City of De Pere Wastewater Treatment Plant

39th Annual W.W.O.A. Conference
October 4-7, 2005
Regency Suites/KI Convention Center, Green Bay

HOST:
Green Bay Metropolitan Sewerage District
President’s Message

Fellow WWOA Members:

This past July, I attended the Minnesota Wastewater Operator’s Association 29th Annual Conference in Marshall, MN. The hospitality and courtesy provided by the MWOA membership was wonderful and a good time was had by all. Although on a smaller scale, the MWOA Conference offers many of the same opportunities that our own annual event does. I look forward to welcoming MWOA President Rick Ashling and MWOA Secretary/Treasurer Jim Miller to our Annual Conference in Green Bay this October.

Speaking of our Annual Conference, the big event is now just a few short weeks away. Technical Program Committee Chair Kay Marshall has done an outstanding job assembling another fantastic line-up of technical sessions and related activities. I am personally looking forward to the change in scenery with Green Bay as our host community this year. Special thanks to everyone willing to give of their time and talents in making the WWOA Annual Conference the successful event it has become.

Sounds like most of us were able to get through the inaugural round of 2005 eCMAR submittals successfully. The Utility here in Grafton presented the positive eCMAR findings to our Village’s Board of Public Works the other evening for review and discussion. With that new letter grade system, it reminded me of those days long ago when you eventually had to hand over your school report card to mom and dad so they could see it. Sometimes you were eager to; and then there were those other times!

One of the most memorable parts of my WWOA Presidency has been the opportunity to travel about the state to the various Regions and meet with the WWOA membership. A personal goal of mine, I have been able to attend meetings in each of the 6 WWOA Regions in 2005; the North Central (January), Southeast (February), Northwest (April), West Central (May) and the Lake Michigan and Southern (August). Those memories of good times and fellowship will indeed last a lifetime.

On that note, my run as the WWOA President has nearly reached its end. It has been a very rewarding experience both personally and professionally. I encourage each of you to take a few minutes and read over the President’s Farewell Message I have written; it should be posted near the Historical display area during the Conference. This message sheds some further light on what this experience as WWOA President has taught me.

With that I look forward to bringing my good friend Tom Kruzick onboard as our next WWOA President. I know Tom will continue to steer the WWOA in the positive direction that it has been heading for so many years now. In addition, I wish to thank Richard and Carol McKee for all their support and assistance provided with the day-to-day business of this organization. My sincerest appreciation to the membership for allowing me the opportunity to represent this great organization of ours over the past 12 months.

In your service,

Timothy A. Nennig
WWOA President
a weekly average of 12 mg/L for Ammonia Nitrogen and a monthly geometric mean of 400/100 mL for Fecal Coliform.

Operation/Plant Upgrades: Even though the newly upgraded plant provided treatment well below the permitted levels, management targeted efforts to reduce operational costs while maintaining the highest quality treatment possible. In the 80’s many in-house changes were made regarding the treatment process and utilization of various equipment technologies. Some are as follows:

- A computerized energy management system was installed, allowing equipment and processes to operate during the off-peak electrical demand time, reducing energy consumption by 25%.
- Beginning in 1983, phosphorous removal was achieved biologically, eliminating the costly use of alum.
- In the mid-80’s, a computerized control/surveillance system for operations was

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installed, offering a less labor-intensive and better-controlled system. Presently, the facility is staffed with a total of only 23 employees, four less than previously.

In the mid to late 90’s the plant was nearing it’s 20-year expected mechanical life, while maintaining effluent quality in the single digit to range. The goal is to maintain the highest quality treatment at the lowest cost, by implementing equipment and treatment process replacements. For the past eight years we have undergone over $13M in plant upgrades, but managed to maintain stable customer unit rates. Some of the major projects include:

- **1997/1998** – Disinfection was changed from Chlorine to UV.
- **1999/2000** – Influent preliminary treatment was modified from Coarse to Fine Screening.
- **2000/2001** – The effluent filtration system was upgraded, switching from multi-media to a single media and adding air-water backwash.
- **2001/2002** – The solids handling processes were upgraded, eliminating Dissolved Air Flotation thickeners and adding Gravity Belt Thickeners and Belt Presses.
- **2003/2004** – A new Operations SCADA system was installed.
- **2003/2004** – The aeration system was upgraded including replacement of the Centrifugal Blowers to Micro turbines.

This final modification is the first installation of its kind in this country. The HST Turbo Compressor is a single rotor design that operates at a speed of 17,000 RPM. This is possible since the motor has no mechanical bearings or other friction components. The compressor maintains proper clearances between the rotor and stator with the use of a magnetic bearing system. Since no lubrication is required is this system, maintenance requirements normally found in standard systems are eliminated. In addition, this system is very quiet. Sound levels inside the blower room are around 75 decibels. You can actually carry on a conversation in there. This helps us maintain a peaceful coexistence with the neighboring residential area and a public park.

Continued efforts are being made to upgrade existing equipment as the plant is nearing capacity for BOD. We anticipate that all major equipment upgrades will be completed prior to increasing plant capacity.

The City of De Pere Wastewater Treatment Facility Staff is dedicated to providing its customers with the best treatment services at the lowest possible cost, while maintaining harmony with our environment. We take pride in our operation, which has generated USEPA and WDNR operations and environmental awards.
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PLANT TOUR — CITY OF DE PERE WASTEWATER TREATMENT PLANT

The De Pere Wastewater Treatment Plant is a City owned and operated regional treatment facility located on a 23-acre site at the north end of our city on the West Side of the Fox River. The service area is comprised of the City of De Pere, the majority of the village of Ashwaubenon, parts of the village of Hobart, and parts of the townships of Lawrence, Ledgeview, and Oneida.

Our facility incorporates a two stage activated sludge process with tertiary filtration and ultra violet disinfection. Solids handling is accomplished with two separate processes. The majority of waste solids are thickened with a gravity belt thickener, dewatered in a plate and frame filter press, then incinerated. The second means of solids disposal is to dewater the waste solids on a belt filter press and simply landfill the dewatered solids.

Since the present operation has been on line since 1978, many changes and upgrades have been made. New state of the art equipment include; Influent fine screening (Hycor Waterlink); Gravity Filter Building upgrade (U.S. Filter Multiwash); Two Gravity Belt Thickeners to replace the DAF system (Komline Sanderson); Two Belt Filter Presses (Andritz); A Polymer Feed System (U.S. Filter Polyblend); Lime Slaking Equipment (RDP Technologies Tekem Slaker); A Grease Concentrating System (Hycor Roto Strainer/Helix Press); and the Centrifugal Blower Replacement to the HST Integral Turbo-Compressor, which is the first installation of its kind in this country. This highly efficient blower is a single rotor design with an intergral motor that has no bearings or gears, eliminating maintenance requirements normally found in standard air compressors. Since there are no bearing or friction components, the compressor operates with very low noise levels. In fact a short informational presentation will be given in the Blower Building while the compressors are in operation.

Michael Kersten, Operations Manager
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PLANT TOURS – WWOA ANNUAL MTG.
Green Bay MSD & DePere WWTP

There will be an opportunity to participate in one of four tours being planned for Thursday, October 5.

De Pere WWTP
DePere will be offering a tour of their treatment facility with special emphasis on the new air blowers. Mike Kersten will actually do a presentation on the new blowers in the blower building with the blowers on line.

Green Bay MSD
You may choose one of three tours being offered at the Green Bay facility.

General Tour will cover the entire facility featuring activated sludge – single stage nitrification, gravity belt thickening, belt filter press dewatering and finally incineration in a multiple hearth incinerator. Treatment Tour will emphasis on-line HACH Luminescence D.O. probes, Royce TSS monitors, ISCO on-line phosphorus analyzers, ISCO STIP units and several different chlorine residual analyzers. Maintenance Tour will focus on three technologies with demonstrations of each, Laser Alignment of pump shafts, Vibration Analysis of moving equipment and use of an Infra Red camera for electrical PM work.

NEXT MEETING DATES
1) Durand - February 2006
2) Tomah - May 31, 2006
3) Boyd - August 8, 2006

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Business Meeting: Dennis Holtz started the day thanking the Black River Falls Wastewater Utility for hosting the meeting and thanked L.W. Allen for the rolls and refreshments. Russell Good from the Black River Falls Utility welcomed everyone to the meeting. Dennis then introduced WWOA President Tim Nenning. Tim talked about the different awards that are presented at the annual conference and that we should be getting nominations as soon as possible, John Bond talked about getting a Operators Competition Team together for the annual conference, Kay Marshall gave an update on the Annual Conference in Green Bay. Dennis announced the next meeting to be in Holmen August 9th.

Technical Sessions:
1) Electrical Safety in the Workplace: Russell Good /Black River Falls Utility described his accident with electricity and his recovery, 40% of his body was burned and was unconscious for 7 weeks. Russell stressed the need to be aware of all safety concerns when performing our jobs.

2) Human Hormones in Wastewater: Chris Groh /Wisc. Rural Water. He talked about Endocrine Disruptors and how they affected Alligators and fish in Florida. Endocrine Disruptors are found in Pesticides, DDT, Herbicides, PCBs, and Heavy Metals. Eagles were affected by DDT, which made the eggshells soft, after the DDT ban eagles recovered. 96% of Endocrine Disruptors found in Wastewater are removed in the wastewater plant.

3) Laboratory Inspections: Camille Johnson /DNR gave a presentation on what to expect on a DNR laboratory inspection. Some tips to make the audit go smoother:
A) Be prepared, accurate recordkeeping, maintain 3 years of records
B) Use it as a training experience  
C) Need to respond to report within 30 days  
D) Make a plan to resolve deficiencies  
E) Follow through with deficiency plan  
F) Annually make sure to upgrade manuals, re-analyze LOD and recalculate Q.C. limits.  

4) O&M Problems in Wastewater Plants: Jim Lund / Ayres Assoc. Jim showed some slides of different plants that had some problems and some slides showing plant upgrades.  
5) Security and SCADA: Mark Kane / L.W. Allen discussed security issues at wastewater plants. Mark stated that most new installs were now wireless. Some tips we should be practicing are:  
   A) Change passwords regularly  
   B) Have rules for users  
   C) Limit vendor access  
   D) Maintain back-ups off-site  
6) Screens and Grit Removal in your Plant: Rick Knoelke / Mulcahy Shaw did a power point presentation on 3 types of screens: Severe Heavy Duty, Fine Screen and spiral screens. He showed the Vulcan step screen and the Vulcan screw compacter. He mentioned that we could use screened water for a rinsing of the fine screen, Spiral screens are for low flows of <2 mgd. Grit washers clean grit from the Vortex Grit removal system instead of the grit classifier.  
7) D.N.R. Updates: Judy Hayducsko / D.N.R. talked about electronic submittals and if we have trouble we are to press the contact tab and area engineers will also get the help message and would be able to give us a hand.
Fred Minnich Starts Wastewater Operator Training Company

Fred Minnich, recently retired from teaching Water Treatment Technology at Northern Michigan University, has started a company for the specific purpose of providing Continuing Education training programs for wastewater treatment plant personnel. The company, Water Treatment Technology Training (WTTT), currently has seventeen one-day and two-day courses and is continuing to develop additional courses as requested by wastewater treatment personnel.

Fred has been providing training in the State of Michigan for the past year, helping the plants meet new continuing education requirements that became effective May 1, 2004. Now, in response to the elimination of the operator training program that had been provided by the WDNR, the same training programs will be offered to wastewater treatment plants in the state of Wisconsin.

Training programs can be provided on-site at any Wisconsin wastewater treatment plant or at a nearby suitable facility in order to make training as convenient as possible. In addition, it is hoped that “host” plants will invite personnel from surrounding plants (approximately a one-hour radius) to participate in the training opportunities.

Ultimately, Fred hopes to help fill the void in each of the six Wisconsin regions left by the departure of the WDNR circuit rider program. This would mean establishing one or more host sites in each region. One plant may serve as the host each time a course is offered or several sites can alternate as host. The vision is to have quarterly stops in each region.

The cost for training will likely be $50-$100 per person per day depending on the number of attendees and the number of classes offered at the site or in the region. Of course there will be an attempt to work with WWOA on this so that all regions will have the same opportunities for training and also so an economies-of-scale benefit can be realized even by the less populous regions of the state.

The seventeen currently available courses are:

- Disinfection: 1 day
- Sludge Thickening, Digestion, and Dewatering: 1 day
- Lagoons: 1 day
- Fixed Film Reactors: 1 day
- Primary Treatment: 1 day
- Pretreatment and Preliminary Treatment: 1 day
- Facility Management: 1 day
- Activated Sludge: 2 days
- Activated Sludge Process Performance Improvements and Troubleshooting: 1 day
- Wastewater Treatment Overview for Beginners {great for new employees}: 2 days
- Intermediate-level Overview of Wastewater Treatment {great for employees who want to take a certification exam}: 2 days
• Wastewater Treatment Technology Training Study Abroad: This 2-week trip to European plants will hopefully be offered sometime in 2006. Be sure to express an interest via e-mail so I know that there may be enough participants to make the trip feasible. In Michigan, this course is designated as a 2-day course.

• Wastewater Math: 1 day
• Basic Laboratory safety: 1 day
• Laboratory QA/QC: 1 day
• Wastewater Laboratory Procedures I: 1 day
• Wastewater Laboratory Procedures II: 1 day

All of the classes except the four laboratory classes will be taught by Fred Minnich. Lucy Belcher (a lab specialist in Michigan) will teach the four laboratory classes. Due to requests received, an effort will be made to create a pump course as time allows.

There is a set agenda for each of these courses with power point presentations on each segment of the course. However, course content can be altered somewhat upon request in order to better serve the interest of individual plants. The exception is the Wastewater Math course which is a chalkboard-only class.

Each day represents six hours of contact time with the instructor. There are no exams associated with the courses except for the Intermediate Overview of Wastewater Treatment course. There is a review test but it is NOT graded. However, a review test can be provided for any of the courses upon request.

If there are requests for these courses in the State of Wisconsin, continuing education units will be obtained by WTTT from the WDNR.

For additional information and a look at the agendas for each currently available course, see the WTTT web site www.wttt.net. To contact Fred Minnich, e-mail him at fredminnich@yahoo.com.

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Keeping Challenges at Bay

High bedrock. High groundwater. High-density, small residential lots. The challenges posed by installing sanitary sewers in Dyckesville were great. But local residents’ commitment to protecting the waters of Green Bay from failing septic systems was greater. Foth & Van Dyke worked closely with the Dyckesville Sanitary District to overcome difficult site conditions during sewer construction, and continues to be a valuable partner in protecting water quality in the bay region. If you need a partner who can find a way to keep challenges at bay, contact Foth & Van Dyke.

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Dyckesville Sanitary District President Dick Charles (left) with Foth & Van Dyke’s Dennis Steigenberger
Lake Michigan District Meeting  
Marion, Wisconsin  
May 19, 2005

The Lake Michigan District held our May meeting at Northwinds Banquet Hall in Marion; hosted by the Marion WWTP. We had 70 in attendance.

Kevin Skogman, LMD Chairperson, called the business meeting to order at 8:45 a.m. Kevin began by thanking Graef, Anhalt, Schloemer, & Associates for providing the break refreshments & donuts and John Bork from the City of Marion WWTP for sponsoring the meeting.

The minutes of the February meeting along with the Treasurer’s Report were presented by Kevin. A motion and second was made to approve. Jeff Haack of the DNR noted that he had no updates to share with the group. Jeff received a huge round of applause!

Kevin informed the group of a few changes in the operator’s competition and that anyone interested in being involved on an Operators Competition team for the October Conference should contact himself or Ron Austreng. We are still looking for nominations for Operator of the Year. The next meeting will be the corn roast/golf outing at Maxwelton Braes in Bailey’s Harbor, hosted by the Egg Harbor WWTP on August 18, 2005. Kevin also mentioned the Bernauer, Crabtree, and Service Awards. More information regarding the awards can be obtained from a member of the Board of Directors or at www.wwoa.org. Kevin also reminded the group of the 18th Annual Collections Systems Seminar on June 2nd.

The business meeting adjourned and was followed by a welcome from the City of Marion City Council President, Hollis Sether. Hollis gave a history of their WWTP facilities, along with a description of several attractions in the community.

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The first technical presentation was given by Jon Standridge of the Wisconsin State Lab of Hygiene. Jon talked about the history of waterborne diseases and typhoid fever. Nine million people per year die of these type of diseases globally. He also talked about the effects of over-the-counter and prescription drugs, and other “endocrine disrupting compounds” in rivers and streams.

After the morning break, Jeff Schneider of U.S. Filter/Envirex Products gave a presentation on Upgrading the Circular Clarifier. Jeff reviewed several key items including bearing arrangements, replaceable strip liner drive units, riser pipe clarifier, spiral blade scrapers, neoprene dust shields, H-drive unit housings, and 4 – point contact bearing drives.

Following was a presentation from Marty Rognlien of Intellisys Inc. Marty talked about e.xml DMR’s and how the EPA initiated and conducted the nation-wide pilot for electronic submittals. He then demonstrated a software program available to operators to easily submit their eDMR in .xml format.

After lunch, Scott Davis of Reed Bed Systems, Inc. spoke to the group on the biodynamics and mechanisms of the reed bed process. Scott’s presentation outlined the advantages of a reed bed system, planting of phragmites, common problems and solutions, harvesting, and cost. Anyone wanting more information can check out their website at www.reedbed.com

Prior to leaving for a tour of the Marion WWTP, Mike Lefebvre of Graef, Anhalt, Schloemer, & Assoc. gave a brief plant introduction.

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**THE GEORGE F. BERNAUER MEMORIAL AWARD**  
By Tom Asmus

In an era when wastewater treatment technological advances were being made in leaps, not steps, and infrastructure improvement and expansion was extensive, public servant George F. Bernauer was at the peak of his career. His efforts served the public through fostering progressive thinking and a genuine interest in the aspects of treatment works. His efforts have not gone unnoticed. George Bernauer's effort and determination are recognized by the WWOA through the annual George F. Bernauer Memorial Award.

The following is an excerpt from an October 9, 1958 publicity statement by Roger P. Scovill of the Conference of Wisconsin Sewage Works Operators.

"George F. Bernauer was first employed by the Wisconsin State Board of Health on Feb. 5, 1940 as District Sanitary Engineer. He was promoted to the Central Office in 1942 as Public Health Engineer and assigned the responsibilities of Sewage Works Engineer, where his specialty was Public Sewage Works Assistance. From that date until his death on October 8, 1958, he served as Consultant to Consulting Engineers on Sewage Works Designs and to Municipalities on sewage works operations and maintenance.

Mr. Bernauer was active in many organizations devoted to public health and welfare. He was Chairman of the Sewage Works Standards Committee of the Great Lakes - Upper Mississippi River Board of Public Health Engineers from 1951 until his death. He served as Secretary for the Central States Sewage and Industrial Wastes Assn. for several years. He was a member of the Wisconsin Society of Professional Engineers and was a registered Professional Engineer in Wisconsin. He was active in the Wisconsin Association for Public Health, The Middle States Association for Public Health, The Conference of Wisconsin Sewage Works Operator, and the Federation of Sewage and Industrial Wastes Associations, where he was a member of the Operators Qualifications Committee."

George Bernauer was killed tragically in a car accident in 1958 while traveling for his job. He was survived by a wife and three children. The Conference of Sewerage Works Operators, the predecessor to today's WWOA, responded by creating the George F. Bernauer Memorial Award. The award is presented each year at the annual conference in his memory.

The Award recognizes treatment plant operators in the State of Wisconsin who demonstrate a high level of plant performance, successful solution of complicated operational problems, and outstanding contributions in the field of wastewater technology. The purpose of the award is to stimulate improvements in the field of wastewater treatment. Mr. Bernauer is one of the founding fathers of today's progressive culture within the WWOA.

We are grateful for his contributions.
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Dear WWOA Members, Associates, and Guests:

The WWOA Board of Directors cordially invites you to the 39th Annual WWOA Conference, which will be held October 4-7, 2005 at the KI Convention Center in beautiful downtown Green Bay.

WWOA activities kick-off Tuesday afternoon with the ever-popular Pre-Conference Workshops scheduled from 12:30 p.m. to 4:00 p.m. There will be two interesting and timely workshops to choose from this year: Workshop #1, “Electrical Safety”, will be held at Green Bay MSD and Workshop #2, “QC Sample Use in Assessing Data Quality” will be held at the KI Center. Since space is limited at GBMSD, pre-registration is required for workshop #1.

At 6:00 p.m. Tuesday evening, please join us for the traditional "Meet and Greet". This informal gathering features an open buffet of brats, burgers, munchies and refreshments in the KI Center Breakout Lobby. Come rekindle old friendships and make new friends.

Wednesday morning activities will begin at 9:00 a.m. with the Opening Address by WWOA President Tim Nennig. Tim’s address will be followed by our Keynote Address presented by well-known local channel 5 television anchor Tom Zalaski. Vendor exhibits will open at 10:00 a.m. and run through 5:00 p.m.; in addition, the vendor exhibits will be open Thursday morning from 8:00 a.m. until 12:00 noon.

Concurrent Technical Sessions are scheduled for the mornings and afternoons on Wednesday and Thursday of the Conference. Training opportunities for large and small system operators will be the primary focus throughout the Conference. The Annual Operators Competition will be a featured event of Wednesday's program beginning at 12:00 p.m. in the Convention Center.
The WWOA Operators Luncheon and Annual Business Meeting is scheduled for 12:00 p.m. Thursday; the Social Hour & Awards Banquet is scheduled for Thursday evening beginning at 6:00 p.m. We invite you to get involved in the organization and honor your fellow operators at the Awards Banquet. The Awards Banquet will close with nationally known comedian/magician Tom Burgoon from Kansas City. Mr. Burgoon has spent the last 20 years bringing his unique brand of entertainment to millions of people, including the President of the United States, George W. Bush.

We will be holding the popular Farewell Breakfast once again on Friday Morning. Environmental attorney Paul Kent will be providing a timely, insightful, and entertaining look at how our state regulations become law.

Plant tours will feature the De Pere WWTP and the Green Bay Metropolitan Sewerage District on Thursday afternoon beginning at 1:30 p.m. Space for both tours will be limited, so be sure to sign-up in advance. This year’s Spouse/Guest Program will offer a great mix of planned excursions to enjoy the many opportunities that the Green Bay area has to offer. Please review the Spouse’s Program schedule for a complete list of activities and offerings.

Enclosed is Conference information and Registration Forms. **PRE-REGISTRATION IS STRONGLY ENCOURAGED!** On behalf of the Board of Directors, Technical and Local Arrangements Committee, we hope to see you this fall.

Sincerely,

Kay Marshall
Technical Program Committee Chair

Bruce Bartel
Local Arrangements Committee Chair

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**Date:** Tuesday, October 4, 2005  
**Time:** 10:00 A.M. Sharp “Shot Gun Start”  
18 Hole Scramble Format

**Prizes:** 1st, 2nd, & 3rd place team—Longest drive, longest putt, closest to pin.

**Cost:** WWOA Members, Manufacturers, Engineers, Suppliers, and Conference Attendees - - - $47.00

**Cost Includes:**  fi motorized cart, 18 holes golf, scorecards, box lunch (Ham, turkey or beef sandwich, chips, cookie/candy bar, soda/water)  
Snacks during award/prize drawing.

**Other Services:** 2 drink tickets

Payment must be received no later then September 19, 2005 with names of foursome or individual’s. (Committee will assign if not in foursome).

Please RSVP early as we are limited to 100 participants.

No refunds after September 19, 2005 unless course is closed by decision of Club Management.
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- HOFFMAN/LAMPSON

**COMMINUTORS**
- SMITH & LOVELESS
- CHICAGO
- WORTHINGTON

**VALVES**
- PLUG Ü CHECK Ü GATE Ü BUTTERFLY
- HOMESTEAD
- DEZURIK
- MOSER
- TECHNO
- BERMAD
- CLOW

**MISCELLANEOUS**
- BLOWER FILTERS
- MECHANICAL SEALS
- BEARINGS
- MISC PARTS
- PUMP FLOATS
- CHART RECORDERS
- FLOW METERS
- CHEM FEED SYSTEMS

**MECHANICAL FINE SCREENS**
- WASTE TECH INC
- HUBER
- HYCOR

**CORROSION RESTORATION**
- LIFT STATIONS & CLARIFIERS
- SANDBLAST
- PRIME/PAINT & REBUILD CLARIFIER SLUDGE COLLECTOR DRIVE UNITS

**PREVENTIVE MAINTENANCE PROGRAMS**
- WWTP EQUIPMENT & LIFT STATIONS
- PREVENTIVE MAINTENANCE AGREEMENTS ARE DESIGNED TO MEET YOUR SPECIFIC NEEDS.
- MONTHLY/ANNUALLY/SEMIANNUALLY

**DESIGN/RETROFIT/TURN KEY WATER/WASTEWATER TREATMENT PROJECTS**
- TO INCLUDE LIFT STATIONS / ALL PROCESS PROJECTS WITH SINGLE SOURCE RESPONSIBILITY

ENGINEERED PRODUCTS INC.
- GREEN BAY, WI
- 800È793È3557
**PRE-CONFERENCE WORKSHOPS AGENDA**
*Tuesday October 4, 2005*

<table>
<thead>
<tr>
<th>Time</th>
<th>Workshop #1</th>
<th>Workshop #2</th>
</tr>
</thead>
</table>
| 12:30 – 1:30 | *Pre-Conference Workshops*  
Electrical Troubleshooting  
(Including new arc flash code) | QC Sample Use in Assessing Data Quality |
| 1:30 – 2:30 | Understanding Ladder Diagrams  
Presenter: Tom Steinbach  
Moderator: Jim Thalke | Presenters: Rick Mealy  
George Bowman  
Moderator: Tim Nennig |
| 2:30 – 2:45 | Walk Around Break  
Motor Control/Infrared Testing | Break |
| 2:45 – 4:00 | Workshop #1, continued  
Electrical Troubleshooting  
Presenter: Tom Steinbach  
Moderator: Jim Thalke | Workshop #2, continued  
QC Sample Use in Assessing Data Quality, Continued  
Presenters: Rick Mealy  
George Bowman  
Moderator: Tim Nennig |

**Pre-Conference Workshops**

*Only those who are pre-registered for Workshop #1 will be accepted as the space is limited to 60 attendees. Attendees must provide their own transportation to Green Bay MSD. *There will be no on-site registration for Workshop #1!*

**Electrical Troubleshooting**

This workshop will present procedures and techniques for troubleshooting electrical control panels primarily involving the control of motors used in wastewater treatment and pumping systems. Operators and technicians will be taught how to read electrical diagrams to assist them in the testing and repair of motor controls and three phase circuits, with special emphasis on personal safety. New information on the Arc Flash code will be included.

**QC Sample Use in Assessing Data Quality**

The first part of this workshop will be a review of the different types of QC samples analyzed by laboratories and to understand the value of each in evaluating data quality. The second part of the workshop will include real life data examples and a discussion of how the critical information obtained from QC samples can be used to assess the validity of data generated.

---

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**DO YOUR DOMES SPARKLE OR SHINE?**

Sparkle could mean exposed glass fibers - Mother Nature taking her toll.

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I have over 150 completed units, more than 100 of them in Wisconsin.

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4894 Maple St.  
St. Paul, MN 55126  
John Rysgaard Jr  651-484-1908  
New Area Code
WWOA Pre-Conference Workshops
Tuesday, October 4, 2005
12:30 p.m. - 4:00 p.m.
Registration Form

Name:___________________________________
Address:_________________________________
C/S/Z:___________________________________
Phone:___________________________________
Employer:________________________________

Cost: $10.00 Pre-Registration
      $15.00 On-site

Includes refreshments between Workshops

3.0 DNR credit hours available for full 1:00 p.m. -
4:00 p.m. workshop attendance (wastewater only)

Mail with Conference Registration to:

   Richard D. McKee
   WWOA Executive Secretary
   416 Herman St., Arena, WI 53503

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(800) 666-3103
www.AyresAssociates.com
## WWOA Technical Program Schedule
### Wednesday October 5, 2005

<table>
<thead>
<tr>
<th>Time</th>
<th>Session A: Computerization and Internet</th>
<th>Session B: Regulatory Issues</th>
<th>Session C: Activated Sludge</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:45 to 11:20</td>
<td>Future Trends in Utility Data Collection and Management M. Rogulien and R. Grosch</td>
<td>Compliance Maintenance of Collection Systems</td>
<td>Maximizing Activated Sludge Performance</td>
</tr>
</tbody>
</table>

### Operators Competition
12:00 - 4:30 p.m. Convention Center Ballroom B3

<table>
<thead>
<tr>
<th>Time</th>
<th>Session D: Collection Systems</th>
<th>Session E: Utility Management Skills</th>
<th>Session F: Biosolids Issues and Updates</th>
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</thead>
<tbody>
<tr>
<td>1:30 to 2:00</td>
<td>Finding and Eliminating I/I John Nelson and Jim Beier</td>
<td>Staff Training and Development Ken Sedmak</td>
<td>Racine Solids Management Michael O’Neill and Rick Pace</td>
</tr>
<tr>
<td>2:05 to 2:40</td>
<td>Innovative SSES Pilot Project Scott Stearns</td>
<td>Building Successful Relationships with Industries Jerry Berg</td>
<td>Biosolids Issues Greg Kester</td>
</tr>
</tbody>
</table>

### Walk Around Lunch in Exhibit Area
12:00 - 1:30 p.m.

### Operators Competition
12:00 - 4:30 p.m. Convention Center Ballroom B3

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</table>

### Break in Exhibit Area
2:40 p.m. - 2:55 p.m.

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<td>Biosolids Issues Greg Kester</td>
</tr>
</tbody>
</table>

### Social Hour in Exhibit Area
4:00 pm - 5:00 pm

### Pre-Registration:
(Prior to September 19, 2005)
- Member $50.00
- Non-Member $95.00
- Non-Member with Membership Offer $90.00
- Spouse/Guest Program $60.00
- Student, Retiree $25.00

### On-Site:
(After September 19, 2005)
- Member $80.00
- Non-Member $125.00
- Spouse/Guest Program $70.00
- Student, Retiree $30.00
- Substitution $15.00

### 2005 Conference Committees

**Local Arrangements:**
Chair: Bruce Bartel

**Spouse/Guest Program:**
Chair: Jean Van Sistine

**Technical Program:**
Chair: Kay Marshall

Randy Herwig   George Bowman
Tim Nennig     Todd Fischer
Tom Kruzick    Jeff Haack
Pete Conine    Gary Hanson
John Bond      Gil Hantzsch
Jim Thalke     Troy Larson
Bruce Bartel   Harlan Mueller
Dave Carlson   Aga Razvi
Richard McKee  Dave Sasada
Dan Busch      Ken Sedmak
Greg Kester   

**Manufacturers & Consultants:**
Chair: James Shaw – Sanitaire Corp.

**Exhibit Committee:**
Chair: Carol Stackbein - Sanitaire Corp.
Dave Dorner - The Dorner Company
Tom Mulcahy – Mulcahy/Shaw Water, Inc.
James Shaw - Sanitaire Corporation
Dave Dodge – Adaptor, Inc.

**CURRENT YEAR NAME BADGE REQUIRED FOR ADMISSION TO ALL CONFERENCE FUNCTIONS.**
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10144 North Port Washington Road
Mequon, WI 53092
Phone: 262.241.1199
Fax: 262.241.4997
Website: www.mulcahyshaw.com
Email: info@mulcahyshaw.com

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- BioAlert® operator notification system
- Online O&M support

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- Utilizes cloth media
- Different configurations available: disk (AquaDisk®), diamond for larger flows (AquaDiamond™), and drum for smaller flows (AquaDrum™)
- Reuse quality effluent

AquaABF®
- Utilizes sand media
- Continuous rapid-rate downflow
# WWOA Technical Program Schedule

**Thursday, October 6, 2005**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session J: Laboratory Practices</th>
<th>Session K: Clarifiers</th>
<th>Session L: Energy Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-8:45</td>
<td>Judy Tholen</td>
<td>Gil Hantzsch</td>
<td>Kevin Skogman</td>
</tr>
<tr>
<td>8:50-9:35</td>
<td>Everything You Need to Know About Lab Audits, Part 1</td>
<td>W. H. Boyle</td>
<td>Steve Brand and Tom Foltz</td>
</tr>
<tr>
<td>10:00-10:50</td>
<td>Everything You Need to Know About Lab Audits, Part 2</td>
<td>Clarifier Optimization</td>
<td>Biogas Collection and Reuse</td>
</tr>
<tr>
<td>10:55-11:45</td>
<td>DNR Audits from Registered Lab Perspective</td>
<td>Phil Korth</td>
<td>John Piotrowski</td>
</tr>
</tbody>
</table>

**Break in Exhibit Area 9:40 a.m. - 10:00 a.m.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session M: Emerging Technologies</th>
<th>Session N: Potpourri</th>
<th>Session I: Odor Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30-2:15</td>
<td>Ken Sedmak</td>
<td>Robert Friberg and G. Michael Furst, Jr.</td>
<td>Troy Larson</td>
</tr>
<tr>
<td>2:20-3:05</td>
<td>Nutrient Removal with AnoxKaldness MBBR</td>
<td>Grit Washing vs. Standard Classification</td>
<td>Winterizing Your Biological Treatment System</td>
</tr>
<tr>
<td>3:15-4:00</td>
<td>Traverse City's Membrane Bioreactor Facility</td>
<td>W. H. Boyle</td>
<td>Troy Larson</td>
</tr>
</tbody>
</table>

**Operators' Luncheon** 12:00 p.m. Convention Center Ballroom B

**Business Meeting** 12:30 p.m. Convention Center Ballroom B

**Friday, October 7, 2005**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session I: Odor Control</th>
<th>Session J: Laboratory Practices</th>
<th>Session K: Clarifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30-10:30</td>
<td>John Bond</td>
<td>Judy Tholen</td>
<td>Gil Hantzsch</td>
</tr>
<tr>
<td>10:00-10:50</td>
<td>G. Bowman and R. Mealy</td>
<td>W. H. Boyle</td>
<td>W. H. Boyle</td>
</tr>
<tr>
<td>10:55-11:45</td>
<td>P. Borgo and J. Condron</td>
<td>Clarifier Optimization</td>
<td>Phil Korth</td>
</tr>
</tbody>
</table>

**Operators Farewell Breakfast**

*Presenter: Paul Kent*

**Conference Completed**

---

**Officers:**

- **President** Timothy Nennig
- **President Elect** Thomas Kruzick
- **Vice President** Kay Marshall
- **Past President** Randy Herwig
- **Director (2005)** Peter Conine
- **Director (2006)** James Thalke
- **Director (2005)** John Bond
- **Director (2005)** Bruce Bartel
- **Director (2006)** David Carlson
- **Executive Secretary** Richard McKee

**Plant Tours:**

- Departures from Convention Center Lobby
- Green Bay MSD-WWTP
- DePere WWTP

**Plant Tours:**

- Tours depart from the convention center @ 1:30 p.m.
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39TH ANNUAL CONFERENCE
WISCONSIN WASTEWATER OPERATORS’ ASSOCIATION

Tuesday,
October 4, 2005
A.M. Board of Directors Meeting: Meeting Room 5
Golf Outing: The Woods Golf Club 10:00 a.m. (shotgun start)

P.M. Registration Opens: Convention Center Lobby 1:00 p.m. - 4:00 p.m.
Pre-Conference Workshops: 1 - GBMSD 12:30 p.m. - 4:00 p.m.
2 Breakout Auditorium 1:00 p.m. - 4:00 p.m.
Regional Officers Meeting: Meeting Room 7 4:30 p.m. - 6:00 p.m.
Meet and Greet: Convention Center Breakout Lobby 6:00 p.m. - 7:00 p.m. Open Buffet w/Brats, Burgers, Salads, Snacks, Refreshments, Beer, Wine, Soda

Wednesday,
October 5, 2005
A.M. Registration Opens: Convention Center Lobby 8:00 a.m.
Welcome Address: Convention Center Ballroom B 9:00 a.m. WWOA President Tim Nennig
Keynote Address: Convention Center Ballroom B 9:15 a.m. Tom Zalaski of WFRV TV
Vendor Exhibits: Convention Center Exhibit Area 10:00 a.m. - 5:00 p.m.
Technical Sessions: Ballroom A1, A2, A3 10:45 a.m. - 11:55 a.m. See Program Schedule

P.M. Walk Around Lunch: In Exhibits Area 12:00 p.m. - 1:30 p.m.
Operators Competition: Ballroom B3 12:00 p.m. - 4:30 p.m.
Technical Sessions: Ballroom A1, A2, A3 1:30 p.m. - 4:00 p.m. See Program Schedule
Exhibits Social Hour: In Exhibits Area 4:00 p.m. - 5:00 p.m.

Thursday,
October 6, 2005
A.M. Registration Opens: Convention Center Lobby 8:00 a.m.
Vendor Exhibits: Convention Center Exhibit Area 8:00 a.m. - 12:00 p.m.
Plant Tour Departures: Convention Center Lobby 1:30 p.m. - 4:00 p.m.
Technical Sessions: Ballroom A1, A2, A3 8:00 a.m. - 11:45 a.m. See Program Schedule

P.M. Operator Luncheon: Convention Center 12:00 p.m. - 1:20 p.m.
Business Meeting: Convention Center 12:30 p.m. - 1:20 p.m.
Technical Sessions: Ballrooms A1, A2 1:30 p.m. - 4:00 p.m. See Program Schedule
Social Hour: Convention Center Ballroom B 6:00 p.m.
Awards Banquet: Convention Center Ballroom A 7:00 p.m.
Entertainment: Convention Center Ballroom A 9:30 p.m. - 10:30 p.m. Comedian Tim Burgoon

Friday,
October 7, 2005
A.M. Farewell Breakfast: Paul Kent 8:30 a.m. - 10:30 a.m. See Program Schedule
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WISCONSIN WASTEWATER OPERATORS' ASSOCIATION, INC.
39th Annual Meeting
Kalahari Resort, Wisconsin Dells, WI
October 4-7, 2005

Instructions
1. Complete all the applicable entries on the front and reverse of this registration card.

2. Pre-registration saves you money and more importantly time. Register before September 19, 2005, and SAVE TIME & MONEY!

3. Non-Members take advantage of New Registration/Membership Package.

4. Add Total Due for Technical Program, Spouse Program, Additional Activities and Membership Dues. Make Check Payable to WWOA.

5. Admittance to all events is by badge only including Exhibit Hall, Walk Around Lunch, etc.

Total Enclosed $________________ (Please note only cash and checks will be accepted as payment.)

Mail registration form and payment to:
Richard D. McKee
WWOA Executive Secretary
416 Herman St.
Arena, WI 53503

MANUFACTURERS & CONSULTANTS

SPONSORSHIP FEE
(In addition to Conference Registration)
Manufacturing, Consultant Engineering Firms, Sales Firms, Exhibitors and Contract Operation Firms. (One fee per firm) $75.00

EXHIBIT FEE
(In addition to Registration & Sponsorship)
*Includes one WWOA member Registration.

*Before August 1, 2005 Included in Fee
8'X10' $235.00 1 Registration

*After August 1, 2005 Included in Fee
8'X10' $275.00 1 Registration

Please note only cash and checks will be accepted as payment. No Credit Cards

NEW REGISTRATION OPTION
Registration/Membership Package

This package is available to non-members only and is available thru Pre-registration only. Package provides for conference registration and a two-year membership in WWOA for $90.00. You must fill out the short membership application attached to this registration form. Take advantage of this opportunity to add a WWOA membership, save $5.00 when compared to non-membership registration and save on registration cost next year. Also complete the Registration Form.
CONFERENCE REGISTRATION

Please check all choices

PRE-REGISTRATION
(Prior To September 19, 2005)

___ WWOA Member $50.00
___ Non-Member $95.00

___ Non-Member plus
WWOA Membership
(Pre-Registration Only) $90.00

___ Retiree $25.00
Must be at least 60 years old and retired from wastewater industry

___ Student $25.00
Must send copy of valid student ID

ON-SITE REGISTRATION
(After September 19, 2005)

___ WWOA Member $80.00
___ Non-Member $125.00

___ Retiree $30.00
Must be at least 60 years old and retired from wastewater industry

___ Student $30.00
Must send copy of valid student ID

___ Substitution or Re-Print $15.00

Please note only cash and checks will be accepted as payment.

No Credit Cards

No refunds of conference fees after September 19, 2005

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CONFERENCE REGISTRATION FORM
(Type or Print Clearly)

__________________________________________
Last Name First M.I.

__________________________________________
Nick Name (For Name Tag)

__________________________________________
Firm Name (If Consultant or Manufacturer)

__________________________________________
Mailing Address

__________________________________________
City State Zip Code

__________________________________________
Telephone (Work)

__________________________________________
Telephone (Home)

__________________________________________
Position/Title

Regional Affiliation Member Affiliation
____SE _____Municipal _____Industrial
____NW _____Sales _____Consultant
____Southern _____Student _____Manufacturer
____NC _____Educator _____DNR/EPA
____LMD _____Other
____WC

To assist the Planning Committee, please check the following if you plan to attend.

Tuesday, October 4, 2005
___Meet & Greet

Thursday, October 6, 2005
___Green Bay Wastewater Treatment Facility
___De Pere Wastewater Treatment Facility

Sign up for tours will be on site in the registration area.

APPLICATION FOR MEMBERSHIP

YES! I want to take advantage of the 2005 registration/membership package.

I hereby apply for active membership in the Wisconsin Wastewater Operators' Association, Inc. (WWOA)

Name:_____________________________________

Mailing Address:_____________________________________

City:_____________________________________
State:_________________________Zip:_________

Work Phone: (____)_________________________

Home Phone: (____)_________________________

E-Mail Address:_____________________________________

Affiliation:

___Sanitary Operator ___Town
___Govt. ___Treatment Plant ___Business
___Industrial

Membership Classification:

___Operator ___Certified Operator ___Student
___Educator ___Regulatory ___Retired
___Consultant ___Other

This applicant is recommended by:

Member:_____________________________________
City:_________________________State:_________

Send Membership Application Along with Conference Registration
Put The Control Back Into Your Control Panel

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Control your costs by controlling your energy usage with ESP, the new Energenecs Sensory Processor. Use ESP to:

- Monitor the energy usage of each of your pumps
- Calculate flow rates with a built-in flow meter
- Use accurate capacity and flow data to control your energy consumption
- Save thousands by avoiding peak demand charges

Performance through technology!
Dear Spouse/Guest,

As a guest of someone attending the 39th Annual Wisconsin Wastewater Operators Association (WWOA) Conference to be held at the KI Convention Center/Regency Suites in Green Bay on October 4 – 7, 2005, we are pleased to invite you to take part in this year’s Spouse & Guest Program. We have an exciting program planned for you! You are invited to join us for the Conference kick-off, “Meet and Greet” on Tuesday evening in the KI Convention Center located in the Regency Suites for brats, burgers, munchies, and refreshments with old and new friends.

On Wednesday morning, the Spouse & Guest Program starts with a continental breakfast that will be held in Meeting Room 6 of the KI Convention Center. You’re invited to attend the Keynote Address at 9:00 a.m. given by Tom Zalaski, well-known local Channel 5 television anchor. At 10:30 a.m., Officer Dennis Gladwell of the De Pere Police Department will give a talk on identity theft. To complete the morning, enjoy a walk-around lunch, courtesy of the manufacturers and consultants who are exhibiting.

After the walk-around lunch, please join us for a scenic motor coach bus ride to Algoma where you will receive a guided tour and complimentary wine tasting at the von Stiehl Winery. Listed in the national historic registry, and recognized by the Wisconsin Heritage Tourism Program, the winery is housed in a building built at the end of the civil war. Come experience the bold Austrian architecture, from the underground arched limestone caverns, to the 4th Floor Galerie. There are a multitude of rooms to explore. The traditional architecture is a perfect setting for von Stiehl wines. We will return to the Regency Suites by 4:00 p.m. For more on von Stiehl Winery, please visit their website: www.vonstiehlwinery.com

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and look for us at WWOA in Green Bay!
Stiehl Winery, please visit www.vonstiehl.com on the internet.

On Thursday morning, we will begin the day with a continental breakfast in Meeting Room 6. At 9:00 a.m. a presentation on health issues will be given (see page 35). We will then board a bus at 11:00 a.m. to take us to Frank’s Dinner Theatre located in the SC Grand for a matinee show called, “Beach Baby, Sounds of the Summer 1960-1976”. The program describes the show as follows:

“Skateboard and surfing was boss. The man was the cause of every problem. Laugh-in was on the cutting edge of comedy. Enjoy the times of Kennedy and Johnson. It was a time of radicalism and liberalism. Beach Boys, Jan & Dean, and the Four Seasons made singing in the shower cool. Peter, Paul, and Mary, the Kingston Trio, & Peter and Gordon made us ease back and enjoy great folk music. The baby boomers were all coming of age.”

Lunch is included and will be served at noon with the show starting at 1:00 p.m. Please indicate your lunch selection on the registration form. For more information on Frank’s Dinner Theatre, please visit www.franksdinnertheatre.com. You will arrive back at the Regency Suites at approximately 3:30 p.m. leaving you with some time to relax before the Awards Banquet.

On Friday, you are invited to join all WWOA members for the Farewell Breakfast.

We hope you will join us in Green Bay for a fun and exciting program.

Please note that in order to control the cost of the program, no gift bag will be offered this year.

Sincerely,

Jean Van Sistine  
Spouse/Guest Program Chairperson

Bruce Bartel  
Local Arrangements Chairperson
**WWOA Spouse and Guest Program**  
**October 4-7, 2005 • KI Convention Center**

**Tuesday, October 4, 2005**

6:00 p.m.  Meet and Greet – KI Center Breakout Lobby

**Wednesday, October 5, 2005**

8:00 - 9:00 a.m.  Spouse Hospitality Room – Meeting Room 6
9:00 - 10:00 a.m.  Conference Opening and Keynote Speaker
10:30 - 11:30 a.m.  Identity Theft Presentation – Meeting Room 6
12:00 - 1:00 p.m.  Walk Around Lunch in Exhibit Area
1:00 - 4:00 p.m.  von Stiehl Winery Tour – Algoma
4:00 - 5:00 p.m.  Social Hour in Exhibit Area

**Thursday, October 6, 2005**

8:00 - 9:00 a.m.  Spouse Hospitality Room – Meeting Room 6
9:00 - 10:00 a.m.  Health Issue Presentation – Coping with Attention Deficit Disorder (ADD) Meeting Room 6
11:00 - 3:30 p.m.  Frank’s Dinner Theatre – SC Grand – De Pere
   Lunch Included *(Drinks not included)*

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**2005 Clarifier Deadlines**

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Spouse and Guest Program Details
The Spouse and Guest Program offers:

- Tuesday Meet and Greet
- Keynote Address
- Admission to Exhibits
- Spouse and Guest Hospitality Room
- Wednesday Walk Around Lunch
- Wednesday Social Hour
- Farewell Breakfast
- von Stiehl Winery Tour
- Frank’s Dinner Theatre
- Identity Theft Presentation
- Health Issues Presentation

Advance Registration for the Full Spouse and Guest package is $60.00.

Spouses and Guests are encouraged to register in advance. On-site registration for the Spouse and Guest Program will be $70.00.

Admittance to all Spouse and Guest Program functions will be by badge only. Please note that the Spouse and Guest Packages are designed for adults.

DID YOU EVER WANT TO JUST RUN AWAY…?

Do you have difficulty staying on task or feel overwhelmed because of your procrastinating? Do you start a lot of projects but not finish them? Do you have a tendency not to read directions or have problems on handling your money wisely? If this sounds like you or maybe someone you know, please join us Thursday morning, October 6, at 9:00 a.m. Kathleen Zeitler will be sharing her experiences and information on Attention Deficit Disorder (ADD) as an adult. Kathleen has had attention deficit/hyperactivity disorder her entire life and speaks to groups about the challenges she is faced with. She says there is a reason why life seems so difficult; find out where others are coming from and how it feels to be judged because they think differently. Learn the facts and hopefully you will be inspired by her life. Dr. Kenneth Pride will also be there for questions and answers.

Kathleen has owned her own business for 23 years called, “Signs That Sell.” She is a cancer survivor and through her life experiences, has developed “Soul Passing” and “Inspired By Life.” She says the Soul Passing gifts are a way for people to express what is in their hearts, which she feels is something that is often difficult to do. The idea is to purchase a particular bag with stone and pass it on to someone in need of encouragement. When that person finds peace, he or she can pass it on to another person having similar difficulties. She says if you toss a stone into water that ripple effect you get is like soul passing. The Soul Passing stones are treasured amethyst stones that come in a little black velvet pouch with one of eight inspirational messages to fit a particular occasion. Kathleen shipped 800 “sympathy” stones to families affected by the September 11, 2001 terrorist attacks.

Kathleen will have Soul Passing stones and writing journals available for purchase. She donates a percentage of the money to Wellspring, which is a place of peace for women here in Green Bay. For more information, please visit www.inspiredbylife.us.
SPOUSE/GUEST PROGRAM
REGISTRATION FORM
(Please Type or Print Clearly)

Last Name:_______________________________________

First:________________________________        M.I._______

Nick Name (For Name Tag)

PRE-REGISTRATION (Prior to September 19, 2005)

____ Spouse/Guest Program           $60.00

ON-SITE REGISTRATION (After September 19, 2005)

____ Spouse/Guest Program           $70.00

DINNER THEATRE MEAL CHOICE

____ Pork Medallions w/Whole Grain Mustard & Maple Glaze
____ Chicken Marsala
____ Champagne Poached Salmon
____ Summer Vegetable Tart

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“Clean Water is Our Life”
1. All Manufacturers and Consultants in attendance of any scheduled conference event or activity or present in a hospitality room are required to register and pay the established fee.

2. Display of equipment is allowed in the official exhibit area. Display of equipment in or adjacent to the Annual Meeting area or in hospitality rooms may detract from the effectiveness of the Annual Meeting and tend to keep participants from attending formal presentations, and will not be allowed. Descriptive brochures will be allowed in official exhibit area and hospitality rooms only.

3. Advertising for separate inspection tours (not programmed) of facilities outside the convention area is not permitted. Private solicitation by Manufacturers or Consultants will be allowed, but these special trips must be scheduled either prior to or following the completion of the convention.

4. Hospitality rooms are allowed. They will only be open when no formal convention program is in session. Advertising for these rooms will be allowed at one location which will be in the proximity of the registration area on a board as provided by the hotel, which will be available to all. All sponsoring occupants of each hospitality room must be registered with the conference as stipulated above in these guidelines.

5. To add to the decorum of the convention, all hospitality rooms shall be closed by 12:00 midnight.

6. Compliance with the above rules will be directed by the Manufacturers and Consultants Committee. Non-compliance by a Manufacturer or Consultant shall result in the Committee submitting the offender's name to the W.W.O.A. Board of Directors for review and appropriate action.

7. Questions regarding these guidelines should be directed to a member of the Manufacturers and Consultants Committee.

8. Please keep in mind, the W.W.O.A. Board of Directors does not govern our Committee. We Manufacturers and Consultants are present at this conference to greet old friends and make new ones. Everyone's cooperation is requested and required to make this convention a success.

---

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2005 PROFESSIONAL OPERATORS MOTORCYCLE RIDE

Operators and friends renewed acquaintances and welcomed a few new riders at the July 21 evening cookout held at Phil and Dorie Hoopmans’ in Ripon.

Fifty-seven people greeted the July 22 morning sunshine to begin the ride on scenic back roads to Berlin, Neshkoro, Spring Lake, and on to the Ding Restaurant at Saxville for lunch. Then up to Wild Rose for a tour of the DNR Fish hatchery. It is a large and well run facility producing 100,000 pounds of freshwater fish such as trout, salmon, walleyes, and northern pike for annual stocking in various Wisconsin lakes and rivers.

Enjoying the sweeping curves of highways G, W, and 49; the group motored back to Ripon’s AmericInn motel for outdoor and poolside relaxing and visiting into the night.

Clouds and a bit cooler temperatures greeted us Saturday morning as the group headed south around Big Green Lake to Kingston and a stop at an Amish wood craft shop and homemade ice cream just beyond Dalton. Then west and north to the twisty roads, big hills, and trees of Buffalo Township in Marquette County to Montello and then the Long Branch Saloon at Germania for their homemade pizza and famous Hippopotamus burgers.

With quickly darkening skies, the more daring and perhaps less smart riders in the group took back roads to Princeton and Greek lake to arrive at the Lester Schwartz indoor (paintings) and outdoor (metal sculpture) art galleries. Riders not intending on getting wet made a beeline for the motel. The former group was invited into Schwartz’s Frank Lloyd Wright inspired home as a big rain and lightning storm rolled in across Big Green Lake awesomely visible thru the homes strategically placed windows.

When the lighting let up, a five mile rain soaked ride was endured back to the AmericInn. With just enough time to dry off, we rejoined the others at nearby Michael’s Supper Club for the annual banquet and Reidy Awards session.

Riders heading home Sunday experienced some of the very hot and humid weather that the summer of ’05 generously provided. Next year’s WWOA ride will be hosted by Geno and Barb McClure of Laona.
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Quality Always
51st Upper Peninsula Operator’s Conference
Takes on an International Theme

Submitted by Tom Asmus / Donohue & Associates

Water and wastewater treatment in Ecuador? Wastewater technology and world views from a European perspective? If last year’s Section 21 Conference had a historical theme, this year’s conference had an international theme. What better way to grasp an understanding of our industry’s value than to recognize wastewater treatment from an international perspective. The 51st conference was held in Bark River, Michigan, at the Chip In Casino and was hosted by the Escanaba Wastewater Treatment Plant staff.

After leaving this year’s Upper Peninsula Operator’s conference, one would realize that many parts of the world are primitive with regard to water/wastewater treatment while others are more tightly regulated than here in the United States. Is it where we were and is it where we’re going? History tells us that several generations ago; we too were primitive in our treatment of wastewater and only recently transitioned into a more “civilized” society.

The training conference hosted a well-rounded mix of presentations beginning with Ken Hyrkas of the North Houghton County Water and Sewer Authority, an organization that has been around since the early 1900’s. As it turns out, the Authority was formed when copper was king in the Cities of Calumet and Laurium. Once bustling boom towns, they now host a more reserved atmosphere. Ironwood, another old mining town, was featured this year. Located on the western tip of Michigan, the sewer infrastructure is all but worn out as exposure and time have taken their toll. The biggest challenge to resolving SSO issues is the lack of documentation and drawings of the original system.
Some of the other conference topics included septage handling regulation, total nitrogen removal for ground water discharge plants; field update from the DEQ, lift station hydraulics presented by Dan Johnston, Operator for the Marquette Area WWTP, and membrane bioreactor technology implementation at the Traverse City Regional WWTP.

The recipient of this year’s Jack Rydquist Award is Al Gerou of the Escanaba WWTP. The award recognizes “hands on” operational staff that makes outstanding contributions to their facility. He has been employed at the Escanaba WWTP for nearly 35 years, and his knowledge of the City’s facilities prove it. The traditional banquet dinner was followed by Malfunction Junction, a truly and proudly local band residing in Escanaba. After several hours of music, conversation, and good times, those that had anything left tried their luck on the slots or black jack table. For the rest, it was time to fold.

Many benefits that we enjoy from living in a civilized society are the result of clean water and safe drinking water. It has been instrumental in our nation’s development. It is said that one key to success is achieving balance. This year’s Upper Peninsula Operator’s Conference certainly achieved a striking balance between hard technology and the softer but equally as important subject matter that give us an international perspective.
### 2005 – 2006 Wastewater Classes for Wastewater Training Solutions

**Instructor:** Dan Tomaro  
**phone:** (608) 770-5144

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To Register call (608) 770-5144 or send a check to:

**Wastewater Training Solutions**
219 Janesville St.
Oregon, WI 53575

*(please do not call the Technical College)*

**Prices:**
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Address _____________________________________      _____________________________________

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_____________________________________     _____________________________________

Phone _____________________________________      _____________________________________
e-mail _____________________________________      _____________________________________

Class name: _____________________________________________________________________________

Class date(s) _____________________________________________________________________________

2nd Class name _______________________________________________________________________

2nd Class date(s) _______________________________________________________________________ 

Tuition: 1 day class = $80
         2 day class = $160
         3 day class = $240
         5 day Intro (plus review) = $325
         6 day Intro (plus review) = $375

Amount enclosed $ __________________________

(make check payable to: Wastewater Training Solutions)

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Questions: call Dan at (608) 770-5144
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ITT Flygt Corporation, N27 W23291 Roundy Drive, Pewaukee, WI 53072
2005 Operators Golf Outing

The 2005 operators golf outing was held on a beautiful sunny day, Monday, June 20, at the Riverdale Country Club and Golf Course in Sheboygan, Wisconsin. 67 golfers attended the annual event and two of the golfers won the coveted traveling trophies. Jerry Hertlein from Milwaukee MSD won “Old Dad’s” operator trophy with a raw score of 79 and a Calloway score of 72. Jeff McBain from Crispell-Snyder, Inc. won the manufacturers/consultant trophy with a raw score of 79 and a Calloway score of 72. Our congratulations are given to two great golfers Jerry and Jeff.

We had an excellent lunch and dinner and enjoyed the golf day. Lunch was prepared by cooks, Jim Deppiesse and LaMont Russo. Jim and LaMont fried the burgers and brats and did an excellent job, Thank you.

Our thanks to the golf committee including Leo Templeton, Pete Albers, Dick Neterval, Carol Strackbein and Ken Sedmak for organizing the outing.

Plans are being made to continue the outing at Riverdale Country Club in 2006 unless an alternate golf course is selected by others. There was discussion about moving the Outing to a more central location in the State to attract more golfers. Your comments and suggestions are welcomed as well as participation as a committee member. Just contact Ken Sedmak at 920-208-0296 for suggestions and other comments.

WWOA Conference Schedule

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<td>La Crosse, WI</td>
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Require a minimum of 2 years experience in utilities/streets/parks operations. The chosen candidate will have one year to obtain necessary WI Water and Wastewater certifications. Residency will be required within one year.

Send cover letter, resume, salary history and references to Public Administration Associates, LLC, P. O. Box 282, Oshkosh, WI 54903; e-mail paassoc@northnet.net; phone 920-235-0279; by September 16, 2005. Applicant names subject to public release by state law unless confidentiality requested. Confidentiality cannot be guaranteed for finalists.

Sanhueza-Torres Joins Applied Technologies

BROOKFIELD, Wisconsin (July 15, 2005) – Applied Technologies welcomes Elizabeth Sanhueza-Torres, E.I.T. to its growing Environmental Engineering department in Brookfield. Sanhueza-Torres joins Applied Technologies as a project engineer. She has a BS degree in Chemistry from the University of Chile-Santiago and an MS degree in Civil and Environmental Engineering from the University of Wisconsin-Madison. Her recent publications include “Dynamics of Candidatus Accumulibacter Phosphatis During the Operation of a Biological Phosphorus Removal Sequencing Batch Reactor” (2001) and “Photocatalytic Degradation of Pentachlorophenol on TiO2 Sol-Gel Catalysts” (2001).

Applied Technologies, headquartered in Brookfield, Wisconsin, is a multidisciplinary engineering and architectural firm specializing in wastewater treatment design and consultation and civil engineering. The company also has an office in Lake Villa, Illinois. For more information, visit www.ati-ae.com.
Maximizing Secondary Treatment Wet Weather Capacity Part 4 (of 6):
Optimizing Secondary Clarifier Performance

Bill Marten, Wastewater Process/Operations Engineer, Triad Engineering Inc.

This is the fourth of a six-part series discussing strategies to maximize secondary treatment peak flow capacity. While the strategies are focused toward activated sludge treatment systems, many of the strategies are applicable to other systems as well. Future editions of The Clarifier will present additional parts of the series. For reference, the series includes:

Part 1: The Big Picture: Peak Wet Weather Capacity Considerations
Part 2: Optimizing Mixed Liquor Settleability – General and Operational Considerations
Part 3: Optimizing Mixed Liquor Settleability – Facility Configuration and Modifications
Part 4: Optimizing Secondary Clarifier Performance
Part 5: Minimizing Clarifier Loadings
Part 6: Putting It All Together: Integrated Strategies for Success

As noted in Part 1 of this series, “the key factor that controls the peak flow capacity of activated sludge systems is solids separation”, and the performance of your secondary clarifiers are the key to solids separation. Good secondary clarifier performance is dependent on having a good settling mixed liquor, good hydraulic characteristics, and appropriate loading rates.

Parts 2 and 3 of this series discussed mixed liquor (ML) settleability, the factors that affect it, and strategies to optimize it through operational or facility modifications. The next two installments (Parts 4 and 5) pick up at the secondary clarifiers themselves, where the ML solids are separated from treated effluent. Part 4 discusses how to optimize secondary clarifier performance, while Part 5 discusses how to minimize secondary clarifier loadings.

A Couple Keys
The main role of secondary clarifiers is solids separation – getting the mixed liquor solids, which perform the biological treatment, separated from the treated effluent. The solids are returned to the aeration basins, where they can once again perform their biological treatment magic, while the clear water remaining leaves the clarifier as treated effluent. This physical separation happens due to gravity – the mixed liquor solids are slightly heavier than water, and so will settle to the bottom of the clarifier under the right conditions. So what are those “right conditions”? Well, we need to consider the bulk liquid conditions in a clarifier, and also what goes on at the microscopic particle level.

Let’s start on the large scale by considering the bulk flow into and out of a circular clarifier – one that has its inlet in the center. Flow enters the clarifier in the center, and typically flows down and also spreads radially out in all directions through the clarifier. As the flow spreads, it slows down and gradually changes direction, turning upward to exit the clarifier.
over the effluent weirs (See Figure 1). If we divide the plant flow rate (gallons per day) by the total clarifier surface area (square feet), we end up with what is called the clarifier Surface Overflow Rate, or SOR, with units of gallons per day per square feet (gpd/ft²). This is an important parameter, often used to design and size clarifiers, and to determine clarifier loadings. It represents the average upward velocity of the plant flow going through the clarifiers, if the flow was distributed perfectly throughout the entire clarifier surface.

Oftentimes, especially under high flow conditions, short-circuiting can occur within a clarifier, resulting in some areas with very high flow rates, and other areas will little or no flow. Very high vertical flows can occur in the areas where the short-circuiting is occurring – we often call this “localized areas of high overflow rates”. When this happens it may mean that even though the calculated average clarifier overflow rate is within design parameters, the actual overflow rate in these areas of short-circuiting may be much higher, resulting in local areas where solids may wash out.

So one key requirement for good clarifier operation is to make sure we minimize short-circuiting – we need to make sure that the flow through the clarifier spreads uniformly throughout the whole clarifier.

Now, let’s think about another key to good clarifier performance, particle size. Our mixed liquor solids are slightly heavier than water, as noted above. As the mixed liquor enters and flows through the clarifier, three forces are applied to the solids, and the balance between these forces will affect where the solids end up – in the return sludge, stuck in the
clarifier, or in the effluent. These forces are:

- The force of gravity, which pulls the solids toward the bottom of the clarifier.
- A buoyant force caused by the water surrounding the particle trying to displace the particle.
- A drag force caused by friction along the particle’s surface, as the particle moves through the water. This force can change directions depending on what direction the particle is moving. Because we want to settle particles (downward), for our purposes we assume the friction force is applied upward.

Figure 2 shows how these forces act on a particle. The force of gravity, $F_g$, is pulling the particle down, and is directly proportional to the weight of the particle – more weight means more gravitational pull. The buoyant force, $F_b$, is exerted upward by the liquid as it tries to displace the particle. The friction force, $F_f$, resists movement of the particle through the fluid, and is proportional to the viscosity of the fluid (more viscous fluids produce greater friction) and speed of the particle (higher speeds create greater friction).

Thinking about these forces, let’s now consider how they pertain to our goal of settling solids.

First, let’s consider particle size, and let’s assume we have three floc particles, A, B and C, as shown in

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**Figure 2: Forces Affecting Particles in a Clarifier**

- $F_b$ = Buoyant Force
- $F_f$ = Friction Force
- $F_g$ = Gravitational Force

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Figure 3. If each of these particles are separate (left side), they have their full surface area in contact with the fluid, resulting in the maximum friction applied to them. However, if they come together as a combined floc particle (right side), some of their surface area is blocked from direct contact with the fluid, and therefore the friction force being applied is reduced. The particles still weigh the same and take up the same volume, whether separate or combined, so the downward force of gravity and the buoyant force of the fluid doesn’t change. The net result is that the combined floc particle on the right has less force hindering settling (friction) for the same amount of gravitational and buoyant forces, so it will settle more rapidly.

The resulting higher settling velocity means that the combined floc on the right can withstand higher upflow velocities/overflow rates and still settle to the bottom of the tank. This results in the ability to handle higher overall flow rates in your secondary clarifiers under peak wet weather flow conditions. So the bottom line with regard to floc particle size is that larger floc particles increase the peak flow capacity of secondary clarifiers.

The third key to secondary clarifier performance relates to what happens to the solids once they have settled. This one is quite simple – you need to get them out of the clarifier quickly. You should not operate with significant (more than a foot or so) blankets. These settled solids are just looking for something to do – do you want them treating wastewater in your aeration basins, or do you want them escaping in your effluent. If you store them in your clarifier blanket, the solids not only aren’t performing treatment, but they are potentially going to find a way to escape – either by being scoured by high velocity currents or by bubbling to the surface (often occurring as denitrification) as clumps of mixed liquor. So the key here is – settle those solids and then get them back to the aeration basin as quickly as possible.

Getting the Most From Your Clarifiers

Now that we’ve talked about keys to secondary clarifier performance, let’s talk about a few things you can do to improve your clarifier performance. A couple of these are pretty straightforward, and pretty inexpensive to accomplish:

- If you have multiple secondary clarifiers, make sure they are all receiving about the same flow rate (proportional to their size, of course). This may require adjusting inlet gates or the weirs on splitter boxes to ensure proper flow distribution between all units.
• Operate your return sludge pumping operation to minimize sludge blankets in your clarifiers.

Assuming you’ve done these two things, there are a couple more actions you can take which require constructed modifications to your clarifiers. These modifications are focused on the first two keys noted above – minimizing short-circuiting and maximizing floc particle size.

The first action, to minimize short circuiting, involves adding baffling in your clarifier to break up “density currents”, which are the areas where the short-circuiting is occurring. Depending on the type of clarifier you have (center feed circular or square, peripheral feed circular, rectangular), there are different baffle arrangements that will serve you best.

One of the most common ways that density currents form in center feed (circular or square) clarifiers with outboard effluent weirs is that the flow comes into the clarifier, drops to the bottom and races outward to the wall. There it races up the wall and over the effluent weir, leaving a large portion of the clarifier volume (in the middle) unused. Such density currents often occur in these clarifiers, particularly under peak flow conditions. So what can be done?

The answer is a relatively low cost clarifier modification – installation of Stamford Baffles (sometimes called McKinney Baffles). Stamford Baffles are simply a baffle hung a few feet below the effluent launders around the entire clarifier perimeter, angled down and toward the middle of the clarifier. These baffles have proven very effective at breaking up density currents, as they direct the flow back into the middle, unused portion of the tank (see Figure 4), and often increase clarifier peak flow capacity by 30-50% or more. At an installed cost usually less than $100 per lineal foot, there are a very good “bang for the buck” in terms of the cost per gain in capacity achieved.

The second constructed modification to improve clarifier performance is related to maximizing the size of mixed liquor particles, remembering that larger particles settle faster (and thus allow for higher overflow rates). When we think about these mixed liquor particles, we need to remember they are biological, flocculated solids that are bonded together due to a slight polymer-like effect. These bonds are relatively fragile, and can be easily broken due to turbulence in the aeration basins, in the piping or channels that deliver mixed liquor to the clarifiers, or even at the clarifier inlets.

It may be difficult to identify if you’ve got a problem of excessive turbulence shearing the flocs, although if there is a lot of small floc particles that appear suspended throughout the bulk liquid in your clarifier, that may be an indication. There are also specific settling tests that can be performed, termed DSS/FSS tests, that can identify if your clarifiers are suffering from such problems.

If you do identify that your clarifiers are suffering from such a problem, one solution is to try and eliminate the cause of the excess turbulence. This is most easily accomplished if the problem is due to excessive aeration. In such a case, try to operate at lower airflow rates, provided such operation doesn’t affect overall treatment performance.
Another strategy that is gaining application is re-flocculating the solids as they enter the clarifiers. The key here is that the mixed liquor particles are usually able to reflocculate, and re-form into larger floc particles. There are a number of options to accomplish this, all involving providing gentle mixing of the mixed liquor as it enters the clarifier, along with a gradual decrease in speed as the flow spreads out into the clarifier. These options may involve mechanical mixing or just flow direction changes and gentle inter-mixing of the mixed liquor solids as they enter and flow out into the clarifier. While not cheap, if done right such modifications can be very effective at producing large, fast settling floc particles and at some plants have also improved return activated sludge (RAS) performance by producing a more concentrated RAS. Figure 5 shows photos of several of these options.

This wraps up discussion on maximizing clarifier performance, as one part of your strategy to maximize your activated sludge system’s peak flow capacity. The next installment in this series will focus in on how clarifier loadings come into play, and what you can do about them. Please stay tuned.
### MUNICIPAL ENVIRONMENTAL GROUP - WASTEWATER DIVISION
### LEGISLATION AND REGULATION TRACKING TABLE

#### LEGISLATION

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>NUMBER</th>
<th>IMPACT ON WASTEWATER FACILITIES</th>
<th>STATUS</th>
<th>MEG POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABOR (property tax limits)</td>
<td>AB58</td>
<td>Legislation to restrict increases in property tax levies above growth rates unless a referendum is passed. Does not apply to user charges</td>
<td>Passed Assembly and Senate floor; vetoed by Governor</td>
<td>Oppose</td>
</tr>
<tr>
<td>Plumbing Fees</td>
<td>AB370</td>
<td>Would limit local government authority to charge permit fees for installation of plumbing fixtures</td>
<td>Referred to Urban and Local Affairs Committee</td>
<td>Monitor; will oppose if progresses</td>
</tr>
<tr>
<td>Septage</td>
<td>AB449</td>
<td>Joint Legislative Council introduced bill developed by Legislative Council Committee. Bill addresses septage fees, facilities planning, landspreading ordinances and other matters.</td>
<td>Bill introduced and referred to Committee on Natural Resources.</td>
<td>Support as Amended</td>
</tr>
<tr>
<td>Stormwater utilities</td>
<td>AB492</td>
<td>Would impose some limitations on methods of charging for stormwater</td>
<td></td>
<td>Monitor; will oppose if progresses</td>
</tr>
<tr>
<td>Utility Payment</td>
<td>SB170</td>
<td>Would change the way certain municipal utilities can collect arrearages from tenants. Application appears limited to electric utilities</td>
<td>Referred to Committee on Energy, Utilities and Information Technology</td>
<td>Monitor</td>
</tr>
</tbody>
</table>

#### REGULATION

<table>
<thead>
<tr>
<th>TOPIC</th>
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<th>IMPACT ON WASTEWATER FACILITIES</th>
<th>STATUS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Bacteria Standards</td>
<td>No number assigned</td>
<td>In 2000, Congress passed BEACH Act (Beaches Environmental Assessment and Coastal Health Act). As a recipient of BEACH funds, the state must now revise its bacterial water quality criteria to be consistent with EPA criteria.</td>
<td>Advisory Committee in process</td>
<td>Oppose in part</td>
</tr>
<tr>
<td>Fertilizer/ Biosolids regulation</td>
<td>ATCP 40</td>
<td>Revisions to existing regulations of fertilizers and soil additives that apply to certain high quality biosolids.</td>
<td>Public comments under review</td>
<td>Oppose application to most biosolids</td>
</tr>
<tr>
<td>Lab Certification</td>
<td>NR 149</td>
<td>New rules to add detail on lab procedures and reporting. Could create substantial additional burdens for small wastewater labs.</td>
<td>Advisory Committee in process</td>
<td>Oppose in part; support in part</td>
</tr>
<tr>
<td>Landspreading</td>
<td>NR 243</td>
<td>Revised rules on wastewater from large scale animal feedlot operations. Will control nutrient runoff from agricultural facilities and indirectly benefit point source discharges to affected waterways.</td>
<td>Public Hearings Statewide August 15-25</td>
<td>Monitor</td>
</tr>
<tr>
<td>Landspreading</td>
<td>ATCP 50 and 51</td>
<td>Incorporation of proposed phosphorus-based NRCS 590 standards into revisions to soil and conservation standards in ATCP 50 and development of livestock facility sitting standards</td>
<td>Public comments under review; final adoption planned for September, DATCP Board meeting</td>
<td>Support an exemption for biosolids</td>
</tr>
<tr>
<td>Nutrient Criteria</td>
<td>No number assigned</td>
<td>EPA expects states to adopt nutrient water quality standards consistent with federal criteria by 2006 or 2007.</td>
<td>State Study ongoing</td>
<td>Monitor</td>
</tr>
<tr>
<td>SSO</td>
<td>NR 210, NR 110</td>
<td>New rules governing sanitary sewer overflows from sewerage systems including collection systems, new definitions of bypass, new provisions for response to SSO events.</td>
<td>Advisory Committee suspended</td>
<td>Support use of SSO Committee, oppose certain proposed SSO rules</td>
</tr>
<tr>
<td>Thermal Water Quality Standards</td>
<td>NR 106</td>
<td>DNR developing rules relating to thermal water quality standards and their applicability for the first time to wastewater treatment facilities.</td>
<td>Advisory Committee dormant</td>
<td>Oppose application to municipalities</td>
</tr>
<tr>
<td>WET Test</td>
<td>NR 106, 149 and 219 WT.53-04</td>
<td>DNR revising WET test methods with stated objective to improve reliability; does not include algal test method</td>
<td>Adopted June 1, 2005.</td>
<td>Monitoring; oppose algal standard</td>
</tr>
</tbody>
</table>

For more information on any of these topics, please call Paul Kent and/or Amy Tutwiler at Anderson & Kent at (608)246-8500 or e-mail Paul at pkent@andersonkent.com and Amy at atutwiler@andersonkent.com.
Best Management Practice (BMP) for Facility Management Information

By Ray Grosch  
rgrosch@intellisys-is.com

Information Management Technology has evolved significantly along with the rapid advancement of computer technology over the past thirty years.

I recall visiting a number of facilities when I first got started in the water and wastewater business. Many of the facilities had evolved large spreadsheet type forms, some up to 48 inches wide, where daily data readings from instruments, laboratory and operator measurements were transcribed. Usually this information had been manually collected on a clipboard or a bench sheet. A vision of a medieval scribe comes to mind when I think about recopying numbers from one form to another.

Over the years many wastewater facilities have simply replaced their old manual spreadsheets with computer based spreadsheets. During this same period of time information management requirements have grown in scope. Today a facility manager must manage detailed operational process records, laboratory data and quality control records, regulatory reports, asset maintenance records along with management and engineering reports. A spreadsheet is an excellent reporting and data analysis tool however it is NOT considered a good tool for data storage. A database management system is considered the best method for managing facility data today.

Best Management Practice (BMP) for information management today dictates that database technology be used for storage of data. Database technology is preferable for a number of reasons including single point entry and multi-user capabilities. Database technology has been identified as Best Management Practice for many years by industry leading organizations such as AWWA and WEF. The Integrated Facility Information Model provides a graphic view of information BMP. The model also demonstrates the sharing of data across the enterprise.

The purpose of an information system is to provide accurate information to the appropriate personnel in a timely manner.

Collecting data automatically saves time, improves data consistency and reduces data transcription errors. Data is not always information and information is not always knowledge, however, data properly manipulated by machines or man can become valuable information. Information in the presence of skilled humans can become knowledge. Knowledge used properly can result in wisdom. This process has been described as the knowledge staircase.

Is your facility still working with scribes, or is your facility equipped with an information system that empowers employees with information and knowledge tools for continuous improvement of operations and maintenance?

Additional information about BMP for facility information management is available from IntelliSys Information Systems. Contact info: (800 347-9977) or www.intellisys-is.com
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