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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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Winter is almost around the corner!! As I write this we are in a winter weather watch for up to 12" of snow. Now hopefully we have a nice easy change into spring and let all this snow soak into the ground (wouldn't want the farmers’ manure, spread on snow covered ground, to not wash away)

The first round of regional meetings is in the books. I didn’t make it to any of the meetings, so I will have a busy spring and summer getting to each region.

Please keep tracking the website events calendar for meetings in your area. Also something new, you can access your account on the WWOA website and there is now an area where you can select to get notices about regional meetings, membership renewal notice, new job posting notice, new equipment sale notice, and notices about changes on the website homepage. Our webmaster and web committee have been busy making the website better and better all the time!

The 2013 conference is coming up soon!! Local arrangements, technical, golf, sporting clays, operators’ competition, and exhibitors committees have been busy putting on the final touches to the conference. How is your region’s operators’ competition team coming along?? Remember we are hoping for one team from each region this year. It’s a great learning experience and you earn CEUs!

The technical committee met in February and selected two pre-con sessions and 38 technical sessions. The pre-conference workshops are: “After the Siege: Dealing with the Audit Aftermath” and “Automation & Emergency Power Solutions for Medium-Voltage Services to Critical Infrastructures & Understanding Arc-Flash Hazards”. The technical program is packed with everything you ever wanted to know: Phosphorus, collection systems, lagoons, watershed compliance, biogas, Nerd 101, and Poop-er-ee.

The annual meeting will cover the 2012 financials, the elections, and the proposed change to life membership. The draft is enclosed within this issue of the Clarifier. The golf outing will be at the Wisconsin River Golf Club in Stevens Point and the sporting clays event will be at J & H Game Farm in Shiocton.

I would like to thank the board of directors for putting forth the time and effort to create the job announcement and conducting the interviews for the new executive secretary. We are glad to announce that Karen Harter has been selected as our executive secretary. She started in February. Please make her feel welcome to the organization the next time you meet her.

My time is half over already and I would like to thank you members for your great support of this organization!!  

Wade D. Peterson, WWOA President

Wade Peterson, president

The Clarifier’s 200th volume

Welcome to the 200th volume of the Clarifier. It is a tribute to this special organization that the Clarifier has been around as long as it has. It seemed fitting to take a moment and celebrate this milestone. We hope you enjoy the wonderful article Dan Busch prepared on the history of the Clarifier along with some of the people who have contributed to its success.

Speaking on behalf of the current Clarifier staff, we thank all those that have gone before us. It is a privilege to support WWOA through this publication. The Clarifier is your publication and its success is directly attributed to the input and support provided by the membership. Please enjoy this issue.

Wade Peterson, WWOA President

Celebrating the Clarifier’s 200th volume

Welcome to the 200th volume of the Clarifier. It is a tribute to this special organization that the Clarifier has been around as long as it has. It seemed fitting to take a moment and celebrate this milestone. We hope you enjoy the wonderful article Dan Busch prepared on the history of the Clarifier along with some of the people who have contributed to its success.

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The April 2013 issue is number 200 and therefore is quite historic when you take into account the origin of the Clarifier. I will describe what I feel are some of the more predominate changes in the evolution of the Clarifier although it would take a lot more time and space to adequately address every change that has taken place since 1967. I struggled with how to get this information to flow in an article, what to cover first and how to proceed. As I stated earlier it would be quite the task to identify each and every change that has taken place over the last 46 years.

**Historical Perspective**

The Clarifier’s founding principle is simply “a newsletter by the members for the members.” It was meant to be informational and educational, a means to transfer experiences and information between the members of the then Wisconsin Wastewater Works Operator Conference Inc. Remember back then we didn’t have email, Internet and web sites. It still serves this purpose today and I’m proud to say is now a professional based magazine which has weathered the course of time and is still put together by members for members. Several other wastewater publications have become commercialized and are now put together by professional publishing agencies, but the Clarifier remains a true grass roots member based publication. It is probably still the most significant membership benefit the organization as to offer. I hope it remains that way well into the future, but it will only be possible with continued support and contributions from its members and that would be you!!

The first exercise to chronicle the evolution of the Clarifier appears in the Commemorative Silver Anniversary issue published in 1991. This issue is available on the WWOA web site under the archived Clarifier section. Pages 13 through 24 are filled with some very interesting information from the first Clarifier editors and members. I encourage everyone to view the 1991 documentary on the WWOA web site. Bill De Bauche was the primary editor of this

*continued on page 6*
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special publication and I can attest to the fact that it took a lot of effort and time to produce it.

Significance of Volume 200
Let us start with a little history on Volume 200. The Clarifier has been published on a five issue per year schedule so simple math would dictate that we should have reached Volume 200 after 40 years or sometime in 2007. In the very early years it was published on a bi-monthly basis, but because of time constraints and lack of contributing material this schedule was not always met. I did go back in the issues and discovered however that somewhere along the line the publication did get back on schedule and Volume 100 was printed in December of 1992. That would say that Volume 200 should have been published in December or 2012. So why wasn’t it?

Again some digging and research discovered that there were two duplicate issues in the last 20 years. This will be a good trivia question for the Annual Meeting so pay attention! The two duplicate issues are Volume 147 published in April and June of 2002 and Volume 152 published in June and September of 2003. It is interesting that they occurred within a year of each other and are five issues apart. What’s embarrassing is that it happened on my watch! So now you know the rest of the story and why Volume 200 occurred two issues later then it should have.

Editorial Staff
The solid foundation of the Clarifier lies in the Editors and editorial staff that have contributed countless hours as volunteers over the years to put together the information from the membership. In the early days it was a one man show, and with time evolved into a team effort as the publication grew and required more time and talent.

In 1980 Al Winter stepped aside and a team of editors under the direction of an ad hoc committee chaired by Al began the process of transforming the Clarifier from a newsletter to a magazine. This was a significant transitional period. I was able to find the following editorial by Al Winter on the front cover of the January 1980 issue. A copy of the editorial is on page 8.

A very important part of this evolution was the movement from a male dominated editorial staff to one which

continued on page 8
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continued from page 8

2007 – 2008  Dan Busch, Jean Van Sistine (GBMSD),
Jeff Haack (WDNR), Jon Butt (Symbiont)
2008 – 2010  Jon Butt (Symbiont), Jean Van Sistine
(GBMSD), Jeff Haack (WDNR)
2010 – 2013  Jon Butt (Symbiont), Kay Curtin (MPCA),
Doralee Piering (Energenecs)

Clarifier Content
The early Clarifiers were newsletter based, very informal
and pounded out by Al Winter "Old Dad" on a Saturday
afternoon using a manual typewriter. Somewhere in one of
the early issues Old Dad speaks of finding the typewriter at
a second hand shop and is excited to tell Ward Holz what
a good deal he got on it and how he saved the membership
some money. His only disappointment was that it did not
have “spell check”, good thing it didn’t, that would have
taken all the personality out of Old Dad’s writing!

Al’s writing was colorful and interesting, he told it like it
was; we’d never be able to publish some of the jokes he
printed back then. As I think about it, it would be a great
endeavor to scan and print the early newsletters; it sure
speaks a lot about where this organization got its roots from
and where we’ve grown to.

Speaking of growth I thought it would be interesting to
prepare the following graph to illustrate the slow but steady
growth from a newsletter to a magazine. The timeline starts
in 1980 when Old Dad turned over the reins to the Green
Bay folks. The graph is based on average number of pages
per the five issues in the year.

Speaking of 1980, in September was the first Presidents
message to appear in the Clarifier. It was penned by Pete
Albers from Kewaskum, WWOC President at the time. The
early President’s messages were on the front cover and in
May 1984 were moved to inside the front cover when plant

continued on page 12

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photos began to appear. June of 1986 saw the President’s message complete with picture from none other than Ron “Take Pride” Perkovich from Rice Lake.

Advertising
The addition of advertising was one of the many changes that came out of the 1980 Clarifi er ad hoc committee. The first issue in which ads appeared was February 1984. This 12 page issue contained two ads, L.W Allen, Madison and Tech Line Instruments, Fond du Lac. This issue also saw the inclusion of the first advertising contract.

The May 1984 issue saw three more advertisers join in; Davy Laboratories, La Crosse; Donohue Engineers and Architects, Sheboygan and Chem-Bio Corporation, Oak Creek. From there advertising volume grew as the Clarifi er expanded to today where there are as many ads as there are pages in each issue. The intent was for the advertising revenue to off-set the printing costs and this has been true to a large extent over the years.

Paste-up / Publishing Changes
The early Clarifi er was a true ‘cut and paste’ operation. The articles were typed up on a typewriter, first of course was Old Dad’s manual typewriter, later to be replaced by an electric typewriter in 1980. The text was set in 3.5 inch columns and cut apart and pasted onto a full sheet. These paste-up sheets which also included the space for ads (recall we didn’t have copiers either) were numbered, bundled together and sent to the printer where the printer typeset it for printing and publication. Somewhere in the mid 80’s saw the move from typewriter to computers for the typing.

Sometime in the mid 90’s is when articles and ads began to come in on floppy disks, diskettes and ultimately by CD. The June 1999 issue was the last “cut and paste” issue. In September of 1999 the first desktop publishing issue using Quark Express was submitted to Sun Printing by copying the entire issue from the computer hard drive to a CD and mailing a single CD to the printer. Jean Van Sistine from Green Bay was instrumental in getting this first issue together. Jean and I worked many long hours early on to learn the software and slow but sure we got to where we could began to capitalize on all the advantages of using software to set the Clarifi er up for printing on the computer and customize the articles and advertising. I can’t tell you how many times she came to me almost in tears because the program had locked up or lost everything she had prepared. But she never gave up and was always looking to improve the look and content to the point where in the end she was doing it all.

Ten years later, Quark Express was replaced by Adobe In Design in April 2009. Still more improvements and saved time. With Adobe In Design it was possible to send the entire issue via email to a share FTP web site at Sun Printing, where it was finalized and fine-tuned by them. Any changes could now be made right through the web site without having to send a hard copy proof back for review and approval. Doralee Piering, Energenecs, has been doing the desktop layout since 2010. In Design software is still in use and Doralee has done a very fine job of continuing to produce a first class magazine for the WWOA membership.

Featured Writers
As the Clarifi er grew so did the need for more professional articles. Jeff Haack, WDNR probably did the most in this area of all the people I associated with as an Editor. He was the behind the scenes guy who always made sure we had front page photos and plant stories. He was a great liaison between WWOA and the DNR and was always there encouraging DNR staff to communicate their changes and concerns through the Clarifi er. I believe Jeff was the

continued on page 14
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quiet advocate who gently introduced Jack Slates, WDNR to the eager and enthusiastic readers of the Clarifier. Jack’s technical, yet easy to understand articles have been a godsend for the WWOA membership.

Kay Curtin recently joined the Clarifier staff as a featured writer and contributor. I can remember meeting her for the first time when almost 20 years ago she asked if she could write some microbiology and laboratory based articles. Kay is another great writer and trainer who has helped the Clarifier grow and become what it is today.

Front Cover
The front cover has gone through numerous changes over the years. May of 1984 saw the first black and white front cover photo with the Appleton WWTP. The front covers have predominately been WWTPs since then with the exception of the following issues.

1991 December Ward Holz - WWOC Executive Secretary and WWOC Honorary Member
1993 June Dr. Koby Crabtree – First WWOC Honorary Member (1986) Memoriam
1998 June Al Winter (Old Dad) – Clarifier Editor, Memoriam
2004 June Vern Handrick – WWOA Director, Minocqua, Memoriam
2005 June Leo Templeton - WWOA Honorary Member
2006 June Pete Albers – WWOA Honorary Member
2008 December Dan Busch – WWOA Honorary Member
2009 December Front cover was a collage of Annual Meeting photos
2009 December Front cover was a collage of Annual Meeting photos

There have been several changes in the formatting of the front and back covers over the years. Originally I was going to detail each one, but then decided not to bore our readers to tears. Rather I will simply touch on the major changes.

In December 1994 (Volume 110) the front cover was changed to recognize the name change from the Wisconsin Wastewater Works Operator’s Conference (WWWOC) to the Wisconsin Wastewater Operators’ Association (WWOA). In 1999 there were four issues where the back cover was a full page color ad (USA Bluebook). With the exception of these four issues, the back cover always contained the Director’s directory. In April of 2001, the first color photo...
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- Self-monitoring functions in combination with AC 01.2 Diagnosis indication include torque curves and time-stamped operation log
(Dane-Iowa Wastewater Treatment Plant) was used on the front cover, prior to this only the Clarifier title and organization logo were in blue. February of 2009 saw the change to the current front cover and back cover format. A very modern look and a change from the predominantly white background to a blue border with full page photo color.

Printing and Publishing
I’d be amiss if I didn’t acknowledge our Printer, Sun Printing of Wausau. They have been our printer 30 of the last 32 years. Many of the improvements in putting the Clarifier together have been the result of Karla Kieffer and her excellent staff. Karla was the one who got us headed down the desktop publishing trail, she was there to help train Jean and I early in the switchover to Quark Express.

She is the one who proposed and provided the share FTP web site to speed the upload and editing of each issue. While all of the Editors, editorial staff and writers have been a big part of the Clarifier’s success and growth, I feel confident in saying we wouldn’t be where we are today without having Sun Printing as our partner along the way.

Closing
As Old Dad would say “It’s time to bring this one to a close” I hope you have enjoyed walking down memory lane in this Volume 200 issue.

For the “Old Guard” I hope it provided some fond memories and quiet smiles. For the newer members I hope there were some “Oh I never knew that” moments. As WWOA members you should be proud of how the organization has grown and changed with the times.

Remember what I said in the beginning; the Clarifier is “by the members for the membership.” Help Jon, Doralee and Kay out by taking time to write about what your plant has done, improvements you have made or problems you’ve solved. It may be old hat to you, but a time and life saver to someone else reading the Clarifier. Thank you for the opportunity to serve WWOA.

Author’s Note: I’d like to thank and recognize Jean Van Sistine for all her help over the years we worked together on the Clarifier and for all her help in gathering information for this article related to the publishing and printing of the Clarifier over the years.
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Stevens Point hosts winter North Central WWOA meeting

The winter meeting of the North Central Region WWOA was held at Sentry Sportsplate in Stevens Point, on Tuesday February 12, 2013. 69 people were in attendance.

Jeremy Cramer called the meeting to order at 8:30 am. He introduced Joel Lemke, Public Utilities Director for the City of Stevens Point. Joel welcomed attendees to Stevens Point. He highlighted various projects at the wastewater treatment facility and commended staff on their roles in the project.

WWOA director Jeff Simpson was introduced and shared a few comments on the organization and upcoming events. Jeremy introduced Leon Downing, Donohue and Assoc, who made the first presentation of the day. He discussed the importance of aeration energy reduction in the energy independence program. He discussed benchmarking and design factors in used to monitor energy use. He explained the use of modeling as a tool to plan aeration modifications. He discussed high efficiency blowers and diffuser transfer efficiency. He shared data from three aeration modification case studies.

Randy Wirtz, Strand Associates, made a presentation on Anaerobic Digestion Optimization and Energy Recovery. He started with background information that concluded the most anaerobic digesters have unused capacity. He went on to discuss several digester upgrades and co-digestion of non-traditional waste streams that can improve digestion efficiency and increase gas production.

Dr. Daniel Zitomer, Marquette University, discuss various aspects of co-digestion of non-traditional waste streams. He shared research on various waste streams the laboratory tested and how the streams fared when added to operating digestion systems.

Jan Scott, Unison Solutions, Inc, gave an overview of the damage that can be caused by contaminants in the gas and

continued on page 19
equipment to remove harmful contaminants. He also discussed the various end uses of processed gas, including heating, electrical generation, and vehicle fueling.

Lunch was served. The NRC business meeting was led by Chairman Terry Vanden Heuvel. Terry thanked Jeremy Cramer and the City of Stevens Point for hosting the meeting. He thanked all the speakers for their contributions. Terry introduced Andy Ott, Marshfield, the new steering committee member. Terry congratulated John Nicksic, Mauston, recipient of the 2012 Operator of the Year award.

Terry congratulated the operator competition team members, Jason Schill, Merrill, Chris Lefebvre, Stevens Point, and Dan Dvorak, Edgar, for winning the 2012 competition. Terry stated that the operator’s competition will be held at 2013 WWOA Annual Conference in Stevens Point. The North Central Region hopes to sponsor two teams for the competition. A few more team members are needed. Terry called for questions, changes, or corrections to the September 2012 Merrill Regional Meeting Minutes. There being none, the minutes were accepted as printed.

Terry called for questions, changes, or corrections, to the steering committee meeting minutes of December 4, 2012. There being none, the minute were accepted as printed. Ken Bloom presented the Treasurer’s report.

Terry listed upcoming meetings and Events:
Feb. 28th Government Affairs Seminar in Middleton, hosted by CSWEA-WI, WWOA, DNR
March 13th Spring Biosolids symposium in Stevens Point, hosted by CSWEA-WI, WWOA, DNR
April 2nd CSWEA 18th Annual Education Seminar in Madison
April 9th Pump/grit seminar in Merrill details shortly
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April 24th  NCR Meeting at NCL
May 14th-17th  CSWEA 86th Annual Meeting in Madison
June CSWEA-WI Pretreatment Seminar
June Classic Collection Systems seminar in Watertown, Hosted by CSWEA-WI, WWOA
July Northwoods Collection Systems seminar in Marshfield, Hosted by CSWEA-WI, WWOA
CSWEA CSXYPX '13 in Wisconsin Dells
Oct. 5-9 WEFTEC in Chicago, possible bus trip
Oct. 22-25 47th Annual Conference in Stevens Point
Rhinelander is scheduled to host the winter 2014 meeting.

Terry mentioned the possibility of sponsoring a bus to WEFTEC this fall. Interested persons should contact the steering committee. Terry mentioned the WWOA awards and encouraged people to nominate deserving individuals. Please check the website or contact Jim Bergles (assistantdirector@tds.net) if you would like to place an order for WWOA promotional items.

Terry explained the scholarship and tuition aid programs that members can use. Visit the WWOA website for application forms and more information on scholarships and tuition aid and submit information to Sharon Thieszen (Sharon.thieszen@sheboyganwwtop.com). The scholarship application deadline is August 1, 2013.

Terry stated a directory is available for changes/additions at the registration table. Please check and make any necessary corrections or contact a steering committee member for more info. Membership is encouraged to all non-members. Benefits include discounted rates to annual convention and training opportunities, student scholarships, tuition aides, the Clarifier magazine, the membership directory, and eligibility for WWOA awards.

If you are interested in having your community host a future meeting, please contact a steering committee member for details. The steering committee members available to provide you with as little or as much help as you need. It is a great way to showcase your community and your facilities. Terry mentioned that the Richard McKee resigned as the WWOA executive Secretary. The organization was in the process of appointing a new Executive Secretary. Watch the website for more information. Terry opened the floor for new business. There was no new business. The business meeting was adjourned at 1:17 pm.

continued from page 19

continued on page 22
Our pumps do a lot of heavy lifting. They have to. The demands for environmentally friendly solutions to water and wastewater management are getting heavier.

For more than sixty years, L.W. Allen pumps and Altronex control systems have been providing municipalities with wastewater treatment pumps and pump systems. Today, the greatest opportunity for cost savings is the efficient operation of your facilities. Our SCADA telemetry expertise lets you monitor potentially dangerous fluctuations, which lead to equipment and system failures and inefficiencies.

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Our pumps do a lot of heavy lifting. They have to. The demands for environmentally friendly solutions to water and wastewater management are getting heavier.

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CALL L W ALLEN
Eric Donaldson, DNR Area Engineer, gave the DNR update. He addressed new e reporting forms, phosphorus permitting status, the Wisconsin River TMDL study, the permit backlog, and the NR 114 revision schedule.

Jim Neitzel, Wisconsin Rapids Wastewater, explained the background, investigation process, equipment selection process, installation, and start up of an electrical generation project installed at the WI Rapids Wastewater Treatment Facility. The generator supplies approximately one third of the electrical demand of the plant. Kurt Pulvermacher, WI Rapids Water and Light Commission, explained the data capture related to the project and shared his preliminary conclusions.

Dave Ericksen, Wausau WWTF, presented a case study their energy independence project. He reviewed the facility operating data, background information, and plant layout. He reviewed the aeration design and installation phase of the project. He wrapped up with a description of the engine generator phase of the project and closed with a summary of the impact of the projects.

Jeremy Cramer, Stevens Point Wastewater Treatment Facility, started the final presentation of the day with a review of the facility and background information. We went on to describe their efforts to locate and bring in compatible high strength wastes to increase gas production and closed with a discussion of generator equipment selection, installation, and operating performance data. The meeting closed at 3:30 pm. Participants were invited to tour the Stevens Point Treatment Facility.

Submitted by Rich Boden, North Central Region Secretary

Crane Engineering is planning to host its 14th Tech Expo, themed “Driving Results Through Innovation” on April 25th, at the Radisson Paper Valley Hotel, downtown Appleton.

New product innovations will be on display from over 35 top equipment manufacturers, including Gorman Rupp Pumps, ABS, and Lakeside Equipment. Select manufacturers will present Tech Sessions during the event to educate attendees on numerous current topics including energy efficiency, managing assets for reduced lifecycle cost and increased production efficiency, and general pump maintenance tips. Crane Engineering plans to draw over 300 attendees, including water and wastewater operators, maintenance professionals, and engineers.

“The economy has changed a lot in the industry since our last Tech Expo, but one thing has not changed; the need for operations to do more with less,” said Lance Crane, CEO of Crane Engineering. “Technology in this industry has exploded in the last two years; so our Tech Expo will focus on advances in fluid processing that are helping...”
It’s that time again: 26th Annual Collection System Seminar

Thursday, June 6

Turner Hall, Watertown

MORNING SESSION
Speakers on Collection System Issues

AFTERNOON SESSION
Vendor and Equipment Displays, Door Prizes
Product Demonstrations

TENTATIVE TOPICS
Private Property I&I Programs
Asset Management: GIS & GPS
Safety: Distracted Driving
New pump technology-case study
DNR - SSO Rules
Storm event categorization
Quick Hits: Gas Detectors
PACP Codes
Sewer Rate Study

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Wisconsin Wastewater Operators Association

DNR credit hours will be available

Mark your calendar!

Northwoods Collection System
Thursday, July 25
Eagles Club, Marshfield

Online Registration at www.cswea.org
or download a form on www.wwoa.org
municipalities achieve higher efficiency rates, and reduced costs.”

Crane Engineering is working with the Wisconsin Department of Safety and Professional Services, the Wisconsin DNR, and Michigan DNR to have tech sessions accredited, providing education credits to engineers and other attendees in the water and wastewater industries. At the conclusion of the day’s events, attendees will share a beer with Green Bay Packers legend, Larry McCarren while he speaks about current Packers news, the NFL draft, and fields questions from the audience.

Crane Engineering is a leading distributor of fluid processing equipment in Wisconsin and Upper Michigan. Its portfolio ranges from industrial pumps and valves, to specialized equipment like chemical feed systems and wastewater treatment equipment. Founded in 1939 as a pump distributor to the paper industry, Crane Engineering now serves over 3,000 customers in 46 states. Further information about Crane Engineering can be found at craneengineering.net.

If you have ever participated in a WWOA Operators’ Ride or if you have only been thinking about getting involved This Is The Year!!

The 25th Annual Professional Operators’ Ride is August 15-18, 2013. The event kicks off with the Operators’ Cookout on Thursday, August 15 at the home of: P.J. (Woody) and Chris Nolan 28821 Oak Hill Lane, Waterford, WI RSVP to either 262-662-1692 or email nolanpj262@aol.com.

Thursday night lodging is at: Baymont Inn & Suites 750 Fox Lane, Waterford 262-534-4100

Friday & Saturday 8/16 & 17, 2013 Best Western Plus (Sparta Trail Lodge) 4445 Theater Road, Sparta WI 608-269-2664

Reference for both motels: WWOA Operators’ Ride.

Start making those plans and ride safely Reid “Dusty Roads” Snedaker
Proposed change to the WWOA Articles of Incorporation

The Board of Directors of the WWOA make the following proposal to change the Articles of Incorporation:

Current Articles of Incorporation Reading:
Article 8: C

A Life Member shall be one who has been an Active Member for 25 years or more in this Corporation or 25 years in the Wisconsin Wastewater Work Operators Conference and Wisconsin Wastewater Work Operators Conference Incorporated, the predecessor organization of this Corporation, or a total of 25 years in both. Life Members shall have the same voting privileges as Active Members and Honorary Members, but shall not be required to pay dues. Life Members shall not, however, be eligible to hold any office in the Corporation.

Proposed Articles of Incorporation Reading:
Proposed Articles of Incorporation Reading:
Article 8: C

A Life Member shall be one who has been an Active Member for 25 years or more in this Corporation or 25 years in the Wisconsin Wastewater Work Operators Conference and Wisconsin Wastewater Work Operators Conference Incorporated, the predecessor organizations of this Corporation, or a total of 25 years in both. Life Members shall have the same voting privileges as Active Members and Honorary Members and shall be required to pay dues if currently employed by a Wastewater Affiliated Organization. A Life Member wishing to hold an office in the Organization may do so only if they are paying dues.

This proposed change shall be published in the Clarifier at least twice before the annual conference and will be voted on at the Annual Business Meeting October 24, 2013.
Menomonie hosts February West Central WWOA Meeting

On February 21, 2013 a meeting of the West Central District was hosted by Menomonie and was held at Dean and Sue’s Bar. About 50 people were in attendance, including 15 on-site registrations.

The business meeting was called to order by Paul Sterk, Chair of the West Central District. Paul mentioned that we still need a Vice-Chairperson and that the West Central District is the only WWOA district without one.

He asked for people to consider hosting a regional meeting and announced that up to four employees from the city hosting the meeting can attend for free. He then asked for operator of the year nominations and for at least three people to be part of an operator competition team at the annual conference.

Paul announced that the next West Central district meeting will be held in LaCrosse on May 14th. Paul introduced the various vendors who had set up table displays. He then introduced WWOA Director, Jeff Simpson.

Jeff mentioned some upcoming events, such as the Government Affairs Seminar February 28th and the Spring Biosolids Symposium on March 13th. He discussed the deadlines for submitting articles to the Clarifier, and called for interest in the operators competition and encouraged members to serve the WWOA in any way they can.

The first speaker of the day was Greg Paul of Quality Liquid Feeds. Greg gave a two part presentation on biological phosphorus removal. Greg spoke about the three main phosphorus fractions: Phosphorus in solids, dissolved reactive P, and dissolved non-reactive P. Greg highlighted the importance of reducing phosphorus in your influent where you can.

He then described the Bio-P process in detail. In summary, Greg said to have a phosphorus target, reduce the phosphorus load to your plant, use a profile test, take advantage of the experience of others, ensure good anaerobic conditions are present, have adequate volatile fatty acids available, and make sure your aeration basin’s oxygen levels are sufficient.

Phil Korth of Foth. Phil’s presentation examined the new phosphorus rules and the various ways to achieve compliance. Phil talked about the new requirement of 0.10 to 0.075 mg/L total phosphorus.

The options available are construction, variances, adaptive management or pollutant trading. Phil went on to speak about ways to optimize your phosphorus removal process.

Matt Huston of Infratech. Matt spoke about Monoform manhole lining and gave a few examples of where Monoform may be preferable to manhole replacement.

Matt’s slide show took us through the Monoform lining process from start to finish. In the end, you get a like-new manhole, without a complete excavation. Matt then took questions from the audience.

The next speaker was Matt Huston of Infratech. Matt spoke about Monoform manhole lining and gave a few examples of where Monoform may be preferable to manhole replacement.

Mark Kane of Altronex. Mark’s presentation was on SCADA systems and electronic reporting. He began with an overview and company history of Altronex.

continued on page 27
Mark then took us through a slide show of SCADA systems and discussed the time saving advantages of electronic reporting for DMRs and drinking water.

Next, Greg Paul gave the second part of his biological phosphorus removal presentation as described previously.

Tom Ponty of the Wisconsin DNR followed with a DNR update.

A tour of the Menomonie Wastewater Treatment Plant was given at the end of the day.

Submitted by Paul Sterk, Chairman West Central District
Fond du Lac hosts Southern WWOA meeting

The Southern District Regional Meeting was held in the fine city of Fond du Lac at the Holiday Inn. There were 45 people in attendance at the meeting, which started promptly with a welcome by Southern District chair, Jon Butt.

Jon introduced Joe Moore, City Manager for the city of Fond du Lac. Joe thanked us all for attending and recognized our underappreciated status as an industry. Joe went on to explain that Fond du Lac, the home of Mercury Marine, is in the midst of an economic resurgence. Finally, Joe congratulated the Fond du Lac Regional WWTF for its continued success and feature in the “Clarifier.”

Jon introduced our first presenter of the morning, Troy Larsen of Strand Associates, to talk about Permit Related Activities at Fond du Lac WWTF. Troy discussed a study on dissipative cooling of effluent flow to the receiving lake. The result of the study was that the DNR excluded thermal limits for Fond du Lac WPEDS permit.

He went on to talk about phosphorus: its sources and optimizing biological removal, Variances, Tertiary technologies, Trading and Adaptive Management. He closed out his presentation with a discussion on blending and dealing with excess flow.

After the break Jon introduced our second speaker Sasha Tetzlaf of Strand Associates to present on developing and writing Standard Operating Procedures (SOPs). Sasha covered the significance of having SOPs, considerations to take into account when writing them, and a “how to” guide on successful SOP development.

We moved into a presentation about the biogas modifications project at the Fond du Lac WWTF, given by Tom Folz of Strand Associates. Tom explained that the plant upgraded to temperature phased anaerobic digestion (TPAD). To condition the biogas for direct energy use, siloxanes and hydrogen sulfide had to be removed and ancillary equipment had to be installed. Following this presentation, we were treated to a hearty lunch courtesy of the Holiday Inn dining services.

Directly following, Jon introduced the southern regional officers and called the business meeting to order. There was no discussion on old business and we accepted the minutes for the last meeting as written. Todd Fisher, treasurer, gave the treasury report that included an update on printing postcards from Sun Printing, and the addition of a debit card as an alternative way to disburse funds when needed. A motion to accept the report was made by Dave Carlson and seconded by Tom Folz.

Jon made a few comments about the locations of future meetings then Jon called on Sharon Thieszen, WWOA director and regional coordinator, to give an update. She announced Karen Harter as the new WWOA executive secretary and encouraged the formation of a southern district team for the operator’s competition at the annual conference held in Stevens Point. The motion to adjourn was made concluding the business meeting.

Mark Stanek of Wisconsin DNR updated us on operator’s certification and plant re-classification developments within the department. Jon then segued into the next presenter, David Roskowic from ASA Analytics. David explained how online phosphorus analyzers can optimize chemical phosphorus removal. He expanded on chemical removal of phosphorus, cost considerations and provided relevant case studies.

Introduction to the Fond du Lac WWTF was given by John Leonhard, Operations Manager, gave a spirited overview and virtual tour of the plant. He explained the intricacies of the plant’s regional agreements with the contributing communities and impacts of industrial solids loadings.

Dave Carlson, Sanitary Engineer, expanded on blending, ortho-phosphate online analysis and the UV upgrades done at the plant. Directions were given to the plant and the tour concluded the meeting.

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Cedarburg WI 53012
The City of Oconomowoc’s Plant Upgrade Project is approximately 80% complete.

It will include UV disinfection, electrical and SCADA upgrades, biosolids storage and pumping, an additional secondary clarifier, chemical containment, and vehicle storage. ©
All wastewater systems today utilize time-series data. Some time-series data may be collected manually while other data may be collected by a SCADA (Supervisory Control and Data Acquisition). Daily values of time-series data are used in the monthly DMR.

The periodicity of time-series data is something a manager needs to understand and have some control over to increase the value of the time-series data. Time-series data is used extensively in business and industry. Its use can benefit utility operations for:

- Benchmarking Performance and Goal Setting
- Validating Performance Quality as in a DMR
- Developing Process Intelligence and Predictions
- Predictive Maintenance

In many utility operations data is collected with different databases, and at different frequencies or periodicity, i.e., lab data, flow data, instrument readings, weather data, equipment runtime and cycle count. SCADA systems today have enhanced automated data collection. However, many SCADA integrators focus only on alarming and process controls and not on the value of this time-series data for the end user. To maximize the value of the time-series data, it should be properly summarized, preferably in a SQL database with easy-to-use query and compression software tools.

SQL databases are used in all types of business and industry. SQL is not a brand of database; SQL is a standardized query language for databases. SQL compatible databases are similar to large spreadsheets with rows, columns, and cells, but far more robust and powerful. Examples include Microsoft SQL, MySQL, and Oracle.

I recommend that automated data be summarized and collected hourly in a facility management SQL database. This allows the daily diurnal flow and loading variations to be well understood for process control and energy management purposes. Hourly data for discrete tags (equipment status) can be collected and stored as follows:

1. runtime in hours
2. number of starts

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What has the Clarifier meant to you?

The Clarifier staff asked a random group of WWOA members to answer this question. The following is a brief list of their responses.

“Over the years The Clarifier has enabled me to follow what is happening in WWOA throughout the State of Wisconsin. We are fortunate to have such a strong association in our state, and through The Clarifier I learn what other sections are doing and discussing, as well as what other treatment facilities are doing to handle the issues we all face.

The solutions presented are often creative and stimulate thinking such as “Why didn’t I think of that?” or “That won’t work quite the same for me, but, if I changed this and tweaked that…”.

Alan Grooms, Process and Research Eng, Madison MSD.

I started reading the Clarifier on a regular basis sometime in 1982. It has always been a good source of information about upcoming conferences/seminars, training opportunities, new DNR regulations or revisions to existing, what's going on in other treatment plants (upgrades, retirements), etc.

The Clarifier been a good source for staying on top of the who's, what's, where's and why's related to wastewater. Thanks to the many staff and those that submitted articles that helped make the 200th volume of the Clarifier possible.

John Krug, Supt. Sun Prairie WWTP

I've spent more than 16 years in the wastewater industry working my way up from operators assistant to plant superintendent. Along that path I've read “The Clarifier”. So it has always been a source of reference with real people and their stories. Someone else doing what I do who may have found a better(or worse) way to address a problem or situation.

I know that sources like “The Clarifier” are there to retell the efforts of those who face the same challenges and learning from stories has saved time and money. Reading through the magazine has kept me current of upcoming events and opportunities, so I am a cover to cover reader. Thanks to all at “The clarifier” and keep up the good work.

Doug York, Supt. Fontana- Walworth WPCC

The Clarifier has been a publication I've looked forward to receiving for over 25 years.

It represents a network of professionals that is the envy of many states. We are very fortunate to have the strong organization that we do in the WWOA, and the State of Wisconsin has benefitted greatly.

As our industry morphs into the next tier of technology I am looking forward to the ability to keep track of our progress, and contribute as I am able to this publication.

THANK YOU to all the WWOA officers, operators, engineers, suppliers, contractors, etc., who have contributed to this publication.

Tom Steinbach, Supt. Oconomowoc WWTP
New executive secretary named for WWOA

Karen Harter has been named the new executive secretary for the Wisconsin Wastewater Operators Association (WWOA).

She brings a wealth of experience managing and working with associations, including WWOA during the past five years. In her former position with MSA Professional Services, she helped the association organize convention activities and has frequency worked with wastewater operators who were MSA employees or clients.

In her work with the Rocky Mountain Electronic Representatives Association, which consisted of more than 100 member firms located across a four-state region, she served on the board of directors.

In that capacity she was part of a team that set the association’s direction, activities, policies and finance. In addition, she successfully developed a program to address the needs of the representatives of small manufacturing firms.

Karen has more than 20 years of experience working with not-for-profit associations on a local and national basis. In addition, she has experience with event planning and developing and managing tradeshows and technical programs. She is adept at building productive relationships to further an organization’s goals. Karen believes in the mission of WWOA and looks forward to working with members.

Karen Harter
Not your typical fine bubble retrofit: Cheese producer improves efficiency/performance with aeration system overhaul

By Todd Hammond, Grande Cheese Company, Tom Bachman and Jon Butt, Symbiont

Grande Cheese Company (Grande), a Midwest producer of Italian cheeses and related dairy products, operated a 3-ring rotary disc mechanically aerated oxidation ditch as the main activated sludge process at its Brownsville, Wisconsin, processing plant. Grande wanted to add a new high strength wastewater anaerobic digestion treatment system to eliminate the practice of hauling and land application. The anaerobic system would also produce biogas that could be used to offset natural gas demand within the production plant. Liquid waste from the new anaerobic system would go to the oxidation ditch.

The oxidation ditch at was operating at or above design capacity. The additional loading from the new anaerobic system was going to cause problems. In addition, the processing plant was expanding increasing the load even more. Grande was faced with the need to increase aeration capacity. Working with its design engineer Symbiont, Grande estimated the existing aeration system capacity at about 457 Lbs oxygen per hour (clean water) based on literature from the disk equipment manufacturer. Plant records indicate the energy consumption of the disk aeration system at about 105 kW. Additional aeration in 2010 was provided by a floating aerator approximately 9 months of the year at an energy consumption of 13.4 kW. Total power of the system during the summer was 118.4 kW.

The increased load would demand about 904 Lbs oxygen per hour (clean water), almost double the capacity of the existing disk equipment. To keep the disk system would require installing twice as many units increasing the horsepower needed. Other mechanically aerated equipment (floating aerators, brushes, etc) could also be used but that would also add additional horsepower. An alternative system using mixers, fine bubble diffusers, and blowers was considered. The main advantage of this alternate system was the ability to provide the increase oxygen demand with less horsepower. The challenge was to figure out a way to install the equipment without interrupting the processing plant.

The design engineer developed a plan. Detailed designs were prepared and equipment was purchased. Banana blade style mixers were used to provide horizontal propulsion to keep solids suspended within each ring. A total of six mixers were selected (2 per ring). Each mixer was identical in size but each was operated with a vfd to control the amount of thrust. Membrane fine bubble diffusers were selected. The diffusers were arranged in small grids that could be lifted into position with a crane. Membrane diffusers were selected because they allow the air to be turned off without affecting performance. Each grid was connected to the air supply with a flexible hose.

continued on page 35
The final design also included space for adding more grids in the future should process conditions change. Grids were assembled next to the aeration tank. All the grids were assembled before installation in order to reduce the downtime of the oxidation ditch.

<table>
<thead>
<tr>
<th>Year</th>
<th>Organic loading to the Oxidation ditch (kW/BOD/day)</th>
<th>Annual Energy Consumption (kW/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>3,339</td>
<td>919,800</td>
</tr>
<tr>
<td>2010</td>
<td>3,798</td>
<td>1,006,632</td>
</tr>
<tr>
<td>2011</td>
<td>3,653</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>3,877</td>
<td>656,124</td>
</tr>
</tbody>
</table>

Efficiency and flow control were the main reason variable speed single stage turbo blowers were selected. A total of three blowers were installed. All blowers included VFDs to allow operation from approximately 50% to 100% flow.

Two blowers would supply future production plant waste loading requirements along with new loading from the anaerobic treatment effluent. The third blower would serve as a spare or in case of an upset could be turned on to maintain aerobic conditions. A small amount of air is also being used by a new coarse bubble re-aeration system to help elevate dissolved oxygen levels after the clarifiers prior to effluent discharge to the stream.

With all the equipment selected and a plan in place, installation commenced. The plan was to install the aeration system in 12 weeks. The sequence started with everything outside the tank: air main piping and blowers. Next came the stuff inside the aeration basin. Industrial underwater divers did the installation work; drilling anchors holes, setting concrete anchors, securing the base for each mixer, and clearing debris that might be in the way of the membrane grids.

Drawings of the ditch were used for reference but several obstructions were not shown. Progress was slow because the existing rotating disks were turned off when the drivers were working. Treatment conditions limited how long the disks could be off. With obstructions in the ditch removed, installation of the aeration grids was finished in less than 11 days. The new aeration system has been operating since June, 2011. Dissolved oxygen levels in all rings have increased and are more constant when compared to the old system. Plant data indicated that the loading to the ditch has increased since 2009 by over 15% however the new aeration system is using nearly 35% less energy as compared to 2010. The energy consumption per pound of organic shows a 36% energy reduction.

Operations staff also has noticed several process benefits beyond the energy reduction. Staff reports the mixed liquor settles better, they have not had any filaments, no oil on the ground, no overspray, less cooling of the mixed liquor in the ditch during the winter, and better DO control in each ring of the ditch. Grande wanted to change solids processing to add anaerobic digester of high strength waste. This addition would also increase the organic loading to the already overloaded wastewater treatment area. A shortage of oxygen was identified as the limiting factor and a new aeration system was designed to resolve this issue.

The new system that features fine bubble diffusers, high efficiency blowers, and large blade mixers has satisfied all the objectives associated with the new design. It has provided much greater process control, minimized the affect of seasonal changes, capacity for treating digester effluent, and has extra capacity for future expansion. The new system reduced power consumption by 35% plus provides many operational benefits.
continued from page 31

3. current value

Analog data should be collected and stored as:
1. minimum
2. maximum
3. average hourly values
4. total hourly values

With your time-series data in single SQL database and a set of easy to use database query and compression tools all of the benefits of time-series data are at your fingertips.

I have worked with a number of facilities to help setup benchmarking and control limits for energy management strategies, helping to reduce energy costs. These same techniques can be used to develop adaptive operational management strategies for nutrient control, reducing chemical cost or delaying the need for plant modifications.

A well designed data collection system that documented operational performance was proven to be invaluable by providing forensic analysis of treatment performance issues associated with specific truck loads accepted at their waste receiving station. The forensic analysis indicated the BOD test on the waste sample was being inhibited and the BOD was in fact much stronger than the initial testing had indicated.

Many wastewater utilities use daily runtime and start count reports with hourly values on lift station pumping equipment as a predictive maintenance tool. Stations designed with alternating pumps that show unbalanced performance often are an indicator of a problem before an alarm is actually received.

Nobody likes to have to respond to an alarm call from an automated alarm dialer at 2 AM, so it is always a benefit to know about problems before they result in an alarm condition.

The examples listed in the preceding paragraphs are but a few of the dozens of examples of where I have seen time-series data proven to be of great value in helping to improve efficiency, lower operating costs and troubleshoot multi-variable operational issues. Are you tapping the value of time-series data in your operations?

For additional information contact:
Ray Grosch, Software Consultant, yar.grosch@gmail.com

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NC Region considers bus to WEF in Chicago

The North Central Region Steering Committee is discussing the possibility of sponsoring a one day bus trip to WEF in Chicago this fall. The trip would provide an opportunity to attend a national wastewater conference for operators that otherwise may not be able.

The bus would do pickup points along the I39 corridor. We would arrive at WEF late morning and stay until late afternoon. The cost of the trip would include transportation and conference registration. We hope to offer CEUs for the day. Participants would be responsible to get to and from the pickup locations. Times, pickup locations, and cost will be determined if sufficient interest is shown.

Anyone interested should contact a steering committee member or send an email to ncr_steering_committee@wwoa.org.
Attention All Golfers - Operators Golf Outing
Monday, June 17, 2013         Tee-off 11AM Shotgun Start
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Cost: $65.00 per person includes Lunch, Dinner, 18 holes of golf with cart.
Sponsor Fee: $75.00 Required per firm, any non-municipal operator attending the event.
(This goes to door prizes and helps offset the cost of the event) Donated prizes encouraged as well.
NO REFUNDS

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Energenecs Welcomes Steve Berggruen, P.E.

Energenecs is pleased to announce the addition of Steve Berggruen P.E., to its engineered sales team.

Steve has been in the wastewater industry for more than 30 years. Most recently, Steve was the regional manager for membrane bioreactor (MBR) systems for Ovivo. In this position, Steve was instrumental in bringing membrane bioreactor technology to Montana, Wyoming, Colorado, Minnesota, and Wisconsin.

Prior to joining Ovivo, Steve worked at Envirex in the industrial wastewater group and with Sanitaire aeration and ABJ SBR products (now Xylem) in a variety of positions in the engineering, marketing and sales departments, including director of municipal wastewater sales before joining Ovivo in 2007.

Steve earned his bachelor of science degree (environmental science engineering) from the University of Michigan and also has a master of business administration from Marquette University. He is a registered professional engineer in the state of Wisconsin. Steve resides in Wauwatosa with his wife Jeanine, and has three children.

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Wastewater Engineer

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