Welcome to 2017 members!

It is anyone’s guess as to what is in store for this year and the years to come, but change is certain. One thing has been proven to be true and hasn’t changed is that the NHWPCA is made up of some really good shits.

This was made very clear at the 50th celebratory kickoff event at Browns Lobster Pound last fall. Standing off to the side, I witnessed folks that I knew and those that I had only heard of reminiscing and reconnecting after too many self-professed years of absence – it was quite impressive and humbling. I extend my sincerest thanks to those who have preceded me in this position and as members.

Retirements, new regulations, technology and the apparent shortage of interest in our profession will definitely be a force that will continually shape our industry.

Since I can’t seem to leave work at work very often, I find myself wondering where this industry is headed. I think about how we are being driven to remove various compounds at mind numbing reduction levels ie; PPM, PPB, PPT - really? As I see facilities become more complex and automated it strikes me with much irony that we are being pushed into a more industrial setting than ever before and yet process an input material that has very limited QA/QC. Sure, most of us have some form of SUO and/or IPP but we still capture very little of our incoming material profile. A “standard” manufacturing process could not/would not tolerate the fluctuations we have to deal with. With the technological advancements, could we see even more operator positions eliminated, or will they evolve into more specialized and technically dependent positions? How about a fully automated facility?

I truly hope that our regulatory community will be more open and forthcoming with their intentions and directives. The uncertainty is troublesome for municipalities and our rate payers. As resourceful as operators are, I have yet to see one with an accurate crystal ball in their toolkit.

Needless to say, you should all be proud of what you accomplish each and every day.

For 2017 I hope to see several things initiated:

1. A review and update of our constitution – this will take a couple of years at best, but it needs to be done.
2. The creation of a “clearinghouse” on our website so facilities can obtain boiler plate templates for things like CMOM, IPP, permitting issues, policies etc.
3. Expansion of our ongoing outreach efforts to engage students.

2017 has a host of activities at new locations and promotional items – all we need is you for it to be successful. Many dedicated folks have put in a lot of time and effort to coordinate them – we hope to see you there.

Warm regards
Kevin MacLean – President 2017
Editor’s Words

The other day I was talking with an acquaintance from my home-town. First, she complained about the quality of the drinking water. I have a well at my house, but I still always feel the need to stick up for our friends on the clean-end of water treatment. Too much chlorine taste? That’s the taste of safe drinking water! You’re sure that the water isn’t safe because it doesn’t taste like bottled water. Do you read the annual report of all the required analytical testing that was done on your town water? Oh good, you do. Have you ever read a report on the required analytical testing that was done on your bottled water? Of course you haven’t because there aren’t strict testing requirements on that water!

Next the acquaintance asked “wasn’t that bill stuffer annoying? The town shouldn’t be telling me what I can and can’t put down the drain.” So, I went into educational mode, talking about the importance of not flushing wipes and grease. And she said “but that’s their job to clean that stuff out of the sewer.”

And then I kind of flipped out. I told her that she was correct and it was OUR job to clean that stuff out of the sewer. And WE’RE responsible 24/7, 365 days per year. And yes that includes weekends and holidays. And because people dump grease down the drain WE miss Christmas Eve with our kids because a pump is clogged with grease. And because people flush wipes WE miss our grandchild’s birthday party on a Sunday afternoon because a pump is clogged with wipes. And because WE’RE always ready to clean that stuff out of the sewer WE have to run

37th Annual Trade Fair

Upcoming Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 23, 2017</td>
<td>NHWPCA 50th Anniversary Celebration at the Hampton South Beach Pavilion in Hampton, NH.</td>
</tr>
<tr>
<td>August 3, 2017</td>
<td>NHWPCA Annual Golf Tournament at the Beaver Meadow Golf Course in Concord, NH.</td>
</tr>
<tr>
<td>September 15, 2017</td>
<td>NHWPCA Fall Meeting at the Manchester WWTF in Manchester, NH.</td>
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<tr>
<td>December 8, 2017</td>
<td>NHWPCA Winter Meeting at the Newmarket WWTF in Newmarket, NH.</td>
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</tbody>
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Special Thanks to this Issue’s Contributors

Kevin MacLean, Michael Theriault, Patricia Chesębrough, John Adie, Stephanie Rochefort and Alexis Rastorguyeff.
GET YOUR NHWPCA 50th ANNIVERSARY APPAREL and ACCESSORIES
Visit the NHWPCA 50th Anniversary Store and place your order today!!!
https://store.shirtmasters.com/nh-water-pollution-control-association/
All items will be delivered at the April Trade Show.
Order before 11:59PM on Sunday March 19, 2017 and you can pick your items up at the April Trade Show in Manchester, NH on April 6, 2017.
If you cannot attend the spring meeting you can pick your items from the NH DES office after April 6, 2017, by coordinating with Ray Gordon at ray.gordon@des.nh.gov calling (603) 271-3571 or Nancy Lesieur at Nancy.Lesieur@des.nh.gov (603) 271-2985.

NHWPCA Treasures Report
The end of fiscal year 2016 has the association in a good place financially. We garnered a net gain of just over $9000, which will help fund the 50th Anniversary celebrations. With close to $90,000 moving in and out of the association’s account, I’ve been keeping busy! The Trade Fair in April was the biggest earner for the association in 2016, with a profit of close to $10,000. The profits that are earned by the association are used to offset the costs to run the association, such as paying for mailings, scholarships, offsetting other associations, paying for mailings, scholarships, offsetting the cost to print the newsletter and the poster contest.

New Hampshire’s Newest Wastewater Operators
Hats Off and Congratulations to the following NH Wastewater Operators for passing the December 2016 exams!

Grade 1 and Grade 1-OIT:
Joe Agrusso III, Mark Ayers, Daniel Beaulieu, Edward Boisvert, Anthony Cavaliere, Daunicia Fucile, Amanda Hadley, John Hanlon, Jamie Jarest, Benjamin Knapp, Robert (Corey) Mello, Casey Mitchell, Zachary Mosher, Dylan Murphy, and Chad Pierce.

Grade 2 and 2-OIT:
Matt Berube- Gr 2; Reece Boisvert Gr 2, Robert Burdick, Jr Gr 2-OIT, Nick Curreri Gr 2-OIT, Tucker Dingman Gr 2-OIT; Jason Gagnon Gr 2-OIT, Sean Hanlon Gr 2-OIT, Meredith J Hoyt Gr 2-OIT, Bill Keating Gr 2-OIT, Asa Knowles V Gr 2-OIT, Kelli Morris Gr 2-OIT, Larry Pond Gr 2, Jake Roger Gr 2-OIT, Kyle St Pierre Gr 2- OIT and Will White- Gr 2 Matt Pehrson- Gr 2-OIT and Max Royal-Eisenberg- Gr 2-OIT

Grade 4: Sarita Croce, and Charles Lylis
Recent Reciprocity Applicants: Richard Clark Grade 2-OIT from MA, Kenneth Harwood Grade 2 from MA, Chester Morrison Grade 3-OIT from MA

Congratulations to the 18 Men and Women enrolled in the NH Drinking Water & Wastewater Managers School (DW&WWMS) for 2017.

The 9- month Program is a joint venture between the New Hampshire Department of Environmental Services (DES), and the NH Water Pollution Control Association (NHWPCA), and the NH Water Works Association.


Ashworth by the Sea
Twenty rooms will be available for the 50th anniversary event this year at Hampton Beach. The cost of the room is $259.00 plus tax for a King Size bed-side ocean view and $279.00 plus tax for a room with two Queen Size beds-balcony ocean view. Cost for parking is $18.00 per car, per night.

Other amenities are a restaurant and bar located at the Ashworth by the Sea, and walking distant to surrounding attractions.

For reservations and general information call the front desk of the Ashworth by the Sea at 603-962-6762 and ask for the block of room for the NHWPCA.

Awards!
On Wednesday, January 25th the following awards were presented at the annual New England Water Environment Association (NEWEA) Awards Luncheon:

Dustin Price, Chief Operator for the Town of Seabrook, was selected as a 2016 Regional EPA Wastewater Operator of The Year Excellence Award recipient. Mr. Price was nominated by the New Hampshire Department of Environmental Services (NHDES) to acknowledge the outstanding work that has been performed over the past year.

The Town of Seabrook Wastewater Treatment Facility was selected as a 2016 Regional EPA Operation and Maintenance (O&M) Excellence Award recipient. The Facility was nominated by the NHDES to acknowledge the outstanding work that has been performed over the years by Philippe Maltais, Superintendent and Dustin Price, Chief Operator, along with the entire Facility staff.
Come join the NHWPCA in celebrating the 50th Anniversary on Friday June 23, 2017 at the South Beach Pavilion at Hampton Beach State Park. The event will feature a full day of activities including slideshows and entertainment in a social atmosphere for Association members and individuals in the industry. The celebration will be highlighted by several keynote speakers reminiscing about contributions operators, engineers, regulators and others have made to the Association and the industry in the past 50 years. Speakers will detail how regulations and the need to preserve water quality have changed, and goals and concepts critical for the future of the industry. Speakers may include:

Tom Burack
Jim Barsanti
Al Firmin

Ed Rushbrook
Frank Underwood

Hotel rooms have been blocked out for the 50th Anniversary event at the Ashworth by the Sea on Hampton Beach. Rooms are available for approximately $260-$280 (plus tax) for king and double queen ocean view rooms. Parking is available for $18 per car, per night. Other amenities at the hotel include a restaurant and bar, and the hotel is centrally located in walking distance to surrounding attractions. For reservations and general information call the front desk of the Ashworth by the Sea at 603-962-6762 and ask for the block of room for the NHWPCA. It is encouraged that reservations be made early.

Event guests with an RV or self-contained camper have the opportunity to stay directly adjacent to the 50th Anniversary event. Reserve a campsite one of Hampton Beach State Park’s 28 RV campsites for a night or the weekend. Reserva-

### NHWPCA Past Presidents

**Raymond Vermette - 2007**

Raymond Vermette (or Sonny as most know him) joined this industry 25 years ago. Beginning in junior high Ray participated in a summer program with the City of Somersworth, N.H. at their wastewater treatment facility. After high school he went to work as a pipefitter but wastewater was always in the back of his mind. In 1991 the City of Dover was building a new wastewater treatment facility so he applied and was hired as a laborer at their existing Primary treatment plant. In June of that year the new facility went online and Ray was promoted to Maintenance Technician. However, in 1992 the facility operations were contracted out to OMI where Ray took a position as an Operator. He later was promoted to Operations Supervisor. By 1999 the facility went back to municipal operation. He was then hired by the City of Dover as the Chief Operator and only six months later he was promoted to Wastewater Facility Supervisor where he has worked for 16 years. Ray’s greatest achievement was seeing new technology and innovation implemented at the Dover facility. Ray has been a member of both the Certification and Education committees for NHWPCA and became its President in 2007. As President he worked to keep the committees active as well as successfully planning the Association’s 40th Anniversary celebrations. The celebrations included a train ride that followed the Pemigewasset River with a speaker who described what the river was like before wastewater treatment existed. That year also included a trip to Star Island for the Fall meeting which is one of Ray’s fondest memories. Ray is also a minor celebrity representing NHWP-CA and the industry that year on the television show “Chronicle”. Ray continues his work on committees currently as Chair of the Safety committee. He was a recipient of the Alfred E. Peloquin Award and has served as Director liaison to NEWEA. Ray believes the greatest challenge facing this industry is meeting regulatory compliance.

**Michael Sullivan - 2009**

Michael Sullivan or “Mike” as most who know him call him was almost born into this industry. His family owned and operated David F. Sullivan and Associates which is a manufacturer’s rep firm covering the New England region promoting equipment for the water and wastewater markets. About four months after graduating from college with his Civil Engineering degree he began working at David F. Sullivan and Associates run by his Uncle Dave and Aunt Judy Sullivan. He has been working for them since October 1984. As a manufacturer’s rep he interacts with Engineers, Treatment Plant Personnel, General Contractors and Regulators to bring the latest technologies and processes to the problems facing this industry. Mike feels very fortunate and lucky to be working in such a great region of the country where our resources are valued, necessary funding is provided to do projects and where his clients are interested in finding the right solutions to the issues they face concerning their water and wastewater infrastructure. Mike is most proud of being involved in some challenging, successful projects with the application of the unique solutions that his principals have had to offer. He appreciates the many friends that he has met over the years and still has today within the industry. He believes his chief contribution as President of
the Association in 2009 was not messing with the fine work accomplished by his predecessors. He was encouraged that the Association took on the task of having an annual Legislative Breakfast to inform and educate our Legislators concerning the issues facing this industry. Mike was also happy that the annual Trade Fair was moved to a more central location within the state. His fondest NHWPCA memory was his induction as President at the Winter Meeting at the Ashworth Hotel in Hampton where his mother was also in attendance that day. Mike feels that being part of the Association and a former member of the board of directors means even more to him now that we are celebrating our 50th Anniversary. He feels the most challenging issues facing this industry are the acquisition and retention of Operators, continued funding and keeping up with technology.

**John Adie - 2014**

John Adie (or Johnny) began his career working for a circuit board manufacturing company where he was in charge of the wet process production lines. John worked in the company’s wastewater facility and obtained his grade I OIT operator’s certification. A position opened up at the Nashua WWTF looking for an Operator and as Johnny says “the rest is history”. For 25 years John worked at the Nashua facility working his way up the ranks in various positions. Starting as an Operator he earned his Grade IV certification and then took a position as the Operations Foreman. He then moved to the Maintenance Foreman position and lastly, as Plant Operations Supervisor. In 2015 he officially retired from the City of Nashua. But he wasn’t ready to retire completely and took a position as the Operations Supervisor for the City of Concord’s Hall Street WWTF. He didn’t stay long though because an opening for his dream job came along, working for the Department of Environmental Services. John now gets to do what he really loves and helps trouble shoot problems at other WWTFs where he says he enjoys being the “white hat guy”. John has had many achievements over the years such as being President of NHWPCA, Chair of the Utility Committee for NEWEA and being awarded the William D. Hatfield award from WEF. He feels his greatest achievement of all is the relationships that he has made with many people in this industry! John’s chief contribution to the Association has been his passion for promoting what this organization does to provide everyone with a better quality of life with clean water. His fondest memory was when he was asked to join the board of directors for NHWPCA. John feels the greatest challenge facing this industry is getting young people into the field. He feels that young people will bring change, new perspectives and the energy needed to carry on what we have begun.

**Peter Goodwin - 2015**

Peter Goodwin began his career in wastewater in 1983 as a Resident Engineer working on the construction of the wastewater collection, treatment and disposal facilities for the Town of Shelburne Vermont. Five years later he became a Design Engineer/Project Manager. He transferred to the Portsmouth, N.H. office to become the Regional Manager serving both New Hampshire and Maine. Peter currently works for the Ted Berry Company, Inc. as a Client Services Manager which provides municipal and industrial services such as infrastructure assessment, cleaning and trenchless rehabilitation. He has actively participated in many water and wastewater organizations such as NEWEA, NHWPCA, MEWEA, APWA and NEWWA. In 2015, Peter became President of our Association offering insight from his experience learned from his previous posts. As a result he implemented digital committee reports to improve efficiency and accuracy of the Board of Directors meetings. Peter was also one of the founders of the Permit Committee to support the many smaller facilities dealing with increased regulatory requirements implemented by DES and EPA. He successfully ended his year with financial numbers within a couple of hundred dollars of the projected budget.

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**Book Review - Flush by Carl Hiassen**

It’s exciting to find a book that has anything to do with wastewater so I was thrilled to be introduced to the book *Flush* by Carl Hiassen. *Flush* is advertised as a young adult novel and I learned about it when it was read by local seventh graders. BUT, I found this book in the chapter-book children’s section of my local library not in the young adult section. The middle school teacher that I talked with said that the book could easily be read by younger students but the seventh graders were able to have a greater understanding of the environmental issues in the book. I definitely agreed with this based on the wonderful questions for me from the students. The book opens with the teenaged main character, Noah, visiting his dad in jail. The Dad is a vigilante environmentalist who was caught sinking a casino boat because he believed that the owners were flushing wastewater illegally and polluting a local beach. Noah, along with his younger sister Abbey and a few other colorful characters, hatches a plot to catch the polluters.

I would recommend this book to students as a great way to begin a dialogue about wastewater. The writing is young, but can be enjoyed by all ages. This book would be great summer reading for our kids and grandkids!
On Monday, January 16, 2017 in Key Largo, Florida, three utility workers lost their lives, a firefighter was critically injured, and three Sheriff’s Deputies were taken to the hospital, when they were overcome by hydrogen sulfide and methane fumes in and around a manhole. Work was being performed by one individual, who fell victim to the hazardous atmosphere. This is a terrible tragedy, but it didn’t stop there. Another utility worker descended into the manhole, and then a third, to also become victims themselves. But, it didn’t stop there. When first responders arrived on site, a firefighter descended into the manhole and also became a victim. A second firefighter, properly equipped with a SCBA, descended into the hole and was able to rescue the first firefighter, who was airlifted to the hospital and survived. It was too late to save the three utility workers. Our thoughts and prayers go out to their family and friends.

OSHA is investigating this tragic accident, but their findings won’t bring back our fallen brothers. We are left wondering how such a tragedy could happen. Why didn’t the first worker recognize the hazard and take proper precautions? Why didn’t the second worker recognize the hazard once his colleague went down? After two colleagues went down, why didn’t the third recognize the hazard? These questions are not asked in judgement of the fallen; rather, in judgement of our apparent inability to teach our workers to recognize and avoid confined space hazards. We have laws, regulations, policies, procedures, permits, training, etc., etc., etc., but none of these seem to be effective in getting the message across to those who need it. Behavior is not changing and people are still dying in confined spaces. What can be done to fix this?

Obviously, there is no simple answer to this question. But, we can make sure those around us hear about this terrible tragedy in hopes that it will change the behavior of even one worker. Please share this story; tell all your employees, supervisors, and anyone else that will listen. Post it on the bulletin board or wherever you can. Let’s all do our part to change behavior and prevent confined spaces from claiming any more lives!

The NHWPCA Safety Committee is pleased to have brought you this article in hopes of keeping all our members safe. Would you like to see us write about a specific topic? Do you have a Near Miss stories? Please send all ideas for Safety Corner to Patty Chesebrough (chesebroughp@wseinc.com or 978-532-1900). All reports are confidential.

Please be safe everyone!

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**Lagoon Maintenance**

**By John Adie, Environmentalist IV, NHDES**

with many thanks to contributions from the NHDES Wastewater Engineering Bureau and the NHDES Dam Bureau

Here at NHDES Wastewater Bureau, the Operations Section always looks for ways to help out our fellow plants and operators. There is always a need for weed control at lagoon facilities. Lagoons are a main focus for removal of unwanted vegetation and control or vegetation. Growth of vegetation along the banks and shoreline can cause a multitude of problems. Some lagoons have components such as rocks that line the slopes and liners. The rocks prevent rain and water erosion of the slopes. Liners provide protection for the lagoon against ground water infiltration and lagoon water intrusion into the adjacent soil. A problem to keep in mind is degradation of lagoon liners from root intrusion. This can provide pathways for rodents that can burrow into the lagoon slope face, creating holes in the slopes. Tree and weed growth prohibits the overall view of the wastewater lagoon, jeopardizes the process and inhibits site inspections.

Most people do not realize lagoons can be considered dams. A dam is any artificial barrier which impounds or diverts water (Continued on page 11)
I thought I’d continue along the lines of my last thoughts by looking up what I haven’t written about for some time and then looking at the history. The history of the BOD test is quite fascinating. In 1888 at Budapest University, Ludwig Wilhelm Winkler was working on his doctoral dissertation and developed the test to measure dissolved oxygen that would later be named after him. Ten years later, the British government formed the Royal Commission on Sewage Disposal. The Commission’s eighth report, in 1912, listed the 20 degrees C and 5 days that are part of today’s BOD protocol. But throughout the years and into North America, lots more studying and experimenting happened until the United States Clean Water Act in 1974. The Winkler method was modified time and again and then the DO probes that we use today were developed somewhat recently in the timeline of the BOD test.

Although I call myself a wastewater dinosaur, I am not old enough to have ever done a Winkler titration. I looked up some YouTube videos and am very glad that I never had to rely on the Winkler method to measure dissolved oxygen. There’s so many picky steps in the BOD protocol, it would just be too much to have to add in MORE picky steps just to measure dissolved oxygen (DO). You think? But, even though I’m of a lucky age to have always used DO probes in the BOD procedure, I have set-up and read-out over 1500 BOD tests so I have a few helpful hints to pass on.

1. Do your dishes properly! A laboratory dishwasher is the absolute best for cleaning BOD bottles. You also need to clean your composite bottles and all glassware used to measure dilutions. And rinse with DI water. I love to drink City water and I’ll take a shower in it myself, but my glassware needs a DI rinse.

2. Start early with prepping your dilution water, even though this step shows up further along in the preparatory steps in Standard Methods. You’ll need to experiment to find out which magic works for proper dilution water in your lab – I need to let the water hang out in the BOD incubator overnight.

3. Preserve your samples properly – composite at or below 4 degree C and keep the sample at or below 4 degrees C until you’re ready to analyze.

4. Warm up your sample to 20 degrees C before checking pH and TRC. I have re-purposed a water-bath for this so I don’t over-warm the samples.

5. Check the pH of the samples and SLOWLY, drop-by-drop add H2SO4 or NaOH to adjust to the correct range.

6. Check for TRC. The method states that if possible you should avoid samples containing residual chlorine. I’m definitely on-board for AVOIDING! There is a procedure for dechlorinating with sodium sulfite. It sounds difficult and a little scary because too much sodium sulfite will exert an oxygen demand.

7. Standard Methods has a long paragraph about preparation of proper seed. This is another one to start thinking about early. PolySeed works consistently well. I can say that because I’ve tried all the other seed ideas in Standard Methods.

8. Don’t stress out over dilutions. Until you get to know your wastewater, you should do more than three to make sure that you have something that meets the acceptable criteria of at least 1.0 mg/l final DO and at least 2.0 mg/l depletion. Once you get to know your treatment plant you’ll be able to look at your samples and know what dilutions will work. I always run a Kool-Aid factory dilution. Just in case a Kool-Aid factory pops up in your town without you knowing it and they happen to have a spill of the mystery flavor Kool-Aid that has a high BOD and you don’t know about it because it has no color.

Seems like the mystery flavor was always watermelon when my kids would talk me into buying mystery flavor Kool-Aid. Watermelon is NOT my favorite Kool-Aid flavor. I really object to all the sugar in Kool-Aid but it sure was nice to leave a pitcher of side on a summer the kids play out longer. tend to other dren, though. yellow hornets. least the nets wouldn’t come in the bathroom… even if mys-
Call for 50th Anniversary Sponsors

The New Hampshire Water Pollution Control Association is celebrating its 50th Anniversary in 2017. Events include a Ski Day, Spring Trade Fair, the 50th Anniversary Celebration, Golf Outing, Fall Meeting, and Winter Meeting. We have prepared special sponsorship levels so your company can take part in these celebrations. Your support will help us keep expenses and keep ticket prices at a reasonable level for our members and friends during the celebratory year. Donations will be used to defray expenses for the 50th Anniversary celebration, a dinner for past NHWPCA presidents, and for the purchase of 50th Anniversary promotional items. As always, we appreciate your support of our association and efforts towards clean water in New Hampshire. Help us celebrate!

<table>
<thead>
<tr>
<th>Sponsorship Level</th>
<th>Benefits</th>
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</table>
| Platinum $2,500   | • Large company logo to be printed on a T-shirt for the 50th Celebration and a long sleeve shirt for the 2017 Winter Meeting  
                  • Company logo to be recognized on the NHWPCA website and Collector newsletters as a 50th Platinum sponsor  
                  • Company logo and services to be displayed for NHWPCA event presentations  
                  • Company logo and services to be put on curtain banners at events  
                  • Company logo to be put on the 50th Banner  
                  • ¼ Page advertisement in the 2017 Fall Collector  
                  • Company logo on 50th commemorative plaque |
| Gold $1,500       | • Small company logo to be printed on a T-shirt for the 50th Celebration and a long sleeve shirt for the 2017 Winter Meeting  
                  • Company logo to be recognized on the NHWPCA website and Collector newsletters as a 50th Gold sponsor  
                  • Company logo to be displayed for NHWPCA event presentations  
                  • Company logo to be put on curtain banners at events  
                  • Company name to be put on the 50th Banner  
                  • 1/8 Page advertisement in the 2017 Fall Collector  
                  • Company name on 50th commemorative plaque |
| Silver $800       | • Company name to be printed on a T-shirt for the 50th Celebration and a long sleeve shirt for the 2017 Winter Meeting  
                  • Company name to be recognized on the NHWPCA website and Collector newsletters as a 50th Silver sponsor  
                  • Company name to be displayed for NHWPCA event presentations  
                  • Company name on 50th commemorative plaque |
| Bronze $400       | • Company name to be recognized on the NHWPCA website and Collector newsletters as a 50th Bronze sponsor |
| Individual $100   | • Individual to be recognized on the NHWPCA website and Collector newsletters as a 50th Individual sponsor |

For additional information or to sign-up as a sponsor, please contact Michael Theriault mike.theriault@wright-pierce.com or any of the NHWPCA Board Members. Deadline to participate in this sponsorship program is May 15, 2017 so the Association
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The New Hampshire Drinking Water Coalition is pleased to announce...

The 25th Annual Drinking Water Festival & Fourth Grade State Science Fair!

The New Hampshire Drinking Water Festival is an environmental education program that educates children about drinking water and other closely related natural resources. This event celebrates National Drinking Water Week and is held in a different community in New Hampshire each year. The goals of the event are to heighten the awareness of water resources, help students recognize water’s relationship to other resources, promote environmental awareness and foster the belief that individual actions can make a difference in protecting these resources.

Festival events include:
- Hands on water activities
- Educational displays & exhibits
- Presentations from water professionals
- Live music & storytelling

WHEN: May 10, 2017
9:00 am - 2:00 pm
WHERE: Keene Rec Center
312 Washington Street
Keene, NH 03431
WHY: To celebrate clean water!

For more information please contact: Lara Hooper, NHDES Drinking Water and Groundwater Bureau at lara.hooper@des.nh.gov or (603) 271-4071.
The Town of Wolfeboro, New Hampshire’s Wastewater Treatment Facility was presented with the Plant of the Year Award from the New Hampshire Water Pollution Control Association (NHWPCA) during the organization’s annual winter meeting on Friday, December 9.

The Woodard & Curran operated extended activated sludge treatment facility has a permitted design flow of 0.6 MGD and services approximately 6,000 people (with peaks of over 20,000 in summer periods). The facility’s efficient wastewater treatment process and commitment to continuous improvement in maintenance and operations has enabled the facility to provide a valuable service to its community for over four decades.

The Wolfeboro facility has invested in continuous incremental upgrades over the last several years investing in upgrades, such as but not limited to: replacing equipment including diffusers, aeration blowers, adding instrumentation and the optimizing the process by installing automated wasting processes and converting to cyclic aeration. The facility’s cyclic aeration upgrade (completed in 2008) was highlighted in a recent US Environmental Protection Agency (EPA) report to demonstrate how cyclic aeration can improve the efficiency and performance of an activated sludge system.

At the facility, treated effluent is stored in a reservoir and managed through rapid infiltration basins (RIBs) and a spray irrigation system under a NH Department of Environmental Services (DES) groundwater discharge permit. The facility has a rigorous safety program that is managed through several written programs and procedures and reinforced through continuous training.

The NHWPCA Plant of the Year Award is given to a New Hampshire Wastewater plant to recognize outstanding excellence in following both US EPA and NHDES requirements.

Woodard & Curran is an integrated engineering, science, and operations company serving clients locally and nationwide. The firm operates more than 40 clean water facilities throughout the U.S. Visit www.woodardcurran.com for more information.
The history of brewing beer in America goes back to colonial days, with many a local tavern offering their own home brews (Sam Adams anyone?). Things really got going by the early 20th century, when nearly every town worthy of being on a map had its own brewery (or two). After prohibition, and its repeal, only a few large national/regional breweries remained, and the local breweries were gone. How things have changed!

With the rediscovery of the marketability of local “craft brews” to the American palate (and gut), the industry segment of the “micro” brewery has exploded over the past couple decades. How does this impact wastewater treatment you might ask? Well first off, on average it takes about 5 gallons of water to make 1 gallon of finished beer. Those 4 gallons of wastewater have to go somewhere – and not just out to the back door like in the old days. So if you have just only a single 100 barrel per week brewery in your service area, that’s about 3,000 gallons of wastewater going down the drain each week. Depending on the style of brewery operation, you might only see 600 gallons per day (gpd) – or you might see the entire 3,000 gallons in one day. And that wastewater can have pollutant characteristics that could cause trouble for the collection system and treatment plant if not properly managed.

For smaller treatment plants the primary pollutant of concern is biological oxygen demand (BOD). Depending on where in the brewing process the wastewater is coming from and how/if it is pretreated, the BOD can range from 5,000 to 50,000+ milligram per liter (mg/l). The highest BOD loaded wastewater will be in the suspension of the spent grains and mash used in the fermentation of beer. The brewery must have a willing recipient of these spent grains or they will more than likely end up down the sewer. This should never be allowed to happen as dumping this stuff to the sewer will invariably cause operators’ headaches (e.g. odor issues, septicity) beyond the high BOD load. Outside of the raw mash used to brew the beer, finished beer has the highest BOD. So you need to look at sources of finished beer going into the wastewater too; for example, from bottling/canning lines or slug loads of wasted “bad” beer. Yes, it’s hard to imagine bad beer, but if the brewery’s internal quality control reveals “bad” micro-organisms in the beer (either before or after packaging), that beer can’t be sold. So put 5,000 mg/l from normal cleaning/rinsing process into an oxidation ditch with reserve capacity – not too much of an issue. Put 50,000 mg/l from a dump of bad beer into a stressed lagoon system – not a fun time!

For collection systems the primary concerns are with pH and TSS, and these are also potential concerns for the treatment plant itself. The cleaning and sanitizing chemicals used to prevent bad beer from being brewed or packaged can cause the wastewater pH to vary from 2 to 12. How the chemicals are used, the volume of the discharge and where the brewery is in the collection system, will determine whether the concern will be for the collection system alone or if the impact of the treatment plant needs to be looked at too. Even a few hundred gpd at a 2 pH will do damage to a concrete or iron-based sewer pipe in a very short period of time. For TSS, as with BOD, if the brewery doesn’t have a willing recipient of the spent grains used in the brewing process, they more than likely will end up in the sewer and eventually at the plant’s headworks. A 600 gpd flow with a TSS of 50,000 mg/l going down the sewer will not be good at the fringes of any collection system, as the low background flows in these areas could provide the right environment for solids to settle in the sewer pipes. The settling problem could also pose an issue for a smaller treatment plant – even if the discharge is near the plant.

So what should a municipality do to insure that wastewater discharged from a brewery doesn’t cause pass-through or interference with the sewer or treatment plant?

First, know that the brewery exists. This might seem obvious, but sometimes these smaller micro-breweries pop up in unexpected places. Keep an eye out and know your service area. Second, always issue a written industrial discharge permit to the brewery. Some brewers will balk at the idea that they are an industrial discharger (“all we are doing is brewing beer”), but without a written permit it will be difficult for all parties involved to be “on the same page” when it comes to responsibilities and expectations. Third, make sure the brewery can spell out what it does with all its waste streams and how it goes about its business of making beer. A couple of sentences saying they mix water and grains together, add yeast, then clean the vats, is not enough to show the brewery understands the impact their wastewater can have on the municipality’s treatment system and the implications of the brewery’s non-compliance. This is especially important in regards to how the brewery manages its spent grains and mashes; without a clearly documented process for the brewery to dispose this waste stream, you are asking for trouble. Lastly, don’t just “set it and forget it.” By their very nature these micro-breweries start out small, but can grow very quickly. If you issue them a general permit with a 5-year term and only inspect them once in that term, you are setting up a scenario that will allow for substantial changes to occur right under your nose without you knowing it. And what’s wrong with having a good working relationship with your local brewer (or two) anyway?
These wastewater issues apply just as well to distilleries and wineries, with some minor variations. Both these “craft” businesses are gaining in popularity, so keep an eye out for them too.

The Operations Section and the Industrial Pretreatment Section of the NHDES stand ready to help NH municipalities with guidance and assistance in their efforts to assure that the resurgence of the old ways of local craft brewing can successfully meld with the requirements of modern wastewater treatment.

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which; (1.) has a height of six feet or more, (2.) is located at the outlet of a great pond and (3.) is an artificial barrier which impounds industrial or liquid commercial wastes, or septage or sewage, regardless of height or storage.

Our NHDES Dam Bureau works very hard to make sure the state has properly maintained and functional dams. Dam inspections happen in the non-winter months of the year (approximately seven months of the year) and wastewater lagoons are included on their inspection list. The Dam Bureau is also a great resource for the do’s and don’ts of maintaining dams / lagoons. You can find a Dam Maintenance Bullet List on the Bureau website for more information. (link to information is provided below)

A collaborative effort between the NHDES Wastewater Engineering Bureau and the Dam Bureau is underway. The intention is to provide information, guidance and resources for wastewater operators that have lagoon facilities. The goal is to help lagoon operators keep their facilities in good order and be compliant with applicable NH State Regulations and to better understand NH State Regulations that apply.

Lagoons can be very challenging facilities to run. There are not a lot of process control tools to help an operator with challenges that come about. Challenges can result from seasonal changes, influent flow changes and changing wastewater characteristics. Along with staffing issues, funding and condition of equipment can also make it very tough for an operator to maintain permit. All this being said only emphasizes the need to maintain lagoons / dams in good working order.

Unwanted vegetation on lagoon embankments can be managed by mowing or physically removing the vegetation or by applying herbicides. Herbicide use can be administered by municipal employees or be contracted out to specialized companies. It may be most cost effective for a municipality to contract out herbicide control. There are lots of hurdles to overcome if you choose the path of becoming a certified applicator. First and foremost, SAFETY! Herbicides are a threat to health if incorrectly used. You need to wear the correct PPE when applying herbicides. The proper storage of pesticides is another very important safety issue. In addition to health issues, improper storage and use can result in environmental impacts. Herbicides could be introduced into the wastewater process if not properly administered. This could result in adverse effects on the aquatic life that the lagoon discharges to. There is also monetary and spent time realized in order to become a certified applicator. With all things considered, it makes sense to leave this to the pros!

Helpful link to Pesticide Applicators for NH:
https://usdasearch.usda.gov/search?utf8=%E2%9C%2593&affiliate=usda&query=pesticide+applicato+for+NH&commit=Search&x=19&y=17

Helpful link to the Dam Bureau:

Here are some helpful Links to the NH Department of Agriculture:
http://www.agriculture.nh.gov/laws-rules
Fact Sheet: Effluent Limitations Guidelines and Standards for Dental Offices

Summary
EPA finalized technology-based pretreatment standards under the Clean Water Act to reduce discharges of mercury and other metals from dental offices into municipal sewage treatment plants known as publically owned treatment works (POTWs). Dental offices, which discharge mercury and other metals present in amalgam used for fillings, are the main source of mercury discharges to POTWs; these metals are subsequently released to the environment. The rule requires dental offices to comply with requirements based on practices recommended by the American Dental Association, including the use of amalgam separators. Once captured by the separator, dental amalgam can be recycled. Removing mercury when it is concentrated and easy to manage, such as through low-cost amalgam separators at dental offices (average annual cost per dental office is about $800), is a common sense solution to managing mercury that would otherwise be released to air, land, and water.

In addition, this rule minimizes dental office reporting requirements and the administrative burden to federal, state, and local regulatory authorities responsible for oversight of the new requirements.

EPA expects compliance with this final rule will reduce the discharge of metals to POTWs by at least 10.2 tons per year, about half of which is mercury.

EPA projects the total annual cost of the final rule will be $59 - $61 million.

Background
Why are standards needed for the dental industry? When dentists remove old amalgam fillings from cavities, or when dentists place a new filling, mercury in the form of dental amalgam enters the wastewater of the dental office. Mercury from waste amalgam can make its way into the environment from the POTW through the incineration, landfilling, or land application of sludge or through surface water discharge. Mercury is a potent neurotoxin that can have a wide range of health effects, and mercury pollution is a global concern. Once released into the aquatic environment, certain bacteria can change mercury into methylmercury, a highly toxic form of mercury that bioaccumulates in fish and shellfish. Eating fish and shellfish is the main source of people’s exposure to methylmercury in the U.S.

Who is affected by this regulation?
This rule applies to offices, including large institutions such as dental schools and clinics, where dentistry is practiced that discharge to a POTW. It does not apply to mobile units or offices where the practice of dentistry consists only of the following dental specialties: oral pathology, oral and maxillofacial radiology, oral and maxillofacial surgery, orthodontics, periodontics, or prosthodontics.

Control Authorities (which are often the state or POTW) are responsible for oversight associated with this rule.

What does this rule require of dental offices?
Dental offices that discharge to POTWs that do not place or remove amalgam need only submit a one-time certification.

Dental offices that place or remove amalgam must operate and maintain an amalgam separator and must not discharge scrap amalgam or use certain kinds of line cleaners. They must also submit a One-Time Compliance Report.

Where can I find more information?
You can access the Federal Register notice on EPA’s Effluent Guidelines website at:

www.epa.gov/eg/dental-effluent-guidelines. In addition, the final rule will be available at regulations.gov under Docket ID:
Now that's old school. Cleaning sewers in Paris in the 1870s literally required rolling giant balls of wood and iron through the tunnels.

Back in the old days (and even in some stretches of sewer today), workers raked muck from sewers that could be reached safely, but some scenarios called for something more. Enter these giant balls of the 1870s. They were forcefully "bowled"