Aerial view of Wisconsin Rapids Wastewater Treatment Plant

51st Annual W.W.O.A. Conference
October 16-20, 2017
Madison Marriott West
The Clarifier is the publication of the Wisconsin Wastewater Operators’ Association and is intended to inform and educate the membership on issues related to the treatment and control of wastewater. The Clarifier is produced five (5) times each year: February, April, June, September, and December. All members are encouraged to contribute to the mission of the Clarifier.

The Wisconsin Wastewater Operators’ Association is a non-profit organization dedicated to educating, informing, and advancing the wastewater profession. WWOA has approximately 2,000 members divided throughout six regions: Southeast, Southern, Lake Michigan, North Central, Northwest, and West Central.

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The Wisconsin Wastewater Operators’ Association (WWOA) plays an integral role in our Resource Recovery industry and I have been honored to serve as your president and lead this great organization through our 51st year. I have enjoyed traveling across Wisconsin to Regional meetings and seeing the countryside, several resource recovery facilities, and listening to presentations on issues and advancements within our industry. I am constantly in awe of the talent and dedication of our members. I always learn and gain new information and leave more energized.

Talking with our members at the Regional meetings and other seminars is always a highlight. I recently had the privilege to have lunch with one of our most experienced and senior members who has remained passionate about WWOA over the years. At this same meeting, I met a young woman who was new to wastewater treatment and was excited to learn everything she could about the Resource Recovery specialty. My hope is that this young woman will remain excited and will enjoy WWOA for as many years as this senior member.

I want to personally thank the Board of Directors, Regional Officers, and Committee Members for the time and effort they have put in leading the committees and organizing the numerous training events and the Annual Conference. Without these dedicated volunteers, the WWOA’s membership would not be possible. I encourage you to participate in WWOA and consider joining either your Regional Board or the State Board as your time allows. If you are interested, please contact any of the current board members or officers for more information and to get their thoughts on what is involved. Serving on the WWOA Board of Directors has been one of the most rewarding aspects of my career. I also want to thank our Executive Secretary, Karen Harter, for all her work and assistance in keeping the WWOA functions operating smoothly.

I look forward to seeing you at our 51st WWOA Annual Conference in Middleton, October 17-20, where we will discuss and celebrate Recovering Resources. If you have not registered for the conference, please do so as soon as possible. I encourage you to sign up for one of the social events as they allow for good networking opportunities in a fun and relaxed atmosphere. The pre-conference workshops, technical sessions, and the new Septage Compliance held session Thursday afternoon offer many opportunities for continuous learning and exchange of ideas. The Board of Directors invites everyone to attend and participate in the Annual Business Meeting on Thursday, October 19, at 12:30pm following the Operators’ Business Lunch. Please note you do not need to purchase a lunch ticket to attend the Business Meeting. Please visit the WWOA website for full conference details.

Enjoy the final summer days and welcome in the cooler, autumn days. Thank you again for allowing me to serve as your 51st President.

WATER is our resource to protect, renew, and share!
Names do matter – WWOA or WRRS?
Sharon Thieszen

Resource Recovery Specialists do incredible and lifesaving work every day. The British Medical Journal recognized the importance of our work when it published survey results (18 January 2007) in which readers voted that the introduction of clean water and sewage disposal was the most important medical milestone since 1840. Efficient water management is crucial to public health, a viable economy, and a livable urban environment. Water truly is our most valuable resource and must be protected!

Wastewater treatment has well exceeded the Clean Water Act standards set and passed in 1972. We continually work to optimize our facilities in the most efficient and financially sound manner possible. We not only clean and reclaim our water more efficiently than ever before; we also recover the energy and nutrients from the waste stream and produce valuable, renewable resources. The WWOA is largely responsible for training and helping the Wisconsin wastewater operators earn and maintain their certification. We offer great resources and technical support for operators, managers, engineers, laboratory technicians, regulators, mechanics, and specialists of all wastewater disciplines.

WWOA provides training and networking opportunities for all of our members. If we are to continue to grow as an organization, we need to attract new members. We need to help the future operators embrace the industry and become passionate about cleaning and recovering the resources from wastewater in a fiscally sound manner. In this busy time period that is filled with instant messaging and quick returns, we need a name that will properly reflect what we do while catching people’s attention. We need to let the public and our future specialists know what we do.

We are an amazing, unique, and highly valuable group of professionals. We deal with sewage, recognizable solids, grease, septic conditions, harsh environments, pollution, corrosion, confined space, and bacteria. We embrace the challenges and recover resources from the waste and produce water that is cleaner than many surface waters! And we do this 24/7, 365 days a year no matter how harsh the conditions.

Are we Wisconsin Wastewater Operators Association (WWOA) or Wisconsin Resource Recovery Specialists (WRRS)? It’s hard to get someone to open a book if the title does not sound interesting. When I first entered the wastewater field over 20 years ago, I was asked what I did for a living. I excitedly told people I worked for a sewage treatment plant. I thought working with crap was cool! Many did not understand my enthusiasm thus the conversations usually ended. Until one of my coworkers schooled me to answer the question by saying I was an “environmental scientist” and worked in the “environmental field.” Once I changed the language, people wanted to listen and became intrigued in my work and wastewater treatment. The book was opened. I was then able to share with others that crap was cool and that I was part of an important and diverse profession.

WWOA or WRRS? In addition to name accountability, name recognition is important. The WWOA has built a strong and successful organization that is nationally recognized. I believe we can continue that tradition and continue the path to grow by adopting a name that reflects and demonstrates our technical field and recovery role. I invite you to discuss amongst your peers what your job and career mean to you and how we can best attract members and gain the respect our profession deserves. Adopting a new name does not change our organization, but perhaps it does more accurately share what we do and who we are with ourselves and the public.
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Wisconsin Rapids Wastewater Treatment Plant

By: Derek Budsberg, Chief Operator

Overview
In 1900, the once rivaled towns, Centralia, located on the west side of the Wisconsin River, and Grand Rapids, located on the east side of the river merged as one and adopted the name “Wisconsin Rapids”. The name came naturally due to a 45 foot decent the river has over an irregular shaped rock bed. Coupled with a number of small islands, the city makes for an aesthetically pleasing place to live.

The Wastewater Treatment Plant serves a population of about 20,000 people as well as two large cranberry operations, Ocean Spray and Mariani, which make up about 50% of the plants total BOD loadings. Wisconsin Rapids Wastewater also treats wastewater from two outlying communities Biron and Rudolph WI. In order to effectively treat the city’s growing industry, the plant was upgraded in 2011 by Foth Engineering. The facility treats on average 3.5 millions gallons of wastewater on a daily basis. Peak monthly flow is 5.27 MGD. Peak daily flow is 8.71 MGD. The plant treats 12,000 lbs of BOD per day on average, and meets an effluent phosphorus limit of <1.0 mg/l monthly average. The treatment train consists of 17 lift stations located throughout the city, with the 4 largest lifts pumping directly to the plant headworks, to start the gravity flowing treatment process.


The WWTP has 9 full time employees including a Superintendent, Chief Operator, three Operators, Maintenance Technician, Relief Operator/Assistant Maintenance, Collections Crew Leader, and Collections

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continued from page 6

Operator. Staff works together to efficiently and effectively operate, maintain, and manage the treatment facility as well as the collection/conveyance system.

Primary Treatment/Solids Separation
At the treatment plant, influent wastewater flows through two 5 mm mechanical screens that remove inorganic material like large coarse solids and rags. Wastewater flows from the screens to the grit removal system which consists of a grit vortex working simultaneously with a grit washer to settle out and remove heavy inorganic solids from the raw wastewater. The wastewater is then gravity fed to two 95 ft primary clarifiers where solids are encouraged to settle. Two primary clarifiers effectively remove settled organic solids and reduce downstream BOD load by 30%. This helps lessen the BOD and nutrient load sent to the Integrated Fixed-Film Activated Sludge Process (IFAS).

Secondary/Biological Treatment
The IFAS system is similar to a conventional activated sludge process, but with the addition of plastic disks that increase the surface area of the tank and allow organisms to bio-accumulate on the disks. The mixed liquor and the...
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fixed film media disks work in conjunction to effectively treat high loads of BOD and nutrients in the wastewater. The IFAS system consists of two concrete tanks filled with plastic media disks. Three ABS high-speed turbo blowers diffuse air from the bottom of the tank to provide oxygen for biomass as well as keep the mixed liquor and media disks well mixed. The disks allow a better environment for fixed film to thrive in the wastewater treatment process. Other benefits include a more diverse population of organisms, the ability to treat fluctuating loadings from day to day, and the ability to keep a larger biomass on-hand at all times.

The IFAS system is followed by up to four aeration basins that allow for polishing and further reduction of BOD and nutrients in the wastewater. Water then flows into a splitter box where flow is split between two final clarifiers. Floc is settled out and clear effluent water is passed over the clarifier weirs where it is passed through a Trojan 3000+ UV disinfection system before being discharged into the Wisconsin River. Settled activated sludge from the final clarifiers is either returned back to the IFAS system for continued biological treatment or wasted out of the system for thickening prior to digestion.
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Solids Treatment and Handling/Digestion
Waste activated sludge is thickened with two rotary drum thickeners before it is sent to digestion. Two 400 GPM RDTs use an emulsion flocculent to allow water to be filtered out of the WAS, and reduce supernatant load to the digestion process. A Thermophilic batch digestion process (TPAD) is used to treat the solids portion of the treatment process, which produces an DNR approved “Exceptional Quality Class A” Bio solid. In the TPAD process both Digesters are heated to 135 degree Fahrenheit and continuously mixed with bio gas cannons. The bio gas produced is collected and held in the floating digester covers. The two covers allow for gas storage up to 50,000 cubic ft. On average the digestion process produces 110,000 cuft/day. The bio gas is then used to power a 330 kw Jenbacher generator that supplies power...
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to the plant and heat for the digesters. At times the facility is able to produce as much power as is demanded, making the facility energy neutral during these periods. Digested sludge is dewatered with a Fourier fan press to 15% solids and sent to a drying pad for further drying until it is land applied as a soil amendment fertilizer.

Laboratory
The Wisconsin Rapids Wastewater Treatment Plant staff also operate a Wisconsin State certified Laboratory. Certified Laboratory Operators run daily tests on influent wastewater, treatment process checks, and effluent wastewater. These tests are performed to ensure compliance with the WPDES discharge permit parameters issued by the Wisconsin DNR. The main areas of compliance relate to Biochemical Oxygen Demand (BOD) which correlates to biological load the wastewater will put on our treatment process, Total Suspended Solids (TSS) which is the solids content of the wastewater that needs to be treated, Total Phosphorus (TP) which is the main nutrient of concern for the receiving body of water, and pH which is the acidity or alkalinity of the wastewater. Operators rotate through the Laboratory on a weekly basis, ensuring complete staff proficiency for environmental compliance.

Message from Lisa Bushby, former Operator Certification Coordinator

Dear Operators:
Many of you will have received an email already, but for those of you who haven’t, I have left the Operator Certification Program.

I began a new position in the DNR Drinking Water and Groundwater Program at the beginning of July.

I want to reiterate what I stated in the email; I have thoroughly enjoyed working with you all for the past 5½ years. As always, I admire your diligence and dedication to your work. You all play such an important role in providing safe drinking water and protecting the waterways of the state.

I will miss helping you all with your certification questions and seeing you at conferences.

Until a new Operator Certification Coordinator is hired, you may contact DNROpCert@Wisconsin.gov with operator certification questions.

My email address remains the same as before: Lisa.Bushby@Wisconsin.gov

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There were 50 people attending with 10 of them vendors.

The meeting opened with a few words from the City Administrator Tim Freitag who expressed his appreciation for the job us as wastewater employees all do. He gave a brief history lesson on the VFW hall that the meeting took place in. It was established sometime in the 40s and is one of the oldest in existence.

Ben Heidemann from Town & Country Engineering spoke about the Jefferson Wastewater Treatment plant and their evaluation of biogas operations. They looked into four options: Flare, Heat generation through a boiler, a biogas engine/turbine, or using it as a fuel substitute for vehicles.

The talk was more focused on the fuel substitute option. They looked at plant loadings and capacities, industrial contributors, and even bringing in more hauled in waste to help produce more gas. The City was losing one of their industries that contribute a large portion of their BOD. The T&C group looked at cost of the fuel systems which are needed to clean, pressurize, and store the gas before use. When looking at cost they also performed some payback analysis for each system. The different departments of the municipality were consulted to see what would be involved to convert their vehicles to run on this fuel.

Some cost estimates were anywhere from $5-10k to do the conversion. Trunk space for the police department was one concern that was mentioned. The conversion system resides in the trunk and would pretty much eliminate the trunk space which is needed. They determined it was not cost effective. With losing their industry and that supply of BOD there was concern with being able to meet the demand. Also, there are a lot of logistics involved in the certification and licensing to be considered a fuel supply station. The City has decided against it, but will continue to evaluate other options.

The next topic for discussion was Ultra Low Phosphorus Levels using the CLEARAS system. Terry Robinson presented on his process where algae treats plant effluent to remove remaining nutrients such as: Total Phosphorus, Nitrogen, Total Suspended Solids, BOD, and Carbon Dioxide. In the process of this nutrient removal Oxygen is increased in the effluent. It is a simple process utilizing three phases: Mix, Recover, Separate. Terry explained how similar the process is to the Activated Sludge processes many of us have. A carbon source is added to the bioreactor in the form of Carbon Dioxide.

A steady environment to promote algae growth and keeping everything fresh is important to successful operation and therefore some algae is recycled back into the process and some is wasted. A convenient aspect to this system is that it is modular and scalable to your specific treatment plant. It isn’t a one size fits most. Flow and phosphorus concentration determine sizing of the system. On top of the ultra-low phosphorus removal that takes place the wasted algae can be used for a variety of things from digester feed to actually providing a product to sell (used in cosmetics, pharmaceuticals, and fertilizers) and recover some of the cost.

David Arnott from Reukert and Mielke presented on Bio-P removal using oxidation ditches. For those who don’t know Oxidation Ditches are complete mix tanks in a series in the shape of a racetrack. The shapes of the racetrack vary from plant to plant, but the one David spoke of is known as an Orbal oxidation ditch.

Ditches usually run with an SRT of 20-30 days. They have a variety of mixing/aerating options: Brush, Disc, or Surface Aerating. The downfall to ditches for Bio-P is there are no true anaerobic zones. That’s where a bit of trial and error comes in to play.

David and his group experimented with turning off the aerators at certain areas of the ditch to attempt to create an anaerobic zone and promote bio-p all while making sure there was enough mixing occurring in other areas to

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prevent solids from settling out. With making changes to the aeration they were able to drop the ORPs and get some biological phosphorus removal to occur.

The next presentation was from Suzanne Wade from the Rock River Coalition. Her presentation was titled: Testing the Water: A Paddle to Probe Adventure. She discussed engaging the community in promoting water quality using recreational opportunities. Her group decided to get people together May, 2016 to go kayaking on the Rock River and while doing so they carried along instrumentation which measured D.O. and pH. They also collected samples at different points on the river to analyze for nutrients such as phosphorus. Suzanne provided some great data on the Rock River that will help them later on when discussing watershed work to improve water quality. She hopes going forward they will test for other constituents such as Turbidity and Nitrates and also include fixed locations for sampling. She also mentioned doing this again at different times of the year to collect more data. Another wish list item is a cellular modem for battery power because electronics were often an issue during all the hours on the river. The final part of their story was trying to get the volunteers to tell the appropriate story for different areas of the Rock River. Using the data that was collected and putting together a report card of the river and explaining the areas that may need more attention than others is a big part to moving in a positive direction with water quality.

DNR Update: DNR Basin Engineer Amy Garbe
Amy reminded everyone of the due date for the CMAR – June 30th. She mentioned the Collection and Financial sections and how those look different. If there are any questions go to the website as it has been updated to reflect the changes and should provide solutions for you. The DNR is still working on producing electronic SSO forms to be used in the future should you need them. Amy also touched on staffing changes and that they are still working through them.

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The Southern District Business meeting was called to order. The meeting minutes and treasury report were discussed. The plaque for hosting the Southern District meeting was presented to Jefferson’s WWTP Superintendent Todd Clark.

The Southern District is looking for a new Secretary for 2018, an Operator of the Year for 2017, and a competition team for the Annual WWOA conference in the fall. Southern is also looking for host communities for 2018. Establishing the Tuition Aid Fund for the Southern District was discussed. It was voted on and approved. The Southern District will have it set up by the next meeting in August for people to apply. We will upload it to the website when it is completed. The next meeting will be in August in Richland Center, but we are still working on a date.

State Update
Rick Mealy talked about a change in the competition this fall. For the lab portion the competitors will not be doing analysis. Instead, they will be auditing the analysis of the judges putting a unique twist on the competition.

The final speaker was David Bolha from the DNR who talked about Water Quality Improvements in the Fond du Lac Watershed. There was a priority watershed project that took place in 1997 which was a nonpoint source control plan. BMPs were installed in hopes of improving water quality. The DNR had some great baseline data (Nitrates, TSS, and TP) previous to this project. In 2015 David performed some nutrient analysis, aquatic insect assessment, and fish surveys to determine current water quality and impairment.

Overall, his findings did not show much improvement. Some areas showed more improvement than others, but there was a large amount of sediment in the river that contributes to a lot of the issues.

Contributing factors that were discussed were limited buffers, eroding streambanks, cropland erosion, urban development, and extensive tile damage. Developing a 9 key element plan to come up with other ideas to improve water quality is a big part of the process to get more funding. This is something for the local Land and Water Conservation Departments to consider or anyone for that matter to move forward in improving the watershed.

The projects that were taken into account for this presentation provide some great data and real world scenarios for those looking into something like this. This discussion was a good example of the realities of watershed management to show that not all efforts are completely successful.

The meeting adjourned after a brief discussion of the Jefferson WWTP. A tour of the facility followed the meeting.
2017 WWOA Sporting Clay Shoot on Tuesday, Oct. 17

WWOA will once again be hosting a sporting clay shoot as part of the annual conference activities. The sporting clay shoot this year will be held on Tuesday, October 17 at the Waunakee Gun Club, with a “shotgun start” at 10AM.

WWOA members, manufacturers, engineers, suppliers, and conference attendees are welcome to participate. The event will be an 8 station, 50 target shoot, and also include a novelty shoot and separate Lewis class. Prizes will be awarded for 1st, 2nd, and 3rd place teams as well as Top Gun. Lunch after the shoot will once again be grill-your-own steaks, texas toast, potato salad, and beans.

Thanks to some very generous donations, there will be nearly $3000 worth of guns raffled off at the event. Bright Technologies donated a Benelli Super Nova 12 gauge pump shotgun, CH2M donated an LSI Pointer .410 shotgun, Crane Engineering donated an H&R 20 gauge pump shotgun., Donohue and Associates donated an LSI semi-automatic 12 gauge shotgun, J.E Ahern donated a Delton .223-560 semi-automatic rifle, and Sabel Mechanical donated a Ruger .30-06 bolt action rifle with Vortex scope.

Participants can register as individuals or teams of up to 4. Registration, which is due by September 29, 2017, can be sent via mail or submitted on the WWOA website. A registration form is on page 25 of this issue of the Clarifier.

The event is sure to be great time for both novice and experienced shooters. We hope to see you there.
Mid-State Technical College hosts North Central meeting

The spring North Central Regional meeting was held slightly later than usual at the Stevens Point campus of the Mid-State Technical College on June 22nd. It was hosted by the Village of Whiting Utilities. There were 40 people in attendance and 8 vendor displays. The meeting started at 8:25 with a welcome from Steering Committee President Andy Ott. Andy introduced Village of Plover Police Chief Daniel Ault who gave the first presentation on the intersection of wastewater and illegal drugs. Dan highlighted the heroin and methamphetamine problem common in many of the communities. He talked about the signs indicative of illegal drug use, focusing on the hazards associated with discarded needles and methamphetamine “cooking” equipment.

Changing directions slightly, Dan spoke of the commonalities between police work and Public Works, including wastewater. He highlighted the positives common to both, including our “presence” in the community and our expertise in our related fields. He emphasized the “see something, say something” approach and open communications. He also touched on the potential negatives associated with public sector jobs including burn out and the important difference between skepticism and cynicism.

The second presentation was given by Terry Robinson of Clearas Water Recovery. He spoke of the benefits of harnessing natural processes, in this case algae growth, as a means of resource recovery. Originally started as a feed source process for fish farms, the process lacked a large, stable, affordable food source for the algae. Coincidentally, the process was extremely efficient at removing nutrients, including phosphorous and nitrogen. This caused the designers to look at wastewater plants from both a food source perspective and as a treatment option.

The process designed by Clearas mirrors the activated sludge process. Algae and secondary effluent are mixed in a special reactor consisting of thousands of lineal feet of 4 inch diameter glass piping. A combination of sunlight and ultraviolet light provide the algae the energy needed for exponential reproductive growth similar to the activated sludge. At the end of the reactor some of the algae are returned to the beginning to maintain the proper mixing ratio and the excess are wasted out. The wasted algae are dewatered, packaged, and sold to wholesalers who market the product to a large number of industries including bio-plastic, nutraceuticals and pharmaceuticals, and fertilizer companies. The wastewater discharged has near zero nutrient levels and the algae can be sold at a profit.

After a short break, Andy Johnson, recently retired from Marathon County Land Use Management, and Andy Kurtz, City of Marathon Administrator, talked about their work at the county level to promote Water Quality Trading. Since retirement Andy Johnson has been working with the Farm Bureau and other agriculture advocates to promote an education over regulation approach to working with farmers from a Water Quality Trading perspective.

Marathon City, like so many other communities in Wisconsin, is looking for ways to deal with the DNR’s new phosphorus limits. One of the first communities to receive a permit with the new limit, Marathon City is at the forefront working on compliance options. Andy and Andy are hopeful the County will step up to broker trades in a WQT program, but are also researching private/public partnerships options through non-governmental organizations. The as yet incomplete Wisconsin River TMDL is a large unknown complicating negotiation.

Nathan Wells gave the DNR update, covering a variety of subjects including the Wisconsin River TMDL, Water Quality Trading, Collection System Certification, the new energy portion of the CMAR, CMOM implementation, and the new Sanitary Sewer Overflow form and reporting requirements. Nathan also reported that he will be leaving his position as DNR Wastewater Engineer in our area to take a similar position down in the Madison area. Until the position is filled West Central Region Supervisor Lacy Hillman will be filling in.

A lunch of brats and burgers was served at 12:00, after which Andy Ott called the business meeting to order. The meeting minuets are submitted for review by our members.

1. Andy called the meeting to order at 1:00 PM
2. Andy thanked the members for their attendance. He thanked the speakers for taking the time to share their

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The WWOA Board of Directors cordially invites you to the 51st Annual WWOA Conference, October 17 through October 20, 2017. We are at a new venue this year, the Madison Marriott West Hotel and Conference Center in Middleton, WI. As we begin our next Fifty Years, I hope you will be joining us. Our Conference Program is full of exciting information on what will prove to be a great conference.

Tuesday starts the fun with an array of activities.
- Golf Outing and Sporting Clays Events along with the Bicycle Tour of the Dane County country side
- Two Pre-Conference Workshops taught by the WDNR and Fehr-Graham
- Meet and Greet with open buffet and refreshments

Wednesday officially opens the conference starting with the Welcome Address from Sharon Thieszen, WWOA President and our Keynote Speaker, LeRoy Butler, star strong safety for our beloved Green Bay Packers. Along with his accomplishments on the field of play, Mr. Butler is the man that started the tradition of the “Lambeau Leap.” You don’t want to miss what is sure to be a Keynote to be remembered.

Wednesday’s activities include:
- Expo Hall/Exhibitor Venue - 10:00 am to 5:00 pm
- Technical Session with three different tracks starting at 10:45 and runs until 4:00 pm
- Walk-Around-Lunch (open to all) Noon until 1:30 pm
- Operators’ Competition (in the Expo Hall) 12:30 pm until 4:30 pm
- Exhibitors Reception (Expo Hall) 4:00 pm to 5:00 pm
- Technical Sessions - 8:00 am to 4:00 pm
- Special Technical Session – Septage Compliance and Master Operator Training: 12:30 pm – 4:30 pm
- Expo Hall/Exhibitor Venue – 8:00 am to 11:45 am
- Annual Business Lunch and Meeting – Lunch: Noon - 12:30 pm, Meeting: 12:30 to 1:30 pm
- Plant tour – 1:30 pm to 4:00 pm
- Social Hour – 6:00 pm – 7:00 pm
- Awards Banquet – 7:00 pm to 9:00 pm
- Entertainment – 9:00 pm to 11:00 pm with Comedian Dobie Maxwell-a.k.a. ‘Mr. Lucky’ & card playing.

We close our conference Friday morning with a Farewell Speaker and Breakfast. Our closing speaker, Greg Paul, will present a special talk on “The Gut Bug Connection”. This will be an interesting talk highlighting the similarities between our human “gut health” and wastewater treatment.

PRE-REGISTRATION IS STRONGLY ENcouraged! On-line registration via credit card is available at www.wwoa.org. On behalf of the WWOA Board of Directors, the Technical Program Committee and everyone that has worked to bring the 51st Annual Conference together, we look forward to seeing you in October.

Sincerely,

Jeff “Juice” Simpson,
WWOA Vice President
and Technical Program Committee Chair

CURRENT YEAR NAME BADGE REQUIRED FOR ADMISSION TO ALL CONFERENCE FUNCTIONS
## Conference schedule at a glance

### Tuesday, October 17, 2017
- **10:00 a.m.** Shotgun Start
  - Pleasant View Golf Course, Middleton, WI
- **10:00 a.m.** Shotgun Start
  - Sporting Clays: Waunakee Gun Club, Dane, WI
- **9:30 a.m.** Bike Ride: Military Ridge State Trail, Madison, WI
- **2:00 p.m. – 4:00 p.m.** Registration Opens: Conference Center
- **1:00 p.m. – 4:00 p.m.** Pre-Conference Workshops: Biosolids Rooms
- **4:30 p.m. – 6:00 p.m.** Regional Officers Meeting: Lakes & Streams Room
- **6:00 p.m. – 9:00 p.m.** Meet & Greet (beer, wine, soda, cash bar): Atrium
- **6:00 p.m. – 8:00 p.m.** Dinner buffet: Atrium

### Wednesday, October 18, 2017
- **7:00 a.m. – 5:00 p.m.** Registration Opens: Conference Center (Scanning In and Out)
- **8:30 a.m. – 8:45 a.m.** Welcome Address: Champions Ballroom
  - WWOA President, Sharon Thieszen
- **8:45 a.m. – 10:00 a.m.** Keynote Address: Champions Ballroom
  - LeRoy Butler, Green Bay Packers
- **10:00 a.m. – 4:00 p.m.** Exhibitor Expo: Conference Center
- **11:00 a.m. – 12:00 p.m.** Technical Sessions: Clean Waters/Lakes & Streams/Biosolids Rooms
- **12:00 p.m. – 1:30 p.m.** Walk Around Lunch: Conference Center/
- **12:30 p.m. – 4:00 p.m.** Technical Sessions: Clean Waters/Lakes & Streams/Biosolids Rooms
- **1:30 p.m. – 4:00 p.m.** Exhibitors Social Hour: Expo Hall
- **6:00 p.m. – 8:00 p.m.** Dinner buffet: Atrium

### Thursday, October 19, 2017
- **7:00 a.m. – 4:30 p.m.** Registration Opens: Conference Center (Scanning In and Out)
- **8:00 a.m. – 11:45 a.m.** Exhibitor Expo: Conference Center
- **8:00 a.m. – 11:45 a.m.** Technical Sessions: Clean Waters/Lakes & Streams/Biosolids Rooms
- **12:00 p.m. – 12:30 p.m.** Operators’ Luncheon: Champions Ballroom
- **12:30 p.m. – 1:30 p.m.** Business Meeting: Champions Ballroom
- **12:30 p.m. – 4:00 p.m.** Septage Compliance Technical Session: Woods & Meadows Room
- **1:30 p.m. – 4:00 p.m.** Plant Tour Departure: Convention Center Entrance
  - (Must pre-register at Conference Registration Booth for bus transportation)
  
### Friday, October 20, 2017
- **7:30 a.m. – 11:00 a.m.** Registration: Conference Center (Scanning In and Out)
- **8:30 a.m. – 10:30 a.m.** Farewell Breakfast: Aliquot Room (Conference Center)
- **Greeting:** Jeff Bratz, WWOA President
- **Speaker:** Greg Paul
2017 WWOA golf outing

Pleasant View Golf Course, 1322 Pleasant View Rd.,
Middleton WI 53562
Date: Tuesday, October 17, 2017
Time: 10 a.m. “Shotgun Start”
Type: 18 Hole Scramble Format
Prizes: Flag prizes
Cost: $60 WWOA Members, Manufacturers, Engineers, Suppliers and Conference Attendees. Includes: Golf with cart, 18 holes golf, range balls, box lunch. Snacks provided and cash bar during award/prize drawing in club house.

Golf outing registrations, with names of foursome or individuals, must be received no later than Sept. 22, 2017. (Committee will assign if not in foursome).

Hole prize sponsorship available for $75/hole. Please contact Randy Herwig at randymail@charter.net.

No refunds after September 16, 2017 unless course is closed by decision of club management. Day of event, rain checks would be issued for play, accepted through 2018 season. Appropriate golf attire required.

Name: ________________________________________
Address: _______________________________________
City: _______________________________________
State/Zip: _____________________________________
Email: ________________________________________
Phone: ________________________________________
Part of a Foursome?   Yes       No
Others in Group: _______________________________________

# paid ______ X $60 each

Register online with a credit card or make check payable to WWOA.

Mail registration card and fee to:
Karen Harter, WWOA Executive Secretary
PO Box 451, Baraboo WI  53913

Waiver: In consideration of the registering for this event, I do hereby waive and release the Wisconsin Wastewater Operators’ Association and all persons and agencies connected with the WWOA from all claims for damages arising from my participation in and travel to and from this event.
2017 WWOA bicycle ride and luncheon registration form

Name: ______________________________________
Address: _____________________________________
City: _________________________________________
State/Zip: _____________________________________
Email address: __________________________________
Phone number: __________________________________

$30: _________ Bike storage: _____________
T-shirt Size: S M L XL

Register online with a credit card or make check payable to WWOA. Mail registration card and fee to:
Karen Harter, WWOA Executive Secretary
PO Box 451, Baraboo WI 53913
608-355-3081 or secretary@wwoa.org

2017 WWOA bicycle ride and luncheon

Date: Tuesday, October 17, 2017
Time: 9:30 a.m. Rider Meeting & Start Leisurely Ride
Determine your own distance
Complete ride ~ 30-mile route
Group start, ride at your own pace, turn around as your schedule requires.

Cost: WWOA Members, Manufacturers, Engineers, Suppliers and Conference Attendees – $30.00

Cost Includes: Snacks and drinks along the way, daily trail pass, T-shirt. Meal and drinks at establishment along trail for those that ride to Mount Horeb.

Please RSVP early. No refunds after Sept. 16, 2017 UNLESS THERE IS INCLEMENT WEATHER.

Registrations must be received no later than Sept. 22, 2017.

Secure bicycle storage available in Marriott Convention Center. Contact Karen Harter, Executive Secretary for access to secure storage.

Waiver: In consideration of registering for this event, I do hereby waive and release the Wisconsin Wastewater Operator’s Association and all persons and agencies connected with the WWOA from all claims for damages arising from my participation in and travel to and from this event.

800-876-8478    www.visu-sewer.com

REPUTATION
Just one of the core values we live by every day at Visu-Sewer, Inc.
2017 WWOA sporting clays

Waunakee Gun Club, 6680 Ripp Dr., Dane, WI  53529

Contacts: Jim Thalke 262-955-9090
          Jeff Smudde 920-851-1087

Date: Tuesday, October 17, 2017

Time: 10:00 A.M. “Shot Gun Start”

Prizes: 1st, 2nd, & 3rd place team – Top Gun

Cost: $50 per shooter, WWOA Members, Manufacturers, Engineers, Suppliers, and Conference Attendees

Includes: 8 station/50 target shoot, (bring your own shells or purchase at Club). “Cook your own steak, Texas toast, potato salad and beans.” All food included in cost.

Cash bar after shoot. Special door prizes and a novelty shoot and a separate Lewis Class.

Door prizes and other donations appreciated.

Station sponsors needed: $50 each (includes signage). Mail all sponsorships to Karen Harter.

Sporting Clays registrations, with names of three/foursome or individuals must be received no later than Sept. 29, 2017. (Committee will assign if not in a three/foursome).

Please RSVP early as we are limited to 80 participants.

No refunds after Sept. 16, 2017 unless course is closed by decision of Club Management.

Mail registration card and fee to:
Karen Harter, WWOA Executive Secretary
PO Box 451 Baraboo WI  53913

Waiver: In consideration of the registering for this event, I do hereby waive and release the Wisconsin Wastewater Operators’ Association and all persons and agencies connected with the WWOA from all claims for damages arising from my participation in and travel to and from this event.
## Schedule

### Pre-Conference Workshops

**Tues., Oct. 17, 1 to 4 p.m.**

<table>
<thead>
<tr>
<th>Workshop #1</th>
<th>Workshop #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room</td>
<td></td>
</tr>
<tr>
<td>Biosolids-1</td>
<td>Biosolids-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Speaker(s)</th>
<th>Speaker(s)</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steve Geis, Rick Mealy, George Bowman</td>
<td>Michelle Boeldt, George Bowman</td>
<td>Marc Zimmerman, Tom Fitzwilliams</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Moderator</th>
<th>Moderator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marc Zimmerman</td>
<td>Tom Fitzwilliams</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Workshop #1</th>
<th>Workshop #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 2:25 p.m.</td>
<td>Lab Certification Changes to NR 149</td>
<td>Core Elements for Successful Safety Program</td>
</tr>
<tr>
<td>2:25 to 2:40 p.m.</td>
<td>Break</td>
<td>Break</td>
</tr>
<tr>
<td>2:40 to 4 p.m.</td>
<td>Workshop #1</td>
<td>Workshop #2</td>
</tr>
<tr>
<td></td>
<td>EPA Has Changed the LOD Procedure... Have you?</td>
<td>Core Elements for Successful Safety Program</td>
</tr>
</tbody>
</table>

---

### Pre-Conference Workshops

**Tues., Oct. 17, 1 to 4 p.m.**

#### Registration Form

Name: ________________________________________
Address: ______________________________________
City: _________________________________________
State/Zip: ______________________________________
Phone: _______________________________________
Employer: _____________________________________
DNR#: ________________________________________
Workshop #: ___________________________________

Cost: $35 Pre-Registration

- $45 On-Site or after Sept. 22
- No refunds issued after Sept. 16, 2017
- Includes refreshments between workshops
  - CECs 3 hours Municipal Waterworks
  - 3 hours Wastewater
  - Full workshop attendance 1-4 PM

Register online with a credit card or make check payable to WWOA.

Mail registration card and check to
Karen Harter, WWOA Executive Secretary
PO Box 451
Baraboo WI  53913
### WWQA Technical Program Schedule

**Wednesday, October 18, 2017**  CECs: 5.0 General Septage, 5.0 Wastewater, 3.0 Municipal Waterworks

**Welcome Address** – WWQA President Sharon Thieszen 8:30 a.m. In the Champions Ballroom

**Keynote Speaker** - LeRoy Butler, Green Bay Packers

#### Exhibits 10:00 am - 5:00 pm

<table>
<thead>
<tr>
<th>TIME</th>
<th>Session A: Activated Sludge</th>
<th>Session B: Lagoons</th>
<th>Session C: SCADA/Computers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Moderator: Bernie</td>
<td>Moderator: Jeff Bratz</td>
<td>Moderator: Lyle Lutz</td>
</tr>
<tr>
<td></td>
<td>Room: Clean Waters</td>
<td>Room: Lakes &amp;</td>
<td>Room: Biosolids</td>
</tr>
<tr>
<td>10:45 - 11:20 am</td>
<td>Ryan Hennessy</td>
<td>Scott Schramm</td>
<td>Derek Milz</td>
</tr>
<tr>
<td></td>
<td>Septicity/VFA’s: “Double Edge Sword”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:25 - 12:00 pm</td>
<td>Kevin Hopkins</td>
<td>Jerry Deriott</td>
<td>Steve Muller and</td>
</tr>
<tr>
<td></td>
<td>Troubleshooting a Municipal WWTP leads to improved Industrial Pre-Treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy savings due to WWTP upgrade for lagoons.</td>
<td>“The Times They Are A Changing”</td>
</tr>
</tbody>
</table>

**Walk Around Lunch** 12:00 pm - 1:30 pm  Conference Center

**Operators Competition** 12:30 pm - 4:30 pm  Exhibit Hall—CECs 6.0 Wastewater

<table>
<thead>
<tr>
<th>TIME</th>
<th>Session D: Collection Systems</th>
<th>Session E: Phosphorus Compliance</th>
<th>Session F: Biosolids</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Moderator: Nate Tillis</td>
<td>Moderator: Jeff Smudde</td>
<td>Moderator: Ryan Mulcahy</td>
</tr>
<tr>
<td></td>
<td>Room: Clean Waters</td>
<td>Room: Lakes &amp;</td>
<td>Room: Biosolids</td>
</tr>
<tr>
<td>1:30 - 2:00 pm</td>
<td>Troy S. Nail</td>
<td>Tim Neffing, &amp;</td>
<td>Scott Davis</td>
</tr>
<tr>
<td></td>
<td>Overview of Sanitary Sewer Management Programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:05 - 2:40 pm</td>
<td>Rick Allen</td>
<td>Jim Berges, Jeff Bratz, and</td>
<td>Jim Fredricks</td>
</tr>
<tr>
<td></td>
<td>The dreaded “flushables”. Are they really flushable?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Watershed based approach to Phosphorus compliance</td>
<td></td>
<td>Land Application of Sludge</td>
</tr>
</tbody>
</table>

**Break in Exhibit Area** 2:40 pm - 2:55 pm

<table>
<thead>
<tr>
<th>TIME</th>
<th>Randall Rager</th>
<th>Greg Gunderson</th>
<th>Rick Allen</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:55 - 3:25 pm</td>
<td>Comprehensive Manhole Assessment and Rehabilitation Program -</td>
<td>City of Brodhead’s P04 Trading Plan</td>
<td>Solids Reduction</td>
</tr>
<tr>
<td></td>
<td>Darin Scott</td>
<td>Jane Carlson/Travis</td>
<td>Rusty Schroedel</td>
</tr>
<tr>
<td></td>
<td>Collection System Odor Control</td>
<td>Regulations, Watershed Issues</td>
<td>A solution to too much Biosolids</td>
</tr>
</tbody>
</table>

**Social Hour in Exhibit Hall** 4:00 pm - 5:00 pm
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>8:00 - 8:45 am</td>
<td>Moderator: Don Linntner, Room: Clean Waters</td>
<td>Moderator: Rick Mealy, Room: Lakes &amp; Streams</td>
<td>Moderator: Kelly Zimmer, Room: Biosolids</td>
</tr>
<tr>
<td></td>
<td>Leah Miller</td>
<td>Steven Greg</td>
<td>Rusty Schroeder</td>
</tr>
<tr>
<td></td>
<td>BPR and Chemical coagulation in an Industrial Activated Sludge WWTP (Cheese) Plant</td>
<td>Lab Certification Changes to NR 149</td>
<td>Is it really cost effective to use my digester gas?</td>
</tr>
<tr>
<td>8:50 - 9:35 am</td>
<td>Brent Muldolland</td>
<td>Joseph Cantwell</td>
<td>Sid AzRIA</td>
</tr>
<tr>
<td></td>
<td>Plant Operations/Performance Monitoring</td>
<td>Treatment facility Performance</td>
<td>Minimizing Mixing Energy in Activated Sludge Selector Basins</td>
</tr>
</tbody>
</table>

Break in exhibit hall 9:35 a.m. to 10:00 a.m.

<table>
<thead>
<tr>
<th>TIME</th>
<th>Session J: Nutrient Removal</th>
<th>Session K: Computer Application</th>
<th>Session L: Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 - 10:50 am</td>
<td>Moderator: Kevin Freber, Room: Clean Waters</td>
<td>Moderator: Troy Larson, Room: Lakes &amp; Streams</td>
<td>Moderator: Jim Johnson, Room: Biosolids</td>
</tr>
<tr>
<td></td>
<td>Richard Mealy</td>
<td>Troy Larson</td>
<td>Scott Schramm</td>
</tr>
<tr>
<td></td>
<td>Trace metal Considerations when Phosphorus Chemicals are used.</td>
<td>Practical uses for Excel at POTW's</td>
<td>Public Construction</td>
</tr>
<tr>
<td>10:55 - 11:45 am</td>
<td>Mark Barden</td>
<td>Greg Paul</td>
<td>Mark Barden; Tim Kimming</td>
</tr>
<tr>
<td></td>
<td>Richard Mealy</td>
<td>Mark Barden</td>
<td>City of Rhinelander</td>
</tr>
<tr>
<td></td>
<td>Phosphorus: Crossover Chemical for water Supply Impacts Wastewater</td>
<td>Excel and Word; Making record keeping easier</td>
<td>Downtown Reconstruction</td>
</tr>
</tbody>
</table>

Operators' Luncheon 12:00pm Champions Ballroom Business Meeting 12:30 pm Champions Ballroom

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1:30 - 2:15 pm</td>
<td>Moderator: John Bond, Room: Clean Waters</td>
<td>Moderator: Jeremy Cramer, Room: Lakes &amp; Streams</td>
<td>Moderator: Sharon</td>
</tr>
<tr>
<td></td>
<td>Harry Mathes</td>
<td>Phillip Koith</td>
<td>Douglas J. Nelson</td>
</tr>
<tr>
<td></td>
<td>25 years of Biological Nutrient Removal &amp; Clean Water</td>
<td>Return Activated Sludge-Why it Matters-How to Optimize</td>
<td>Are the Operators helping the Students or Vice Versa?</td>
</tr>
<tr>
<td>2:20 - 3:05 pm</td>
<td>Garrett Patto</td>
<td>Chris Leelbye</td>
<td>Sharon Thieszen/Tom Steinboich/Troy Larson</td>
</tr>
<tr>
<td></td>
<td>Nutrient Removal/Recovery</td>
<td>Utilizing Excess Facility Capacity</td>
<td>Tricks of the Trade</td>
</tr>
<tr>
<td>3:15 - 4:00 pm</td>
<td>Bruce Bartel &amp; Jake Reckten &amp; Nathan Casady</td>
<td>Pat Morrow</td>
<td>Sharon Thieszen/Tom Steinboich/Troy Larson</td>
</tr>
<tr>
<td></td>
<td>Optimization in Practice: Case Studies from New water's Phosphorus and TSS Optimization Plans</td>
<td>How Drones Streamline and Enhance Wastewater Planning and Design</td>
<td>Tricks of the Trade</td>
</tr>
</tbody>
</table>
Meet LeRoy Butler, our Conference Keynote speaker on Wednesday morning, October 18th. Mr. Butler, a former NFL strong safety played his entire career as a member of our beloved Green Bay Packers.

A Super Bowl winner (1996), five time All-Pro and four time Pro Bowler, he was named to the 1990s NFL All Decade Team by the Pro Football Hall of Fame, and was later inducted into the Green Bay Packers Hall of Fame in 2007. In 1993, LeRoy scored a touchdown at Lambeau Field and leaped into the arms of fans in the first row of the endzone seats—a tradition that continues today at Lambeau Field.

Mr. Butler will be speaking to the WWOA Conference attendees on Wednesday, October 18 starting at 8:45 am. He will stay after the Keynote for a while to sell and sign merchandise at a reduced rate from his on-line store. (No FREE autographs will be available).

Current Year Name Badge required for admission to the Keynote Speaker and all conference functions.
Thank you for joining us at the 51st Annual WWOA Conference
Oct. 17-20 Middleton, WI

President                 Sharon Thieszen     Director (2017)    Jeff Smudde
President Elect          Jeff Bratz             Director (2018)    Don Lintner
Vice President           Jeff “Juice” Simpson   Director (2017)    Jim Johnson
Past President            Lyle Lutz              Director (2017)    Jeremy Cramer
Executive Secretary       Karen Harter           Director (2018)    Rick Mealy

Technical Committee
Chair                      Jeff Simpson

Committee Members: Lyle Lutz, Sharon Thieszen,
                   Jeff Smudde, Bernie Roberston, Jeff Bratz,
                   Karen Harter, Kevin Freber, John Bond,
                   Mark Zimmerman, Don Lintner, Troy Larson,
                   Rick Mealy, Rusty Schroedel, Nate Tillis,
                   Tom Fitzwilliams, Jeremy Cramer, Jim Johnson

Exhibit & Manufacturers/Consultants Committee
Chair                      Tom Mulcahy
Co-Chair: Carol Strackbein

Committee Members:
Kevin Freber,
Dave Dodge,
Karen Harter

Mark Your Calendars for 2018! WWOA 52nd Annual Conference!
Grand Geneva Resort, Lake Geneva, WI     October 16 to 19, 2018
Hotel reservation info on WWOA website under Annual Conference

Memories from 2016
WWOA 51st Annual Conference Registration
October 17-20, 2017 – Middleton, WI

Registration Form (fill out one registration form for each person attending) Please print clearly.

Name (Last, First, M.I.) ___________________________ Email Address: ___________________________

Employer/Firm Name (if Manufacturer or Consultant): ___________________________

Mailing Address: ________________________________________________________________

Phone: ___________________________ Position/Title: ___________________________ WDNR Certification #: ___________________________

Regional Affiliation: SE NW SO LM NC WC Member Number: ___________________________

Member Affiliation: Municipal Consultant Industrial Operator Manufacturer/Sales Educator Septage Operator DNR/EPA Student

Pre-Registration (On or Before September 22, 2017)

<table>
<thead>
<tr>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWOA Member - Full Conference</td>
<td>$100.00</td>
</tr>
<tr>
<td>WWOA Member - Wednesday Only (includes Walk Around Lunch)</td>
<td>$80.00</td>
</tr>
<tr>
<td>WWOA Member - Thursday Only</td>
<td>$60.00</td>
</tr>
<tr>
<td>Non-Member - Full Conference</td>
<td>$155.00</td>
</tr>
<tr>
<td>Non-Member - Wednesday Only (includes Walk Around Lunch)</td>
<td>$120.00</td>
</tr>
<tr>
<td>Non-Member - Thursday Only</td>
<td>$100.00</td>
</tr>
<tr>
<td>Non-Member plus WWOA Membership (see form following page) (Pre-Registration only)</td>
<td>$150.00</td>
</tr>
<tr>
<td>Retiree - Full Conference (Must be at least 60 years old &amp; retired from wastewater industry)</td>
<td>$55.00</td>
</tr>
<tr>
<td>Student - Full Conference (Must send copy of valid student ID)</td>
<td>$55.00</td>
</tr>
<tr>
<td>Student - Wednesday Only (Must send copy of valid student ID) (includes Walk Around Lunch)</td>
<td>$35.00</td>
</tr>
<tr>
<td>Student - Thursday Only (Must send copy of valid student ID)</td>
<td>$25.00</td>
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On-Site Registration (After September 22, 2017)

<table>
<thead>
<tr>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>WWOA Member - Full Conference</td>
<td>$160.00</td>
</tr>
<tr>
<td>WWOA Member - Wednesday Only (includes Walk Around Lunch)</td>
<td>$140.00</td>
</tr>
<tr>
<td>WWOA Member - Thursday Only</td>
<td>$120.00</td>
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<tr>
<td>Non-Member - Full Conference</td>
<td>$215.00</td>
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<tr>
<td>Non-Member - Wednesday Only (includes Walk Around Lunch)</td>
<td>$180.00</td>
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<tr>
<td>Non-Member - Thursday Only</td>
<td>$160.00</td>
</tr>
<tr>
<td>Retiree - Full Conference (Must be at least 60 years old &amp; retired from wastewater industry)</td>
<td>$70.00</td>
</tr>
<tr>
<td>Student - Full Conference (Must provide copy of valid student ID)</td>
<td>$70.00</td>
</tr>
<tr>
<td>Student - Wednesday Only (Must provide copy of valid student ID-includes Walk Around Lunch)</td>
<td>$50.00</td>
</tr>
<tr>
<td>Student - Thursday Only (Must provide copy of valid student ID)</td>
<td>$40.00</td>
</tr>
</tbody>
</table>

SUB-TOTAL

REGISTRATION FORM CONTINUED ON NEXT PAGE

NO REFUNDS WILL BE ISSUED AFTER SEPTEMBER 16, 2017
REGISTRATION FORM CONTINUED

Additional Functions

<table>
<thead>
<tr>
<th>Event</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle Outing <em>(Please include separate registration form)</em></td>
<td>$30.00</td>
</tr>
<tr>
<td>Golf Outing <em>(Please include separate registration form)</em></td>
<td>$60.00</td>
</tr>
<tr>
<td>Sporting Clays <em>(Please include separate registration form)</em></td>
<td>$50.00</td>
</tr>
<tr>
<td>Pre-Conference Workshop <em>(Please include separate registration form, enter fee here)</em></td>
<td>$35.00</td>
</tr>
<tr>
<td>Meet &amp; Greet - Tuesday <em>(Please check if planning to attend) NO CHARGE</em></td>
<td>No Charge</td>
</tr>
<tr>
<td>Operators Business Lunch <em>(Grilled Chicken w/garlic whipped potatoes and seasonal vegetable)</em></td>
<td>$20.00</td>
</tr>
<tr>
<td>Social Hour -Thursday <em>(Courtesy of Manufacturers &amp; Consultants) (free to all paid attendees)</em></td>
<td>No Charge</td>
</tr>
<tr>
<td>Awards Banquet <em>Circle Meal Choice: Braised Short Ribs - Roasted Free Range Chicken Breast - Seared Salmon</em></td>
<td>$40.00</td>
</tr>
<tr>
<td><em>Vegetarian Option available upon request. Contact Karen Harter</em></td>
<td></td>
</tr>
<tr>
<td>Farewell Breakfast <em>(Included in registration; Please note no. of tickets needed) NO CHARGE</em></td>
<td># attending</td>
</tr>
</tbody>
</table>

WWOA Dues – Two Years Renewal *(If Applicable)*

<table>
<thead>
<tr>
<th>Membership Type</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>$50 regular Membership</td>
<td>$40 Lifetime Members (25 Year Members)</td>
</tr>
</tbody>
</table>

Total

<table>
<thead>
<tr>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL ENCLOSED</td>
</tr>
</tbody>
</table>

NO REFUNDS WILL BE ISSUED AFTER SEPTEMBER 16, 2017

Manufactures & Consultants Registration and Payment Information on next page

New Membership Option (Registration/Membership Package)

This package is available to non-members only and is available through pre-registration only.

Package includes: Conference registration and a two-year membership in WWOA for $150.00. You must fill out the Membership Application section AND the Conference Registration section. Take advantage of this opportunity to add a WWOA Membership – save $5.00 when compared to non-membership registration and save on registration for next year.

New Membership Application Form

Name (Last, First, M.I.): ____________________________

Email Address: ____________________________

Employer: ____________________________ Company Name: ____________________________

Mailing Address: ____________________________

Phone: ____________________________ Position/Title: ____________________________ DNR Certification # ____________________________

Regional Affiliation: SE NW Southern LM NC WC

Member Affiliation: Educator Septage Operator DNR/EPA Student

This applicant is recommended by:

Member Name: ____________________________

City: ____________________________ State: ____________________________

Send Membership Application along with Conference Registration
Manufacturers & Consultants Registration

Sponsorship Fee (In Addition to Conference Registration)

All manufacturing, Consultant Firms, Sales Firms, Exhibitors, and Contract Operation Firms NOT exhibiting at the Annual Conference must pay the Sponsorship Fee (one fee per firm).

Exhibit Fee (Sponsorship Fee Included)

On or Before July 31, 2017 – 8’ x 10’
(One conference registration fee included)
$435.00

Starting August 1, 2017 – 8’ x 10’
(One conference registration fee included)
$635.00

(Add M & C Registration costs to total on page 13)
NO REFUNDS WILL BE ISSUED AFTER SEPTEMBER 16, 2017 (add payment total to page 13)

Booth Description
8’ X 10’ space, piped and draped, one 8’ skirted table and two chairs, identification sign, and one 120v AC 500 Watt outlet. Additional electrical connections or supplies may be ordered from the Exhibiting Set-Up Company. All exhibitors will receive a separate set-up packet from the Marriott Convention Center.

Insurance
It is agreed that in no case will WWOA or its officers or directors be responsible for any loss, theft, damage by fire or water, or injury to any person or article as a direct result of their participation in the show.

Liability
Each booth operator assumes responsibility for the space leased during the conference and will keep it free from hazards to persons on the premises. WWOA will not be responsible for any injury that may occur to booth operators, their associates or employees.

Exhibiting Schedule

Exhibit Set-Up
Tuesday, Oct. 17 - 8:00 AM to 6:00 PM
Wednesday, Oct. 18 - 6:00 AM to 8:30 AM
All exhibits must be set up by 9:00 AM on Wednesday

Show Hours
Wednesday, Oct. 18 - 10:00 AM to 5:00 PM
Thursday, Oct. 19 - 8:00 AM to 11:45 AM

Exhibit Teardown
Thursday, Oct. 19 - Not before 11:45 AM
All exhibits must be removed from the exhibit hall by 2:00 PM Thursday

Enter credit card information in box at top of registration form.
Make checks payable to: WWOA
On-line registration available at www.wwoa.org

Mail registration form(s) and fees to:
Karen Harter
WWOA Executive Secretary
PO Box 451
Baraboo, WI 53913-0451
WNDR Continuing Educational Credits (CEC) Procedures – WWOA Conference

As everyone should be aware of by now, the WDNR implemented a new electronic CEC tracking system. In order for those WWOA Conference attendees to receive their required CECs the following program will be in place for this year’s conference. It is imperative that everyone that has a DNR Operators Certification Number included on their registration (no matter how they register – either on-line or by mail in registration form). If you do NOT know your number, you can find it by going to the DNR website and look it up: http://dnr.wi.gov/elp/public/optcertlookup.aspx?pg=opcert. You can find your number and training history here. All of the Certified Operators in attendance will have a special barcode, based on their DNR Operator number, added to their badge for scanning purposes. They will be the only attendees with Barcodes.

In order to receive CECs for the Conference, everyone with a BARCODE on their badge will have to scan in and out on Wednesday, Thursday, and Friday. All barcode scanning will be done at the WWOA Conference Registration Office. We will have special lines set up for scanning purposes. Everyone going on the plant tour will have to return to the Marriott Conference Center and scan out in order to receive the CECs for that day and for the tour. If you plan on attending the Farwell Breakfast Speaker on Friday, registration will be in the Marriott Conference Center Registration office. The Friday Keynote breakfast will be in the Aliquot Room in the Marriott Conference Center as well.

NOTE: We will only scan one badge per person. You must bring your own badge to the Registration office for scanning. We will NOT scan multiple badges presented by one person.

The WWOA Registration Office will be open the following hours during the convention:

<table>
<thead>
<tr>
<th>Date</th>
<th>Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, October 17, 2017</td>
<td>2:00 pm to 4:00 pm (pick up registration packets only) Marriott Conference Center. Pre-Conference Registration will be at the Registration office in the Marriott Conference Center.</td>
</tr>
<tr>
<td>Wednesday, October 18, 2017</td>
<td>7:00 am to 5:00 pm Registration and Pick Up Registration Packets Scan In and Out for CEC Hours</td>
</tr>
<tr>
<td>Thursday, October 19, 2017</td>
<td>7:00 am to 4:30 pm Registration and Pick up Registration Packets Scan In and Out for CEC Hours</td>
</tr>
<tr>
<td>Friday, October 20, 2017</td>
<td>7:00 am to Noon/Registration office (scan in and scan out) Marriott Conference Center Registration Office Scan In and Out for CEC Hours</td>
</tr>
</tbody>
</table>

DO NOT FORGET TO SCAN OUT AFTER THE TOUR

Everyone that signed up for the Pre-Conference Seminars, check in and check out will be handled at the Registration office in the Marriott Conference Center. On-site Registration for the Pre-Conference Seminars will be at the Conference Registration office in the Marriott Conference Center.

Every participant will receive CEC’s based upon their scan in and out times. If you scan out early, you will only receive CECs for the time that you are in attendance at the WWOA Conference. There will be signs placed throughout the facilities reminding everyone to scan in and out. Ultimately, this will be the responsibility of each attendee to do so.

Everyone that requires Professional Development Hours (PDH’s), please check in at the Registration Office.
CONFERENCE FACILITY LAYOUT/ROOM LOCATIONS
<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Phone</th>
<th>Email &amp; Website</th>
<th>Rate/One Bed</th>
<th>Two Double Beds</th>
<th>Release Date</th>
<th>Group Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baymont Inn &amp; Suites</td>
<td>8102 Excelsior Drive</td>
<td>608.831.7711</td>
<td>CALL HOTEL DIRECTLY TO RESERVE ROOMS</td>
<td>King $119.00</td>
<td>Double $119.00</td>
<td>9/17/2017</td>
<td>WWOA</td>
</tr>
<tr>
<td>Comfort Suites</td>
<td>1265 John Q Hammons Drive</td>
<td>608.839.3033</td>
<td>CALL HOTEL DIRECTLY TO RESERVE ROOMS</td>
<td>King $119.00</td>
<td>King Suite $139.00</td>
<td>9/17/2017</td>
<td>WWOA</td>
</tr>
<tr>
<td>Country Inn &amp; Suites</td>
<td>2212 Deming Way</td>
<td>608.831.8970</td>
<td>CALL HOTEL DIRECTLY TO RESERVE ROOMS</td>
<td>2 Queen Beds $109.00</td>
<td>Double $119.00</td>
<td>9/17/2017</td>
<td>Wisconsin Wastewater Operators Assoc.</td>
</tr>
<tr>
<td>Courtyard by Marriott</td>
<td>2286 Deming Way</td>
<td>608.203.0100</td>
<td>CALL HOTEL DIRECTLY TO RESERVE ROOMS</td>
<td>King whirlo pullout $154.00</td>
<td></td>
<td>9/20/17</td>
<td>Wisconsin Wastewater Operators Assoc.</td>
</tr>
<tr>
<td>Fairfield Inn &amp; Suites by Marriott</td>
<td>821 Green Bay Blvd</td>
<td>608.831.1400</td>
<td>CALL HOTEL DIRECTLY TO RESERVE ROOMS</td>
<td>Standard Room $164.00</td>
<td></td>
<td>9/20/17</td>
<td>Wisconsin Wastewater Operators Assoc.</td>
</tr>
<tr>
<td>Hampton Inn &amp; Suites by Hilton</td>
<td>415 Commerce Drive</td>
<td>608.271.0200</td>
<td>CALL HOTEL DIRECTLY TO RESERVE ROOMS</td>
<td>Double Queen $169.00</td>
<td></td>
<td>9/20/17</td>
<td>Wisconsin Wastewater Operators Assoc.</td>
</tr>
<tr>
<td>Holiday Inn &amp; Suites</td>
<td>1108 Fourte Drive</td>
<td>608.826.8500</td>
<td>BOOK YOUR RESERVATION</td>
<td>$119</td>
<td></td>
<td>9/19/2017</td>
<td>WWOA</td>
</tr>
<tr>
<td>Homewood Suites by Hilton</td>
<td>678 Commerce Drive</td>
<td>608.271.0800</td>
<td>CALL HOTEL DIRECTLY TO RESERVE ROOMS</td>
<td>Studio Suite $179.00</td>
<td></td>
<td>9/20/17</td>
<td>Wisconsin Wastewater Operators Assoc.</td>
</tr>
<tr>
<td>Marriott Madison West/Middleton</td>
<td>1315 John Q Hammons Dr</td>
<td>608.831.2000</td>
<td>Book your group rate for Wisconsin Wastewater Operators Association</td>
<td>Single $126.00</td>
<td>Double $128.00</td>
<td>9/19/2017</td>
<td>Wisconsin Wastewater Operators Assoc.</td>
</tr>
<tr>
<td>Redisson Hotel</td>
<td>517 Grand Canyon Drive</td>
<td>608.833.0100</td>
<td>CALL HOTEL DIRECTLY TO RESERVE ROOMS</td>
<td>King $129.00</td>
<td></td>
<td>9/17/2017</td>
<td>WWOA Annual Conf.</td>
</tr>
<tr>
<td>Residence Inn &amp; Marriott</td>
<td>8400 Market Street</td>
<td>608.862.1100</td>
<td>CALL HOTEL DIRECTLY TO RESERVE ROOMS</td>
<td>Studio Suite $179</td>
<td></td>
<td>9/17/2017</td>
<td>Wisconsin Wastewater Operators Assoc.</td>
</tr>
</tbody>
</table>

Please contact each hotel directly to make your reservations.

Marriott Madison West/Middleton = Host Hotel
**WWOA Convention Housing Information, October 16—20, 2017**

Visit the WWOA website for a listing of all of the hotels, their rates, contact information, etc.  
**PLEASE CONTACT EACH HOTEL DIRECTLY TO MAKE YOUR RESERVATIONS.**

The Marriott Hotel Shuttle will run to all of the Middleton Hotels listed below

Courtyard by Marriott/Fairfield Inn & Suites/Residence Inn

**HOTELS WITH SHUTTLE BUS RUNS**

- **SHUTTLE BUS SCHEDULES** are for Tuesday, Wednesday and Thursday, October 17, 18, and 19, 2017
- Locations included on shuttle bus listed below.
- Tuesday, October 17, there will be one Shuttle bus running to all of the Madison hotels from 5:00 pm to 10:00 pm (last pickup of the day).
- Wednesday, October 18, there will be a Shuttle bus running from 6:00 am to 10:00 am (last pick up at the Radisson Hotel) to the Marriott. The afternoon bus starts with pick up at the Marriott at 2:00 pm with the last pick up at the Marriott at 6:00 pm with last drop off at the Radisson for each run.  
  Bus will run in reserve order returning everyone back to the Madison hotels on the schedule.
- Thursday, October 19, there will be a Shuttle buses running from 6:00 am to 10:00 am to the Madison hotels. The afternoon bus starts with pick up at the Marriott at 2:00 pm with the last pick up at the Marriott at 6:00 pm with last drop off at the Radisson for each run.  
  Starting at 5:00 pm to 12:00 am, there will be one Shuttle bus running to all of the Madison hotels. Pick up will start at the Marriott and run in reverse order, with last stop on the bus route being the Radisson Hotel.
- There will be a special bus for the Plant Tour. Bus departs at 1:15 pm and returns from plant tour at 3:45 pm
- Buses will pick up and drop off at the Marriott Conference Center entrance.
- Departure times are subject to change based on travel demands. Full buses will go directly to the Marriott Conference Center. Approximate times between bus stops 10 minutes. **NOTE:** Bus will leave the Radisson on the hour from 6:00 am to 10:00 am.

- Contact Karen Harter with any questions or concerns prior to the conference during business hours at 608.355.3081  
  During the Conference, contact Karen Harter on her cell phone at 608.477.2530
- All bus schedules are listed on the website, there will be a copy in all attendee packets and at the registration Office.
- **NOTE:** There is ample free parking at the Marriott Hotel and Conference Center if you wish to drive to it.

**Hotels on the Bus Route**

- Radisson Hotel, 517 Grand Canyon Drive, Madison  
- Homewood Suites by Hilton, 479 Commerce Drive, Madison  
- Hampton Inn & Suites, 483 Commerce Drive, Madison  
- Baymont Inn & Suites, 8102 Excelsior Drive, Madison  
- Holiday Inn & Suites, 1109 Fourier Drive, Madison  
- Comfort Suites, 1253 John Q Hammons, Madison
We are committed to providing world-class process equipment and control system integration in an efficient and innovative way. All backed by an unmatched dedication to service.
B&M Technical Services welcomes Jesse Claflin

B&M Technical Services is excited to welcome Jesse Claflin to its sales team as an Outside Sales Representative! Jesse brings 21 years of water and wastewater experience to the team, and is a familiar face to many operators across Wisconsin. His expertise is highly regarded by those who have worked with him for many years.

Jesse started his water/wastewater career with the City of Durand in 1996. There he worked as a summer helper while he attended Vermilion Community College in Ely, Minnesota. After completing the Water Pollution Control program, Jesse worked in the Village of Boyceville to run their water and wastewater departments.

In 2000 Jesse moved to the Wisconsin Rural Water Association as a wastewater technician, where he spent the next 17 years helping systems all over the state with many different types of problems. Jesse assisted with everything from day to day operations, plant upsets, disaster relief, troubleshooting and about everything in between. Jesse now looks forward to the new challenges that lie ahead in his new position with B&M technical Service.

B&M Technical Services has been in business for nearly thirteen years. During that time, they have remained committed to providing high quality service at affordable prices. As full service process control system integrators, they serve water and wastewater treatment plants across Wisconsin.

For more information about B&M Technical Services, visit www.bmtechservice.com or call Jesse at 715-459-7003.

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Alarm Systems
Calibrations
Chemical Feed Systems
Controls
Cross Connections
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Lift Stations
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Pumps/Rotary Equipment
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SCADA/Telemetry Panels

B&M Technical Service, Inc.
715.228.7604  bmtechservice.com
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Reduce your energy costs and save time. Call (800) 362-7266.
Northwest District July Meeting Hosted by Medford

The Simek Recreation Center in Medford was the site of the July 28, 2017 meeting of the Northwest District. Larry Reinke, District Chair, opened the meeting and Mike Wellner, Mayor, City of Medford, welcomed the group. The business meeting agenda included presentation of Appreciation Award to Dave Wierzba of MSA Professional Services for serving in a leadership position for the Northwest District.

Larry addressed the group and asked for any new business but seeing none moved to the next item on the agenda. The Treasurers Report was presented by Mike Romsos. A motion was made by Mike Magee to approve the treasurer’s report and seconded by Tim Pernsteiner. The motion passed on a voice vote. Mike Romsos also presented the Secretary’s Report on behalf of Susan Wojtkiewicz. A motion made by Larry Reinke to approve Secretary’s Report was seconded by Mike Magee and passed on a voice vote.

Sharon Thieszen, President of WWOA talked about the upcoming state conference in Middleton, operator’s competition, regional, state awards and other WWOA information.

With no further business Larry Reinke made a motion to adjourn meeting. A second to that motion was made by John Stack and motion passed on a voice vote.

The meeting included many presentations and a tour of Meyer Manufacturing.

Terry Robinson of Clearas presented “Advanced Biological Nutrient Removal: Recovering Revenue from Industrial Wastewater”. Waste Stream Recovery was the topic presented by Kyle Hanson of Freemont Industries.


The day concluded with a tour of Meyer Manufacturing, hosted by Troy Meyer.
presentations with the group. He thanked the vendors for their support, Whiting for hosting the meeting, and Mid-State Technical College for providing the venue.

3. Andy presented Ken Bloom’s Treasurer’s Report showing an escrow account balance of $679.01 and a checking account balance of $3,915.98, as of 6/22/17.

4. Andy reminded the group of the following upcoming meetings: Marshfield Northwoods Collection System Seminar on 7/27/17, NCL Microscope/Microbiology Class on 8/7-8/17, and the WWOA Annual Conference in Madison the week of 10/17/17. The location and date of our fall regional meeting is being worked on.

5. Andy introduced WWOA Executive Secretary Karen Harter and WWOA Vice President Jeff Simpson who each spoke on various state level issues including membership, scholarships, awards, and the annual conference.

6. Andy called for any new business. Hearing none he closed the business meeting at 1:15 PM.

Next up, Dan Origer from Primex gave a presentation on Control Panel Components and Component Function. He touched on a number of safety related issues, including arc flash, intrinsically safe relays, and low voltage concerns. He review the review the basic components of a lift station control panel including level sensors, relays, starters and breakers. He spent some time reviewing the different applications and limitations of VFDs, especially as they relate to pump plugging concerns.

At 2PM attendees were invited to take a tour of the Whiting Wastewater Treatment Plant. Despite the rain most of those attending made the drive over and were walked through the facility by Director of Public Works and Utilities Nicholas Schmeiser. Nick highlighted the changes made in 2009 which turned an old manual conventional activated sludge plant into an automated extended aeration system. At a cost of $6.5 Million, the upgrades also included remote operation and monitoring of the Village’s lift stations, water treatment plant, wells, and water tower.

Submitted by Chris Helgestad, NCR Secretary.
Kelly Lake hosts May Lake Michigan meeting

The May 18th Lake Michigan District meeting in Kelly Lake was another successful meeting with approximately 80 operators and septage haulers, along with many equipment and process vendors. A special thanks to Dorner for sponsoring the treats during the breaks.

The first presentation of the day was by Jeremy Klingbeil of NEW Water who spoke on Safety Improvements to Existing Equipment and Safety Promotion Journey. Jeremy explained the story behind some pictures of utility repair work that were not safe. Jeremy next went into discussing the challenges and then the benefits of the upgrades to NEW Water’s EBS lift stations to improve operator safety. Following the EBS lift station safety upgrades, Jeremy discussed the use of cameras to watch operators performing maintenance on equipment is difficult to access and see operators in confined space areas. Jeremy ended the presentation by describing how the communication radios the NEW Water operators use are linked in with Brown County emergency dispatch to speed up and to also have the ability to call for help in the event of an emergency because places where operators enter have no cell service.

Next on the agenda was Mike Olson of Impact Polymer. Mike had a presentation titled Impact Polymer PolymerCrete. Mike began the presentation by describing what is polymer concrete. The first principal advantage of polymer concrete products that Mike discussed was increased physical properties, such as higher compressive, flexural, and tensile strengths with a corrosion resistant matrix throughout the wall cross section. The second is no need for secondary linings to connect to or coating to be applied for corrosion resistance, which is required for concrete. The third is that the polymer concrete products are manufactured with conventional concrete precast practices and procedures. Fourth, the

continued on page 48
Calling All Inventors

It’s time to TOOT Your Own Horn!

At this year’s WWOA Annual Conference we will feature an expanded Tricks of the Trade

So now is the time to showcase your invention, innovation, ideas, “tool of all tools,” management practice, etc.

Possible categories of Tricks of the Trade include Sampling/ Monitoring, Improved Accessibility, Process Control, Containment/Algae & Odor Control, Cleaning, Preventive Maintenance, Safety, Public Education & Watershed Awareness, Automation, Signage & Communication, Data Management, and Training & SOPs

Please submit your Tricks of the Trade topic to Tom Steinbach, tsteinbach@oconomowoc-wi.gov by Oct. 10.

If you don’t like the limelight that’s OK, we’ll help you with that or present your topic for you. Submit a few Power Point slides or photos separately and we’ll help you put it all together.

For more information or to discuss your topic you can also contact Tom at 262-569-2192. “Tricks of the Trade” session will be Thurs. afternoon, October 19, 2017.

Process Equipment Repair Services – Our name says it all.

Our team provides equipment repair and rebuild services to the water and wastewater treatment industry. With over 30 years of experience, our staff has installed, rebuilt and/or repaired the following equipment:

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- Conveyors
- Grit Removal Systems
- Clarifiers
- Aeration Equipment
- Trickling Filters
- Digesters
- Flocculators
- Sand Filters
- Screw Pumps
- Airlift Pumps
- Trash Rakes
- Traveling Water Screens
- Floatation Thickeners

We offer professional guaranteed service. We will provide a quotation including equipment requirements and a firm price for the project.

Our customized services allow you the option of having our trained staff work with your personnel or we will provide total turnkey service to complete your equipment installation, repair, or rebuild needs on a timely, competitively priced basis.

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PROUDLY MADE IN WISCONSIN
Ruekert & Mielke, Inc. opens new office in Oconto Falls

Ruekert & Mielke, Inc. (R/M) is proud to have seven former Kaempfer and Associates, Inc. employees as part of our staff.

Our new office in Oconto Falls includes the addition of Taryn Nall, Don Heikkila, Gene Deprey, Bill Bancroft, Janet Benak, and Cynthia Lefevre. Ryan Schultz works out of the R/M Waukesha office.

This new office provides R/M with a presence in the Fox Valley to provide planning, design, construction and operations support for collection system expansion and rehabilitation, wastewater treatment facility upgrades, water distribution and treatment, drafting, survey, construction review, and administrative assistance services.

Please contact Kevin Wagner P.E., Oconto Falls Office Manager, at (920) 876-6382 or kwagner@ruekert-mielke.com for more information.

continued from page 48

Probability of 95% Grit Removal and Other Grit System Improvements.

Larry discussed the recent advancements in grit removal technology. Larry explained how baffle placement has affected velocity of the flow to increase the grit removal capabilities. Larry handed out samples of grit and described the probability of removing the different sizes of grit. Larry ended his presentation by answering many questions from the operators.

The last presentation of the day was by Dick Sachs of the WDNR. Dick’s presentation was titled Multi-Discharge Variance (MDV). Dick started off by explaining what a multi-discharger variance (MDV) is. Dick stated that the MDV was approved in February of 2017 and that not everyone is eligible.

In addition, the MDV is not a statewide variance. Dick discussed that optimization and interim limits are required. However, the MDV is only effective until February 5, 2027. Dick then went on to discuss the benefits and downsides of the MDV. Dick provided a stepped process for obtaining a MDV. The presentation was wrapped up with Dick answering questions.

Jeff Falsh, plant operator for the Kelly Lake Sanitary District, gave an introduction of the WWTP location and collection system, flows, loadings, treatment process, effluent discharge to seepage cells, and future challenges. A plant tour followed the plant introduction.

The next meeting will be in New Holstein on Aug. 17, 2017.

Special thanks to the Kelly Lake Sanitary District for hosting this meeting.

Minutes submitted by Josh Steffeck, Lake Michigan District Secretary/Treasurer
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