The Town of Hampton currently owns and operates a 4.7 MGD (ADF) extended air wastewater treatment plant configured as a Modified Lutzack Ettinger (MLE) treatment system. Flow at the plant travels through two primary clarifiers prior to the secondary treatment process. The Town handles sludge from their system by thickening their primary and secondary wastes, co-blending inline and mechanically dewatering. The Town also owns 14 and operates 18 pump stations throughout town, with one of the largest being the Church Street Pump Station. Last year a comprehensive upgrade to their dewatering system and Church Street Pump Station were completed. Described below is a brief history of the two projects.

By way of a state initiated review of the Town’s treatment system, it was identified that the dewatering system was impacting effluent quality and characteristics. Therefore an Administrative Order on Consent (AOC) was issued to the Town to upgrade their dewatering system to handle additional throughput. It was determined after a brief alternatives analysis that upsizing the current dewatering system with additional channels would be the most cost effective solution. In early 2013 construction began on the upgrades to the dewatering equipment. The upgrade also included yard piping work to separate side stream flows from the influent lines which were impacting sampling and process control. Some value engineering savings were identified early in the construction phase of the project which allowed the Town to reallocate some of the funds to make some much needed improvements to their polymer system. Construction was completed in mid-2013 on this project. The AOC has since been fulfilled and is no longer in effect.

The Church Street Pump Station serves a large portion of the Town’s beach community. The station is considered a critical component in the successful operations of this part of town. Originally, the Church Street Pump Station site was the location of a primary wastewater treatment facility for the Town, but was later converted in the late 1960s to a pump station with a building. Subsequent upgrades to portions of the station were completed in 1980 and included replacement of pumps and piping and the installation of a 14-inch ductile iron force main to supplement an existing 14-inch asbestos cement force main.

The Church Street Pump Station upgrade was completed in April 2014 with the construction of a new building, wet well, grinder manhole, site work and parking lot improvements. To minimize horsepower requirements and conserve energy, peak flows were designed to be conveyed to the treatment plant via one or both existing force mains utilizing a dual force main discharge strategy. Flexibility for future growth was also a focus of the upgrade and all equipment and ancillary items were designed with provisions to accommodate future flows beyond that anticipated from the Facility Plan. The pump station is currently running well and has experienced multiple holiday weekends at the beach with increased flows with no appreciable impacts to the system.

Last but not least, the Annual Business Meeting will be held at the Ashworth by the Sea. I hope that you all can attend!
Editor’s Words

I’ve been known to say that Operators and Engineers get along like cats and dogs. Recently my 19-year old son, the Civil Engineering student, gave us all some high praise. As part of a class at UNH he has been touring wastewater treatment plants. He was quite excited for this because he was looking forward to laughing at the other students’ reactions to the smells that he grew up with! (This is the kid who gave me a big hug at his primary school and loudly announced “You smell like a wastewater treatment plant” like it was a good thing.) After these tours, he definitely felt more respect for people in our field. He told me “they’re all dressed like garage mechanics, but once they get talking you realize that they really know a lot about the science behind what they’re doing”. OK, so he’s disdaining our municipal worker uniforms, but I tend to make fun of the uniforms, too. I’m feeling hopeful that his comment means that there’s hope for the next generation of Engineers to get along better with the next generation of Operators. If you look at the list of who is on the committee for this newsletter, you will see quite a variety of operators, engineers and vendors. We really do all get along. So, if you’re thinking about joining a committee, come talk to me at the Winter Meeting, we’d be glad to add a new member or two!

We’re on the web! Find us at www.nhwpca.org

In This Issue

Dec. 12, 2014
NHWPCA Winter Meeting will be at the Hampton WWTF with lunch at the Ashworth by the Sea.

Jan. 25-28, 2015
NEWEA 2015 Annual Conference & Exhibit at the Boston Marriott Hotel, Copley Place, Boston, MA.

April 16, 2015
NHWPCA Trade Fair.

Aug. 6, 2015
NHWPCA Annual Golf Tournament.

Special Thanks to this Issue’s Contributors

Jason Young, Dave Rommily, P.E., Mike Carl, Gene Weeks, Steve Clifton, Stephanie Rochefort and John Adie.

NEWSLETTER COMMITTEE

Stephanie Rochefort, Todd Gianotti, Mary Jane Meier, Steve Clifton, Gene Weeks, Kurt Robichaud, Ben Mosher & April Hyde. We welcome additional members. We are looking for meaningful articles for the Wastewater Operator in a timely fashion. Send submission articles for THE COLLECTOR to: Stephanie Rochefort via email at srochefort@somersworth.com.

Editor - Stephanie Rochefort - Layout & Design - Todd Gianotti

“THE COLLECTOR” is the Official Newsletter of the NHWPCA

For more information about the NHWPCA visit our website at www.nhwpca.org
As president of the NHWPCA, it is my job to make sure that the idealism, spirit and body of our organization carries on. It is my duty to see that all of the hard work by our members, volunteers, board members and past presidents are perpetuated for future members to embrace. I truly believe that changing our name to NHWEA will lead us into the future and sustain our future membership. I know that some members may have some reservations about the name change. Some members feel that we may lose our identity and the reason why we chose the title of NHWPCA. I am here to tell you that no one can take away who we are and what we have no matter what our association may call itself. As long as we are in this together, remembering why we do what we do, we can move confidently into the future. Alignment with organizations like NEWEA and WEF will bring us closer with our industry. Benefits than can be realized include engaging with other industry professionals, idealisms, goals, knowledge and solidarity. I would like to change our name during this year’s membership renewal. You will find a ballot to cast your vote along with your renewal. Votes will be tallied along with membership renewals and we will have the wishes of our membership counted. Please cast your vote and make a difference. I want to thank everyone for taking the time to make our organization better for us and for our future members.

Ebola Information

CDC preparing Ebola guidance for wastewater sector in the U.S.

Oct. 17, 2014

The Water Environment Federation (WEF; Alexandria, Va.), in collaboration with many water and public health organizations, has been seeking credible Ebola information to address concerns and questions within the water sector. Although there is limited data on the fate and transport of Ebola in wastewater collection systems, the development of protective precautions is essential. As such, the organizations have reached out to appropriate federal agencies to discuss wastewater worker safety and the inactivation of Ebola by wastewater treatment processes.

During a conference call, organized by WEF on Oct. 16, a spokesman for the U.S. Centers for Disease Control and Prevention (CDC) shared that CDC has prepared and is conducting an internal review of an interim guidance. The guidance, titled Interim Guidance for Workers Handling Untreated Sewage from Ebola Cases in the United States, will address basic hygiene practices, personal protective equipment (PPE) use, and PPE disposal actions. Specifically, this guidance will provide recommendations and protocols for

- workers who perform sewer maintenance,
- construction workers who repair or replace live sewers,
- plumbers, and
- workers who clean portable toilets.

CDC stated that the guidance review would be expedited and indicated that guidance could be released as soon as late October. WEF will communicate when CDC releases the guidance or as new information becomes available.

CDC is the lead federal agency for Ebola containment and prevention. For the best information on Ebola, visit www.cdc.gov/ebola. Also see the National Institute for Occupational Safety and Health for general Ebola guidance focused on workplace safety and health at www.cdc.gov/niosh/topics/ebola.

(updated Oct. 20, 2014)
What We Found
Management controls put in place by the EPA to regulate and control hazardous chemical discharges from sewage treatment plants to water resources have limited effectiveness. The EPA regulates hazardous chemical discharges to and from sewage treatment plants, but these regulations are not effective in controlling the discharge of hundreds of hazardous chemicals to surface waters such as lakes and streams. Sewage treatment plant staff do not monitor for hazardous chemicals discharged by industrial users. This is due to a general regulatory focus on the priority pollutants list that has not been updated since 1981, limited monitoring requirements, limited coordination between EPA offices, a lack of tracking hazardous waste notifications required for submission by industrial users, or a lack of knowledge of discharges reported by industrial users under the Toxics Release Inventory. Except for EPA Region 9, sewage treatment plant permits generally include very few monitoring requirements or effluent limits, which can limit enforcement actions.

The EPA developed whole effluent toxicity test results as a mechanism to identify toxic chemicals such as hazardous discharges to sewage treatment plants. However, these are not required for all permits, and are not tracked by the EPA to verify that sewage treatment plants are reporting results as required. Moreover, exceedances of chemical limits in permits and toxicity tests do not trigger notification to enforcement programs. Consequently, the EPA may not be aware of chemical discharge or toxicity exceedances that should be addressed to minimize potentially harmful contamination of water resources.

Recommendations and Planned Agency Corrective Actions
We recommend that the EPA develop a format for sharing annual Toxics Release Inventory data, develop a list of chemicals beyond the priority pollutants list for inclusion in permits, confirm compliance with the hazardous waste notification requirement, and track required submittals of toxicity tests and violations. The agency suggested a change to one recommendation, which the OIG accepted. All recommendations are resolved.

Noteworthy Achievements
The EPA has designed the Discharge Monitoring Report Pollutant Loading Tool to provide access to surface water discharge and other data.

Why We Did This Review
We evaluated the effectiveness of the U.S. Environmental Protection Agency’s (EPA’s) programs in preventing and addressing contamination of surface water from hazardous chemicals passing through publicly owned treatment works (hereafter “sewage treatment plants”). Hazardous wastes, regulated by the EPA, may be harmful to human health or the environment. Sewage treatment plants receive permits, from the EPA or states, for discharges to surface waters that establish pollutant monitoring requirements. However, hazardous chemicals discharged to sewers are not regulated under EPA hazardous waste regulations. Rather, they are regulated under the Clean Water Act, which focuses on a list of 126 priority pollutants that does not include many hazardous chemicals.

This report addresses the following EPA goals or cross-agency strategies:
- Protecting America’s waters.
- Ensuring the safety of chemicals and preventing pollution.
- Protecting human health and the environment by enforcing laws and assuring compliance.

Send all inquiries to our public affairs office at (202) 566-2391 or visit www.epa.gov/oig. The full report is at: www.epa.gov/oig/reports/2014/20140929-14-P-0363.pdf.
My name is Jason Young and I was chosen for the 2014 Operator Exchange. I am a Wastewater Operator I at the Franklin Treatment Plant in New Hampshire. I joined the team in August of 2011 and have since received my Grade 2 Wastewater license. Previously I was in the plumbing field and had a great interest in where our wastewater goes and how it is treated.

The Franklin Treatment Plant is an activated sludge secondary treatment plant with a design flow of 11.5 MGD. It serves 13 communities around the Lakes Region in central NH. The plant was built to protect the water quality of the surrounding lakes and the Winnipesaukee River. After treatment, it discharges into the start of the Merrimack River. It recently went through a new U.V. disinfection upgrade to do away with the supplemental chlorine disinfection. It has 4 anaerobic digesters that produce methane gas that is used to heat the plant and the digesters. Centrifuges are used for dewatering and Class B bio-solids are made and land applied. It also accepts a large volume of residential septage from the surrounding towns.

The first place I traveled was the treatment facility in Manchester, CT run by Ray Weaver. The plant's flow is 6.5 MGD and discharges into the Hockanum River after U.V. disinfection (seasonal). Nitrogen and Phosphorus removal are the biggest concerns for the receiving water. Currently they are going through a complete plant upgrade with energy efficient equipment. New blowers for aeration and VFDs for the pumps are a few things that are key to keeping the cost low. New SCADA improvements that control the process more efficiently have also been integrated into the upgrade so that as the flows change during the course of the day, the equipment also changes the way it runs to save power. They have rotary drum thickeners that thicken their sludge to around 6% and then dewater using centrifuges. The sludge is then brought to an incinerator, and the ash is brought to a local landfill.

Then we traveled to the Deep River treatment facility. It only gets 170,000 gallons a day but this very small facility still has a purpose. It is an SBR, sequencing batch reactor, facility and has a very simple process. Wastewater comes in, the solids settle to the bottom and the water is skimmed off the top. The water then passes through a small U.V. system (seasonal) and then discharges into the receiving water. The sludge is sent through a gravity belt thickener and then taken to a larger facility for dewatering.

Later in the day I met with Frank Russo the manager at the Meriden Facility. Their flow is around 6 MGD. The facility is secondary treatment with activated sludge. In the aeration tanks they reduce the BOD along with ammonia. They also do biological nitrogen and phosphorus removal adding methanol to their process. Their final effluent is then chlorinated and dechlorinated before discharging into the Quinnipiac River. The sludge is thickened to 6% on gravity belt thickeners and then sent through belt presses before incineration. The whole process is run off of the latest technologies having numerous sensors in each tank checking ammonia, pH, D.O, nitrogen and phosphorus along with flow pacing. The SCADA is set up so that all areas of the plant can be controlled and monitored more closely making it easier to spot issues sooner and be able to change the process more efficiently.

The final day, I met with Kevin Cini at the Groton Treatment Facility. The plant is primarily industrial. Some of Pfizer's research and development is next door to the facility. General Dynamics is also a big industry where two nuclear submarines are built each year. The facility receives around 1MGD. It is a conventional activated sludge plant with secondary treatment. The final effluent is then chlorinated seasonally. They send their sludge through rotary drum thickeners and then it is trucked out for dewatering. They have a marine pump-off station.

(Continued on page 8)
Early in 2014 the NEWEA Safety Committee emailed its annual Wastewater Facility Safety Survey for the 2013 work year to facilities throughout the six New England states. The purpose of the annual survey is to:

- Collect regional incident and injury statistics and publish them for use by all wastewater professionals to benchmark their safety programs.
- Identify those areas and activities where injuries are occurring so that facility managers can better focus their safety efforts.
- Gather information regarding the status of safety programs at wastewater treatment facilities throughout New England.

For the 2012 work year, 40% of those facilities returning surveys reported at least one incident. For 2013, that rate decreased to 28%. There were a total of 56 injuries reported, with 25 of those causing lost workdays - meaning almost half of incidents reported were severe enough that the employee incurred lost workdays. Those 25 injuries resulted in 411 total lost workdays.

The body part most frequently injured in 2013 was the back. The majority of those injuries were strains caused by lifting, pulling, or reaching (e.g., turning a wrench on a fire hydrant, opening a chain valve, pulling the stop gate at the aeration tank, etc.). Hand injuries were the second most common and the majority of those were cuts caused by “struck against” injuries (e.g., cleaning out the screw press, pump repair, sawing pipe, etc.).

Soft tissue and muscle injuries in the back can be costly, involve surgery, require painful rehabilitation, and limit the injured person from returning to their previous level of function, affecting their life at work and at home. Additionally, once a person experiences these types of injuries they are often more susceptible to future occurrences. Completing basic stretching and warm up exercises before engaging in physical activity can help to prevent these injuries. Another effective way to prevent back injury is to implement a safety program that focuses on safe work practices to reduce the hazards of lifting (e.g., think about things like: using mechanical aids when available; assigning two people to lift the load; alternating heavy tasks with lighter ones to reduce the build-up of fatigue, etc.).

Machine guarding and safety gloves are common ways to approach hand safety hazards such as using tools, operating equipment, handling rough materials and chemicals, and stacking and storing objects. In addition to these safeguards, make sure you also take a moment to think about the task you need to perform and the potential hazards involved. What if...the knife slips while I am stripping this wire? Will I cut myself? What if...the screw driver slips off this stubborn screw I'm trying to remove from this box in my hand? Will I punch the screwdriver through the palm of my hand? What if......there’s a little bit of chemical left in the line I’m working on? Will my hands be burned? By thinking through the potential hazards you could face, you will be better prepared to choose the appropriate means to protect yourself.

In addition to providing incident information, many of the survey respondents also expressed common concerns regarding their biggest safety challenges. The list below represents the top concerns:

- Keeping up to date with training (the availability of affordable classes; finding time to attend)
- Avoiding complacency during daily job tasks
- Workers falling, tripping or slipping
- Confined spaces
- Construction at the facility creating daily work hazards
- Funding

This information helps us to understand where the majority of our losses and challenges are coming from, and may allow us to plan resources for these areas in the future. The Safety Committee is pleased to have provided this information and we hope that members find it useful. As expected, the survey highlighted the fact that incidents are a reality in our facilities, and that additional efforts are needed to improve our safety programs and protect our personnel. The vast majority of these incidents are preventable. We would like again to thank all of the facilities that returned 2013 work year surveys and we strongly encourage all facilities to return the 2014 work year survey (watch for it in the spring of 2015) in order to help us increase the value of its results.

Respectfully Submitted,
NEWEA Safety Committee
THOUGHTS FROM THE BENCH
By Stephanie Rochefort, City of Somersworth WWTF

It’s Friday here in Somersworth as I’m writing this. OK, I’m pretty sure that it’s Friday most everywhere, but it’s been THAT KIND OF A WEEK so I’m not 100% sure! In Somersworth, Friday is usually a “BOD-day”. I’m thinking that it’s typical for Friday to be a “BOD-day” in a lot of treatment plants, because five days after Friday is Wednesday, which will be another “BOD-day”. As I’m going through the long process of setting up a BOD test, of course I can’t help but wonder why I’m doing this. The easy answer is because it’s in Somersworth’s permit, enough said. But, maybe there’s other reasons for this several-times-per-week frustration. You think?

No, I’m not sitting at my computer doing research on the history of the BOD test as an excuse for a third cup of coffee today, but that does help. I know that you can’t believe everything that you read on the internet, but I’m finding the same references to the BOD test on multiple sites. References like: a real pain in the @&&; the most impractical test every; controversial; outdated; inaccurate and superfluous.

The history of why this test was chosen as a standard is kind of interesting. Wikipedia tells me that “The 7, which was established in 1865 and the formation of the does not exist)” Royal Commission on Sewage Disposal in 1898 led to the selection in 1908 of BOD\textsuperscript{5} as the definitive test for organic pollution of rivers. Five days was chosen as an appropriate test period because this is supposedly the longest time that river water takes to travel from source to estuary in the U.K.” Then, the United States just decided to copycat what the United Kingdom had already done and adopt the 5-day BOD test. I can understand that, why re-invent the wheel?

I’ve been setting up and reading out BODs for longer than I care to admit. I’ve lived through every problem with the test that you could possibly experience. Now that the extra caffeine has kicked in, I’d like to talk about the improvements that I’ve seen in the BOD test. Since I’m stuck with this test, I may as well embrace it.

1. Pre-mixed chemicals for preparing dilution water! Standard Methods still talks about adding phosphate buffer solution, magnesium sulfate solution, calcium chloride solution and ferric chloride solution to prepare the dilution water and gives instructions for preparing each of these solutions. Thankfully, I can purchase these solutions ready-mixed and quickly make up my dilution water.

2. Pre-mixed chemicals for nitrification inhibition! Standard Methods also lists how to make up a nitrification inhibitor but if I want to run a CBOD all I need to do is purchase the chemicals ready-made and add a dose.

3. Ready-made GGA standard! There is so much better repeatability and accuracy with the ready-made GGA standards that are available now.

4. Commercial Seed! Over the years, I’ve tried every conceivable way to prepare seed from my influent. The influent here just is too variable to get a good, repeatable seed depletion. I love commercial seed. It’s the same every time.

5. Improvements in measuring dissolved oxygen! Anybody remember how to do a Winkler titration? Or awkward DO probes that displaced a ridiculous amount of water from the BOD bottle? Or DO probes without built-in stirring? Or replacing membranes? I’m so happy to have the DO meter that I do now!

6. Approval of the 48-hour hold-time from the end of the composite sample! I may not often use more than 30 of the hours, but I sure do like having them available.

Now, that I’ve put it into perspective with all that’s improved with the BOD test, I hope that you can also embrace this test! Feel free to get in touch with me if you want to discuss any of the frustrations that crop up – like I already said, I’ve lived through them all.
The scholarship is changing!
The NHWPCA is committed to promoting excellence in the fields of wastewater engineering and operations. The Scholarship Committee is responsible for applying a portion of the Association’s assets to a New Hampshire student who is attending college and majoring in the environment field related to water and wastewater.

An annual scholarship of $1000 is awarded to a student enrolled in a New Hampshire college who meets the eligibility requirements as listed in the informational document. The scholarship opens in December with the applications due in March. Finalists will be selected and will be notified by the Scholarship Committee.

The award of the scholarship is based on the following criteria:
- The applicant must be a resident of New Hampshire.
- Be enrolled in a New Hampshire college.
- Complete a standard application form and submit it to the NHWPCA Scholarship Committee.
- The application shall include an essay portion.
- Include a letter of reference, preferably from an individual in the environmental field.
- Applicant must provide verification of enrollment to the institution with a major in Water Pollution Control, Environmental Science, Engineering, Chemistry or other wastewater related field. Priority will be given to vocational students who are preparing for a field directly related to the water environment.
- Priority shall be given to NHWPCA members and to immediate family of members who have been in good standing for a period of one year prior to application date.
Blurbs, Blurbs & More Blurbs

Breakfast anyone?

The NHWPCA Legislative Affairs Committee will once again be planning for our annual Legislative Breakfast to be held in Concord in early March. The Breakfast has become a cornerstone event for our organization as it brings us together with many water quality professionals and our elected Representatives and Senators to educate and share important issues facing our industry and communities. This event will again be at the Holiday Inn starting at 7 am and we want more of our members to join us to get the word out and invite these folks to attend. This year especially as there will be many new faces in the NH legislature! For more information, or to join the planning committee, please contact Shelagh Connelly at 603-536-8900 or Shelagh.connelly@RMIrecycles.com.

Who will go to Washington for NHWPCA this year?

Each year a handful of true believers go to Washington to spread the word that Water’s Worth It! For the past five years New Hampshire water professionals have been at the table meeting with all of our elected officials to make sure water is on their agenda. With so many competing interests and pressing issues, it is easy for our concerns about regulations, funding and infrastructure to be lost in the shuffle. We want to make sure our voices are heard and that Congress understands how important clean water is for our social fabric, the environment, business and public health. The date for the Water’s Worth It! Fly In this year will be April 13-15. This will be a collaborative gathering including WEF/NACWA/ WERF and NEWEA. For more information about attending this important outreach event, please contact Shelagh Connelly at 603-536-8900 or Shelagh.connelly@RMIrecycles.com.

Solving Lifting Problems


One of the problems we face on a fairly regular basis is moving heavy loads: motors, valves, pumps, etc. Most plants have the necessary plans and equipment to solve some of their lifting problems. Plants have various dollies, carts, overhead hoists, forklifts, etc. What happens when the load is not accessible by fork lift and is not under the overhead hoist? Most of us are quite aware of where the lifting problems are. Some plants are hiring riggers occasionally which is presumably safe, but expensive. Sometimes however we are using methods that we know are not the safest to get that motor or whatever into the truck. I have heard stories about using the backhoe as a crane in very ingenious ways. Many of us have seen a tripod designed for confined space entry being used to remove submersible pumps. What happens when the tripod gets damaged by being used improperly and is no longer safe for use in confined space entry?

In recent years there have been some advances made in the design of portable lifting equipment. Many plants already have portable cranes, either davit type (crane arm at an angle pivoting on a fixed base) or gantry type (Horizontal beam supported by triangular end supports on casters). Historically many of these cranes are not really very portable because they are so heavy, being made of steel. Now several manufacturers are making this equipment of aluminum which is much lighter and it doesn’t rust. Let’s consider the removal of a submersible pump. Many plants use a truck mounted hoist, but suppose the truck is in the shop or the pump station is not accessible due to snow banks. If we have the proper crane base installed at the pump station, we can remove a pump weighing up to 1000 pounds with an aluminum davit crane that weighs less than 40 pounds. Throw the davit in any pickup and off you go. That one davit crane can service 12 or more properly equipped pump stations. When we get set up at the pump station, we want to remove the pump in one pull – not up 3 feet, get another grip, up another three feet, etc. There are two ways that I am aware of to remove a submersible pump (or mixer) in one pull. The first is a crank type hoist attached to the davit crane with the proper stainless steel cable permanently attached to the pump. Hook the cable to the hoist and get cranking. The other way involves an ingenious piece originally developed by a pump company called a “Grip Eye”. A Grip Eye will slide down the chain attached to the pump and grab the chain right over the pump then the hoist can take it right up with one pull.

For use around the plant gantry cranes are more versatile. Several companies make gantry cranes that can be easily disassembled (2 men – 4 bolts) and reassembled over the load. Once the load (motor, pump, valve, whatever) is up the gantry can be rolled on its casters with the load. Often the gantry and load can be rolled right out the door and over to the shop or over to the truck.

Give some thought to portable lifting equipment made of aluminum and how it might make your lifting problems easier, quicker, and most of all - safer.
For your Reading Pleasure

By Steve Clifton, NHWPCA Newsletter Committee

From time to time, I will bring you suggestions for your reading pleasure related to our profession. This time of year we like to keep it light. I thought rather than provide you with a summary of an interesting tale, I would share with you what is the latest in my collection of wastewater reading pleasure to fortify me in the coming months. Perhaps Santa can make some room under the Christmas tree for one of these selections for you.

So settle in to a great read that is related to the wastewater profession. When you are done, you will gain more perspective and respect for a job that saves human lives every day.

Everyone Poops, by Taro Gomi
We probably all were hung up on the poopie stage for a long time during our formative years. For some children, joking about poop is the funniest thing in the world. Perhaps some of us stayed in that stage a little too long, hence we all work for the largest waste producer; humans.

At first I wasn’t sure I would like this book. There was a lot to like about it, lots of photos, easy reading, relevant to the profession, but there was something missing for me. I even was prepped for the reading by Shelagh Connelly of Resource Management, Inc., who showed me the “cradle to grave” solution used throughout history, before sewers became common place. So I pulled out the book and settled down to a nice weekend afternoon of reading.

Of course, after reading the book for the first time, I still felt like something was missing. Then I had to put the book away because we had my son’s family come to the house for a visit.

The book was left on the table for later. In the course of the afternoon, some little guys grabbed the book and started to laugh. So I started to read the book to them. Finally, the missing ingredients were found! Going through the book with the grandchildren brought back all that great humor I remember from my youth. It was hard to get through a page without laughing out loud.

We even got a little of Eric Wahlberg’s class on activated sludge in there – the TSS is probably 90% VSS and the VSS exerts 0.5 to 0.7 lbs of BOD₅ in the waste stream. I explained, to the grandchildren’s amazement, that everyone poops – at a rate of 0.2 pounds of TSS and 0.17 pounds of BOD₅ per day. Now we are looking to do some measurements, but I may have a little trouble with Mom and Dad over this.

So in their infinite wisdom, the grandchildren asked if the bacteria poop too. I said, of course! But then I started to think about it. Well I know they produce CO₂ and H₂O. Then it hit me! Hey, they mostly fart!

Have a happy and holy holiday, this year and well into the future.

Steve

(Continued from page 3)

For boats that come in from the Long Island Sound. Kevin took me to the Coast Guard Academy and we toured around the Civil Engineering department and got to see what they do for research on structural materials.

Kevin then took me to the Norwich Treatment Facility. It is an 8.5 MGD facility with activated sludge and secondary treatment. They recently had their anaerobic digester upgraded with an inflatable membrane cover. The methane gas that is produced is cleaned and then sent through two turbine generators that make electricity for parts of the town. They have unique primary clarifiers that have trolleys that rake the sludge from one end to the other. They thicken their sludge on a gravity belt thickener which goes directly to a belt press and then to an incinerator.

I would recommend the Operator Exchange to anyone that is interested in learning and seeing new ideas in the wastewater field. I really enjoyed meeting new people that have a vast knowledge of this field. I learned a lot of new things in wastewater treatment and different ways of doing things. I got to see different equipment and technologies for process control that I am not used to seeing on a daily basis. I would like to thank everyone who was involved with the Operator Exchange for taking the time out of their days to show me around.