Marshfield Wastewater Treatment Facilities

40th Annual W.W.O.A. Conference
October 3-6, 2006
Kalahari Resort, Wisconsin Dells

HOST:
Baraboo Wastewater Treatment Facility
President’s Message

Greetings WWOA,

I started writing this “President’s Message” immediately after the conference so I could keep fresh the memories of our 39th Annual Conference. Vice President Kay Marshall orchestrated a top of the line technical program and was extremely well prepared for the inevitable lapses and oversights that pop up during such an undertaking. Thank you Kay!

On behalf of all that were in attendance, thanks are also extended to all the committee chairs; Bruce Bartel for Local Arrangements, Jean Van Sistine for the Guest Program, Jeff Czypinski for the Golf Outing, Tom Asmus for the Historical display, and the incomparable Carol Strackbein for the Manufacturers and Consultants. Thank you to all the individuals that presented papers during the technical portion. What a memorable week it was!

I take the gavel for what will be an exciting and rewarding year for me. I am honored to have the opportunity to represent this organization. I appreciate the chance to be able to communicate to a wider audience, and from a higher stage, the importance and nobility of our occupation. I will do my utmost to assist and develop the future generation of plant operators who will continue to protect Wisconsin’s Watersheds.

In my acceptance speech at this year’s banquet I stressed the important role of water in our lives, and that nothing on this planet will survive without it. I used a few quotes from famous people, but one that really struck a note with me is from poet Loren Eiseley. His quote is simple and poignant: "If there is magic on this planet, it is contained in water." We all contribute to the quality of this "magical resource". We must be the loud and clear voice of water pollution prevention. Our actions and deeds, although mostly unnoticed, are vital for the health and welfare of our communities. We affect not only the physical health but the economic growth of our communities. For some communities, the single greatest investment is its wastewater treatment facility.

I vividly recall looking out at the faces of our membership that were in attendance at the awards banquet. I know so very many on both a personal and professional level. They are the single, largest group of talented and dedicated individuals I have ever been associated with since my time spent in the U.S. Marine Corps back in the mid 1970's. They are very much like my "beloved Corps". They are proud of their profession, confident in their abilities, and willing to put service before self. I consider myself very fortunate to represent this great organization.

As I travel the state during this year, I will urge you to become more involved in the support of this organization. There are many ways, both large and small to contribute. Host a regional meeting, become a regional officer, join the Board of Directors, or simply contact a committee chair and offer your input and help.

Keep up the good work. Work safely and with purpose. Keep helping to maintain the magic of Wisconsin, its good Water. Without good and clean water, Wisconsin’s magic will fade. It’s up to us.

Semper Fidelis,

President Tom Kruzick
INTRODUCTION: Wastewater treatment services began in the City of Marshfield in 1880 with a collection system and primary treatment. Two Imhoff tanks were added in 1923. A new activated sludge treatment plant was constructed on a new site in 1947. An extensive $10M upgrade was completed in 1976, and tertiary treatment was added in 1986. A brand new plant was constructed and placed on line in May 2000 at a new location. A new plant became necessary at that time due to mainly inadequate hydraulic capacity and biosolids storage capacity, added to the fact that much of the equipment was 55 years old. The new facilities were designed to reduce the complexity of the treatment operations by reducing the number of operational functions by 50% from ten to five. This in turn allowed the plant staffing to be reduced by two operators and provided the ability to reassign four operators to collection system responsibilities formerly handled by the Street Department. So overall WWTF staffing was reduced by six operators, for a 50% staff reduction. This now places the City of Marshfield in a position of ultimate control over its collection system maintenance. And finally, the new design features the ability to accommodate high flows during rainfall events without disrupting treatment operations or exceeding discharge permit limits. The cost of the new facilities was $22M including a $5M 12,000 ft. interceptor. The new plant design engineers were Strand Associates, Inc.

DESIGN FEATURES/EFFLUENT LIMITS:

Dry weather design flow is 4.63 MGD.
Wet weather design flow is 7.91 MGD.
Peak instantaneous design flow is 28.0 MGD.

Maximum loadings are:
- **BOD** – 11,000 lb./day
- **TSS** – 11,000 lb./day
- **TKN** – 1,550 lb./day
- **Phosphorus** – 350 lb./day

Treatment units consist of:
- (3) 15 MGD screw pumps
- (2) 1/8” fine screens
- (2) 2.75 MG oxidation ditches
- (3) 881,000 gal. final clarifiers
- (1) 3 meter gravity belt thickener
- (2) 2 MG biosolids storage tanks

Monthly average effluent limits are:
- **CBOD5** – 16 mg/L
- **TSS** – 20 mg/L
- **Phosphorus** – 1.0 mg/L
- **Copper** – 47 µg/L

UNIQUE FEATURES:

- High capacity influent pumping capabilities helps avert sewer system overflows and provides the opportunity to continue full treatment during high flow events.
- Fine screening debris removal to 1/8” virtually eliminates debris in the oxidation ditch and biosolids that are ultimately landspread.
- Total process control utilizing a SCADA system monitors and controls oxygen utilization, data acquisition and storage. This system provides the capability to monitor and control processes utilizing an off-site lap-top computer, and management of real time and historic data for scheduling preventive maintenance of equipment.
- A comprehensive Collection System Operation and Maintenance Program featuring cleaning, televising, flow monitoring, manhole inspections and repairs, home and lateral inspections, a grease management program, and new line pressure and mandrel testing all performed by our
own staff. A Clearwater Committee consisting of wastewater, engineering, street and inspection staff functions to identify and prioritize mainline replacement and rehabilitation projects. Over $1,000,000 per year is allocated for replacement and rehabilitation of deteriorated sewers to eliminate clearwater intrusion.

- A website is maintained, and “virtual” tour videos and power point tours are made available for public education including school site presentations.
- Various modifications to plant operations, maintenance, and personnel procedures have saved $3.8M in costs over the past five years.

The City of Marshfield has been recognized twice by the USEPA through WDNR recommendation for the operation and maintenance excellence of their Wastewater Treatment Facilities. In 1990, they received the USEPA National First Place O & M Excellence Award, and more recently in 2005, they received the USEPA Region 5 Second Place O & M Excellence Award. This is a tribute to the dedication of the staff for their committed performance to providing Clean Water for the community and the waters of the State of Wisconsin. They are truly Clean Water professionals!

### 2006 Government Affairs Seminar

The Government Affairs Seminar will be held on Thursday, February 23, 2006, at the Marriott Madison West on John Q. Hammons Drive.

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Wisconsin Water Association & Central States Water Environment Association

Announce the 1st Annual Midwest Water Industry Expo

The MIDWEST WATER INDUSTRY EXPO is an exposition for utility personnel by equipment suppliers, manufacturers and consulting engineers who want an effective method to exhibit their products and services to water and wastewater professionals. The EXPO provides the opportunity to research problems experienced on a day-to-day basis with manufactures and industry professionals as well as exploring solutions to those problems.

Exhibitors will be offering informative presentations throughout the EXPO, but there will not be a formal technical program. The focus will be on the equipment, the exhibitors and you, the operator.

Please mark your calendar for this upcoming event!!! For more information visit our website:  
http://www.wiawwa.org/joint_expo.htm

Location: The Kalahari Resort at the Wisconsin Dells  
Date: Wednesday, February 1, & Thursday, February 2, 2006  
Time: Wednesday 9:00 a.m. – 6:00 p.m. Thursday, February 2 – 9:00 a.m. – 2:00 p.m.  
Room Rates: Including 4 Waterpark Passes $99.00/night!

NATIONAL ENGINEERING FIRM EXPANDS PRESENCE IN WISCONSIN

Heartland Engineering, an eight-person engineering firm in Brookfield, has joined the Mead & Hunt team.

Mead & Hunt is a privately held, employee-owned corporation and is ranked among the top 500 engineering and architectural firms in the nation by Engineering News-Record magazine. With 300 employees nationwide, Mead & Hunt maintains a dozen offices. The Wisconsin offices are in Madison, Green Bay, La Crosse, and now Milwaukee.

“This is a perfect fit with the Mead & Hunt culture and commitment to client satisfaction. This talented team of professionals is great people and a wonderful addition to the Mead & Hunt family – high integrity, dedication to excellence, and a great team spirit,” said Rusty Chesmore, Mead & Hunt’s vice president. “The Milwaukee team exemplifies Mead & Hunt and will bring value beyond pure engineering to our clients.”

Mead & Hunt has experienced record-level growth during the past decade. The firm was recently recognized on The Zweig Letter Hot Firm List as one of the top 20 fastest growing architectural and engineering firms in the Midwest. Throughout this incredible growth, Mead & Hunt maintained its client-focused project management and employee-supportive atmosphere. In 2003, the firm was ranked number eight “Best civil engineering firm to work for” in the nation by CE News magazine.

“This is an exciting opportunity for Heartland Engineering clients and employees. We’ve worked with Mead & Hunt in the past and look forward to professional growth and being part of the future success of the company,” said Julie Hoppe, manager of the Milwaukee office (former president of Heartland Engineering).
North Central District Fall Meeting
Lakeland Sanitary District No. 1
September 15, 2005

The North Central District held its fall meeting at the Arbor Vitae Town Hall in Minocqua, WI, on September 15, 2005. The Lakeland Sanitary District No. 1 hosted the meeting. There were 41 people in attendance.

Ron Groth, Superintendent of the Lakeland Sanitary District, welcomed everyone in attendance and explained the characteristics of his water and wastewater utility. Ron then introduced the first speaker of the day, Mark Oberhelman, from Hawkins Chemical Company. Mark presented a presentation on polymer applications. Mark explained there are three main areas of polymer applications. First is the primary clarifier, where low molecular weight coagulants are used to help with settling. The second place would be the secondary clarifiers, where polymer or flocculants are used to promote settling from filamentous bacteria due to low dissolved oxygen or low nutrient conditions. Chlorination of the RAS can also help with filamentous bacteria. Finally, Mark explained a lot of polymer applications are used to dewater sludge. For instance, polymers are used to mechanically thicken sludge, such as GBTs, belt presses, and centrifuges. Polymers can also be added to digesters and decanted. Mark stressed sludge age and oxygen concentrations affected polymer dosages. Younger sludge dewater easier than older sludge.

Ken Ligman of Becher Hoppe Associates gave the next presentation of the day on Autothermal Thermophilic Aerobic Digestion (ATAD). Ken explained that ATAD produces Class A sludge, which can be distributed to the public as a fertilizer. This is especially helpful since there is less and less land available for biosolids application. The ATAD minimum requirements are; biosolids with 3-5% solids, biosolids with 50% volatile solids content, maintain a temperature of 131 degrees F for 10 days, and batch operation. The raw sludge is thickened prior to entering the ATAD process and again after the ATAD process to form a sludge cake. The ATAD process greatly reduces the final volume of sludge, while producing exception quality, Class A biosolids, which makes a great fertilizer.

Mark Hoff from P.J. Kortens gave a presentation on Trouble Shooting Controls. Mark touched on areas of safety equipment and types of equipment to use while working on control panels. He explained the
Don Voigt of Energenecs followed the break with a presentation on European Technology. Don explained how European technology has set the standards in engineering wastewater treatment process equipment. Each year a lot more engineering students are graduating from foreign countries, while the United States is declining. Don explained that Europeans see the American people as “wasteful” people. We don’t conserve energy very well. New European wastewater technology strives for better treatment, while also conserving energy. The reason the U.S. stays so competitive is we are quick to adapt to new technologies, while European countries don’t like a lot of change.

The morning session concluded with Bart Sexton from the Oneida County Landfill with a presentation on Treating Septage at a Solid Waste Landfill. Bart explained his facility was proposing the construction of a wastewater treatment facility to take septage and holding tanks wastes from Oneida County. The 22-acre facility would include an access road, receiving pad, anaerobic pond, aerobic pond, and a 20-acre hybrid poplar plantation. Wastes would be offloaded and put into a covered and lined anaerobic pond for decomposition of solids. Gases would be flared or filtered through a biofilter. Effluent from the anaerobic process would be pumped to an aerobic pond for further treatment to 50 ppm of BOD or less. Effluent from the aerobic pond would then be used to trickle irrigate a 20-acre hybrid poplar plantation during May through September.

Following a great lunch, Steve Ohm, Wisconsin DNR, presented a DNR update. Steve discussed concerns and problems of the recent CMAR submittal. He also touched on topics of concern such as; Sanitary Sewer Overflows, Assembly Bill 449 – which provides an incentive for POTWs to accept septage, bacteria standards, ammonia and mercury limits, alternative phosphorus limits, and finally encouraged the use of the new E-DMR.

Ken Bloom, NCD Chairman, then led a short business meeting. The minutes of the business meeting follow this write up.

The day concluded with a tour of the Art Oehmeke State Fish Hatchery, where they raise musky and walleye for stocking in Wisconsin lakes.
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Jim Riege of the Wausau WWTF was recognized as the 2004 Operator of the Year award recipient.

Ken asked communities to consider being a host for upcoming regional meetings.

Non-members were encouraged to become a member of the WWOA.

The site of the next regional meeting was announced – City of Stevens Point, sometime in January 2006.

The floor was opened for any other business.

The meeting was adjourned at approximately 1:50 p.m.

Many thanks to Ron Groth, and all the employees of the Lakeland Sanitary District, for all their work to make this meeting successful.

Business Meeting Minutes

- Ken Bloom, NCD Chairman, called the meeting to order.
- Ken thanked everyone for coming and Ron Groth and the Lakeland Sanitary District for hosting the meeting.
- The minutes from the last meeting in Almond were accepted.
- The treasurer’s report was presented. As of August 1, 2005 we had $1,930.24 in our escrow account, prepared by Gus Strehlo, treasurer.
- A request was made to get more people involved in participating in the Operator Competition Team. We have not had enough people participate to form a team for the past two years.
- The 39th Annual WWOA Conference information was discussed.
- Ken presented the topics of discussion at the past steering committee meeting in Stevens Point on August 30, 2005.
- Chris Helgestad, Village of Spencer, and Lyle Lutz, Village of Amherst, were announced as newly elected steering committee officers. Ken thanked Jeremy Cramer, Stevens Point WWTF, and Ken Johnson, Rib Mountain Sanitary District, for their service to the North Central Region as past steering committee officers.
- The City of Marshfield was recognized for winning the second place, 2005 USEPA Region V, Operation and Maintenance Award.

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**WWOA Conference Schedule**

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<thead>
<tr>
<th>Year</th>
<th>Conference Date</th>
<th>Location</th>
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<tr>
<td>2006</td>
<td>October 3-6</td>
<td>Kalahari Resort</td>
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<tr>
<td></td>
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<td>Wisconsin Dells, WI</td>
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<tr>
<td>2007</td>
<td>October 22-25</td>
<td>La Crosse Civic Center &amp;</td>
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<tr>
<td></td>
<td></td>
<td>Radisson Hotel</td>
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<td></td>
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<td>La Crosse, WI</td>
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Good Evening. My name is Ken Bloom, chairman of the North Central District and it’s my honor this evening to present the 2005 Operator of the Year Award for the North Central Region.

The recipient of the 2005 Operator of the Year award began his career as a certified wastewater operator in 1997. The same year he was also certified in municipal water supply operations.

He operates a 0.5 MGD wastewater treatment plant which includes; grit removal, primary clarification, 6 RBC Units, secondary clarification, and aerobic digestion.

Besides overseeing the WWTP Operations, he is also in charge of all laboratory testing. He has upgraded the physical laboratory facility, revised day to day analytical techniques and procedures, and effectively implemented a computerized laboratory record keeping and reporting system.

His wastewater discharge permit includes BOD, TSS, pH, Ammonia, D.O., and copper. For those of you that have copper limits, you know there’s not much one can do at the WWTP, to treat for copper, so he has continuously maintained communications and cooperation with the water utility, in order to consistently meet the copper limit, in the WWTP effluent.

Additionally, he affectively oversaw their recent WWTP upgrade. This included a new sludge drying and storage facility, to meet DNR requirements. He also performs many maintenance tasks at the plant, including a specialty of his, gear box rebuilding, which has saved the village money in outside contracting fees. As well, he actively participates in the budgeting and planning processes for the wastewater treatment facility.

Overall, he is a self motivated individual and takes great pride in a job well done, which is exhibited in the cleanliness of the plant. No matter what time of the day, or what day of the week you visit his facility, you will find it clean, organized, and operating well. And if all this isn’t enough, he still finds time to maintain the wastewater collection system, and serve his community as Chief of the local volunteer fire department. Therefore, I am honored to present the 2005 Wastewater Operator of the Year Award for the North Central Region to Mr. Dan Dvorak from the Village of Edgar Wastewater Treatment Facility.

Congratulations Dan!
## Wisconsin Water and Wastewater Operator Training Courses

### Moraine Park Technical College – Spring Semester 2006

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Date</th>
<th>Course Title</th>
<th>Campus Location</th>
<th>Room Number</th>
<th>Credits Available</th>
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<tr>
<td>527-130-004</td>
<td>Jan. 24, 25, 26, 31, Feb. 1, 2 &amp; Apr. 27, 2006</td>
<td>Water Supply (Groundwater &amp; Distribution)</td>
<td>NWTC – Green Bay</td>
<td>BC 117</td>
<td>36 CECs; Water Only and 3 Ass. Degree Credit(s)</td>
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<tr>
<td>527-117-003</td>
<td>Feb. 7 &amp; 8, 2006</td>
<td>Iron, Zeolite, and VOC Certification</td>
<td>MATC – Madison</td>
<td>Commercial Ave. Cam. 269</td>
<td>12 CECs; Water Only and 1 Ass. Degree Credit</td>
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<td>527-118-003</td>
<td>Feb. 14 &amp; 15, 2006</td>
<td>Utility Management 1</td>
<td>MPTC – West Bend</td>
<td>N119</td>
<td>12 CECs Water OR Wastewater and 1 Ass. Degree Credit</td>
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<td>527-441-003</td>
<td>Feb. 16, 2006</td>
<td>The Well: Inside and Out</td>
<td>MPTC – West Bend</td>
<td>L141</td>
<td>6 CECs; Water Only</td>
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<td>527-130-005</td>
<td>Feb. 21, 22, 23, 28, Mar. 1, 2 &amp; Apr. 25, 2006</td>
<td>Water Supply (Groundwater &amp; Distribution)</td>
<td>MATC - Madison</td>
<td>Commercial Ave. Cam. 269</td>
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<td>527-117-004</td>
<td>Mar. 7 &amp; 8, 2006</td>
<td>Iron, Zeolite, and VOC Certification</td>
<td>NWTC – Green Bay</td>
<td>CB 213A</td>
<td>12 CECs; Water Only and 1 Ass. Degree Credit</td>
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<td>527-473-001</td>
<td>Mar. 9, 2006</td>
<td>Preventive Maintenance of a Water Distribution System</td>
<td>NWTC – Green Bay</td>
<td>CB 213A</td>
<td>6 CECs; Water Only</td>
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<td>527-130-002</td>
<td>Mar. 14, 15, 16, 21, 22, 23 &amp; Apr. 26, 2006</td>
<td>Water Supply (Groundwater &amp; Distribution)</td>
<td>MPTC – Fond du Lac</td>
<td>E162</td>
<td>36 CECs; Water Only and 3 Ass. Degree Credit(s)</td>
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<td>527-132-002</td>
<td>Apr. 4, 5, 6, 2006</td>
<td>Surface Water Certification</td>
<td>NWTC – Green Bay</td>
<td>BC 117</td>
<td>18 CECs; Water Only and 1 Ass. Degree Credit</td>
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<td>527-416-004</td>
<td>Apr. 10, 2006</td>
<td>Water Disinfection</td>
<td>CVTC – Chippewa Falls Campus 116</td>
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<td>6 CECs Water OR Wastewater</td>
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<td>527-137-002</td>
<td>Apr. 11 &amp; 12, 2006</td>
<td>Distribution Certification</td>
<td>CVTC – Chippewa Falls Campus 116</td>
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<tr>
<td>527-441-004</td>
<td>Apr. 13, 2006</td>
<td>The Well: Inside and Out</td>
<td>CVTC – Chippewa Falls Campus 116</td>
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<td>6 CECs; Water Only</td>
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<td>527-117-005</td>
<td>May 1 &amp; 2, 2006</td>
<td>Iron, Zeolite, and VOC Certification</td>
<td>MPTC – West Bend</td>
<td>N119</td>
<td>12 CECs; Water Only and 1 Ass. Degree Credit</td>
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<td>527-451-003</td>
<td>May 9, 2006</td>
<td>Confined Space Safety</td>
<td>FVTC – Appleton Bordini Center Room 186</td>
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<td>6 CECs Water OR Wastewater</td>
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<td>527-442-003</td>
<td>May 10, 2006 (AM)</td>
<td>Cross Connection Control</td>
<td>FVTC – Appleton Bordini Center (across from FVTC) Room 186</td>
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<td>3 CECs Water OR Wastewater</td>
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<td>527-427-002</td>
<td>May 10, 2006 (PM)</td>
<td>Leak Detection</td>
<td>FVTC – Appleton Bordini Center (across from FVTC) Room 186</td>
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<td>3 CECs Water OR Wastewater</td>
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<td>527-119-002</td>
<td>May 11 &amp; 12, 2006</td>
<td>Utility Management 2</td>
<td>MPTC – West Bend</td>
<td>N119</td>
<td>12 CECs Water OR Wastewater and 1 Ass. Degree Credit</td>
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### REGISTRATION AND CONTACT INFORMATION

Register online at [http://www.morainepark.edu/academics/register.shtml](http://www.morainepark.edu/academics/register.shtml); or call 1-800-221-6430

For general information call 920-924-3270 or email jfreismuth@morainepark.edu

### INSTRUCTOR CONTACT INFORMATION

Fred S. Rice – email at frice@morainepark.edu (your best option) or voicemail at 920-924-3283
The WWOA Tips & Ideas Web Site

Wastewater operators must always fine-tune their processes and equipment. Solutions are needed for design problems, modifications must be performed on process equipment, and clever devices are needed to save time and money. All these ideas make a facility run more efficiently.

The WWOA offers many outlets to share ideas with its members, e.g., e-mail list, regional meetings, Clarifier articles, and conference technical sessions. Also offered is the Tip & Ideas section at wwoa.org. Simply type in “wwoa.org” and click the “Tips & Ideas” heading to the left. Browse through 12 categories of interest. There’s something for everyone whether you’re a lab tech or safety director.

Recently, new tips have been added to the site. Here are some examples:

- Inspection for illegal sewer connections
- Pretreatment sampling
- An idea to unplug final clarifier draft tubes
- Anaerobic digester gas condensate drain
- Helpful welding hints
- Snail control for trickling filters and RBCs.

If you have a useful idea, contrivance, gadget, apparatus, tool, suggestion, contraption, device, or tip we’d like to hear from you. They’re easy to submit, simply write up a description and e-mail it to our web master, Scott Thompson at: scotthomps@athenet. Pictures are always helpful, but not necessary.

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Do not try reforming bad pumps yourself. When good pumps go bad, call L.W. Allen.

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The WWOA Southern District held its summer meeting August 25, 2005 in Watertown. Sixty-nine members and two non-members gathered at Turner Hall in Watertown, WI. Attendees were welcomed by Watertown Mayor John David.

The first speaker of the day was Marty Rognlien of IntelliSys Information Systems. Marty explained the XML computer programming language. He said it was very similar to the HTML that we are familiar with. He explained that double entry can be eliminated as the software takes the entered data and inputs it into the e-DMR form so that manual reentry is not necessary. Marty demonstrated how the system works when data is actually entered.

After a break to visit with vendors Brian Hahn of the National Weather Service spoke to everyone about the Advanced Hydraulic Prediction Service (AHPS). The AHPS is used to predict both high and low water levels on area streams and rivers which help to determine flooding threats. Southern Wisconsin stations are monitored by the Sullivan, WI NWS office. Brian explained the different types of manual and automated gauging stations that are being used. Manual stations often have only a wire weight or a staff gauge, whereas, automated stations utilize a bubbler system and a pressure transducer. Lastly, he showed how data is reported via the internet and advised members how to access the information on the internet.

Dean Wiebenga of Peterson and Matz, Inc. finished the morning program by speaking to attendees about circular clarifier drive maintenance. His emphasis was on inspecting and rejuvenating aging circular clarifiers. Dean explained that the three main components to look at are the main bearing/gear, the intermediate gear, and the micro switches. He talked about checking bearing wear on the drive and also the torque overload housing. Dean also said that new LED torque overload readouts are available as well as neoprene dust shields. He then spoke about options for flocculation and scum collection. Dean then invited everyone outside to view a trailer mounted circular dive unit. He explained maintenance issues on the unit and entertained questions.

After the usual outstanding lunch provided by the Turner Hall staff, the Southern District held its business meeting. Next, the DNR update was given by DNR Engineer Doris Thiele. Doris educated and entertained members by administering a quiz on Wisconsin water related topics.

Before attendees left to tour the Watertown Wastewater Treatment Facility an overview of the plant was given by Bill Ericson of Applied Technologies and treatment plant superintendent Kevin Freber. Bill reviewed the history of wastewater treatment in Watertown beginning with the first facility in 1933. He briefly explained the processes included in the new plant and why they were utilized.
Lake Michigan District  
August 18, 2005  
Egg Harbor, Wisconsin  

By Dawn Jandrey  
WWOA-LMD Secretary/Treasurer

The August 18, 2005 Lake Michigan District meeting was held at Maxwelton Braes Golf Course in Bailey’s Harbor. A total of 86 people attended. Chairman Kevin Skogman called the meeting to order at 9:15 a.m., beginning by thanking L.W. Allen for providing the morning break food and refreshments, Robert E. Lee & Associates for sponsoring the brat & corn roast and Egg Harbor for making the local arrangements.

Kevin began the meeting by reading the minutes of the May 19, 2005 meeting along with the treasurer’s report. A motion was made and seconded to approve both documents as presented.

Kevin reminded the group of the upcoming annual conference October 4 – 7, 2005 in Green Bay. There is still time to enter nominations for the Operator of the Year Award or become a member of an operator competition team. The LMD currently has one team, consisting of Jeff Mayou, Marinette; Jeff Smudde, Green Bay; Dan Vanden Avond, Green Bay; and Jason Ellis, Oshkosh. Nominations were taken for the Vice President position. A motion was made by Jeff Haack to nominate Jeff Mayou of the Marinette WWTP to take over the VP responsibilities. There were no other nominations so a motion was made to close the nominations and elect him to the job. The motion was seconded and approved. Kevin then introduced Tim Nennig from the Board of Directors.

Ending the announcements, Kevin advised of the following regional meetings for 2006:

February – Hilbert
May – Saukville (Joint meeting w/ SED)
August – Sister Bay
November – Oconto

Kevin then entertained a motion to adjourn the business meeting. Motion was seconded and carried.

Bruce Hill of the Egg Harbor City Council welcomed everyone to Egg Harbor. Next, Al Krings of Robert E. Lee then gave a history of the Egg Harbor WWTP and a plant introduction. The group then left for a tour of the Egg Harbor plant.

After returning from the plant tour, Mark Kane of L.W. Allen gave the first technical presentation on Security & SCADA. The second presentation was given by Joe Cantwell; SAIC. Joe talked about water/wastewater energy efficiency programs, program structure and assessment approach, and education & training. Joe also discussed the energy savings obtained through installed projects at several locations. Joe had handouts and informational packets available for anyone wanting additional information.

After a break, Brian Hahn of the National Weather Service gave the final presentation of the day regarding river level information from the National Weather Service AHPS System. AHPS stands for Advance Hydrologic Prediction Service; a series of web graphics that display stage hydrographs, past stages and predicted stages. Brian showed maps of river monitoring points, river forecast centers, gauging stations, and river stage forecasts. Brian noted that the National Weather Service is always looking for facilities to obtain data and be a part of a co-operative weather observation program.

Chairman Kevin Skogman again thanked L.W. Allen, Robert E. Lee, Egg Harbor, Mark Kane, Joe Cantwell, and Brian Hahn for their support and participation. The group then adjourned for the brat and corn roast.
Village of Antioch
Retains Applied Technologies for
New Multi-Million Dollar Plant

ANTIOCH, Illinois (September 9, 2005) – The Village of Antioch, Illinois has retained Applied Technologies, Inc. (ATI) to provide engineering design services for its new wastewater treatment facilities. The Village began investigating wastewater treatment alternatives because the current plant is quickly approaching its design capacity.

The new facilities will be constructed on the site of the existing facilities and will include replacement of all major components. Drawings and specifications will be completed in early spring, and construction of the new facilities is scheduled to begin in the summer of 2006. The facilities will improve land use and the quality of water discharged to Sequoit Creek.

Applied Technologies, headquartered in Brookfield, Wisconsin with offices in Lake Villa and Oak Brook, Illinois, is a multidisciplinary engineering and architectural firm specializing in industrial and municipal wastewater management. For more information, visit www.ati-ac.com.

WISCONSIN WASTEWATER OPERATORS’ ASSOCIATION, INC.
39th Annual Business Meeting
Regency Suites/ KI Center
Green Bay, Wisconsin
October 6, 2005

President Nennig called the meeting to order at 12:30 PM on October 6, 2005. Roll call was taken. All Officers and Directors were present. Approximately 275 attendees were present.

President Nennig asked for a moment of silence for all the members who have passed away in the past year.

John Leonhard made a motion to dispense with the reading of the minutes from the October 28, 2004 Annual Business Meeting and to approve the minutes as written. LaMont Albers seconded the motion. Motion Carried.
Executive Secretary McKee distributed copies of the Financial Report. McKee reminded the membership this is an audited statement. McKee reported the revenue for this fiscal year ending August 31, 2005 is $162,487.26. Expenditures totaling $153,225.22, with excess revenues over expenditures totaling $9,262.04. A motion was made by LaMont Albers to approve the Financial Statement as presented. Dean Falkner seconded the motion. Motion carried.

President Nennig discussed briefly with the membership the commitments of an individual considering running for the Board.

NOMINATIONS - ELECTION OF OFFICERS

Nominations Chairperson, Randy Herwig, reviewed nominations and election procedures. President Nennig appointed Leo Templeton, Pete Albers, Dale Neis, LaMont Albers, John Allen, Rich Boden, John Leonhard, Jim Krueger and Gary Hanson as ballot clerks. Randy Herwig was appointed recorder.

The Nominations Chairperson, Randy Herwig, announced our new President for 2005-2006 is Tom Kruzick. Randy Herwig placed into nomination the name of Kay Marshall for the office of President-Elect. President Nennig called three times for nominations from the floor. There being none, John Leonhard made a motion the nominations be closed and a unanimous ballot be cast electing Kay Marshall to the office of President-Elect. LaMont Albers seconded the motion. Motion carried.

The Nominations Chairperson, Randy Herwig, placed into nomination the name of Jim Thalke for the office of Vice-President. President Nennig called three times for nominations from the floor. There being none, John Fales made a motion the nominations be closed and a unanimous ballot be cast electing Jim Thalke to the office of Vice-President. Pete Albers seconded the motion. Motion carried.

ELECTION BOARD OF DIRECTORS – 4

President Nennig informed the membership in attendance we have four candidates for the positions of Directorships; Dan Tomaro, Randy Thater and two incumbents John Bond and Bruce Bartel.
President Nennig explained to the membership there are three two-year Directorships and with the election of Jim Thalke to Vice-President we have one one-year Directorship to be filled. The first three with the most votes will fill the three two-year Directorships and the one with the least votes will fill the one year position. President Nennig asked for nominations from the floor three times. There being no further nominations, John Fales made a motion to close the nominations, Paul Lange seconded the motion. Motion carried.

Each candidate spoke briefly to the membership. President Nennig instructed the membership to vote for three.

The election results for Directors were Bruce Bartel, John Bond and Dan Tomaro for the two-year Directorships and Randy Thater will fill the one-year Directorship.

President Nennig congratulated Bruce Bartel, John Bond, Dan Tomaro and Randy Thater.

LaMont Albers made a motion to destroy the ballots. Randy Herwig seconded the motion. Motion carried.

President Nennig informed the membership the Board of Directors is recommending to the membership, Honorary Membership be awarded to Pete Albers. President Nennig recognized Pete for all his dedication and service to the organization.

Carol Strackbein made a motion to award an Honorary Membership to Pete Albers. Georgia Paul seconded the motion. Motion carried. A unanimous hand vote was taken to award Pete Albers an Honorary Membership.

President Nennig commented Pete is the 5th individual to be awarded an Honorary Membership.

COMMITTEE REPORTS

TECHNICAL PROGRAM - Kay Marshall thanked the Technical Program Committee, moderators and the speakers for all their help.

WEBSITE - Bruce Bartel informed the membership if you have any suggestions for the website, you can contact him or a member of the committee.

PROMOTIONS - Dave Carlson thanked the membership for stopping by promotions. Carlson commented the Board decided to sell the older items at a 50% discount.

OPERATOR TRAINING - Dave Carlson stated he assisted Jack Saltes of the WDNR in coordination of eCMR training that was conducted at treatment plants having internet access. Three training sessions took place in Antigo, Medford and Eagle River.

We also provided one operator training seminar titled, “Sampling and Flow Monitoring for Wastewater Treatment Plant Operators.” The session was held in Fond du Lac and was well attended.

CLARIFIER - Dan Busch introduced the other CLARIFIER editors, Jean Van Sistine and Jeff Haack. Busch recognized Ron Altmann for gathering all the information regarding the history of
the CLARIFIER and the WWOA. Busch thanked Bill Marten and Jack Saltes for submitting educational articles for the CLARIFIER. Busch urged the membership to submit more educational articles so we can maintain balance between educational articles and advertising.

EXHIBIT COMMITTEE - Carol Strackbein commented the exhibits were successful this year. We had a total of 110 exhibit booths. Strackbein thanked all the sponsors and exhibitors.

REGIONAL COORDINATOR - Pete Conine thanked the regions and the Regional Officers.

SCHOLARSHIP - Pete Conine reviewed the scholarship criteria with the membership. Conine announced Sara Driver is the recipient of the $1000.00 four-year scholarship. Sara is the daughter of Jim Driver and is pursuing a degree in civil engineering at UW Milwaukee.

HISTORICAL - Tom Asmus, Chairperson of the Historical Committee, introduced the Committee, Leo Templeton, Dan Busch, Carol McKee and Richard McKee. Asmus urged the membership to take a look at the WWOA Historical Display.

NEW BUSINESS

OPERATOR COMPETITION AWARDS - Jim Thalke introduced the judges and the equipment suppliers and companies. Thalke thanked them for all their help and support of the 2005 Operators Competition. The Judges are: LaMont Albers, Tom Kimberly, Tom Steinbach, Frank Bonney, Pete Wachs, Mark Duerr, Gordy Koch, Dan Tomaro, Monty Baker, and Mike Hess.

Thalke stated we had three teams competing this year. The Southeast Region-The Fecal Fanatics, members are Bruce Rabe, Tom Dixon, Gary Martinson and Mike Christel; West Central Region-W.C. Sewer Dogs, members are Greg Imgrund, Sam Warp, Dan Burns and Merle Noren; and the Lake Michigan Region-Insufficiently Wasted, Jeff Smudde, Dan Vanden Avond, Jason Ellis, and Jeff Mayou. Each team did an incredible job. The first place team is Insufficiently Wasted.

President Nennig informed the membership we have a total of 861 attendees this year.

There being no further business, John Leonhard made a motion to adjourn the 39th Annual Business Meeting. Dean Falkner seconded the motion. Motion Carried.

President Nennig adjourned the meeting at 1:24 PM on October 6, 2005.

Respectfully submitted,

Richard D. McKee
Executive Secretary
LIFETIME MEMBERS


WWOA Committee Chairs 2005/2006

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<tr>
<th>Committee</th>
<th>Chairperson</th>
<th>Phone Number</th>
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<tbody>
<tr>
<td>Executive Committee</td>
<td>Tom Kruzick</td>
<td>(920) 232-5365</td>
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<td>Technical Program</td>
<td>Jim Thalke</td>
<td>(262) 246-5184</td>
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<td>Local Arrangements</td>
<td>Gil Hantzsch</td>
<td>(608) 355-8879</td>
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<tr>
<td>Spouses Program</td>
<td>Kelly Zimmer</td>
<td>(608) 355-8956</td>
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<td>Nominations</td>
<td>Tim Nennig</td>
<td>(262) 375-5330</td>
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<td>Career Development</td>
<td>Kay Marshall</td>
<td>(715) 720-6288</td>
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<td>Tom Kruzick</td>
<td>(920) 232-5365</td>
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<td>Promotional</td>
<td>Dave Carlson</td>
<td>(920) 322-3664</td>
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<tr>
<td>Clarifier</td>
<td>Dan Busch</td>
<td>(920) 438-1101</td>
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<td>Website</td>
<td>Bruce Bartel</td>
<td>(920) 322-3664</td>
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<td>Exhibits</td>
<td>Carol Strackbein</td>
<td>(414) 365-2231</td>
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<tr>
<td>Manufacturers, Consultants</td>
<td>Jim Shaw</td>
<td>(414) 365-2200</td>
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<td>Publicity</td>
<td>John Bond</td>
<td>(715) 749-3175</td>
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<td>Membership</td>
<td>Rich McKee</td>
<td>(608) 795-0024</td>
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<td>Annual Awards</td>
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<td>(715) 720-6288</td>
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<td>Regional Coordinator</td>
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<td>Permanent Arrangements</td>
<td>John Leonhard</td>
<td>(920) 929-2956</td>
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<td>Government Affairs</td>
<td>Randy Thater</td>
<td>(262) 524-3626</td>
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<td>Resolutions and Bylaws</td>
<td>John Leonhard</td>
<td>(920) 929-2956</td>
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<td>Directory</td>
<td>Rich McKee</td>
<td>(608) 795-0024</td>
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<td>Spring Biosolids Symposium</td>
<td>John Bond</td>
<td>(715) 749-3175</td>
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<tr>
<td>CSWEA Liaison</td>
<td>Randy Thater</td>
<td>(262) 524-3626</td>
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EMS or Environmental Management System is a topic you will be hearing about in future years. EMS being promoted by the USEPA are based on ISO 14000 standards. (International Standards Organization).

**What is an Environmental Management System?**
An EMS defines an organization's structure, responsibilities, practices, procedures, documentation processes and resources used to satisfy the organization's state goals. Commitment of organization leadership is crucial to ensure success. An EMS is a continual cycle of planning, implementing, reviewing and improving the processes and actions that an organization undertakes to meet its business and environmental goals.

**Why develop an EMS?** An EMS allows an organization to systematically manage its environmental and health safety matters. Currently the USEPA is has given a strong recommendation to the implementation this management strategy. Many of the pending regulations, such as CMOM are based on the EMS strategy of Plan, Do, Check and Act.

**What other benefits can an EMS provide?** In general these systems are associated with:

- Improved environmental performance
- Enhanced compliance documentation
- Resource conservation
- Inadvertent pollution prevention
- Increased efficiency
- Reduced costs
- Improved asset management
- Improved financial management
- Enhanced public image
- Improved employee awareness of environmental issues

**What resources are required to develop an EMS?**
Internal staff time is the cost associated with EMS. However there may also be costs associated with management and information system consultants. A brief list of the potential costs includes:

- An investment of internal resources, including staff/employee time
- Costs for training of personnel
- Costs associated with hiring consulting assistance, if needed
- Costs for technical resources to analyze environmental impacts and improvement options, if needed.

Since the USEPA is strongly recommending the development of EMS programs, early implementer will save their organization time, cost and effort in the future by starting your EMS plan sooner rather than later. Wisconsin facilities are already getting their first example of an EMS strategy with the new ECMAR program being implanted by the Department of Natural Resources.

For USEPA EMS information visit:

http://www.epa.gov/ems/

Additional information about EMS facility information management is available from IntelliSys Information Systems. Contact info: (800 347-9977) or: http://www.intellisys-is.com
ABS Pumps
Adaptor, Inc.
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Clearbrook, Inc.
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CPR Services, Inc.
Crane Engineering Sales, Inc.
Cretex Specialty Products
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Dorner Company
Drydon Equipment, Inc.
Earth Tech
Edge One, Inc.
EMS Industrial, Inc.
Energenecs, Inc.
Engineering America, Inc.
EnviRestor, LLC.
Environmental Resources, Inc.
Envirotech Equipment Company
Flo Trend Systems
Foth & Van Dyke
Frantl Industries, Inc.

GAC Mid America
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GS Systems
Hach Company
IntelliSys Information Systems
ITT Flygt Corporation
J.F. Ahern Company
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TT Technologies, Inc.
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Vacuum, Pump & Compressor, Inc.
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W.A. Vorahl, Inc.
William/Reid Ltd.
Xypex Chemical Corporation
Zorn-Cochrane Compressor & Equipment, Inc.

39th ANNUAL WWOA CONFERENCE
REGENCY SUITES & KI CENTER
GREEN BAY, WI
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United Water Services
US Filter-Envirex
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Watson Marlow
WeirWasher
Westech
Wilco-Emu-USA
Yeomans Chicago Corporation

2006 Clarifier Deadlines

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<td>December 2006</td>
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2005 WWOA AWARDS

BERNAUER AWARD

Dan Busch (R) Green Bay MSD
Presented by Leo Templeton

KOBY CRABTREE AWARD

Bill Marten (R) Donohue & Associates
Presented By Ken Sedmak

WWOA HONORARY MEMBER

Pete Albers (R)
Presented by Tim Nennig

2005 WWOA BOARD OF DIRECTORS

(L - R) John Bond, Jim Thalke, Dan Tomaro, Bruce Bartel, Kay Marshall, Dave Carlson, Tom Kruzick, Randy Thater, Tim Nennig
2005 REGIONAL OPERATOR AWARDS

Lake Michigan Region

Frank Dart (R) Maribel WWTF, Kellnersville WWTF, Kossuth Sanitary District #2
Presented By Ron Austreng

North Central Region

Dan Dvorak (R) Village of Edgar
Presented By Ken Bloom

South East Region

John Erickson (R) Twin Lakes WWTP
Presented By Kerry Gloss

Southern Region

Steve Nighbor (R) Alto Dairy Co-op
Presented By Harry Mathos

West Central Region

Jeff Dejarlais (R) La Crosse
Wastewater Utility, Presented By John Bond

North West Region

Rick Glaser (R) Mercer Sanitary Dist. #1
Presented By Mike LaRose
Ettrick, Wis. — Wilber B. Salzwedel, 66, of Ettrick died Friday, Oct. 14, 2005, at Mayo Clinic in Rochester, MN.

Wilber was born May 11, 1939, to Willard and Bernice (Olson) Salzwedel in Galesville, Wis. He graduated from Gale Ettrick High School. He also attended University of Wisconsin-Stevens Point. In 1959, Wilber enlisted in the U.S. Air Force and was honorably discharged in 1963. Wilber married Sharon Erickson in 1966 at Living Hope Lutheran Church in Ettrick. Wilber worked for the Village of Ettrick as streets and sanitary superintendent until his retirement in 2001.

The following was extracted from the La Crosse Tribune - Matt James, Published - Friday, October 21, 2005.

Wilber Salzwedel never got cheated in life. He did things his way. He was the town’s chief maintenance man. He ran the waste treatment plant and the water system. He mowed the grass in the parks. He cleaned the roads and streets. There always was his devotion to Ettrick. That’s where he’d grown up on the family farm. And he took his snow plowing seriously. When it snowed, he would wake at night, sometimes as early as 2 a.m., get in a two-ton truck and plow the streets of Ettrick. “He was a good fella that did his job very well,” says 90-year-old Smith Beirne, who was the Ettrick clerk and treasurer for 22 years. That’s how it was with Wilber’s snow plowing. He was so good at it for so long, you couldn’t help but take it for granted. You woke up, the streets were clean, you went to work. It was like that for 30 years.

Every story has an end, of course. Wilber’s legs started swelling in 2000, and when they finally dragged him to the doctor, his kidney was failing. He’d lost the other to cancer 20 years earlier, and so they put him on dialysis. For two years, he waited for a transplant, and when it looked like he would never get one, a 40-year-old woman in South Carolina was taken off life support in October 2003. He had another chance. Then, he caught pneumonia. In the hospital, he said softly, “I don’t think I’m gonna make it this time.” He died a week later on Oct 14, 2005.

The big Ettrick fire truck followed the funeral procession carrying Wilber’s grandkids. He had been a volunteer firefighter, an Air Force man, too. A deer hunter. A fisherman. Ettrick’s citizen of the year one time. A morning card player at Weiner’s Bar. An owner of three convertibles in his life. A 66-year-old man thinking about buying a motorcycle this year.

He will be missed.
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MOBILE 414-719-5567
The 2005 Operators Competition will be offering five Events this year as it did last year. The **Collection System Event** will be setting up (programming) a sampler with a Palmer Bowlus Flume in a 8” PVC Pipe in a flow loop. The **Safety Event** involves the rescue of an unconscious victim in a manhole. The **Mechanical Event** involves the maintenance and operation of a 4” diesel pump. The **Laboratory Event** will be the set up of a BOD test along with questions on ammonia testing. The last event will be **Process Control** which is always a surprise. All competition material and guidelines have been sent out last month to the competing teams. Unfortunately we only have 3 teams this year down from 6 last year and 7 from the previous year.

The three team names are:  
**Fecal Fanatics**  
**W.C. Sewer Dogs**  
**Insufficiently Wasted**

The judges are:  
LaMont Albers  
Tom Kimberly  
Tom Steinbach  
Frank Bonney  
Pete Wachs  
Mark Duerr  
Gordy Koch  
Dan Tomaro  
Monty Baker  
Mike Hess

A special thank you to the Equipment Suppliers and Companies that supported the **WWOA 2005 Operators Competition**:  
Process Equipment Repair Services, Inc.  
Lincoln Contractors Supply, Inc.  
J.F. Ahern Co.  
Mulcahy/Shaw Water, Inc.  
Alpha Terra Safety  
North Central Labs  
Wastewater Training Solutions  
Lighthouse Safety

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**WWOA Operators Competition Report**  
**October 3, 2005**  
**Regency Suite Hotel, Green Bay, WI**  
*Submitted By: John Bond and James Thalke*

1st **Insufficiently Wasted** (Lake Michigan Region)  
   Jeff Smudde  
   Dan VandenAvord  
   Jason Ellis  
   Jeff Mayou

2nd **W.C. Sewer Dogs** (West Central Region)  
   Greg Imgrund  
   Sam Warp Jr.  
   Dan Burns  
   Merle Noren

3rd **Fecal Fanatics** (South Eastern Region)  
   Bruce Rabe  
   Tom Dixon  
   Gary Martinson  
   Mike Christel
Since 1974, Moraine Park Technical College in Fond du Lac has been offering an Associate Degree in Water and Wastewater Technology. In addition, Moraine Park began providing operator certification training in 1987; serving operators across Wisconsin who needed to get certified or needed credit hours to renew their certification. Over the years, the network of technical colleges who host this operator training has narrowed but in an effort to still provide a service to operators, Moraine Park continues to offer training throughout the State in various technical colleges on its own accord.

Due to funding constraints, Moraine Park has had to eliminate a portion of this statewide operator training by cutting traditional classroom wastewater certification courses. Water certification courses and many other courses that would provide credit for wastewater certification renewal will still be offered by Fred Rice of Moraine Park in technical colleges around the State thanks in part to funding provided by the Wisconsin Department of Natural Resources. This is a unique collaboration that strategically addresses the needs of both the public and the department by assisting operational personnel in obtaining certification, remaining current on industry trends and regulations, and ensuring they possess the knowledge and skills necessary to protect and serve the public.

Operators may still take wastewater courses online through Moraine Park for General certification assistance, renewal credits, and to earn a degree in Water Quality Technology. Wastewater operators may also take courses with Fred Rice in the technical colleges as many of his courses provide pink credit slips which may be applied towards the renewal of both water and wastewater certifications.

For the present school year, Dan Tomaro, a certified instructor who taught wastewater courses for nine years at Moraine Park, has begun a new venture called Wastewater Training Solutions (www.wastewatertrainingsolutions.com). Dan can provide traditional classroom wastewater certification courses at many locations in the State.
Chairman LaRose opened the meeting with a hardy welcome. Chairman LaRose covered some housekeeping issues and then introduced Wally Thom. Wally gave a brief sampling of things we have done or are in the process of doing to protect the environment we hold so dearly.

After that, Chairman LaRose introduced the Honorable Mayor of Cumberland John Schwanke. John welcomed the group to Cumberland and thanked us for the job we do. Following the Mayor Chairman LaRose introduced the first presenter, Bob Unbehaun. Bob took a two-month sabbatical and kayaked around the entire 1200 mile Lake Superior shoreline. Bob started in Bayfield and went clock wise around the lake. Bob made the comment that Lake Superior was as pristine as a lake could be. Good job operators. Point of information, Lake Superior is about 380 miles east to West and about 160 miles North to South. When asked if he would do it again, he said “No, I do not think I physically could.”

Chairman LaRose then introduced the next presenter Dave Thorson. Dave presentation was on the ice age trail, which meanders through the state of Wisconsin. It basically follows the Moraine or glacial till deposited by a series of glaciers that melted. This trail is one of eight national trails, which is part of the largest national trail called the North Country Trail, which goes from New York to North Dakota. The ice age trail is approximately 1000 miles long. There are three different groups that maintain the national trails and they are National Park Service, Department of Natural Resources, and the Ice Age Park and Trail Foundation. All their goals are to promote education, trail improvements, glacial history, and create learning centers along the system.

Chairman LaRose then introduced the next presenter, Buzz Sorge. Buzz gave a very interesting presentation on Limnology of Wisconsin Lakes. Limnology is the study of a lake that covers plants, water and shoreline species, water quality, sediment and shore line development. Buzz maintained that Wisconsin has 15000 lakes, which keeps him very busy. Buzz listed many things that alter the status quo of a lakes eco-system, such as:

- Residential development-creation of impervious services
- Residential crowding
- Shoreline tree removal-affects bird population
- Tree removal in water-affects fish habitat
- Removal of plants from shoreline and in the shallows-affects fish and cray fish
- Over population of piers-to much shading reduces plant growth
- Storm run off

Many things have been done to improve the lake quality such as storm water retention ponds, storm water green spaces, street sweeping programs, ban on Phosphorus detergents, good bio-solids management and the development of lakes associations. Good job to all of us.
Chairman LaRose concluded the morning by announcing, LUNCH. We had a great Italian meal prepared again by no other that Jerry’s Chartraw’s mother.

Following lunch Chairman LaRose introduced the next presenter, Dave Plumer. Dave presentation was on invasive water species. They’re three kinds of species, native, non-native and invasive. Invasive refers to a species that takes over rather than co-exist. Typically an invasive species has no natural predators and multiplies quickly. Dave had a power point presentation showing some of the problem species we are currently dealing with, such as Eurasian water milfoil, Curly leaf pondweed, Zebra mussels, Rusty Cray fish, purple loosestrife, and there were many others. Proper education and water use can help with the battle. We need to continue to do our part and participate in programs to educate and work with groups to fight the problem in our state waters. Point of information, did you know that purple loosestrife is illegal have and to grow (in any form) in the state of Wisconsin.

Chairman LaRose introduced the next speaker, Storme Nelson. Storme’s presentation was on the Hunt Hill Audubon sanctuary. It is an environmental education site set up to educate the young and old on what is present in our environment. Storme mentioned that because we are good stewards of the environment that he is able to do the job he does. Storme said the kids of today are suffering from N.D.D., which he terms as Nature Deficit Disorder. Because of the wide use of television, video games, and computers our young people have not experienced the wonders of nature as we did as kids. Kids have to many fears about nature and need to be introduced as we were to the wonders. With knowing and understanding we can accept and learn to protect such as we do with our jobs everyday. There are no new environmental heroes or champion such as Gaylord Nelson.

Chairman LaRose introduced the final speaker, Brian Spangler. Brian’s presentation was on the fisheries of the Northwest. Brian works on fish surveys, which lead to lake stocking, river stocking, beaver control, stream fencing for cattle control, rip wrap stream banks and aeration systems for shallow lakes during winter. Brian said the Polk and Barron Counties has 800 lakes 5 acres or larger. They are seeing better nutrient management along the waterways thus improving the water quality.

Chairman LaRose opened the business meeting. First on the agenda was the treasures report. The balance in the checkbook as of September 8, 2005 was $3045.51. The escrow account has an approximate balance of $1177.87. A motion was made and seconded to accept the report, motion was passed. The next report was the secretary’s report with the minutes of the last meeting held in Medford. A motion was made and seconded to accept the report as printed in the Clarifier. Motion passed.

Election of officers was next and the 2006 officers for the Northwest district are as follows:
- Chairman-Mike LaRose-Rice Lake
- Vice Chairman –Dwayne Wilson-Comstock
- Secretary-Wally Thom-Rice Lake
- Treasurer-Mike Romsos-Barron

A motion was made and seconded to adjourn, passed.
Respectfully submitted by Wally H. Thom.
The Village of Almond hosted the North Central District Regional Operators’ meeting on June 7, 2005. The meeting was held at the Almond VFW Hall. The meeting was attended by 55 people.

Dan Folan, operator for the Village, started off the meeting by introducing Dan Iwinski, representing the Almond Village Board, who welcomed all in attendance to the Village of Almond.

Doug Wagner from Applied Industrial Technologies and Joe Carey from Dodge Bearings presented an informative session on bearing types, applications, and lubrication. Dave Felton of L&S Electric followed with a discussion of vibration analysis and the benefits of performing this procedure. Chuck Crawford, Schaeffer Oil, closed out the session prior to break with a demonstration of various Schaeffer lubricants and their applications.

The meeting resumed after break with Dan Disher, Brabazon Pump & Compressor, giving a presentation on pump seals and new seal technologies on the market. Tom Ketchum of the Laub Insurance Group gave a very interesting presentation on insurance liability exposures and ways to reduce exposures. Dan Folan wrapped up the morning session by leading a roundtable discussion of maintenance problems and solutions to problems. Ken Bloom led the business meeting which ended just before lunch.

During the lunch break most attendees went outside to look at the full size cut-away Envirex clarifier drive that was mounted on a trailer in the parking lot. Afternoon speaker Harry Griske, Envirex, answered questions and demonstrated maintenance tasks on the drive.

The meeting resumed with Joe Behlin, DNR, leading off the afternoon session with an update from the

---

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DNR. Harry Griske was the last speaker of the day with his presentation on maintenance of clarifier drives.

Dan Folan closed the meeting with an invitation to tour the Almond Wastewater Treatment Plant.

**Business Meeting Minutes**

- Ken Bloom, NCD Chairman, called the meeting to order.
- Bloom thanked all attendees including the speakers for attending today’s meeting.
- Ken thanked Envirex for providing donuts and coffee for the meeting and Dan Folan from the Village of Almond for hosting the regional meeting.
- The meeting minutes from our last regional meeting were accepted.
- Ken read the last treasurers report as of September 1, 2004, we had $2,718.44 in our escrow account. Bloom informed the group that Gus Strehlo was in the process of setting up a new checking account for the NCD per Rich McKee’s request.
- A request was made for Operator of the Year Award nominations due by August 1.
- Bloom informed the group the NCD was in need of participants for the Operator Competition Team.
- A reminder was made to all the attendees to register for the 39th Annual WWOA Conference, October 4-7, 2005, in Green Bay.
- Bloom asked for nominations for the fall election ballot of two steering committee officer positions.
- Bloom asked municipalities to consider being a host community for upcoming regional meetings.
- Non-members were encouraged to consider becoming a member of the WWOA due to numerous incentives.
- The next regional meeting, the Lakeland Sanitary District was announced
- The floor was opened for any other business.
- The meeting was adjourned at approximately 12:00 pm.
## WISCONSIN WASTEWATER OPERATORS' ASSOCIATION, INC.

### Statement of Revenue

**Cash Basis Ending August 31, 2005**

<table>
<thead>
<tr>
<th>Acc. Number</th>
<th>REVENUE</th>
<th>CURRENT</th>
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</thead>
<tbody>
<tr>
<td>42010</td>
<td>Membership Dues</td>
<td>$33,045.00</td>
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<tr>
<td>42020</td>
<td>Co-Sponsored Seminars</td>
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<td>42030</td>
<td>WWOA Seminars</td>
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<td>42040</td>
<td>Operators Competition</td>
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<td>42050</td>
<td>CLARIFIER Advertising</td>
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<tr>
<td>42060</td>
<td>Annual Conference- Registration</td>
<td>$61,593.95</td>
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<tr>
<td>42065</td>
<td>Annual Conference- Spouses</td>
<td>$2,725.00</td>
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<tr>
<td>42070</td>
<td>Exhibits</td>
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<td>42080</td>
<td>Interest</td>
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<td>42090</td>
<td>Promotional</td>
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<tr>
<td>42100</td>
<td>Miscellaneous</td>
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<tr>
<td>42110</td>
<td>Regional Charter Fees</td>
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<td>42120</td>
<td>Regional Insurance</td>
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<tr>
<td>42130</td>
<td>Web-Site</td>
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<tr>
<td>42140</td>
<td>Pre- Conference</td>
<td>$1,140.00</td>
</tr>
</tbody>
</table>

| Total Cash Receipts | $162,487.26 |

---

**Note:** The table above outlines the revenue for various activities of the Wisconsin Wastewater Operators' Association, Inc., as of August 31, 2005.
## Statement of Expenditure

**Cash Basis Ending August 31, 2005**

<table>
<thead>
<tr>
<th>Acc. Number</th>
<th>EXPENDITURES</th>
<th>CURRENT EXPENDITURES</th>
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</thead>
<tbody>
<tr>
<td>51000</td>
<td>Office</td>
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<tr>
<td>52000</td>
<td>Board of Directors</td>
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<tr>
<td>53000</td>
<td>WWOA Seminars</td>
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<td>54000</td>
<td>CLARIFIER</td>
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<tr>
<td>55010</td>
<td>Nominations Committee</td>
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<tr>
<td>55020</td>
<td>Membership</td>
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<td>55030</td>
<td>Directory</td>
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<tr>
<td>55035</td>
<td>Career Development</td>
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<tr>
<td>55040</td>
<td>Publicity Committee</td>
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<tr>
<td>55050</td>
<td>Historical</td>
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<tr>
<td>55060</td>
<td>Governmental Affairs</td>
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<tr>
<td>55070</td>
<td>Resolution Committee</td>
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<tr>
<td>55080</td>
<td>By-Laws Committee</td>
<td>$0.00</td>
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<td>55090</td>
<td>Awards</td>
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<td>55100</td>
<td>Permanent Arrangements</td>
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<td>55110</td>
<td>Permanent Programs</td>
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<td>55120</td>
<td>Scholarship</td>
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<td>55130</td>
<td>Liaison Committee</td>
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<td>55140</td>
<td>Regional Coordinator</td>
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<tr>
<td>55150</td>
<td>Tuition Aid</td>
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<tr>
<td>55160</td>
<td>National Operations Competition</td>
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<tr>
<td>55165</td>
<td>Miscellaneous</td>
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<tr>
<td>56000</td>
<td>Annual Conference- Reg.</td>
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<td>56000</td>
<td>Annual Conference-Spouse</td>
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<td>56350</td>
<td>Pre- Conference</td>
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<td>57000</td>
<td>Web - Site</td>
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<td>58000</td>
<td>Exhibits</td>
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<tr>
<td>59000</td>
<td>Promotional Items</td>
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<tr>
<td></td>
<td><strong>Total Expenditures</strong></td>
<td><strong>$153,225.22</strong></td>
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**Excess Revenue (Excess Expenditures)**

$9,262.04
### Cash Basis Ending August 31, 2005

#### Balance Sheet

<table>
<thead>
<tr>
<th>Acc. Number</th>
<th>Escrow Account Transaction</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>43000</td>
<td>Escrow Accounts Increases</td>
<td>$35,252.26</td>
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<tr>
<td>61000</td>
<td>Escrow Accounts Decreases</td>
<td>$42,819.09</td>
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<td></td>
<td><strong>Excess Escrow Revenue (Excess Escrow Expenditures)</strong></td>
<td><strong>($7,566.83)</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Account</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash on Hand, August 31, 2004</td>
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<tr>
<td>Excess Revenue (Excess Expenditures)</td>
<td>$9,262.04</td>
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<tr>
<td>Excess Escrow Revenue (Excess Escrow Expenditures)</td>
<td><strong>($7,566.83)</strong></td>
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<tr>
<td></td>
<td><strong>$111,519.49</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Account</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash in Bank, Checking Account</td>
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<tr>
<td>Money Market Account</td>
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<tr>
<td>Certificate of Deposit Account</td>
<td>$83,883.23</td>
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<td>Total Assets</td>
<td><strong>$111,519.49</strong></td>
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</table>

#### Liabilities and Fund Balance

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<thead>
<tr>
<th>Account</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Reserved (Escrow Accounts)</td>
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<tr>
<td>Unassigned</td>
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<td>Total Fund Balance</td>
<td><strong>$111,519.49</strong></td>
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</table>

#### Reserved Fund (Escrow Accounts)

<table>
<thead>
<tr>
<th>Region</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Southern Region</td>
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<tr>
<td>Southeast Region</td>
<td>$371.59</td>
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<tr>
<td>Lake Michigan Region</td>
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<tr>
<td>West Central Region</td>
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<tr>
<td>North Central Region</td>
<td>$1,000.00</td>
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<tr>
<td>Northwest Region</td>
<td>$1,096.96</td>
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<tr>
<td>Manufacturers &amp; Consultants</td>
<td>($462.94)</td>
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<tr>
<td>Golf Outing</td>
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<tr>
<td>Governmental Affairs</td>
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<tr>
<td>WWEA</td>
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<td>Sludge Symposium</td>
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<tr>
<td>Total Reserved Funds</td>
<td><strong>$6,437.01</strong></td>
</tr>
</tbody>
</table>

---

Richard D. McKee  
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AquaABF™
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The Imhoff tank obtained its name from its inventor, Dr. Karl Imhoff of Germany. The technology was developed in the Emscher District of Germany and patented in 1906 by Dr. Imhoff. The first plant was put into operation two years later. From the information available, it can be discerned that Imhoff Tanks were an acceptable form of wastewater treatment up until the 1950’s. The main advantage of this type of tank over the septic tank is that sludge is separated from the effluent, which allows for more complete settling and digestion. Documentation from the period states that when operated properly, these systems are capable of removing 30 to 60 percent of the suspended matter, and from 25 to 40 percent of the BOD.

This technology was introduced into the United States with its application widespread throughout the 1930’s and 1940’s. The development of the Imhoff tank was in response to problems associated with solids handling in primary tanks and the use of “regular” septic tanks. These problems included offensive odors resulting from poor sludge digestion.

As a result, Imhoff tanks are very deep and construction costs were high. Forward flow enters the sedimentation chamber. The settling of solids occurs in an upper chamber and digestion of the solids in the lower chamber. (See simplified process diagram.)

The Imhoff Tank consists of an upper section known as the sedimentation chamber, and a lower section known as the digestion chamber.

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The two chambers are separated by a sloping partition that contains narrow slots through which the solids passed into the lower chamber. Solids settle out in the upper sedimentation chamber and gradually flow into the lower digestion chamber. In the digestion chamber, solids accumulate and slowly digest. By design, gas and scum are prevented from entering the sedimentation chamber due to the narrow slots that disallow gas and sludge particles from entering the sedimentation chamber that “stir up” solids as was learned from the septic tank design.

Imhoff tanks are unable to meet today’s treatment standards for either primary clarifier performance or anaerobic digestion. However, there are several qualities worth mentioning:

- It requires a little space, and has a small “foot print”
- It is simple as it has no moving parts, i.e. mixers, collectors
- It requires little operator time as sludge removal is periodic
- At the time, it offered a better solution to solids handling and digestion.

The Imhoff Tank was used in both small and large wastewater treatment facilities during wastewater plant design in the early and mid-1900’s. Imhoff Tanks proved to be better suited for small treatment applications rather than large. Often, the tanks were used in conjunction with a trickling filter.

The demise of the Imhoff Tank was a result of high construction costs and the inability to meet today’s more stringent performance requirements. The combined treatment processes into a single vessel could not compete with the current, more energy-intensive methods used with individual treatment processes. From a process perspective, operational difficulties were often experienced as a result of incomplete sludge digestion that resulted in foaming and excessive scum formation.

Today, many Imhoff Tanks are still in existence, though many have been modified to serve a “second life” as primary clarifiers or sludge holding tanks. The lower portion of the original Imhoff tanks were filled and new sludge removal equipment installed. Imhoff tanks have been superseded in plain sedimentation tanks using mechanical methods for continuously collecting the sludge, which is moved to separate anaerobic sludge digestion tanks. This arrangement permits improved
sedimentation results and better temperature control in the digestion process, leading to a more rapid and complete digestion of the sludge.

Today, there is at least one Imhoff Tank operating in the state of Wisconsin, see photo and section drawing. The facility serves an institution and utilizes a trickling filter followed by a secondary clarifier. The facility is well maintained and is treating wastewater well within its permit limits, though the plant is significantly under loaded. Sludge from the Imhoff Tank is hauled via septic tank truck to a nearby sewerage district for treatment.

The diagrams below shows an Imhoff Tank with sedimentation treatment for wastewater, combined with anaerobic biological treatment. Section view followed by a plan view.

Imhoff technology served the industry for it’s time by improving treatment process performance without adding complexity. During it’s hey day, an era that preceded the Clean Water Act and it’s associated affect on our industry, the Imhoff tank serves to remind us of simpler times and technologies. That seems to be its legacy. On a more humorous note, Dr. Imhoff’s legacy may well be reflected in Imhoff’s Law that states “The organization of any bureaucracy is very much like a septic tank -- the REALLY big chunks always rise to the top.”

Simplified Process Diagram
Two Wisconsin cities were recently honored for excellence in operation of wastewater treatment plants. The cities of Park Falls and Marshfield each received U.S. Environmental Protection Agency Region 5 awards for their excellence in operating and maintaining their municipal wastewater treatment facilities. Region 5 consists of Wisconsin, Minnesota, Michigan, Ohio, Indiana and Illinois. Both cities were honored for their efforts to keep Wisconsin waters clean and at the same time contribute to local recreational offerings.

Awards were presented during separate ceremonies the week of Aug. 29. The Marshfield ceremony was 10 a.m. Aug. 31 in the City Hall, 630 S. Central Ave. in Marshfield. The Park Falls ceremony was 10 a.m. Sept. 1 at City Hall, 400 Fourth Ave. South in Park Falls. David Stoltenberg, EPA Region 5 awards coordinator, presented the awards to the two communities.

The site of the former mechanical treatment plant at Park Falls, now the main lift station and septage receiving station, has been reclaimed and the aesthetic improvements substantial enough to

---

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incorporate the site into a local river walk system.

The discharge from the Marshfield plant provides much of the stream flow to the upper reaches of Mill Creek, which now supports a fishery and a friends’ group working on its behalf. “These communities have done an excellent job of removing pollutants from wastewater and complying with their permits to the degree they’ve been able to help expand local recreational opportunities,” says Roger Larson, assistant director of the Department of Wisconsin Natural Resources’ watershed management bureau. “These communities, the operators of the facilities, and city leaders all have a right to be proud of their commitment and performance in carrying out this important responsibility.”

The City of Park Falls WWTF, managed by Wastewater Superintendent Kurt Damrow, received a first place in EPA Region 5’s Wastewater Operation and Maintenance Excellence Award in the Small Secondary category. This facility provides sewerage treatment for a population of nearly 2,800 residents. Designed for an average daily flow of 1.055 MGD, the Park Falls WWTF consists of two aerated lagoons with seasonal disinfection by chlorination followed by dechlorination. The WWTF is required to meet “secondary treatment” limits of 30 mg/L on a monthly average for both BOD5 and TSS for discharge to the North Branch of the Flambeau River. The WWTF was upgraded in 1999 with installation of a fine-bubble diffuser aeration system. A comprehensive SCADA system was added in 2001. In addition its excellence in operations, the Park Falls facility’s efficient maintenance management has saved money for the city and its cost-efficient design and management of its septic hauler dump site has allowed the facility to start receiving more septage.

The Marshfield facility, managed by Wastewater Utility Superintendent Ronald W. Dickrell, received a second place award in the Region 5 EPA Wastewater Operation and Maintenance Excellence Award in the Medium Advanced category. Marshfield provides sewerage service for more than 19,000 residents and does an outstanding job of removing pollutants, so much so that Mill Creek, once widely considered little more than an effluent ditch in the 1970s, now supports a warmwater forage fishery in its upper reaches and a smallmouth bass fishery in its lower reaches, according to Paul LaLiberte, DNR watershed program coordinator for west central Wisconsin. “There’s been a huge change in perception of what this stream’s capable of supporting and that’s due largely to upgrading of the treatment plant and its effluent quality,” LaLiberte says. Additional information about the Marshfield WWTF is provided in the cover story for this issue of The Clarifier.

For more information on the EPA Awards Program contact Roger Larson at (608) 266-2666 or your local DNR staff. Alternately, check out the EPA’s web site to get to information on these awards, including instructions and operating rules at: http://www.epa.gov/owm/mtb/intnet.htm.
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President Nennig called the meeting to order at 10:05 AM Tuesday, August 23, 2005. Roll call was taken. All Board members were present except Conine who was excused absent.

Also present was Troy Larson from Strand Associates and Assistant Secretary Carol McKee.

The minutes of the April 28 & 29, 2005 Board meeting were reviewed. President Nennig asked for any comments regarding the minutes as presented. Herwig noted several words that needed to be added within the text of the minutes. Herwig requested attaching the Board-approved reimbursement proposals to the master, final copy of the April 2005 Board minutes and to be placed in the minute records. Herwig made a motion to approve the minutes as presented with the corrections. Bartel seconded the motion. Motion carried.

McKee presented the Financial Statement for Board approval. McKee reported that as of August 15, 2005 the WWOA had $160,477.26 in revenues and $142,563.97 in expenditures with excess revenues over expenditures totaling $17,913.29. McKee commented that the Financial Statement that will be presented to the WWOA membership at the October Annual Business Meeting this year would be an audited Financial Statement. After September 1, 2005 McKee will be contacting the accountant to conduct a full audit. McKee reminded the Board that the WWOA’s Financial Statement is reviewed annually by an accountant; and that a full audit of the Financial Statement occurs every other year.

Herwig questioned why the Permanent Arrangements Committee was over on their 2004/05 budget amount? Board discussion ensued. McKee reminded the Board that the Committee now has five members and it is the Committee Chairperson’s decision whether or not to visit these conference sites. Herwig recommended to the Board that all Committees need to come before the Board if they believe they are going to go over their respective budgets. Herwig feels the Board needs some justification from these Committees when this occurs.

Kruzick would like McKee to bring to the October Board meeting a breakdown of the expenses that incurred for the Permanent Arrangements Committee in 2004/05. Herwig made a motion to approve the Financial Statement as presented. Kruzick seconded the motion. Motion carried.

McKee presented vouchers 208 – 227 for Board approval. After a brief discussion and some clarifications, Kruzick made a motion to approve the vouchers as presented. Carlson seconded the motion. Motion carried.
COMMITTEE REPORTS

AWARDS - Herwig brought the new medallions that were made for the award plaques for the Board to view.

Kruzick informed the Board that all the regions have submitted names for their respective Operator of the Year Award nominations. Kruzick commented he had yet to receive any nominations for the Service, Bernauer and Crabtree Awards. A discussion ensued. Herwig commented that he felt the absolute latest date for award information to get to Total Awards in Madison, WI was September 9, 2005. President Nennig asked Kruzick if the Committee would accept award nomination submittals until that date. Kruzick replied that he had no problem extending the deadline for submittals until September 9, 2005.

In light of the lack of nominations for the Service, Bernauer and Crabtree Awards, a discussion ensued regarding Board member nomination submittals. President Nennig asked that the meeting minutes reflect it was the consensus of the current Board that nominations should come from the membership and not the Board.

Kruzick provided the Board with the list of nominees for the Regional Operator of the Year Awards. Thalke made a motion to approve the nominees for the Regional Operator of the Year Awards as presented. Bond seconded the motion. Motion carried.

TECHNICAL PROGRAM - Marshall reported the final drafts for the Annual Conference agendas were completed and sent to the printers. There have been some minor changes with speakers and moderators.

Marshall provided the Board with a list of speaker AV needs for the Conference. Virtually all presenters will be using PowerPoint presentation.

Gary Hanson and Earth Tech have again offered to help with the Conference Abstracts. Kenneth Ligman of Becher-Hoppe Associates will be helping with the Conference Evaluations.

CONFERENCE SIGNAGE - Troy Larson of Strand Associates discussed with the Board the needed signage for the Conference.

LOCAL ARRANGEMENTS - Bartel commented the training center at Green Bay MSD has been reserved all day on October 4, 2005 for the Pre-Conference’s Electrical Workshop.

The Green Bay and De Pere wastewater treatment plants will be available for tours. The Green Bay tour will be divided into two sections. One tour will be the general plant tour. The other tour will be demonstrations of process monitoring and maintenance equipment. The De Pere plant tour will be the general plant tour and will include showcasing the new blower system upgrade.

SPOUSE PROGRAM - President Nennig reported for Jean Van Sistine. On Wednesday morning October 5, 2005 Officer Dennis Gladwell from the De Pere Police Department will give a talk on “Identity Theft” at the Ki Center.

On Wednesday afternoon, program participants will board a motor coach bus at 1:00 P.M. for a trip to the Von Stiel Winery in Algoma, WI.

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On Thursday morning, October 6, 2005, Kathleen Zeitler will give a talk on “Attention Deficit Disorder in Adults.”

On Thursday afternoon, program participants will board the bus at 11:00 A.M. to go to Frank’s Dinner Theatre. Lunch is included and will be served at noon followed by the show starting at 1:00 P.M.

**GOLF OUTING** - Bartel stated the Woods golf course is all set to host the Annual Conference golf outing on Tuesday, October 4, 2005. Bartel reported that the manufacturer and consultant hole sponsorship and door prizes have been slow coming in.

**EXHIBIT COMMITTEE** - President Nennig reported for Carol Strackbein. The Exhibit Committee will be meeting to assign the booth spaces on September 1, 2005. At the present time, the Committee has sold approximately 95 booths out of the 110 booths available.

**OPERATOR COMPETITION** - Thalke stated that no regional teams have yet to commit for the Competition. The Lake Michigan Region has informed Thalke that they will have a team. A discussion ensued in regards to extending the deadline for teams until September 9, 2005 and what the minimum number of teams we would need in order to have the Competition. It was the consensus of the Board to extend the deadline for teams until September 9, 2005 and that a minimum of three teams participate in order to hold the Competition. The Board agreed to present one award if three teams participate and to present two awards for four teams.

Thalke provided the Board with a schedule of events for the Operator Competition.

**MANUFACTURERS AND CONSULTANTS** - No report.

**WEBSITE** - Bartel informed the Board that the Web Committee chose to contract with a new web hosting service; moving the web site away from WebservPro to its new home with Hostexcellence.com in early July.

Traffic analysis software shows that the employment page of the web site seems to draw the most attention.

Three features of the web site that really focus on communication are the bulletin board forum, the mailing list, and the chat rooms. A recent addition to the site is a photo archive page that allows visitors to browse through images “photo album” style. The photos come from a variety of WWOA events over the years. Bartel commented that members are encouraged to send in any photos they would like to see added. The photo archive page can be accessed from any site.

**NOMINATIONS** - Herwig stated he has one person committed to the office of President-Elect, that person being Kay Marshall, one person committed to the office of Vice-President, that being Jim Thalke, and one person who is interested in running for Directorship.

Herwig commented to the current Directors the great benefits they bring to the Board with their continued experience on the Board.

Herwig suggested another thing we need to do prior to taking nominations from the floor at the Business Meeting is to let the members know one of their main functions on the Board is commitment.

**SCHOLARSHIP** - President Nennig reported for Conine. This year the Scholarship Committee received a total of two applications for available WWOA scholarships. Both of the applications were for the $1,000.00 scholarship. The Committee stated that scholarship applicant Sara Driver has met all WWOA scholarship award criteria and would be acceptable to receive the $1,000.00 scholarship.

Herwig made a motion to award Sara Driver the $1000.00 scholarship for 2005. Kruzick seconded the motion. Motion carried.

Conine provided the Board with copies of the Preamble for the WWOA Scholarship Award Program with some minor changes. After a brief discussion, it was the consensus of the Board to table any action until the October Board meeting.

Herwig made a motion to approve the Committee Reports as presented. Bond seconded the motion. Motion carried.
OLD BUSINESS

DIRECTORY - McKee provided individual Board members with copies of the new 2005-2006 WWOA Directory.

POLICY BOOK - McKee presented the Board with revisions and additions for the WWOA Policy Book. McKee instructed the Board to insert the changes into the appropriate sections and be diligent about keeping their Policy Books up-to-date with any changes as they occur.

WWOA MAILING LIST POLICY - Kruzick presented the Board with copies of the WWOA Mail List Policy for the Board to review. A brief discussion ensued. President Nennig directed McKee to put the Mail List Policy on the agenda for the October Board meeting for further discussion.

NEW BUSINESS

President Nennig briefly discussed the creation of the WWEA Committee many years ago, membership on the Committee and their primary function of coordinating and planning water and wastewater training in the state of Wisconsin. President Nennig informed the Board that the WWEA Committee is still actively involved in that mission. Gary Hanson of Earth Tech is currently serving as the WWOA representative with the WWEA.

Herwig commented about training money that is available through the DNR for lab certification training. They are attempting to make CDs available for lab certification training using that training money.

There being no further business of the Board, Herwig made a motion to adjourn the meeting. Kruzick seconded the motion. Motion carried.

The Board meeting adjourned at 3:05 PM on Tuesday, August 23, 2005.

Respectfully submitted

Richard D. McKee
Executive Secretary

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
Hospital Effluent Management Plans

Problem: What do you do with the wastewater created at a hospital when washing down people exposed to contaminants – chemical, biological, or radiological? POTW’s can expect to be contacted soon by your local hospital to develop a plan on how to dispose of and treat decontamination effluent.

Most hospitals in Wisconsin have purchased portable decontamination shelters with federal funding available through the Hospital Bioterrorism Preparedness Program. A State Expert Panel on the Management of Biological, Chemical and Radiological Effluent was assembled to come up with recommendations for hospitals to use in planning how to dispose of wastewater generated during decontamination in portable shelters and fixed decontamination rooms.

Portable decontamination shelters are tent-like structures with basins that can contain wash down waters. The basin capacity is 160 gallons. At the recommended decontamination rate of 4 people per 20 minutes, the decontamination shelter basin fills with contaminated effluent in 14 minutes. The State Expert Panel’s Report: “Recommendations for the Management of Effluent During Decontamination at the Hospital Site”, contains guidance on how to develop an Effluent Management Plan for decontamination wastewater.

The key recommendations contained in the State Expert Panel’s Report are that each hospital should:

- Meet with its POTW and develop an Effluent Management Plan for their decontamination room/shelters;
- Present the Effluent Management Plan to the Local Emergency Planning Committee for review and comment;
- Notify the POTW within 3 minutes of the first patient presenting conditions which would require decontamination;
- Develop a protocol for notifying the POTW, the County Emergency Management Director, the Wisconsin State Laboratory of Hygiene, and the DNR for directions on the sampling and disposal of decontamination effluent;
- Contain the decontamination effluent once the capacity of their existing containment system is exceeded.

For more information, or to obtain a copy of the State Expert’s Panel Report, contact Julia Riley at 608-264-9244 or julia.riley@dnr.state.wi.us.

Decontamination Wastewater Guide

The National Association of Clean Water Agencies (NACWA), through a cooperative agreement with EPA, developed the guidance document, “Planning for Decontamination Wastewater: A Guide for Utilities.” The guide is a planning tool for wastewater utilities to prevent, detect, and respond to decontamination wastewater containing chemical, biological, or radiological (CBR) substances. The document contains information on:

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• An overview of the types of CBR substances;
• Planning and coordination activities between utility staff and persons in command at a CBR incident;
• Tactics and equipment used to prevent decontamination wastewater from entering the system;
• Decontamination methods for chemical agents and the use of biological agent disinfectants;
• Basic training needs for personnel.

A free copy of the guide can be downloaded at http://www.nacwa.org/advocacy/security. To obtain a free printed copy of the guidance, contact: Paula Dannenfeldt, Deputy Executive Director, NACWA, 1816 Jefferson Place, NW, Washington, DC 20036; e-mail: pdannenfeldt@nacwa.org; or phone: 202-833-4654.

Emergency Response Planning Exercises

The Department of Natural Resources is sponsoring Emergency Response Planning (ERP) Tabletop exercises for Water Utilities. The ERP exercises will focus on how to respond to biological, chemical, or radiological contaminants introduced into the water supply system. A component of the exercise will be coordination of the emergency response with wastewater treatment facilities. Water utilities participating in the ERP Tabletop exercises are encouraged to invite their wastewater utility representatives to participate in the training. For more information on the ERP Tabletop exercises contact: Steve Elmore at 608-264-9246 or Steve.Elmore@dnr.state.wi.us.

Emergency Response Drinking Water Collection Kits

The Wisconsin State Laboratory of Hygiene has developed and distributed emergency drinking water collection kits to test for chemical, biological and radiological contaminants. The kits will also work for testing wastewater samples suspected of containing introduced contaminants if the wastewater has low-levels of suspended materials. If a wastewater has high-suspended materials, it would be better to collect emergency samples in wide mouth jars.

The emergency water sampling kits are located at:

• Department of Natural Resources, Wisconsin Emergency Management, and Division of Health and
Family Services regional offices;
• Tribal Offices; and
• County seat water utilities and/or water utilities serving more than 3000 people.

The Incident Command System Commander for the emergency will determine how samples will be collected after a “credible” threat to the water supply system has been determined by local partners.

Testing will be done at the Wisconsin State Laboratory of Hygiene, Department of Agriculture, Trade and Consumer Protection, Vet Diagnostic, Center for Disease Control, the U.S. Environmental Protection Agency, and/or Federal Bureau of Investigation Laboratories.

For more information on the Emergency Response Drinking Water Collection Kits, please contact:
Steve Elmore at 608-264-9246 or Steve.Elmore@dnr.state.wi.us; or David Degenhardt at 608-224-6270 or davidd@mail.slh.wisc.edu.

NEW! DNR Security Web Pages

Information on wastewater security is now available on the DNR web at:
http://www.dnr.state.wi.us/org/water/wm/ww/security

The following topics are covered:
• Security Overview
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• Vulnerability Assessments
• Security Measures
• Emergency Response Plans
• Brochures and Technical Articles
• “Fifteen Ways to Secure Your Municipal Wastewater Treatment Construction Project” brochure
• Clean Water Fund Eligibility of Security Equipment
• Confidentiality and Submittal of Plans and Specifications for Security Equipment
• January 2005 Government Accountability Office Findings on Funding Recommendations for Security Improvements
• SCADA Systems and Security Equipment Alarms
• Training and Education
• Related Links

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7:15 am Registration Opens

8:25 am Welcome - Greg Kester

8:30 am EPA Update - Rick Stevens

9:15 am Wis. DNR Update - Greg Kester

9:45 am Emerging Pollutants - Joel Pedersen

10:15 am Break

10:35 am Phosphorus Management - Dick Wolkowski & Dave Taylor

11:15 am NBP/EMS Presentation - Pete Machno

11:45 am Lunch

12:35 pm Morning Panel Question & Answer - Art Peterson, Moderator

1:15 pm Operators Forum: Select Biosolids Issues - Tom Kruzick, Steve Brand, Bob Caray, Greg Paul, Connie Wilson, Benjamin Benninghoff

2:00 pm Break

2:15 pm Septage Management - Bart Sexton

2:45 pm Biosolids Management - Future Directions - Rufus Chaney

3:30 pm Closing Remarks - Greg Kester

3:35 pm Adjourn
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December 1, 2005

Dear Fellow WWOA Member:

The WWOA Technical Program Committee is requesting your assistance in developing the Technical Program for our 40th Annual Conference to be held October 3-6, 2006. The Kalahari Resort and Convention Center in Wisconsin Dells, WI will be our conference site.

Technical papers are being solicited at this time for the Technical Program. The Committee is especially encouraging members actively involved in the day-to-day operations of a wastewater facility to prepare and present technical papers at the Conference. The following are major subject areas that presentations may cover. Papers dealing with other topics will also receive consideration by the Committee.


Submit your outline(s) on the 2006 Conference Submittal Form (via mail or fax) by January 6, 2006 to:

Jim Thalke
Sussex Regional WWTF
N64 W23760 Main Street
Sussex, WI 53089
Phone 262-246-5184
Fax 262-246-0921
Email jtallke@sbcglobal.net

Please consider responding to this request or forwarding it on to someone who may be interested in participating. The strength of the WWOA is in the sharing of ideas and information. The success of this organization is dependent upon you the individual member; please consider making a difference!

Sincerely,

Jim Thalke
2006 Technical Program Committee Chair
40th Annual WWOA Conference
October 3-6, 2006

Technical Presentation Subject _______________________________________________________________

Author(s) / Presenter(s) _____________________________________________________________________

Employer / Affiliation ______________________________________________________________________

Address _________________________________________________________________________________

E-mail Address ______________________   Phone #   ____________________  Fax #  _________________

Author is actively involved in the day-to-day operation of a WWTP?   Yes _______  No  _______

Author is an active member of WWOA?    Yes _______  No  _______

Brief Description of Presentation  (Please type or print clearly; continue on back or attach additional pages if necessary)

Submit your outline(s) on the 2006 Conference Submittal Form (via mail or fax) by January 6, 2006 to:

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2006CallPapersC
Maximizing Secondary Treatment Wet Weather Capacity Part 5A (of 6):
Minimizing Clarifier Loadings


This is the fifth 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

Part 1 of this series discussed the key factor that controls the peak flow capacity of activated sludge systems is 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. Part 4 of this series then focused on the hydraulic characteristics of secondary clarifiers, how they affect secondary clarifier capacity and performance, and what you can do to optimize them. This brings us to Part 5, in which we’ll discuss what we mean by clarifier loadings, and what you can do to minimize them during peak flow events. Because of its length, Part 5 is broken into two parts, 5A and 5B. 5A will describe strategies for minimizing clarifier loading. Strategy #1 is “Bring More Clarifiers Online” and Strategy #2 is “Increase the RAS Pumping Rate”. Strategy #3 will be discussed in detail in the February 2006 Clarifier.

Secondary Clarifier Loadings

As discussed previously, 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 to perform more biological treatment or are wasted out of the system, 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 under the right conditions the solids will settle to the bottom of the clarifier and be returned as return activated sludge (RAS).

In terms of secondary clarifier loadings, there are three methods commonly considered in designing clarifiers:

1. Weir Loading Rate (WLR): This is simply the flow over a one-foot section of clarifier weir. It is calculated by dividing the plant flow rate (forward flow only) by the total length of the weirs in all the clarifiers. Generally, the WLR is defined under peak flow conditions, with a typical value being 30,000 gallons per day per foot of weir length. In terms of plant capacity, the WLR mainly affects the hydraulic profile through a treatment plant, and typically does not affect plant capacity as it pertains to maintaining effective treatment. In other words, WLR might affect the maximum peak flow you can get through your
treatment system, but not whether the mixed liquor solids will settle in and be removed from your secondary clarifiers.

2. Surface Overflow Rate (SOR): This was introduced in Part 4, and is calculated as the plant flow rate divided by the surface area of all of the secondary clarifiers that are operating. It is actually a measure of the average upflow velocity within a clarifier, assuming that the flow into each clarifier is distributed equally throughout the clarifier. Under such conditions, the SOR is the average rise rate of the clarifier effluent, if it were rising uniformly throughout the entire clarifier to get over the clarifier weirs. In terms of design, secondary clarifiers are often designed in terms of peak flow SORs, with values of 1,000-1,200 gallons per day per square foot typical. It is calculated as follows: SOR = QF/ASC
Where: SOR = Surface Overflow Rate in gallons per day per ft²
QF = Plant (Forward) Flow Rate in gallons per day
ASC = Total Surface Area of all Operating Secondary Clarifiers

As discussed previously, the SOR is important in terms of clarifier treatment capacity, because the settling rate of the mixed liquor solids must be greater than the rise rate (the SOR) of the water leaving the clarifier as effluent. Any solids whose settling rate is less than the SOR will likely be carried up and out of the clarifier as effluent TSS. In this article we will explore options to minimize peak flow SORs.

3. Solids Loading Rate (SLR): The SLR is the pounds of mixed liquor solids sent to the clarifiers, divided by the surface area of all the clarifiers that are operating. It is different than the WLR and SOR in that it includes both the forward flow and the RAS flow. The SLR is calculated in two steps. First, determine the solids loading to the secondary clarifiers, by multiplying the total flow into the clarifiers (forward plus RAS flow) times the mixed liquor suspended solids (MLSS) concentration, using appropriate conversion factors:

\[ CSL = \left( Q_F + Q_R \right) \times MLSS \times 8.34/1,000,000 \]
Where: CSL = Clarifier Solids Loading in lbs/day
QF = Plant Flow Rate in gallons per day
QR = RAS Flow Rate in gallons per day
MLSS = Mixed Liquor Suspended Solids Concentration in mg/L

Thus the CSL is the total pounds of solids being sent to the clarifiers – these solids must settle, thicken and

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be pumped out of the clarifier as RAS if we are to avoid losing some in our effluent. We next calculate the SLR as the CSL divided by the total surface area for all operating clarifiers: \( SLR = \frac{CSL}{ASC} \)

Where: 
- CSL = Clarifier Solids Loading Rate in lbs/day/ft\(^2\)
- ASC = Total Surface Area of all Operating Secondary Clarifiers in ft\(^2\)

In terms of design, secondary clarifiers are also commonly designed in terms of peak SLRs, with values of 40-50 lb/day/ft\(^2\) typical.

SLR is important, in terms of clarifier capacity, in that there is a limit to how fast the solids coming into the secondary clarifiers will settle, thicken, and be removed from the clarifiers. If we send more solids to the clarifiers than can be removed, we end up building up solids in the clarifier in the form of rising sludge blankets. If left unchecked for extended periods, the result may be sludge blankets rising to near the clarifier weirs, which can cause significant and potentially catastrophic loss of solids in the effluent. Under such conditions, it is important to note that while increased effluent TSS is not a good thing, and may result in effluent permit violations, the loss of a significant portion of the microorganisms from the activated sludge system may be more devastating, as such a loss could take weeks or months to recover from.

The Bottom Line – Avoid Overloaded Conditions

It’s pretty obvious that we want to avoid having our secondary clarifiers overloaded, regardless of whether the overloading is in terms of SOR, SLR or both (note that forward flow, QF, is a direct factor in calculating SOR and SLR, so as QF increases, both SOR and SLR increase proportionally). The challenge is, under peak flow conditions, plant flow rates often rise to the point that clarifier overloading may result if we don’t take action. If we have an SOR overloading condition, the result is typically increased effluent TSS, to the point that effluent permit violations may occur. If we have an SLR overloading condition, we might similarly see increased effluent TSS, but we might also “lose our blanket” and wash a good portion of our biomass out of our system (this is especially true for plants with shallow clarifiers, as there is less distance for the blanket to rise before it reaches the effluent weirs).

So what kind of action can we take? Well, the answer there is somewhat dependent on your plant configuration and facilities, but the general approach is to use the strategies described below to decrease loading rates on your clarifiers.

Strategy 1: Bring More Clarifiers Online

The first thing you can do to minimize peak loading rates is to put more clarifiers in operation. What this does is increase the total clarifier surface area in service, which

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makes the denominator in both the SOR and SLR calculation bigger. The result will be that both the SOR and SLR will decrease, hopefully enough to avoid either one being in an overloaded condition.

Unfortunately, not every plant has extra clarifiers to bring online for peak flow conditions. In such cases, under SOR overloading conditions, the only options are to limit the plant flow into the activated sludge system, diverting any excess flow as necessary, or allow the flow in and live with the consequences (typically increased effluent TSS concentrations). However, if it’s a SLR overloading condition, there may be a couple other actions that can be taken, as discussed below.

Strategy 2: Increase the RAS Pumping Rate
As noted above, the SLR is limited by the ability of the mixed liquor to settle, thicken and be removed from the secondary clarifiers. The goal there is to develop a population of microorganisms that settle fast, thicken well, and leave a clear supernatant (secondary effluent).

But having a great settling activated sludge won’t help if you can’t get the solids out of the clarifier, and that’s where increasing the RAS pumping rate can help. Increasing the rate of pumping RAS under peak flow conditions will help, to a point, by making more room at the clarifier bottom for the mixed liquor solids to settle and compact. However, there is a limit to this benefit, and that limit is related to the rate at which the solids settle and thicken. If we exceed that rate, we will end up pumping a very dilute RAS out of the clarifier, or possibly even “rat-holing” and pumping clear liquid, with settled solids still accumulating in the clarifier as sludge blankets.

Thus, under peak flow conditions, a good strategy is to increase your RAS pumping rate, but not increase it infinitely. Typically, RAS pumping systems are designed to have a maximum pumping rate of 100-150% of the design average plant flow rate, and these upper limits are typically appropriate as the top end for increasing your RAS pumping rate under peak flow conditions, depending on your mixed liquor settleability.

In the second part of this article on Minimizing Clarifier Loadings, the theory in Strategy #3 Decrease the Solids Load to the Secondary Clarifiers will be presented and discussed in detail. Watch for it in the February 2006 Clarifier.
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