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WISCONSIN WASTEWATER OPERATORS’ ASSOCIATION, INC.

Heart of the Valley Metropolitan Sewerage District, Kaukauna, Wisconsin
President’s Message

Happy new year to all my friends and colleagues.

I like to think of New Years in terms of a quote by Hal Borland, “Year’s end is neither an end nor a beginning but a going on, with all the wisdom that experience can instill in us.” A page of the calendar has been turned, but still our duty remains, in both our personal and professional lives; to take care of the people and things around us.

Our task is no small one. Not everything we do comes with instruction manuals or teachers to guide us. Some of our challenges must be met head on, with nothing more than the wisdom previous experience has given us, a positive attitude and guts.

As I write this column, still trying to warm up after spending the day repairing a broken water main, I am reminded once again that winter offers many challenges (or learning experiences, if you are an optimist) for us in the wastewater industry.

Whether you are from a large or a small plant, how your plant runs is a game of Russian roulette in the winter months. Treatments that work in warm weather must constantly be monitored and adjusted to best suit the frigid temperatures. Cold weather is always a concern for biological and mechanical plants. The stress of the cold can cause damage to equipment and infrastructure, using up valuable funds in our O&M budgets and employee time that could be better spent doing other projects.

For those who work for a small municipality, where you not only operate the wastewater facility but are involved in all areas of municipal activities, time management is a huge challenge you face every day. Today’s water main break was not on my list of things to do, but the frost trumped any of our other plans. A repair that would have taken only part of a day in warm weather was magnified by the rock hard ground we had to dig through and the odd fitting that had to be replaced. I am thankful for the assistance from neighboring Villages to locate the needed parts and for all the additional wisdom I gained today.

Regardless of what size of plant you operate, safety is a huge concern in the winter. Slips and falls are one of the major causes of employee injuries. Fatigue is also another contributor, especially if you find yourself behind the wheel of a snow plow. Remember to watch your footing, wear sturdy boots, dress appropriately for the cold and be sure to eat healthy and get plenty of rest and exercise. This will help you be prepared to handle whatever winter throws your way. It doesn’t matter who signs your paycheck, Mother Nature always seems to be the boss.

The combined wisdom of the WWOA membership is a very valuable resource and most often only a phone call or two away. Be sure to call on fellow members if you find yourself in need of assistance. Or if you have come up with a solution to an unusual problem, consider sharing your ideas in the form of an article in the Clarifier.

I leave you all for this edition with this wish for 2009; “May all your troubles last as long as your New Year’s resolutions.” ~Joey Adam

John Bond
The Heart of the Valley Metropolitan Sewerage District (HOVMSD), located in Kaukauna, Wisconsin, provides wastewater treatment services to the City of Kaukauna, Villages of Little Chute, Kimberly and Combined Locks, and Darboy Sanitary District. The City of Kaukauna Wastewater Treatment Facility, originally constructed in the 1930’s, was expanded to a 6.5 MGD regional facility in the late 1970’s; consisting of screening, primary treatment, pure oxygen activated sludge, secondary clarification, filtration, and chlorine disinfection. Solids handling consisted of gravity thickening of primary sludge, dissolved air flotation thickening of waste activated sludge, anaerobic digestion, on-site liquid biosolids storage, and liquid land application (Class B biosolids).

In 2003, HOVMSD retained McMahon and initiated Facilities Planning to address several needs, including:

- Continued rapid growth in the service area, which was stressing both the plant and interceptor capacity;
- Persistent peak wet weather flows in excess of 50 MGD;
- The need to meet a new ammonia nitrogen limit of 3.6 mg/L during the summer and 10 mg/L during the winter, while effluent ammonia nitrogen levels were typically in the 20 mg/L range.

Several unique challenges and design objectives were placed upon the Project Team during Planning and Design Phases:

1. Growth - A projected 60% increase in loadings during the planning period.

2. Effluent Limits - The Wisconsin Department of Natural Resources (WDNR) imposed a reduction of the effluent ammonia nitrogen limit from 20 mg/L to 3.6/10 mg/L summer/winter. The existing pure oxygen system was incapable of meeting these limits, and there was no room on site to use conventional technology to nitrify.

3. Peak Flows - The regional plant was designed for a peak flow of 35 MGD using blending of filtered primary effluent. Current peak flows exceeded 50 MGD and SWMM modeling predicted peak flows of 60 MGD during 10-year storm events. HOVMSD desired a facility that would have zero Sewer System Overflows (SSO’s) in the collection system or bypasses at the plant during a predicted 100-year storm event of 70 MGD.

4. Site Constraints - The existing 5.5-acre triangular site had little room for expansion. Constraints included:

   - Guaranteed NH$_3$-N removal even in cold climates through use of the LemTec™ Modular Cover
   - Meets highly stringent effluent limits not achievable with other aerated lagoon systems
   - Reduces capital and operating costs significantly when compared to mechanical treatment systems
   - Requires less land than most comparable technologies
   - Reduces sludge and solids handling
   - Allows for hydraulic loading variations, temperature fluctuations, and organic surges effectively
   - Expands for growth without major capital outlays
Thilmany Paper Mill to the south and west, part of the old Fox River Locks / Canal to the north, and the Fox River to the east. Shallow bedrock was 5 to 8-feet below grade. Relocation to a new site was considered at a cost of $75 to $100-million, but deemed cost prohibitive.

5. Conventional Technologies Were Not An Option - Primary clarification, single-stage nitrifying activated sludge, secondary clarifiers, return sludge pumping, and anaerobic digestion expansion simply did not fit on the existing site. Other technologies that were evaluated but either did not fit or were deemed too costly included Integrated Fixed-Film Activated Sludge (IFAS) and Membrane Bioreactors (MBR).

In order to achieve treatment on the existing site, the Project Team needed to select high rate processes with a small footprint, and vertical construction if possible to avoid excavation into bedrock. Utilization of existing structures and tankage was also desirable. For biosolids processing, HOVMSD desired a Class A biosolids system to minimize future environmental risks associated with land application.

Based upon these criteria, HOVMSD selected ballasted sedimentation for primary treatment and peak flow treatment, Biological Aerated Filter (BAF) for CBOD removal and nitrification, and conversion of the existing anaerobic digesters to Auto-thermal Thermophilic Aerobic Digestion (ATAD). At the time, there were ballasted sedimentation and BAF systems in the United States treating municipal wastewater, however, none of these systems were coupled together as proposed for HOV. The Project Team had to rely upon European experience for similar full scale flow sheets. In order for McMahon and HOV to be convinced that the coupling of these processes would work, the Team embarked on a three-prong journey:

- Due diligence investigations of European facilities;
- Pilot testing of the coupled process on HOV wastewater;
- Process guarantees from the equipment supplier.

During preliminary design, HOVMSD chose Actiflo by Kruger for ballasted sedimentation, Biostyr by Kruger for the BAF, and Therm Air by Thermal Process Systems (TPS) for the ATAD.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Effluent Limit (mg/L)</th>
<th>Pilot Test Result (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBOD</td>
<td>15</td>
<td>5.5</td>
</tr>
<tr>
<td>TSS</td>
<td>20</td>
<td>8.3</td>
</tr>
<tr>
<td>NH₃-N</td>
<td>3.6 (Summer)</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>10 (Winter)</td>
<td></td>
</tr>
<tr>
<td>TP</td>
<td>1.0</td>
<td>0.31</td>
</tr>
</tbody>
</table>

Evaluation of ballasted sedimentation and BAF processes included plant tours in France and Switzerland, at facilities with similar flow sheets to that proposed for HOV. Data from each plant was reviewed and operators were interviewed. Fifteen specific design recommendations were brought back and applied to the HOV project, and all data suggested the system was capable of meeting the design objectives.

Pilot testing of ballasted sedimentation and BAF was conducted on HOV raw wastewater at the HOV plant site from June 2004 to November 2004. The purpose of the test was to obtain performance data to meet testing objectives and to provide design data to size these unit processes. Actual pilot test performance and operation data of the coupled system was deemed essential to affirm the performance objectives of the system.

Pilot testing confirmed that the coupled process could meet the performance objectives and comply with WDNR effluent limitations:

The liquid flow sheet for the plant consists of fine screening, influent pumping, grit removal, ballasted
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sedimentation (Actiflo), BAF (Biostyr), and chlorination / dechlorination. The plant includes peak flow bypass capabilities to direct peak flows exceeding 26.5 MGD to disinfection prior to being blended with BAF effluent.

The Actiflo process is a compact, conventional-type clarification system that utilizes micro-sand as a seed for floc formation. The micro-sand provides surface area that enhances flocculation and acts as a ballast or weight. The resulting sand ballasted floc display unique settling characteristics, which allow for clarifier design with high overflow rates and short retention times. The design results in a system footprint that is between 5 to 50 times smaller than conventional clarification systems of similar capacity. The system consists of two parallel treatment trains; each train consisting of an injection tank, maturation tank, and clarifier with a scraper.

A chemical coagulant (ferric) is added to the screened and degritted wastewater to destabilize suspended solids and colloidal matter in the influent stream. The wastewater flows into the injection tank where polymer and micro-sand are added to initiate floc formation. These serve as a “seed” for floc formation and development in the next process step. Treatment continues as wastewater flows through the underflow passage from the injection tank into the maturation tank. In the maturation tank, relatively gentler mixing provides ideal conditions for the formation of polymer bridges between the micro-sand and the destabilized suspended solids. The large specific surface area of the micro-sand provides enhanced opportunity for polymer bridging and enmeshment of micro-sand and floc already in suspension to further augment this process.

The fully formed ballasted floc leaves the maturation tank and flows into the settling tank. Clarified wastewater exits the Actiflo system via series of collection troughs for discharge to secondary treatment or blending with treated effluent. The ballasted floc sand-sludge mixture is collected at the bottom of the settling tank and withdrawn using a rubber-lined centrifugal slurry pump. The sand-sludge mixture is then pumped to the hydrocyclone for separation of the sand from the sludge. Once separated, the micro-sand is concentrated and discharged from the bottom of the hydrocyclone and re-injected into the Actiflo process for reuse. The lighter density sludge is discharged out the top of the hydrocyclone and sent to thickening.

Actiflo effluent, up to 26.5 MGD, flows to the BAF. Flows greater than 26.5 MGD are disinfected and blended with the BAF effluent. The BAF uses synthetic media to filter out suspended solids, as well as to provide surface area for bacteria to grow and provide CBOD removal and nitrification. The system operates as a submerged fixed film aerated reactor. The BAF is an upflow unit, with backwashing occurring using treated water in a downflow mode. Spent backwash water flows to the existing Unox reactors, from which it is pumped to Actiflo for further treatment. The BAF is designed to accomplish CBOD removal and nitrification. The influent wastewater flows by gravity to a common inlet feed channel above the BAF cells, where it flows down to the individual cells by gravity. Upon entering the cells, the wastewater is forced upwards through the filter media. The media contained in the cells is composed of specially manufactured high-density polystyrene beads (4.5 mm) covered by active biomass. This active biomass provides biological treatment to the wastewater as it flows through the cells. Ceiling plates with regularly spaced nozzles are used to retain the media. The nozzles allow the treated water to enter a common water reservoir above the filters, which, in turn is used to provide water during backwash sequences.
A process air grid is located below the filter media, so that the whole filter bed is aerobic. BOD is oxidized by the biomass in the lower section of the filter. As the wastewater continues up the filter, additional BOD is consumed. When the BOD:TKN ratio falls below a certain limiting level, nitrification occurs, thereby converting ammonia to nitrate. Growth of biomass and the retention of suspended solids in the filter media make periodic backwashing necessary. The backwash sequence is performed automatically, triggered either when a preset time interval has expired or when the headloss across the filter exceeds a predetermined set-point.

The liquid flow sheet is unique in that the Actiflo process is operated 24/7/365 as HOV’s primary treatment process, rather than only during a peak flow event. During dry weather flows, Actiflo can be operated without sand fluidization at flows as high as 15.6 MGD while still achieving or exceeding the goal of 50% CBOD removal, 70% TSS removal and 75% phosphorus removal. During wet weather flows, Actiflo will treat up to 60 MGD.

The solids processing for the plant includes gravity thickening of Actiflo (primary) sludge, dissolved air flotation (DAF) thickening of waste activated sludge (WAS), ATAD, post-ATAD nitrification, and liquid sludge storage with land application of Class A biosolids. BAF sludge (spent backwash water) is wasted to Actiflo, to cosettle with primary sludge. This mixture is gravity thickened in an existing primary clarifier and transferred to the DAF units for thickening to a minimum 5% solids. Thickened solids are pumped to a mixed batch tank from which the ATAD is led once per day.

The existing 65-foot diameter primary anaerobic digester was retrofitted to an ATAD reactor with the addition of a pair of jet aeration headers, two mix pumps, PD blowers and foam control pumps. HRT at design maximum month loading conditions is about 12 days. The ATAD achieves 60 to 65% volatile solids reduction at a loading that is about 2.5 times the typical loading of a conventional mesophilic anaerobic digester. After the ATAD, the sludge is transferred to two existing 40-foot diameter digesters, which are aerated and cooled to 98°F to create optimal conditions for nitrification. This significantly reduces sidestream ammonia strength from sludge storage decant. The process chosen is PFRP, resulting in 23 hours holding time of the biosolids at 50°F.
to 55°C, to achieve a Class A pathogen reduction. All sludge is stored on-site in two covered glass lined tanks prior to land application by injection as a liquid twice/year.

Most of the existing tankage and structures were reused and integrated into the new facilities for other purposes, in order to make the proposed modifications fit on the constrained site. The ballasted sedimentation design used 1/10 of the space required for conventional primary treatment and performs better. The BAF used 1/9 of the space required for a nitrifying activated sludge system, without the need for RAS pumping. The ATAD used less than half of the space required for conventional anaerobic digestion, and is more energy efficient.

The HOVMSD regional wastewater treatment facility was expanded during a 2 1/2-year construction project, which was completed in mid-2008. Major process equipment, including ballasted sedimentation, BAF, ATAD and MCC’s / Control / Integration, were direct procured, via negotiations with the manufacturers / vendors. To provide quality and value, other key unit process equipment items were direct bid to HOVMSD. General, mechanical and electrical construction was bid under a single contract. Total project costs were approximately $34.6 million. The new facility is meeting and exceeding performance objectives identified during design. The facility can also be expanded again in the future to accommodate future growth, with space designated for the addition of a future BAF, a third Actiflo train, and a second ATAD tank.

This article consists of excerpts from the paper titled “Site Constraints + Ammonia Limits + Peak Wet Weather Flows = High Rate Treatment & Biosolids Technology for the Heart of the Valley Metropolitan Sewerage District”, presented at the May 2006 annual meeting of Central States WEA by Thomas E. Vik, P.E., BCEE, McMahon and Mark Surwillo, District Manager, HOVMSD.
Electronic Records Retention

By Jeff Haack & Tom Trainor, WDNR

In the Standard Requirements section of all WPDES permits, there is a requirement that “The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least three years from the date of the sample, measurement, report or application…” That section goes on to explain that records relating to biosolids disposal must be retained for five years.

DNR staff has occasionally been asked if it was acceptable to keep those records in an electronic or digital format. After all some of these kinds of records actually originate in an electronic format – many flow monitoring records, for example, originate as a 4-20 mA signal. And the DNR is trying to get everybody to file Permit Applications and Discharge Monitoring Reports electronically.

The simple answer is, “Yes, but…” There is no problem with going to electronic data recording only, as long as the following three basic conditions are satisfied:

• There must be sufficient safeguards to prevent anyone from making changes.
• There must be frequent electronic backups of the data in case the original is destroyed.
• And the ability exists to print or otherwise access the information if so requested.

This final point can be very important if any changes to computer systems are made within that three or five year period. For instance, if records are maintained using MS Access and the system is modified to one using SQL or Oracle, the records will either need to be converted or a computer with MS Access and those records will need to be retained somehow.

This is still an emerging issue and the Department of Natural Resources may be refining its guidelines further. Wastewater treatment system operators definitely should talk with their local DNR representatives if they are considering records retention in this manner.

Answers to December Brain Teasers

Introductory Level – b. infiltration

Advanced Level – b. 13 years

$1,200,000 – $100,000 =
$1,100,000 equipment cost

$7,000 x 0.20 = $1400 chemical cost savings
$15,000 x 0.10 = $1500 annual chemical cost savings
800 wet tons of 10% biosolids = 89 wet tons of 90% biosolids = 80 dry tons of biosolids
80 dry tons x $50.00 = $4000 income from product sold
800 wet tons x $100/ton = $80,000 hauling savings

$1400+ $1500+ $4000+ $80,000 = $86,900 per year savings and income
$1,100,000 equipment cost/ $86,900 per year savings and income = 12.66 or 13 years
In Memory of Retamarie Seidl

Retamarie (Reta) C. Seidl, 64, of Sparta (formerly of Black River Falls) passed away Thursday, Nov. 13, 2008 at the Amery Regional Medical Center in Clear Lake.

Reta was born in Bangor, Maine on May 6, 1944 to Ordell and Olga (Lubow) Copus. She was raised in Jackson County, and graduated from Black River Falls High School in 1962. Reta worked at the Norplex Plant in Black River Falls. Later she worked at Northern Engraving in Sparta, and finally as the Lab Manager at the Sparta Wastewater Treatment Plant. She retired from the Sparta Wastewater Treatment Plant in May of 2008 due to her health.

Reta took a lot of pride in her work. Her dedication to her labwork was rewarded as she received the Operator of the Year Award in 2008 and her laboratory received the DNR Laboratory of the Year Award in 2005.

Reta put 100% into her job and was always willing to help others. She had many responsibilities at the Sparta Wastewater Treatment Plant including: groundwater sampling, research projects, daily sampling, laboratory analysis, and baking treats for the other operators.

Reta contributed to the great reputation of the Sparta WWTP by doing such good work and acting as a resource to others. She was a very hard worker and always did her best. Reta never stopped learning, questioning, and improving her lab and plant operations. She also brought a great sense of humor and strength to her overall approach to life. Reta Seidl will be greatly missed.
Sludge problems? Who you gonna call?

Now, ITT Flygt Corporation, the world leader in pumping and mixing, offers wastewater treatment plants an unparalleled combination of sludge-busting technologies, service and support. Flygt's arsenal of sludge busters features our extraordinary N-Pump, with its patented N-impeller and a clog-eliminating, high-efficiency, open backsweped design that makes it best for overall sludge handling. Flygt offers a new Progressing Cavity (PC) pump and macerator for heavier sludge. And to ensure maximum process efficiency in the most challenging situations, Flygt mixers and aerators lead the way.

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On August 28, 2008 the Lake Michigan District held its summer meeting at Liberty Hall and was hosted by Appleton Utilities. There were a total of 91 attendees.

After registration, rolls, donuts and refreshments, Michael Buettner, Appleton Director of Utilities was introduced. He welcomed everyone to Appleton and touched on the highlights of the area and municipality.

The first presentation of the morning was given by Jerry Cookie of North Central laboratories (NCL) covering lab practices & protocol. Jerry reviewed all of today’s tools of the trade used in the lab. He also covered record keeping of lab notebooks, bench sheets, equipment log, MSDS, and certificates of Analysis and Electronic Data. He expressed the importance of documenting everything according to NR-149 record keeping.

The next speaker was Tom Opgenorth of Donohue and his presentation was titled “The Crack Stops Here: A structural engineer’s view of how to avoid costly structural repairs.”

The presentation described mechanisms which cause reinforced concrete to crack: how the location and size of cracks can be controlled by explaining design and construction issues specific to water treatment facilities; how to identify cracks in need of structural repair; and how to repair concrete cracks using common repair techniques. The presentation assembled information from research findings, trade group recommendations, and common construction products and techniques. Actual case studies involving structural failures were included to illustrate the consequences of improper structural design, manufacture, construction, and maintenance of concrete treatment plant structures.

Then right after break, which was compliments of McMahon Associates, Inc., Brian Helminger, chairperson conducted the business meeting. First order of business was to review the minutes of May 22, meeting and treasurer report read by Secretary / Treasurer, George Kemmeter. There was a motion and second to accept both items as presented. Brian informed the group that LMD has two teams for operator competition at the WWOA conference in Stevens Point in October. Brian then asked for nominations for Vice Chairman in 2009 from the floor. Jeff Haack nominated Brad Rokus of Clintonville and John Schoen of Seymour seconded. Brian then asked for a motion to adjourn the business meeting and it was seconded.

The next speaker was Tony Kappel of McMahon Associates with a presentation on Evaluation, Design, and Operation of Sequencing Batch Reactor Systems. He started the presentation with the background of Fill and Draw Activated Sludge Process. He then reviewed the design considerations and then covered the evaluation of SBR Manufacturers available technologies. He then ended the presentation by reviewing the operational considerations and SBR performances of different systems.

For the final presentation of the morning, Jeff Haack from the DNR filled in for Jason Moeller with a short presentation on “Spill Reporting”, emphasizing the three
The magic words – Report Spills Immediately. Whether a release is considered a Hazardous Substance Spill depends on the substance, the quantity and the location, so there may be some judgment in certain situations. But if there’s ever a doubt, report the spill immediately. There are some situations in which a sanitary sewer overflow or bypass, or even a spill from an industry into a sanitary sewer might be a reportable spill. Jeff provided some examples, and concluded with discussion of mitigation and reporting. Stickers with Wisconsin’s 24-Hour Spill Emergency Hotline number – 1-800-943-0003 – were distributed to anybody wanting them.

At noon the group lined up for a buffet lunch down the hall.

Right after lunch Rich Knoelke of Mulcahy / Shaw Water gave a presentation on equipment options for headwork’s at a WWTP. He discussed the different types of screens and washer / compactors. He also discussed grit washers as an alternative to classifiers in cleaning the grit.

After Rich’s presentation, Chris Shaw, Deputy Director of Appleton Utilities reviewed the history and progress of the Appleton WWTP. Chris then gave the group driving instructions to Appleton WWTP. The meeting was adjourned and DNR slips were distributed.

Announcement:

Aeration Industries International, Inc. is pleased to announce Mulcahy/Shaw Water is our new representative for Wisconsin and the Upper Peninsula of Michigan.
Messages from the Editors....

Surprise! The editors of the Clarifier have worked with our printer to “freshen up” the look of the Clarifier. We hope you like the new look. But we assure you that the Clarifier is the same publication that you all can be proud of. The Clarifier is still produced by volunteers, all members of WWOA. And we plan to continue in this tradition. But, we also will be considering additional changes so keep an eye open as the year goes on.

Continuing on the theme of change, we regret to announce that Jeff Haack will be leaving the editorial board of the Clarifier. Jeff has been on the board for many years and is responsible for securing the stories and cover photos for the featured wastewater treatment plant in each issue. Jeff has served WWOA well over these past years and he will be missed.

Jeff’s departure leaves a void on the editorial board. If anyone is interested, please contact Jon Butt for more information. Ideally, we would like someone from the DNR to take Jeff’s place.

Finally, please reserve the following date:

June 22, 2009
Operators’ Golf Outing
Camelot Golf Club
Lomira, WI

Details to be provided in the April issue.

News from the North Central Region

Ken Bloom, Marathon City, and Lyle Lutz, Village of Amherst, recently competed as members of the Central States Teams in the WEFTEC Operations Challenge at the WEFTEC Conference in Chicago, IL. They were selected because they were members of the North Central Team that took first place in the 2007 WWOA Operators Competition in La Crosse. Congratulations on a great job.

The next North Central Region meeting will be hosted by NCL in Birnamwood on April 29, 2009. Many lab topics will be cover by the NCL staff and manufacturers representatives. NCL has a wonderful training facility and always provides an excellent training opportunity. Register early. This is a very popular meeting.

The North Central Region’s fall meeting will be hosted by the Village of Whiting. Whiting is in the midst of constructing a new treatment facility, which will be completed by this summer. They are looking forward to showing off their new facility at the fall meeting.
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27th Annual Spring Biosolids Symposium  
Tuesday, March 10, 2009  
Holiday Inn Hotel & Convention Center, Stevens Point, Wisconsin

Symposium Agenda

7:15 am  Registration Opens
8:15 am  Welcome – Fred Hegeman
8:20 am  USEPA Emerging Issues & Update – Bob Bastian
9:00 am  Wis. DNR Update – Fred Hegeman
9:30 am  WERF Research – Alan Hais
10:15 am  Break
          Paul Schlecht, Moderator
10:30 am  Nutrient Management & SNAP Plus – Sue Porter
11:15 am  Phosphorus Availability – Dick Wolkowski
11:45 pm  Lunch
12:15 pm  Lunch Presentation – Gene Laschinger
12:45 pm  Morning Panel Question & Answer – Connie Wilson, Moderator
1:15 pm  Economics of Septage Charges at Wastewater Treatment Plants – Connie Wilson, Alan Kaddatz, and Rich Boden
2:00 pm  Break
          Bill Marten, Moderator
2:15 pm  Road & Vehicle Issues – Mike Klingenberg
3:00 pm  Panel Discussion/Nutrient Costs – Dick Wolkowski, Jay Kemp, & Mike Northouse
3:30 pm  Adjourn

Registration Form  
Spring Biosolids Symposium  
Tuesday, March 10, 2009

Pre-registration is encouraged.  
Pre-registration deadline of February 27, 2009.

Name
______________________________
Address
______________________________
City/State/Zip
______________________________
Title
______________________________
Affiliation
________ $55  Pre-registration
________ $70  On-site Registration
________ $15  Student Registration

Total Amount Enclosed    $____________

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Mazomanie, WI  53560  
Cell 608-513-9362  
Work 608-795-0024  
Fax  608-795-0051  
rdmckee@WWOA.org
27th Annual
Spring Biosolids Symposium
General Information

Symposium Date:
   Tuesday, March 10, 2009

For more information contact:
   Rich Boden at 715-345-5259

To Enroll: Pre-registration is encouraged!
   Deadline Friday, February 27, 2009
   Enrollment is limited to 350!

Fee: $55; make checks payable to:
   WWOA

   ** ON SITE REGISTRATION IS $70.00**

Registration fee covers program materials, breaks, and lunch. Lodging is not included.

Cancellations/Refunds: In order to receive a full refund, you must cancel by contacting Rich McKee, no later than February 27, 2009. Cancellations received by phone or mail after this date will receive no refund.

Location:
   Holiday Inn Hotel, Convention Center
   & Water Park
   1001 Amber Avenue
   Stevens Point, WI  54481
   715-344-0200

Lodging: A block of rooms will be held at the Holiday Inn Hotel until Feb. 25, 2009. Make your reservations directly, 715-344-0200.

Parking: Ample free parking is available at the Holiday Inn Hotel Convention Ctr.

Credits: CEU’s will be available after the last presentation; 6 credits for wastewater and septage. ☺
Operator’s Competition

By Dale Doerr

It is never too early to begin preparation for the 2009 Operator’s Competition. The 2008 Operator’s Competition was a success, with five teams entered from four WWOA District Associations. While the 2008 Operator’s Competition can be considered a success, it could be better if each WWOA District Association put together a team. Several years ago the size of the competition teams was reduced from four team members to three team members. The reduction in the number of participants increased the number of teams entered and we hope that this trend will continue. I encourage all WWOA Regional Chairs and Vice Chairs reading this article to promote the Operator’s Competition and put together a team for the 2009 Operator’s Competition.

Prior to joining the WWOA Board of Directors, I did not have any experience with the Operator’s Competition other than stopping by and watching the teams competing at WEFTEC. As Chairperson for the 2008 competition, I got a closer look at what goes on during the competition on how seriously the competitors take the various challenges. Looking back on my career, the Operator’s Competition is something I would have really enjoyed participating in when I was a young WWTP operator.

Winners of the WWOA Operator’s Competition have a chance to participate on the Central States Water Environment Associations entry at the WEFTEC Operator’s Challenge the following year. If you have the opportunity, please read the article by Jeff Smudde from GBMSD that was published in the April 2007 Clarifier. Jeff’s article provided a first hand account of his experiences as a WEFTEC Operator’s Challenge participant.

I encourage every WWOA member to seriously think about throwing your name in the hat to join an Operator’s Competition Team. Wouldn’t it be great to have two teams from each Region? The more team’s participating, the better the competition. Please feel free to contact me if you have any questions or suggestions for the Operator’s Competition.

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WWOA Lake Michigan and Southern Districts Joint Meeting
Berlin, WI - May 22, 2008

By George Kemmeter

On May 22, 2008 the Lake Michigan and Southern Districts held a joint meeting at Berlin City Inn in Berlin, WI. There were 84 attendees from the Southern District and 59 from LMD District.

After everyone was registered and had coffee and rolls, Jodie Olson, City Administrator of Berlin welcomed the group and presented some history and highlights of Berlin.

The first speakers, Rick Mealy and Camille Johnson from WI Dept. of Natural Resources presented an overview of developments related to the changes to NR 149, governing laboratory certification, which takes effect September 1, 2008. While this session did not allow sufficient time to cover the many details of the rule change, a series of 8 full day sessions, sponsored by WWOA, Wisconsin Rural Water, and the Wisconsin Environmental Lab Association was announced.

Key changes to NR 149 include:
- Large-scale changes in terminology to match the EPA
- More focus on quality systems
- Labs not only have to have a QA Manual . . . they must adhere to it!
- Formal SOPs required
- Initial demonstration of capability requirements
- Calibration (ICV and CCV concepts)
- 2nd source standards as a means to verify calibrations
- LCS instead of matrix spikes
- No matrix spikes or replicates (in most cases)
- Standard/reagent traceability

Right before lunch Ed Grunden, the Rock River Coalition Director talked about Macro Invertebrates and their importance in determining water quality.

Attendees learned: What is a macro invertebrate; what problems must macro invertebrates solve because they live in streams; why classify and some guiding principles for classification; ways that macro invertebrates may be classified; identification of common Wisconsin macro invertebrates; the terminology used; a way to classify based on macro invertebrates' tolerance to pollution, which generally means organic pollution; using and making sense of Biotic Indices; and determining the quality of the water based on the biotic index of macro invertebrates. The program ended with information on how to become involved with local schools and making a positive image impact within the local community. A follow-up presentation on how to run an educational program with the local school children will be presented on the first day of the state convention during the first breakout session.

Following Ed’s presentation, the group sat down for an enjoyable lunch.

After lunch the Chairperson Kevin Freber of the Southern District called to order the business meeting. Review of the Minutes:

The minutes from the February 2008 meeting at Johnson Creek were approved by the group.

Treasurer’s Report:
The beginning balance for the last period was $3,806.43 and the ending balance was $5,004.97.

The treasurer’s report was approved by the members.

Old Business:
- Kevin thanked the members for utilizing the e-mail list to send out meeting notices. E-mailing the notices saves on postage. Please let any of the board members know if your e-mail address changes.
- The next meeting will be at the Chula Vista Resort and hosted by Wisconsin Dells and Lake Delton on Thursday, August 14.

New Business:
Kevin mentioned that the board is accepting nominations for Operator of the Year award for our region. Kevin directed the membership to the state website: www.wwoa.org/awards/ to find the forms for nominations for Operator of the Year and other awards. The deadline for nominations is the end of August 2008.

Other Business:
None
Acknowledgements:

- Kevin then presented Peggy LaBuda with a plaque thanking her and all those from the Berlin Water & Sewer Department for hosting the meeting.

Announcements:

Randy Thater from the state WWOA board updated the members about the following upcoming events:

- The collection system seminar will be June 5.
- Pretreatment seminar will be June 18.
- NR 149 training to be offered around the state in May and June. Watch for a flyer and on the WWOA website for more info.
- The Northwoods Collection System Seminar will be August 14, 2008 in Marshfield.

Randy urged members to check out the WWOA events calendar at: http://wwoa.org/events.php for more details.

Adjournment:

A motion was made and carried to adjourn the meeting.

Brian Helminger, Chairperson of the Lake Michigan District, called his business meeting to order. First order of business was review of the minutes from February 22 meeting and treasurer’s report, read by Secretary/Treasurer, George Kemmeter. There was a motion to accept both items as presented.

New business discussed was to ask for nominations for Vice Chairman for 2009 term. Brian asked for volunteers for the host sites for future meetings in 2009. Brian also encouraged LMD members to join competition teams for upcoming State Conference in October and to hand in nominations for Operator of the Year. A vote was taken for interest in planning a Timber Rattler outing during the August Appleton meeting. Brian then asked for a motion to adjourn the LMD business meeting and it was seconded.

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Clarifier Due Dates

<table>
<thead>
<tr>
<th>Issue</th>
<th>Submittal Due Date</th>
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<tbody>
<tr>
<td>April 2009</td>
<td>March 6</td>
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<tr>
<td>June 2009</td>
<td>May 8</td>
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<tr>
<td>September 2009</td>
<td>July 31</td>
</tr>
<tr>
<td>December 2009</td>
<td>November 6</td>
</tr>
</tbody>
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Whether you need routine or emergency service, day or night, weekday or weekend, our knowledgeable service staff is ready to respond 24/7.
The first presentation after the business meeting was given by Jeff Haack of WI DNR. Jeff Haack began the “DNR Update” with discussion of the future of plan review for municipal WWTF projects. A memorandum prepared by Duane Schuettpelz, recently retired Wastewater Section Chief in the Bureau of Watershed Management, and was the basis for this discussion. That document recommends: 1) continued emphasis in DNR participation and review of facilities plans for major WWTF projects and projects funded by the Clean Water Fund; 2) continued de-emphasis of detail review of plans and specifications for WWTF projects, limiting DNR activity to a conceptual review and assurance of consistency with the facilities plan; 3) elimination of DNR review of sewer extension plans, requiring notification only; and 4) elimination of DNR review of plans for lift stations and force mains except for projects funded by the Clean Water Fund. Jeff stressed that this is not really a new direction for DNR - things have been moving in that direction for the past decade or more. Before passage of the Clean Water Act in 1972, review and approval of plans for wastewater treatment facilities was the primary vehicle the state used to protect water quality and public health. Those objectives are now accomplished with the WPDES permit program. Implementation will take some time, as some administrative rules (NR 108 and NR 110) will need revision.

The final presentation for the day was given by Tom Foltz of Strand Associates on Standby Electrical Power Generation. Applications for sewage pumping stations and wastewater treatment plants were discussed. Wisconsin administrative code requirements for standby power generation were reviewed, and issues associated with diesel powered, natural gas powered, and digester gas powered generators were discussed. In general, diesel powered generators are available in capacities up to 2000 KW and gas powered generators are available up to 1500 KW. Case studies were reviewed for projects in Theresa, Sussex, Fond du Lac, and Oshkosh.

To wrap things up Richard Keller of Berlin WWTP gave the group a plant overview and history and direction to the WWTP and Magnum Products for plant tours. Kevin Frebor, Chairperson of Southern District adjourned the meeting and credit slips were distributed as the attendees headed out the door.

Respectfully submitted by,

George Kemmeter
LMD Secretary

---

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Government Affairs Seminar
February 19, 2009
Marriott Madison West, 1313 John Q. Hammons Drive, Middleton, WI

8:00 am  Registration
8:25 am  Welcome/Opening Remarks
          Randy Thater

Session Moderator:  Randy Thater

8:30 am  Keynote - A National Perspective
          Fred Andres

9:15 am  Phosphorus Issues, the State Perspective
          Russ Rasmussen

9:35 am  Phosphorus Issues, the Environmentalist Perspective
          Betsy Lawton

9:55 am  Phosphorus Issues, the Plant Perspective
          Jane Carlson

10:15 am  Morning Break

Session Moderator:  Paul Kent

10:30 am  Recent Climate Change Across Wisconsin: Facts, Figures, Fiction
          Dr. Christopher Kucharik

11:00 am  The Floods of 2008, the Local Story
          Steve Zibell and Gene Laschninger

11:30 am  The Floods of 2008, DNR Policy and Enforcement
          Ken Johnson

12:00 pm  Lunch

Session Moderator:  Tom Foltz

1:00 pm  The Financial Crisis and Political Effects on Funding
          Dan Thompson

1:30 pm  Effluent Trading
          Lisa Bacon

2:15 pm  Afternoon Break

Session Moderator:  Bernie Robertson

2:30 pm  Drugs, Bugs, and Sludge - What Pharmaceuticals and Trace Constituents Might Mean to You
          Doug Nelson

3:00 pm  DNR Update
          Bob Masnado

3:45 pm  Seminar Ends - See you next year on February 23, 2010!

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Government Affairs Seminar
General Seminar Information

Date: Thursday, February 19, 2009
Information: Contact Randy Thater at (262) 524-3631
Fee: $75.00 Pre-registration before 2/05/09
     $85.00 Day of seminar or after 2/05/09 (both fees include program materials, breaks, and lunch)
Where: Marriott Madison West
       1313 John Q. Hammons Drive
       Middleton, WI 53562
       (608) 831-2000 or (800) 228-9290
Lodging: Each registrant is responsible for his or her own hotel reservation. Make your reservations early! A block of rooms ($124 single/double) will be held at the Marriott Madison West until January 18, 2009.
Payment: Please return this form with your payment (pre-payment required) by February 5, 2009. On-site registrations will only be accepted with full payment at time of registration. Purchase orders and direct company billing will not be accepted. Make checks payable to UW-Madison. Send registration and payment to:
         CALS Conference Services
         1620 Babcock Drive
         Madison, WI 53706
         P: (608) 263-1672
         F: (608) 262-5088
Online: Register at www.peopleware.net/2723
Credit: DNR credit slips (6 hours) will be available at the end of the seminar.

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Government Affairs Seminar
February 19, 2009

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Daytime Phone _________________________________

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    (includes program materials, breaks and lunch)

____ $85 On-Site Registration (after 2/05/09)
    (includes program materials, breaks and lunch)

Enclose fee. Checks payable to: UW-Madison

____ Check enclosed (pre-payment required, no purchase orders or direct billing will be accepted)

____ Charge on the following account:

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Name on Card __________________________________

Signature _________________________________

No Refunds given after 2/11/09
No purchase orders or company billing will be accepted on-site.
Return registration form by mail or fax and payment by February 5, 2009 to:
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Fax: (608) 262-5088
For questions only, please call (608) 263-1672

WWOA Scholarships & Tuition Aid

Are you thinking about going back to school to finish up a degree or just to further your knowledge?

Is one of your children or grandchildren in college or headed to college?

Go to the WWOA website and check out the criteria for a scholarship or aid. You will find it in the Membership Tab.

The WWOA offers two $1,000 scholarships annually. The student’s studies must be related to the water/wastewater field. The student must be in their 2nd, 3rd, or 4th year of college and enrolled in a minimum of 12 credits per semester.

The WWOA offers six $150 tuition aid reimbursements annually to its members. The members must be in good standing for a minimum of three years and are eligible for one reimbursement per school year.

Again, check us out on the web or contact the scholarship committee chairperson!!  

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November 11, 2008

Attendees: Matt Saloun, Terry Vanden Heuvel, Ken Bloom, Ron Dickrell, Lyle Lutz, Chris Helgestad, Rich Boden

Helgestad called the meeting to order at 12:30 pm. He congratulated Terry Vanden Heuvel on his election to the steering committee and welcomed him to the committee.

2009 Officer assignments are as follows:
Lyle Lutz - Chairman
Matt Saloun - Vice Chairman
Ken Bloom - Treasurer
Rich Boden - Secretary

There was no old business to discuss.

The Committee reviewed a revised format for the registration form. The committee discussed several ideas for topics for the upcoming January meeting. They will contact possible speakers and relay to Boden, who will prepare and mail the program by mid-December.

The spring meeting at North Central Labs was discussed. Suggested topics included lab safety, chemical safety, and chemical incompatibility. Boden will contact NCL to discuss the program.

Whiting will host the fall meeting. Saloun will try to schedule the meeting in early to mid September. The committee agreed that the meeting theme should be operations and or design considerations.

Vanden Heuvel volunteered to host the winter 2010 meeting at Merrill. The committee will try to find hosts for the last two meetings of 2010.

Bloom asked for clarification on meeting registrations for speaker. The consensus was that speakers will be extended a complimentary registration and not be asked to fill out a registration form. Their names will be placed directly on the registration list.

Bloom passed out an updated financial report. He stated that a portion of the income from the Crandon meeting was recorded in the previous year and thus isn't reported on this statement.

The committee discussed ways to increase attendance at the meeting. Suggestions included surveying attendees for future topic suggestions, including space on the registration form for topic suggestions, and trying to reach more people with meeting registration information.

Lutz will make an announcement at the next business meeting about the checking and updating WWOA directory listings. An old directory will be passed around for this purpose.

Helgestad will pass on his box of Regional files to Lutz. Helgestad was thanked by all members for his service on the Steering Committee and his work on behalf of the Region over many years.

The meeting was adjourned at 1:45 p.m.

Be a Part of the 2009 Mercury Green Tier Group

Any community with a wastewater discharge over one million gallons per day will soon be required to comply with the new mercury water quality standards. The mercury Green Tier Charter between municipalities and the DNR is ready to begin a second group this spring. The primary goal is to help municipalities meet the standard in a flexible and efficient manner.

The opportunity to sign up extends through March 31, 2009, with a probable organizational meeting in April 2009. The major benefits of joining the program are the DNR’s one-on-one guidance with implementation of the Pollutant Minimization Plan (PMP) and the collaborative efforts of working on the PMP with your peers.

If you are interested in joining in the second Green Tier group, please contact Julie Baldwin at j baldwin@andersonkent.com for more information.
Brain Teasers – February 2009

Subject: Activated Sludge

Intro:
At which point in the process of a conventional activated sludge plant does the most adsorption usually take place?
a. In the primary clarifiers before entering the aeration basins
b. In the final clarifiers before going over the weirs
c. At the end of the aeration basins where the mixed liquor enters the clarifiers
d. At the beginning of the aeration tanks where influent enters the plant

Advanced:
Operator Bruce noticed that his fecal coliform results have gone through the roof. Bruce uses chlorine gas to disinfect his effluent. The chlorine feed equipment is functioning properly, and there has been no degradation of the chlorine. His effluent BOD and TSS concentrations are still in the single digits, and there also has been no significant change in his influent BOD and TSS concentrations. It is the middle of summer, and the temperatures have been hovering in the high nineties. The chlorine contact tank and clarifiers are cleaned regularly. There has been no change in the pH of the mixed liquor or influent. His effluent ammonia nitrogen concentration is still low. A new industry has recently begun discharging food process waste to the plant, but their MGD loading is low compared to the total plant inflow. Bruce would like to keep his spotless permit discharge record and his pulling his hair out to find the source of the problem. One possible cause is:
a. Organic overloading from the new industry
b. Chlorine changing to less effective chlororganic compounds from excess organic solids in the effluent
c. Nitrite locking from the high temperatures or toxics, causing nitrite to react with the chlorine
d. Mutant chlorine-resistant fecal coliform

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Web Site Review
By Jim Bergles, Eagle Lake Sewer Utility

Having been enrolled in Moraine Park’s water quality technician program for the last year or so, I have had assignments that have introduced me to new outlets for obtaining information.

The most recent one is http://www.waterandwastewater.com/

The first reason I ventured to this site was to find several postings on odor control and what the general consensus was in the thread. From there, I have used it for posting two of my own problems and have gotten several responses from a multitude of people. The people that post on the forum include new operators to well seasoned engineers from around the world. Sometimes you will see responses that you never thought of as a solution to a problem. One thing I did notice is that a few, not many, salesmen troll the boards. They do not contact you...
directly but do leave a short post saying for you to try their product to help with the problem. It is just like real life!

There is more than just a forum on this site. There is a jobs section. Anybody want to go work in Qatar? There is a reading room, industry directory, current news, case histories, and an “Ask Tom Column” kind of like a stump the chump section. He seems very knowledgeable in his answers.

There is one section I would like to see added to the WWOA web site. And that is a video section. There are self help videos on lab procedures to dealing with the grease menace in Bismarck, North Dakota. The videos that any of our WWOA members would submit can just be added to Youtube and the link posted to save space and bandwidth. So if you have some free time this winter check out this web site, you might find something helpful.

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IN CONTROL – February 2009
Successful Operations through Process Control
By Jack Saltes, Wastewater Operations Engineer
Department of Natural Resources

An Activated Sludge Wedding

DNR OFFICIAL: We are all gathered here today, in civil ceremony, to bear witness for a lasting relationship between a wastewater treatment plant operator and a trusted companion of every 10-30 days. Turn up the air, adjust the pH, raise the temperature and let’s begin:

DNR OFFICIAL: Joe, do thee take Vorticella to be your faithful ciliate, to care for, provide freeboard and lodging, a place to settle down, to waste and return, regularly and frequently, so as to not upset the plant?

JOE THE OPERATOR: I do.

DNR OFFICIAL: Vorticella, do thee take Operator Joe, to not sulk and bulk and leave before your time, to be happy and to treat, to keep your operator happy and free (of violation)?

VORTICELLA: I do.

SLUDGE JUDGE: Joe and Vorticella, please clarify how, in returning partnership, you will maintain a healthy, solid(s) relationship, not hindered, nor in excess, becoming too old before your time?

JOE THE OPERATOR: I take thee activated sludge, to honor and cherish, to micro-manage and feed, promising to waste and return, every day, from this day forward, until waste do we part.

VORTICELLA: I take thee Joe, to be my lawfully certified operator, to treat and be clear for you, if you waste me right, from this day forward, for ten or twenty or thirty days or so, until waste do we part.

DNR OFFICIAL: Will you both, in-fluent sickness and health, honor and respect one another, settle and return, day in and day out, complying with our state’s water quality standards?

JOE THE OPERATOR & VORTICELLA: We do.

MICROBIOLOGIST: At this time, are there any among you in attendance, objecting to this union between Operator Joe and Vorticella, speak now or forever hold your foam.

NOCARDIA: I object, I object, I want to be with Joe.

M. PARVICELLA: Me too. Me too!!

MICROBIOLOGIST: Within scope of this union, what I can see, only Joe and Vorticella will be happy together.

DNR OFFICIAL: So be it, Operator Joe and Vorticella! I now permit you, under authority of the Clean Water Act, and limit you, upon discharge, in clarity, as I pronounce you, Mr. and Mrs. Wasting Wright.
Single-use applications range from storm water run-off storage, equalization and trickling filters to sludge digestion and sludge storage/mixing. Suitable for total system applications, AQUASTORE® tanks are used in Sequential Batch Reactor (SBR) systems, package treatment plants, anaerobic sludge digestion systems and conventional large volume treatment.
Employment

The Village of Plover is seeking qualified candidates for the position of Wastewater System Assistant Manager. This is a management position that is responsible for day to day operation and maintenance of the Wastewater Treatment Facility and collection system to meet regulatory and permit requirements.

Five years of experience in the operation and maintenance of a treatment plant or commensurate experience and a Grade IV DNR wastewater certification in subclasses C, E, G, I, & J, within one year of starting date are required. Knowledge of wastewater laboratory procedures and laboratory quality assurance, knowledge of maintenance practices and procedures, and background with computers are also required.

Full qualifications, job description, and salary range are available upon request. More information and job application may be found at www.ploverwi.gov. Applications will be accepted until position is filled. Salary is commensurate with experience. Contact Rich Boden, 715-345-5259, or rboden@ploverwi.gov for more information. Submit resume and completed application to Rich Boden, Plover Wastewater Utility, PO Box 37, Plover, WI 54467.

Wastewater Resources Library - A Success

By Dale L. Doerr

The Wastewater Resources Library is a success. Last fall WWOA in conjunction with the Central States Water Environment Association - Wisconsin Section (CSWEA-W) purchased several wastewater technical manuals for the University of Wisconsin's Water Resources Library. Due to the success of the UW Library program, WWOA and CSWEA-W section have purchased additional manuals for the UW Water Resources Library. The URL link to the UW Water Resources Library website is: http://www.aqua.wisc.edu/waterlibrary/Default.aspx?tabid=229

The wastewater technical books available at the UW Water Resources Library are listed below. The number preceding the book title is the UW Water Resources call number.


Moraine Park Technical College

To register for courses (you will need your social security number or your student ID number) Phone 800-472-4454 or 920-924-3207 (please be patient) or online at http://www.morainepark.edu/pages/221.asp.

A mail-in registration form may be downloaded at http://www.morainepark.edu/PDFFiles/academics/std-records/RegForm1.asp


172926 Operation of wastewater treatment plants, a field study training program, Sacramento: California State University Sacramento Foundation: 2007.


172929 v.1 Operation of wastewater treatment plants: a field study training program, Volume I [Sacramento: California State University]: 2004.


Any adult resident in Wisconsin can check out books from Wisconsin’s Water Library for free. If you are 18 years old or older, you can request a maximum of 5 items. The loan period is 4 weeks or 28 days. You may renew any item twice if it has not been requested by another patron. You may check out materials from the Water Library by either visiting the library in person, requesting the materials by phone, or for the quickest service, use the library’s Book Request Form located on the Website.
After requesting the item, they will send the materials to your local public library through the Wisconsin Libraries Delivery Network. Your local library will notify you when they arrive. Just pick them up and return them at your public library. If your local library is not a member of the Delivery Network, they will mail the materials to you free of charge. You are responsible for all costs associated with mailing the books back. If the books are mailed to you, it is a good idea to keep the packing materials to reuse when you return the items. If you live within the area served by South Central Library System, the materials should arrive in one to two days. If you live outside South Central, it could take up to five days. If the books are not available, the library will notify you as such.

If the UW Library program continues to be a success, WWOA and CSWEA-W section have agreed to fund the purchase of additional wastewater technical books. If there is a wastewater technical manual that you believe should be added to the library, please contact a WWOA or CSWEA-W section Board member.

2009 WWOA Directory Update

Recently, the WWOA had mailed a survey and questionnaire to all the municipal facilities of record to correct inaccuracies in the database. The focus of this survey was aimed at the Municipal Plants and the Operators in Charge. Response was very good and we appreciate those whom took the time to send back the responses.

However, it has become apparent that many of the municipal facilities addresses were out of date and came back undeliverable. We have tried to make phone contact with these missing facilities and will continue to do so. In an attempt to fill in additional missing pieces, we ask that any facility that did not receive this survey take the opportunity to fill out the copy provided in this issue of the Clarifier. Upon completion send the form to WWOA Executive Director Richard McKee. His contact information is printed on the back of this issue of the Clarifier.

Updated information is a valuable asset to our membership who may be seeking assistance in equipment operation or service information. The data received will be used to update the 2009-10 edition of the WWOA Directory. An additional mailing to the Industrial Facilities will go out during the spring of 2009. This mailing will be done to address inaccuracies in this section and to be timely enough to make the printers’ deadline and be available at the 2009 conference.
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Joel Smith    MOBILE    414-477-9795
Joel Smith    PAGER    242-775-0104
Rick Kutcher  MOBILE    262-951-6327
Rick Kutcher  PAGER    262-775-0106
Managing Nutrients on Wisconsin Soils Workshop - 2009

March 11 & 12, 2009
Crowne Plaza Hotel
4402 E. Washington Ave.
Madison, WI 53704
1/4 mile west of I90/94 exit 135A

Presented by:
University of Wisconsin-Extension
UW-Madison-Department of Soil Science
UWEX-Nutrient Management Self-directed Team

Program Information
Managing Nutrients on Wisconsin Soils
is an intensive two day workshop covering the basic principles of soil fertility and nutrient management. It is designed for industry and agency personnel without extensive training in soil fertility or for those individuals desiring a refresher prior to attending the Training for Nutrient Management Planners workshop. The learning objectives are to provide individuals with a fundamental understanding of soil fertility principles and nutrient management options for Wisconsin soils.

Advance registration for the workshop is required. The registration fee is $200 per person. 13.5 CCA CEU credits available.

Lodging
Participants should make their own room reservations. Hotels in the area include:

Crowne Plaza - 608-244-4703
Microtel Inn - 608-242-9000
Comfort Inn - 608-244-6265
Holiday Inn East - 608-244-2481
Fairfield Inn - 608-249-5300
Hampton Inn - 608-244-9400

Managing Nutrients on Wisconsin Soils
Day 1
Wednesday, March 11, 2009
8:30-9:00.......... Registration

Introducing the NEW
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U.S.A. 1-800-558-9595 / www.whirl-pak.com
Canada 1-800-668-0600 / www.spectrummed.com
9:00-10:00........... The Nature of Soils
Fred Madison, UW Soil Science
**TOPICS:** Soil formation and classification; physical properties; biological properties; chemical properties; soil as a source of plant nutrition.

10:00-11:00......... Soil Water
Bill Bland, UW Soil Science
**TOPICS:** Hydrologic cycle; forms and movement of soil water; water use efficiency; crop water budgets; irrigation and drainage.

11:00-11:15........ Break

11:15-12:30......... The Nitrogen Cycle
Matt Ruark, UW Soil Science
**TOPICS:** Nitrogen (N) sinks and sources; N transformations.

12:30-1:30......... Lunch

1:30-2:30 ............. Nitrogen Management
Matt Ruark, UW Soil Science
**TOPICS:** Nitrogen (N) fertilizer sources; N fertilizer recommendations; N fertilizer application options; N credits.

2:30-3:45.......... Phosphorus Management
Carrie Laboski, UW Soil Science
**TOPICS:** Phosphorus (P) forms and reactions in soil; fertilizer sources; P fertilizer recommendations; environmental concerns.

3:30-3:45........... Break

3:45-5:15.......... Sulfur & Micronutrients
Scott Sturgul, UW NPM Program
**TOPICS:** Sulfur and micronutrient requirements; recommendations and management options.

Managing Nutrients on Wisconsin Soils
Day 2
Thursday, March 12, 2009

8:30-9:15.......... Potassium Management
Matt Ruark, UW Soil Science
**TOPICS:** Potassium (K) cycling in soils; K fertilizer management options.

9:15-10:00......... Manure Management
Carrie Laboski, UW Soil Science
**TOPICS:** Manure sources; nutrient composition and availability; manure management options.
10:00-10:45 ........ Alternative Nutrient Sources
Dick Wolkowski, UW Soil Science
TOPICS: Sources of nutrients; slow release fertilizers; biosolids; whey; compost; associated risks.

10:45-11:00 ........ Break

11:00-12:15 ........ Calcium, Magnesium & Liming
Paulo Pagliari, UW Soil Science
TOPICS: Calcium and magnesium management options; understanding soil pH; nature of soil acidity and alkalinity; lime materials and liming recommendations.

12:15-1:15 ........ Lunch

Carrie Laboski, UW Soil Science

2:45-3:15 ............ Fertilizer Calculations
Paulo Pagliari, UW Soil Science

3:15-3:30 ............ Break

3:30-4:30 ............ Tillage & Nutrient Interactions
Dick Wolkowski, UW Soil Science
TOPICS: Tillage practices; crop residue management; compaction; environmental implications.

Registration Information
Fee includes refreshments, lunches, and training materials. For registration information, call or email Carol Duffy (608-262-0485; cjduffy@wisc.edu); for program information, call or email Matt Ruark (608-263-2889; mdruark@wisc.edu). Confirmation letter/receipt will be sent.

Registration Form
Use separate registration form for each person.
Registration deadline for workshop:

February 27, 2009

Fee: $200.00
Are you operating an energy hog? Most water and wastewater utilities are energy hogs.

Environmental Protection Agency estimates that 3% of the national energy consumption, or approximately 56 billion kilowatt hours (kWh) is used for water and wastewater services.

Plants are faced with constantly increasing operating costs due to outdated equipment and infrastructure, and increasing energy costs. The industry is in search of cost-saving measures, and a decrease in energy use is a primary target.

How are you working to manage energy costs? Do you understand your energy costs? An example of an electrical power bill demand charge is explained below:

**Demand** is the rate at which you consume electricity at a given time. The **Demand Charge** is the price the power company charges per KW for the greatest amount of electricity used. This demand charge can be a significance factor on your electrical bill. The bill could be reduced by reducing the peak or shifting some use to off-peak hours. A single peak event may affect your monthly power cost for up to 12 months.

In recent years many of the auto manufactures have added a digital display on the dashboard of their vehicles indicating the current MPG (Miles Per Gallon) that the vehicle is consuming. This new information allows the driver to make intelligent decision about how to drive the vehicle.

One major issue for most water and wastewater facilities is the fact that the operators do not know what their power consumption is at any given time. Without detailed data on power consumption it is difficult if not impossible to do an adequate job managing the energy use. **Do you have a kWh meter reading on your plant desktop dashboard?**

A small data acquisition system that allows simple and easy monitoring of power usage can collect, analyzed and trend the data. Alarms can be enunciated when power consumption exceeds a preset value allowing operators to take none crucial equipment off line in order to prevent the maximum peak demand set point from being exceeded.
Energy efficiency is clearly on the minds of water treatment professionals. In addition to promoting new energy-efficient technology wastewater treatment facilities need to better manage their current energy use. A real-time data collector gives the operator information to make intelligent decisions about how to operate the facility.

While much is being done to promote the benefits of energy-efficient technologies, more importance should be placed on educating plant operators about energy-efficient strategies that can be used with their existing facilities. The cost of energy has been rapidly increasing and will continue to increase in the future for a number of reasons include concerns over CO2 emissions and global warming.

Research by the US Department of Energy has shown that just installing meter monitoring on your building improves awareness and can result in up to 2% energy savings. In many wastewater facilities the addition of a kWh rate display with recording and alarming software could easily provide power cost savings of 5% to 10% and a payback in one year or less.

For additional information on Energy Surveillance at your facility or a free analysis of your monthly power bill, contact IntelliSys Inc. (800 347-9977). IntelliSys is a software application and IT services provider to the Water Resources Industry specializing in Automated Facility Management Solutions.

IntelliSys Information Systems – 800 347-9977
www.intellisys-is.com

WWOA Conference Schedule

2009 - Hotel Sierra & KI Center, Green Bay
2010 - Kalahari Resort, WI Dells
2011 - La Crosse Civic Center
Discharge limits for phosphorus removal are more stringent than ever and pose a definite challenge for treatment plants. In most cases, the degree of removal required by a facility is determined by the quality of the receiving stream. Although a high degree of phosphorus removal can be achieved with a sophisticated secondary treatment process such as an AquaExcel® system or AquaPASS® system, some plants require even lower phosphorus levels. In this case, tertiary treatment is essential and lower levels can be achieved with an Aqua Cloth Filter utilizing OptiFiber® cloth media, AquaMB Process® or Aqua-Aerobic® MBR system.

:: AquaExcel® BATCH REACTOR
- Advanced nitrogen and phosphorus removal in a single unit process, eliminating the need for separate secondary clarifiers.

:: AquaPASS® PHASED ACTIVATED SLUDGE SYSTEM
- Time-managed aerobic and anoxic reactions in a continuous-flow process schematic. Nutrient removal is expedited via Aqua’s unique Phase Separator conditioning technology.

:: AquaDisk®/AquaDiamond® CLOTH FILTERS
- OptiFiber® pile cloth media provides advanced phosphorus removal.

:: Aqua-Aerobic® MBR MEMBRANE BIOREACTOR

:: AquaMB Process® MULTIPLE BARRIER MEMBRANE SYSTEM
- High-level nutrient removal utilizing multiple barriers, featuring filtration with cloth media filters followed by membranes.

:: IntelliPro® PROCESS MANAGEMENT SYSTEM
- Offers an essential link between operations, equipment and treatment objectives for efficient plant operation with integrated comparative analysis and operator guidance via a unique optimization program.

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