property. A minimum of 50 points must remain within each 50-foot-by-50-foot grid segment. Legislative changes earlier this year modified this scoring system to assign higher point values relative to tree diameter and to also assign point values to existing shrubs and natural ground covers.

Impervious surfaces are restricted by the act within 250 feet of the natural mean high water level, high tide line or full pond waterline—the protected shoreland. As amended in 2008, the act limited impervious surfaces to not more than 30 percent of the total area of a lot within the protected shoreland. Under the 2008 requirements, if a proposed development resulted in greater than 20 percent impervious area, a stormwater management plan would be required to infiltrate the increase in stormwater. In addition, any waterfront buffer grid segment not meeting the minimum required 50 point score needed to be planted with additional vegetation so that it met the minimum required point score.

Under the new 2011 requirements, owners and developers wishing to exceed 20 percent impervious area need only implement a stormwater management plan. Property owners can now exceed 30 percent impervious area if a stormwater management system is designed and certified by a licensed engineer and the tree, sapling, shrub and natural ground cover score of each waterfront buffer grid segment meets the minimum required point score or is sufficiently replanted to at least meet the required point score.

DES cannot overstate the value of managing stormwater in order to protect lakes, rivers and other surface waters that serve as sources of drinking water, recreational opportunities and wildlife habitat. Local communities may adopt innovative land use controls to further protect these sensitive resource areas. For

more information about adopting innovative land use controls, see DES’s Innovative Land Use Planning Techniques Handbook at [http://des.nh.gov/organization/divisions/water/wmb/repp/innovative\\_land\\_use.htm](http://des.nh.gov/organization/divisions/water/wmb/repp/innovative_land_use.htm). In most cases, stormwater generated from impervious surfaces can be intercepted and infiltrated by incorporating simple, low cost, but highly effective stormwater management techniques. Find out more about these techniques in DES’s Shorefront Homeowner’s Guide to Stormwater Management at <http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/nhdes-wd-10-8.pdf>. For more information on the Shoreland Water Quality Protection Act and better management of stormwater, visit the Shoreland Program webpage at <http://des.nh.gov/organization/divisions/water/wetlands/cspa/index.htm>. •

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## New Do-It-Yourself Tools to Manage Stormwater

Does your driveway wash out during a heavy rainstorm? Does the runoff from your roof erode the soil around your foundation? Do the basements, yards and roads in your neighborhood flood more frequently than they used to? Do the lakes and ponds in your community look murky after a heavy rain? If so, stormwater could be to blame.

Stormwater is water from rain or melting snow that does not soak into the ground. Roofs, decks, driveways, walkways and other hard surfaces (called impervious surfaces) can all contribute to stormwater. Stormwater can cause many problems, including flooding, stream bank erosion and water pollution. In fact, stormwater contributes to more than 80 percent of the surface water quality impairments in New Hampshire.

To help address these problems, DES has released two new tools for homeowners and local business officials to better manage stormwater on their properties and in their communities.

*The New Hampshire Homeowner’s Guide to Stormwater Management: Do-It-Yourself Stormwater Solutions for Your Home* provides fact sheets for a variety of stormwater treatment practices, such as dry wells and rain gardens, to install on your property. Each fact sheet includes a material list, illustrations and step-by-step instructions. Constructing these practices around your home can help reduce flooding and erosion and

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**Generators, continued from page 6**

For more information regarding air permits and emergency generators, contact Barbara Dorfschmidt at [barbara.dorfschmidt@des.nh.gov](mailto:barbara.dorfschmidt@des.nh.gov) or (603) 271-6796.

In addition to air permits, water systems with emergency generators using aboveground storage tanks (ASTs) that store liquid fuels, excluding propane or natural gas, may need to register and comply with Env-Wm 1402, DES's rules concerning ASTs.

ASTs are commonly used to supply fuel to emergency generators. Depending on their size, ASTs may be regulated under Env-Wm 1402, Control of Aboveground Petroleum Storage Facilities. Facilities with a single AST having a capacity of 660 gallons or multiple tanks having an aggregate capacity equal to or greater than 1,320 gallons must comply with Env-Wm 1402. AST standards, minimum setbacks and other requirements are found within Env-Wm 1402. Additional information about the AST Program is available at <http://des.nh.gov/organization/divisions/waste/orcb/ocs/astp/index.htm>.

Use of any AST, e.g., transfers of fuel, must still comply with Env-Wq 401, Best Management Practices for Groundwater Protection. Additional information about Env-Wq 401 is available by searching for "env-wq 401" at [www.des.nh.gov](http://www.des.nh.gov).

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protect nearby streams and ponds from water pollution.

"The New Hampshire Residential Loading Model" is a spreadsheet tool to help estimate the amount of stormwater pollutants, specifically sediment, phosphorus and nitrogen, that come from your property. This tool can model stormwater pollution resulting from different construction scenarios, such as the addition of a new garage. It can also estimate the water quality benefits of constructing stormwater treatment practices. This can help you and your neighbors plan changes to your property, while reducing impacts to water resources.

These tools are available at <http://des.nh.gov/organization/divisions/water/stormwater/stormwater-mgmt-homeowners.htm>.

For more information, contact Jillian McCarthy at [jillian.mccarthy@des.nh.gov](mailto:jillian.mccarthy@des.nh.gov).

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