

COMMISSIONER'S COLUMN

MtBE Settlement Funds to be Put to Work to Protect NH Drinking Water

As we enter the new year, NHDES is beginning an important new initiative to address the statewide problem of Methyl-tertiary-Butyl Ether (MtBE) contamination. During 2013, the State finalized settlements with all but one of the defendants in its historic MtBE lawsuit, making available over \$81 million for remediation of MtBE contamination in groundwater and drinking water. NHDES will soon begin using these funds to clean up high-priority sites where gasoline that contained MtBE has been released, to test private drinking water wells, and to provide safe, clean drinking water to affected New Hampshire citizens.



Soap bubbles being used to document the release of gasoline vapors containing MtBE from an underground storage tank.

farther, spread faster and last longer in groundwater than many other contaminants. It is also very difficult to remove from drinking water using conventional water treatment methods. Following the recognition of the magnitude of the problem, the New Hampshire Legislature banned the use of MtBE in gasoline as of 2007, but the contamination problem is still with us today.

In 2003, the State initiated its lawsuit against refiners and gasoline manufacturers who supplied MtBE gasoline to New Hampshire. The State alleged that the defendants knew they were supplying a product that posed unique hazards and that it would cause contamination of drinking water supplies. The lawsuit sought damages to perform comprehensive investigation and cleanup of MtBE contamination sites. After reaching settlement with all but one of the defendants, the State went to trial in January of last year against the remaining defendant, ExxonMobil Corporation. After an historic 3-month trial, the State won a \$236 million verdict,

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NHDES Coastal Fellow Finds Climate-Resilience Stories in 33 States

A road trip that clocked 17,358 miles, 158 interviews and one flat tire – that's how new NHDES Coastal Fellow Kirsten Howard and her colleague Allie Goldstein spent their summer after finishing graduate school at the University of Michigan. Dubbed the Great American Adaptation Roadtrip, Howard and Goldstein traveled the country and documented stories of communities adapting to the impacts of climate change. They share 33 stories on their blog: www.adaptationstories.com.

Their route led them from Michigan to New England, across the Gulf of Mexico, through the Southwest, up the West Coast, and across the Plains. When they weren't driving the Goldstein family's minivan, they were trekking through forest burn scars with a fire fighter in

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Thank You, Ray Burton



August 13, 1939-November 12, 2013

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which is currently the subject of an appeal to the NH Supreme Court.

Under the terms of the agreements with the settling parties, the \$81 million in settlement funds are under the control of the New Hampshire Attorney General, and must be used for MtBE cleanup. NHDES has been working closely with the Office of the Attorney General to develop a comprehensive MtBE remediation plan. In early December of 2013, NHDES received authorization from the Fiscal Committee of the Legislature and the Governor and Executive Council to accept and expend up to \$22 million of the settlement funds over the remainder of the biennium. These funds will be used to complete development of the plan and begin implementation. The plan will allocate funds for: (1) installation and improvement of public water supply infrastructure in areas having significant MtBE contamination, (2) investigation and remediation of existing contamination sites where private wells are impacted, (3) testing at-risk private water wells near contamination source sites, and (4) implementation of measures to prevent further MtBE contamination. In the near term, work will begin on plan elements that involve the most significant public health risk concerns. This includes private water well testing and work at highly contaminated sites.

In order to accomplish this important work, NHDES is staffing a new MtBE remediation bureau whose sole purpose will be to implement the plan. The bureau will include both a site remediation section and a drinking water quality section, and will be staffed with engineers, hydrogeologists and scientists. Existing staff in NHDES's related programs will also contribute significantly to the efforts of the bureau. It is anticipated that it will take approximately six years to fully implement the workplan and expend the funds. Depending upon the results of extensive private drinking water well sampling, we anticipate that a significant portion of the funds will be expended on establishing or improving public water supply infrastructure.

We want to ensure that we utilize these funds as effectively and efficiently as possible to address MtBE contamination. As we begin this vital work, we look forward to engaging with New Hampshire's citizens to obtain input on and to shape the final plan. Over the next couple of months, we will be meeting with stakeholder groups from the municipal, business, consulting and environmental communities, and will also host public meetings. Be sure to look for notices of these meetings on the NHDES calendar on our website and in local media. In the meantime, if you have any questions or comments, please contact NHDES's Waste Management Division at 603-271-2905. We look forward to hearing from you as we work to ensure that every New Hampshire citizen's drinking water is protected against MtBE. ■

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New Mexico, paddling through Louisiana's sinking wetlands with researchers or climbing a melting glacier in Montana. But Howard and Goldstein looked past the scary climate vulnerabilities and impacts that communities across the US are facing and instead discovered that solutions are almost everywhere, including in the Granite State.

On a rainy day in Keene, NH, the road trippers met with Public Works Director Kürt Blomquist to discuss flood management solutions. Keene is situated in an ancient lake bed surrounded by hills – so when it rains hard, the city floods. Residents may already be experiencing the intensifying rains that climate change is expected to bring: Keene saw five 100-year storms and one 50-year storm between 2005 and 2012.

Driven by these increasingly common extreme storm events, Keene completed a Climate Adaptation Plan in 2007 outlining over 100 actions, including replacing 43 percent of existing culverts to increase stormwater capacity. Blomquist admitted that plan implementation is piecemeal due to funding constraints, but Howard and Goldstein found a few implemented examples. They visited a porous pavement parking lot, puddle-free despite the May rainstorm, and stopped at the site of a box culvert installation that will help stop flooding on a road that washed out in a February 2012 storm.

Post-road trip, Howard joins the NHDES Coastal Program for two years as a coastal fellow. She made an easy transition from road tripper to member of the Coastal Adaptation Workgroup (CAW) – a collaborative effort helping Seacoast communities prepare for sea level rise and more intense storms. Howard continues to write adaptation stories for CAW's blog, and she will publish one last story on the road trip blog about her final destination – Portsmouth. ■

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29 Hazen Drive • Concord, NH 03301
603-271-3503
www.des.nh.gov
editor@des.nh.gov
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The 2013 Volunteer Lake Assessment Season in Review

The Volunteer Lake Assessment Program (VLAP) experienced another busy year for volunteers and staff in the Jody Connor Limnology Center (JCLC). Approximately 500 volunteers monitored 178 lakes throughout New Hampshire, an increase from 171 lakes in 2012. A total of 423 individual sampling events were conducted at VLAP lakes. Volunteers conducted a total of 296 individual sampling events, and biologists assisted volunteers for an additional 126 sampling events. Approximately 185 deep spots and 500 river/stream stations were sampled.

VLAP in 2013, a significant increase from 12,910 sample results in 2012. This was a result of six additional lakes sampling in 2013, an increase in chloride monitoring, watershed management plan development at Pearly Pond in Rindge and Province Lake in Effingham, volunteers regularly utilizing the viewscope to collect transparency measurements, as well as a relatively wet start to the summer with tributaries flowing regularly.

Figure 1. VLAP Biological Analyses by Laboratory

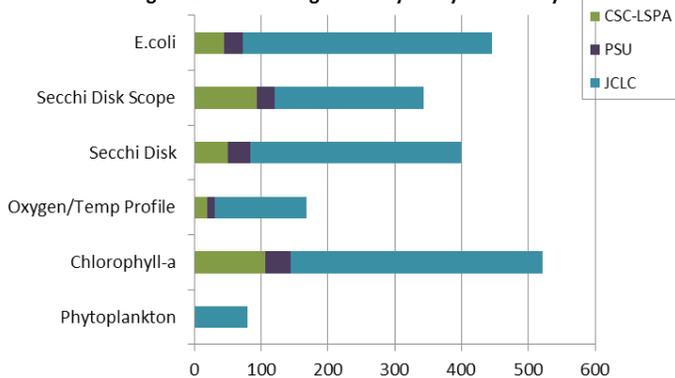
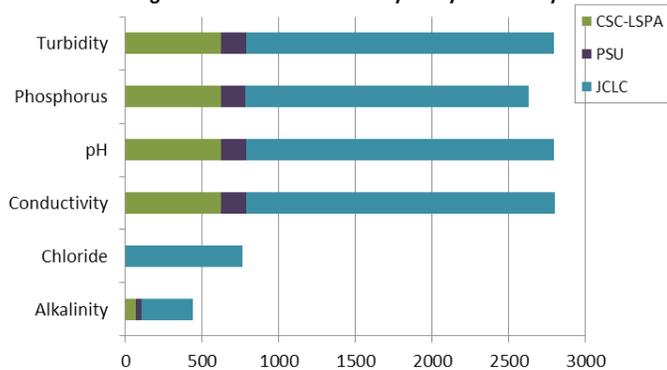
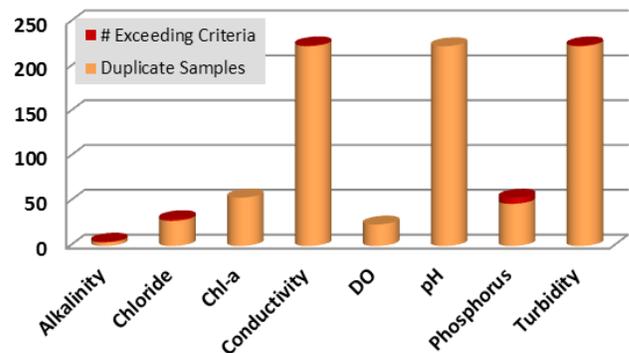


Figure 2. VLAP Chemical Analyses by Laboratory



Figures 1 and 2 provide a summary of VLAP sample parameters analyzed by the JCLC, Colby Sawyer College/Lake Sunapee Protective Association (CSC-LSPA) and Plymouth State University (PSU) for the 2013 sampling year. Approximately 14,184 individual sample results were generated by

Figure 3. VLAP Duplicate Sample Analysis



VLAP continued to collect quality data. Volunteers collect field duplicate samples during the biennial biologist visit to measure their ability to duplicate sampling procedures. Figure 3 depicts the number of duplicate samples collected vs. the number that failed to meet acceptance criteria. The majority of samples met acceptance criteria, validating the quality work of VLAP volunteers.

The 2013 VLAP season continued to follow the biennial biologist visit schedule. Lake names M-Z received a biologist visit in 2013 with the next visit scheduled in 2015. Lake names A-L will receive a biologist visit in 2014 and then again in 2016. Volunteers are encouraged to continue sampling on their own during the years in which their lake does not receive a biologist visit. Annual data collection is essential in establishing long-term water quality trends. These trends help determine whether water quality is getting better or worse and aid in watershed management decisions to protect and restore waters. ■



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Employees of the Year - Brandon Kernen & Gary Lynn

For the first time since the agency began recognizing an Employee of the Year, NHDES has selected two employees to share the award. Brandon Kernen, Section Manager of the Hydrology/Conservation Section in the NHDES Drinking Water and Groundwater Bureau and Gary Lynn, Supervisor of the Petroleum Remediation Section in the Waste Management Division have been awarded the 2013 NHDES Co-Employees of the Year honors.

In the last year, both Brandon and Gary distinguished themselves as key witnesses in the state's historic Methyl-tertiary-Butyl-Ether (MtBE) lawsuit. The State's success in the case was in large part tied to the facts surrounding NHDES's investigation and remediation of sites contaminated with MtBE gasoline. During his entire 10-year period of work on the case, Gary had full command of the State's struggle with MtBE contamination at gas stations and other sites throughout the state, and had the skills to communicate that struggle effectively. Gary shared this knowledge, educating the State's attorneys, answering questions, and completing countless research assignments. He sat for multiple days of depositions, during which he demonstrated the depth and breadth of his knowledge, skills and competence. NH Department of Justice Assistant Attorney General Mary Maloney, the State's lead counsel in the case, said that when he completed his deposition, Gary "overwhelmed" opposing counsel and she knew he was going to be an important and valuable witness at trial.



Brandon's contribution to the case included a commanding knowledge of MtBE's impacts on drinking water and groundwater in the state. In addition to testimony, his program's work associated with developing methods to identify and sample approximately 230,000 private drinking water supply wells filled a huge gap in the State's evidence. Mary Maloney characterized Brandon as follows: "his credibility and passion came through. You would expect that this very high caliber employee would have the technical aspects of his testimony down, but we did not expect his passion. That really

added credibility to the State's case. And it was something the defendant could not overcome."

Beyond their work on MtBE, both Gary and Brandon have been distinguished employees for many years. Brandon, a talented hydrogeologist, is a technical resource for both the Water and Waste Divisions. From his early work on very technically challenging, highly scrutinized, large groundwater withdrawal projects, to his more recent efforts on emerging contaminants, groundwater contamination from rock blasting, as well as the integral part he has played in developing and implementing the State's unused medicine disposal program, Brandon has "rolled up his sleeves" and tackled tough issues head-on. Brandon is a leader, often taking his own initiative to identify and solve a problem. He is a gifted communicator and works with all stakeholders to build coalitions for solving problems. His knowledge, demeanor and work have been recognized by legislators and others as exemplary. He is well respected by both his peers and the people he supervises.

Similarly, Gary Lynn's exemplary work on the MtBE case does not represent an isolated event. He has long been a leader and innovator within the Waste Management Division. From his early work on the Pease Air Force Base cleanup, to his trailblazing as the first NHDES brownfields program coordinator, to his leadership in petroleum remediation, Gary has for many years had a highly visible and measurable impact on NHDES's site cleanup efforts.

Once Gary identifies a challenge, and a "customer" in need, he will very likely find a way to help. Whether it's an impoverished site owner, a municipality struggling to deal with a contaminated site, or one of his colleagues here at NHDES, Gary doesn't rest until he figures out a strategy to help.

For these reasons and many more, Brandon and Gary have been selected as the 2013 NHDES Co-Employees of the Year. Congratulations to both. ■

2013 David S. Chase Memorial Award - Dr. Jeffrey Underhill

Every year, many NHDES staff members work diligently to improve New Hampshire's environment by contributing to the scientific and technical knowledge base that underpins our priorities and strategic goals. The work of these individuals is key to the Department's success in achieving our mission of "...helping to sustain a high quality of life for all citizens by protecting and restoring the environment and public health in New Hampshire." Each year, one of these outstanding scientists is selected to receive the David S. Chase Memorial Award for Outstanding Achievements in Science for accomplishments that have resulted in significant impacts to our understanding of the environment and what we can do to improve conditions and prevent future problems.

The award is named in honor of David S. Chase, the NHDES Radon Program Manager who passed away very unexpectedly in November 2008. Dave served as the Radon Program Manager at NHDES and the Department of Health and Human Services for 16 years. He earned a BS in Forestry from UNH in 1971 and his PhD in Botany and Economic Geography from the University of Wales (UK) in 1978. Dave was extremely dedicated and devoted to the radon program, and under his guidance, New Hampshire's radon program received national recognition by the Conference of Radiation Control Program Directors in 1994. Dave was a world-renowned authority on radon, and served on many committees and boards, including the working group for global standards for radon measurement and mitigation at the World Health Organization, and the National Environmental Health Association's radon certification program.

For 2013, the NHDES Rewards and Recognition Committee selected Dr. Jeffrey T. Underhill, Administrator of the Atmospheric Science and Analysis Section in the NHDES Air Resources Division (ARD) to receive the David S. Chase Memorial Award for Outstanding Achievements in Science. In addition to his normal duties, Jeff (along with David Healy of ARD) took on the challenge of predicting atmospheric nitrogen deposition rates for the Great Bay Nitrogen Non-point Source Study. To do this, he had to adapt a large regional air transport model to predict nitrogen deposition in a small section of New Hampshire. He cross-referenced the model results to trends in measured nitrogen deposition from stations near the watershed. These analyses provided answers to long-standing questions about the significance of out-of-state sources of nitrogen (and their impacts) to the Great Bay Estuary. His in-depth knowledge of the topic from his

doctoral dissertation, as well as his professionalism, produced very credible answers to difficult questions.

Jeff worked closely with scientists in the NHDES's Water Division to build a combined understanding of air and water quality cross-media issues for the Great Bay Nitrogen Non-point Source Study. He is interested in continuing to look for new ways to combine water quality data with air models. Through his efforts and collaborative approach, Jeff is making significant contributions to the understanding and pro-



tection of not just the air of New Hampshire, but the surface waters as well.

Most importantly, throughout these inquiries and all of his great work, Jeff has demonstrated professionalism, patience and humility - the true hallmarks of a great scientist. Congratulations Jeff! ■

Voluntary Salt Applicator Certification Now Law

New Hampshire has become the first state in the nation to offer certification for salt applicators. The new law provides limited liability for damages resulting from snow and ice to salt applicators who choose to get certified - and to the property owners who hire them. The goal of the program is to encourage the most efficient use of salt while maintaining safe conditions on parking lots and driveways. Certification requires successful completion of a five-hour course offered by the University of New Hampshire Technology Transfer Center. See our web site for more details: www.des.nh.gov, click "Salt Reduction Initiative" on the A to Z list, or call Earle Chase, Salt Reduction Coordinator, at 271-5329. ■

Helping the NH Food Bank



The NHDES Senior Leadership flipped pancakes during a “Cash for Cakes” fundraiser held at NHDES to benefit the NH Food Bank. The fundraiser and other collection efforts resulted in NHDES giving over 800 food items and more than \$2,200 to help the NH Food Bank assist NH residents in need this holiday season.

Operation Santa Claus



The 2013 Operation Santa Claus drive at NHDES was a huge success. \$6,325 were raised to sponsor 90 children, plus several more who were provided with individual books, personal care items, games, puzzles, etc. at the Youth Development Center in Manchester and the Philbrook Center in Concord.

Longevity Awards

The following NHDES employees are celebrating a milestone in years of service to the State of NH. Congratulations!

40 YEARS

Rene J. Pelletier, WD

Mitchell D. Locker, WD
Rebecca S. Williams, WMD

Douglas J. Smith, WD

35 YEARS

Richard P. Berry, WMD

Richard H. Pease, WMD

Pamela F. Hoyt-Denison, WMD

Susan A. Carlson, OC

George “Bill” Hall, WD

Douglas W. Kemp, WMD

Stephen G. Cullinane, ARD

Heather R. Chase, OC

15 YEARS

Joan N. Fitzsimmons, WD

Sandra J. Crystall, WD

William “Mike” Fitzgerald, ARD

Margaret P. Foss, WD

Craig D. Thoroughgood, ARD

Teresa B. Ptak, WD

Thomas E. Livingston, ARD

Debra J. McDonnell, WD

Linda M. Magoon, WD

Robert L. Stockman, WMD

Daniel J. Mattaini, WD

David W. Murphy, WD

Rebecca E. Ohler, ARD

Gregory A. Barker, OC

Brian D. Hilliard, WD

Timothy J. Prospert, WMD

Michael G. McCluskey, WMD

10 YEARS

Mary Jane L. Meier, WD

Ancel “Wade” Pelham, WD

Alexis Rastorguyeff, WD

William A. Thomas, WD

Kenneth A. Richards, WMD

Richard “Tim” Wilson, WD

Jessica F. Sheldon, ARD

Alan T. Kjellander, WD

Brett A. Rand, WMD

Susan G. Francesco, WMD

Joshua C. Whipple, WMD

Gary J. Grant, WD

Paul L. Heirtzler, WD

30 YEARS

Michael W. Rainey, WD

Nancy L. McGrath, WD

Timothy W. Drew, OC

25 YEARS

Timothy R. Denison, WMD

Melanie J. Wheelock, WD

Kenneth W. Noyes, WD

Joy E. Perkins, ARD

Sue A. Lang, OC

Scott T. Ashley, WD

Gretchen R. Hamel, OC

Jo-Ann McKenney, WD

Frederick H. Treiss, WD

Judy J. Small, WMD

Holly H. Green, WD

Michael W. Juranty, WMD

Selina J. Makofsky, WD

Barbara Jane Aube, WD

Andrew Stout, WD

Brenda J. Hayward, WD

Craig A. Wright, ARD

Thomas P. Niejadlik, ARD

Worthen D. Muzzey, WMD

20 YEARS

Thomas S. Hyde, ARD

Harry T. Stewart, WD

Mark C. Stevens, WD

Michael E. Guilfooy, WMD

Christopher “Wayne” Ives, WD

Joseph T. Fontaine, ARD

Draft Nonpoint Source Plan Available for Public Comment

The Clean Water Act gives delegates authority over nonpoint sources to states. The State Nonpoint Source Management Plan is the document that describes how the state will address the various nonpoint sources and watersheds of concern. A draft update to the 1999 New Hampshire Nonpoint Source Management Plan is available for review and public comment on our web site, www.des.nh.gov, click “Watershed Assistance” on the A to Z list, or call Jillian McCarthy, Stormwater Coordinator, at 271-8475 for more information. ■

2013 NH Section 319 BMPalooza Tour A Huge Success!

Participants in the 2013 BMPalooza Tour from NHDES and the US Environmental Protection Agency (EPA) were recently hosted by Section 319 Nonpoint Source (NPS) project partners in four different watersheds and provided with an opportunity to inspect installed Best Management Practices (BMPs), discuss future implementation projects and meet our valued project partners in person.

The tour started at Cobbetts Pond in Windham where they were hosted by the Cobbetts Pond Improvement Association and the Town of Windham. Andy Chapman, NHDES Project Manager and Derek Monson, Director of the Cobbetts Pond Improvement Association, joined local project partners to provide background on project development and implemen-

tures observed included root wads, rock vanes and weirs.

The Furnace Brook watershed in New Ipswich was the third stop on the BMPalooza agenda. Attendees were met at the Town Park by representatives from the Town of New Ipswich Board of Selectmen, Public Works Department, Town Administrator, and FB Environmental to explain several stormwater BMPs the town recently installed. BMPs were also toured on Temple and Appleton Roads along Furnace and Willow Brooks. Whitney Baker (FB Environmental) explained that the project has also generated a septic system management plan for the watershed and a stormwater pollution prevention plan for the variety store that sits only a few feet from the banks of Furnace Brook.



Sean Sweeney from Headwaters Hydrology describes stream and floodplain form and function along a restored section of Warren Brook, Alstead NH



Whitney Baker from FBE explains the Appleton Road BMP on Furnace Brook

tation that included over a dozen residential scale, stormwater BMPs, and a much larger BMP train on the Bill Day property. Participants came away from the Cobbetts Pond watershed site visits with a sense of admiration and respect for how much has been accomplished there since the completion of the Cobbetts Pond Watershed Restoration Plan.

The second stop on the tour was in Alstead where attendees met with representatives from the Town of Alstead, the Cold River Local Advisory Committee and Sean Sweeney from Headwaters Hydrology. Attendees learned about the catastrophic flooding on the Cold River and Warren Brook during 2005 and 2006 that led to loss of life and severe damages to infrastructure. Project partners described the development of the geomorphic assessments and management plans for both the Cold River and Warren Brook. Attendees learned about the completed river restoration efforts on Warren Brook and those proposed for the Lower Warren Brook site. Everyone walked upon newly created floodplain and several brave souls walked through the large floodplain culvert on Warren Brook. Other in-stream restoration fea-

The tour concluded in the Pennichuck Brook watershed. Participants met with project partners from Pennichuck Corporation and Comprehensive Environmental, Inc. (CEI). Representatives from Pennichuck Corporation explained the drinking water distribution system that Pennichuck Brook supplies and how critical it is to protect surface waters in this watershed. Flanked by the Everett Turnpike, CEI staff explained the design, treatment capacities, and pollutant removal success of installed BMPs that are in place to protect the supply ponds that provide drinking water for the City of Nashua and beyond.

The tour projects were partially funded by Watershed Assistance Grants from NHDES with Clean Water Act Section 319 funds from EPA. We thank our Section 319 project partners for making time to host NHDES and EPA at their project sites during the 2013 BMPalooza. All attendees came away from the tour feeling energized, rejuvenated, and highly encouraged by the tremendous success achieved in New Hampshire watersheds through the stellar partnerships forged through the Section 319 Watershed Assistance Grants program. ■

Annual Piscataqua River Exercise Series

Each year, an oil spill exercise is conducted in the New Hampshire coastal area with the primary goal being to improve oil spill response capabilities. This year's exercise was held in the Portsmouth, Newington and Dover areas in October. The exercise was designed and hosted under the auspices of the Portsmouth Oil Spill Response Workgroup, which is chaired by NHDES, the Maine Department of Environmental Protection and the US Coast Guard. The scenario simulated a de-railment of a train carrying crude oil through Dover. The incident occurred at 4:00 AM at a railroad trestle over the Cocheco River, severely damaging several rail cars and releasing crude oil into the river and onto the adjacent land. The incident resulted in the release of 30,000 gallons of crude oil into the Cocheco River within the first 30 minutes, with a total of 100,000 gallons being spilled over a 12-hour period. Within minutes of the de-railment, large amounts of oil traveled to downtown Dover, under riverside buildings and near adjacent homes and apartment buildings. Over the next few hours oil traveled several miles downstream to the Piscataqua River.

The exercise was conducted at the NHDES' Coastal Offices Pre-Designated Incident Command Post and the Dover Emergency Operations Center (EOC). Over 160 participants from numerous federal, state and local agencies, as well as railroad and industry members, filled roles that they might be expected to fill in an actual spill event. They began the actions necessary to identify and mitigate the effects of the spill. Actions and activities needed to divert and collect the oil, as well as predict where oil would flow in the immediate future, were identified. The very difficult task of clearly and consistently communicating accurate and up-to-date information between the NHDES Command Post, the Dover EOC and the State EOC in Concord was handled well by all the players. NHDES will be working with its partners to ensure the lessons learned from this exercise are used to better prepare the response community to mitigate an event of this nature. ■



Making Communications Easier via Online System

NHDES is proud to announce that the Air Resources Division is rolling out a new and enhanced online permit application system to aid in the application process for current and future air permit holders. The newest feature added to the system allows facilities to submit Administrative Permit Amendments electronically. Any company in New Hampshire that has been issued a permit from the Air Resources Division can now submit up-to-date facility and contact information through the online Administrative Permit Amendment process. This enhanced feature of the online application system will improve the efficiency of communication between the Department and the permitted facilities.

The online application system also enables facilities to register under the General State Permit for Emergency Generators as well as the Permit by Notification for Non-Metallic Mineral Processing Plants (for rock crushing operations). For more information, contact Cathy Beahm at (603) 271-2822.



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