While I hope everyone is enjoying their summer and had a chance to enjoy some R&R, it’s not too early to make plans to attend WEFTEC.08 this year in Chicago. Being held October 18-22, 2008 at McCormick Place, it’s the largest event of its kind in the world. WEFTEC.07 in San Diego set an attendance record, and since we don’t like to finish second to anyone, it’s our goal this year to bring the attendance record back to the Midwest.

The Local Arrangements Committee has been busy making plans to ensure that the attendees have plenty of options for them to make this WEFTEC the best ever. Highlights include 3 1/2 sessions on Tuesday and Wednesday of the conference dedicated to Innovative Technology/Local Issues/Young Professionals. This year’s facility tours include trips to the Shedd Aquarium, Chicago Center for Green Technology, the Stickney Water Reclamation Plant, and a Chicago River Tour hosted by Libby Hill. The golf outing is scheduled for Sunday, October 19 at one of the best public courses in the Chicago area: George W. Dunne National Golf Course. Also planned for Sunday morning for non-golfers is a bicycle ride along Lake Michigan, which has been organized by volunteers to benefit Water For People.

I encourage everyone to go to www.weftec.org for registration information. Enjoy the rest of the summer, and we’ll see you in October!

Dateline Chicago – October 2008

What do the third week of October, water, wastewater, thousands of wastewater professionals, McCormick Place, and a thousand exhibitors have in common? How about Water for People, World Water Monitoring Day, Water is Life and Infrastructure Nakes It Happen, Water Environment & Technology, Water Environment Research, Utility Partnership Program, Country Pavilion Program, and Global Memberships 2008? And what is the connection between WEFteach, Stockholm Junior Water Prize, University Student Lounge, Design Competition, Student and Young Professionals Networking Career Fair, YP Reception, Global Business Services, and an Operations Challenge? Where are 34 hotels filled, over thirty workshops scheduled, 115 technical sessions with over 600 presentations given by 1,300 presenters, and moderators numbering in the 300’s preside? Can you imagine a locale where WEF was formed in 1928, over 80 years ago, where West (Rebecca) follows Zabinski (Adam) and Denning (Ted) follows Corley (Chuck)?

The common thread to all of this is Chicago, the birthplace of WEF (nee WPCF). And Chicago in October 2008 becomes the host city of WEFTEC.08™. After a five year absence and five years before the next appearance, Chicago this October will host the world of water pollutions specialists, exhibitors and pollution control technocracy. The program is complete, the stage is being set, and it is now your turn to make plans to join in the fun! If the multitude of events and activities don’t entice you, then the shear magnitude of the event should make you curious. Satisfy your curiosity at www.weftec.org for the event of the decade. You may recognize some of the other 35,000 individual members and nearly 50,000 affiliated Member Association members of WEF. Don’t miss it!
The Executive Board met in June to welcome new members, plan for the coming year, and discuss how to better meet the needs of the members of IWEA. Mary Johnson is completing her term as Secretary, and I want to thank her for all the support and direction that she has brought to the organization for the past five years. Her attention to detail and follow-through have given IWEA the level of professionalism that we all strive to achieve. Thank you, Mary… and welcome to Laurie Riotte from Fox Metro who took over for Mary on July 1.

After much discussion, the Board has decided that we should have a joint conference with ISAWWA on even-numbered years. Two years ago, this was a very successful venture, and after learning at WEFMAX that many other MAs hold joint conferences, we felt that this was the right decision to make for the organization. Mark your calendars for March 16-19, 2009 to meet in Springfield.

Rozeanne Ferguson of Crawford, Murphy and Tilly, Inc. has agreed to become the Marketing Chair for IWEA. One of the items addressed at the long range planning meeting was whether we could better publicize awards presented at the conference, and Rozeanne has agreed to take on this duty. She will share with Laurie the task of planning and marketing the conferences.

We also spent time discussing paid staff for some of the Board duties. Amanda Withers brought information and job descriptions used by other MAs. We would appreciate feedback from members on whether you believe that this is the right direction for the organization.

The summer is a busy time for IWEA. Thanks to Sharon Hawkins and the Lab Committee for a successful Lab Seminar, held jointly with CSW EA; to Greg Cargill for his work on the successful golf outing; and to Greg Garbs and the Operations Committee for their efforts with the plant operations seminar held jointly with IAWPO.

WEFTEC will be coming to Chicago in October, and there are many opportunities to help. Brian Perovich of MWRD is leading the efforts for local arrangements, and Greg Cargill and Kendra Sveum are planning another WEFTEACH. This will be a great opportunity for all members to participate in a WEF event.

Chuck Corley suggested that I should come up with a tag line for this column. I love to travel, so I decided to do a take-off on Rick (“Keep on travellin’”) Steves’ line. Who else but an IWEA member would take pictures of manholes in Prague, and get excited about an activated sludge plant in Italy? So…

Keep on shovelin’!

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**WEFTEC.08**  
*By Brian Perovich, Local Arrangements Committee*

**Datemeline Chicago**  
*By Charles Corley, Delegate 2008*

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**RECYCLE!**

Illinois Water Environment Association is a Member Association of the Water Environment Federation dedicated to improving Illinois’ surface, sub-surface and atmospheric water. The **ILLINOIS CLARIFIER** is a quarterly publication of IWEA providing pertinent information by, for and about IWEA Members. The opinions contained herein are those of the authors and not necessarily those of the IWEA or the Illinois CLARIFIER committee. Copy deadlines for the **CLARIFIER** are the 15th day of January, April, July and October. Comments and inquiries should be directed to: Illinois Clarifier, Heather Wachter, Managing Editor, 3680 Charlemagne Drive, Aurora, IL, 60504, (630) 561-2752; e-mail: ILClarifier@juno.com; website: http://iweasite.org. Printed on recycled paper. Share with a friend and prospective member, then recycle.
Ah! Summertime

By Charles Corley, Director '08 and Theodore Denning, Director '10

“Summertime, and the livin’ is easy,
Fish are jumping and the cotton is high.
Summertime, and the livin’ is easy,
So hush little baby and don’t you cry.”

late spring and early summer have not been this idyllic for many in our state. The Irving Berlin lyrics miss the annual Spring and Summer threat of torrential rains and the resulting floods. It came, for the most part, not in a flurry but in a silent rise in water levels. It was not expected and, in many cases, not prepared for. Many in our state have personally suffered these natural occurrences. Natural events, but often exaggerated by human intervention, blunder, and neglect. Our wastewater facilities have not gone unaffected, nor have our water pollution control workers and managers. So if you were personally affected, were one of the thousands of sand-bagging volunteers, or you toiled many hours in your community to mitigate the (not yet declared) Great Flood of 2008, our thoughts and prayers go out to you. We hope your waters recede, recovery is swift, and the damage and pollution are less than expected and anticipated so your summertime can return to “livin’ easy.”

WEF is gearing up for the next Chicago edition of WEFTEC.08©. Before the next issue of the Clarifier, it will have come and gone. The official start of WEFTEC.08 is Sunday afternoon 4:45 p.m., October 19 at McCormick Place. John Anthony Allan, the 2008 Stockholm Water Prize Laureate and professor at King’s College London, will give the keynote address. This opening session time slot has been used the last two years, while the technical sessions begin Monday, October 20, also at McCormick Place. Workshops, however, kick off WEFTEC.08 on Saturday, October 18 and continue Sunday, October 19 at various sites in McCormick Place and beyond.

As a member of the WEF Plant Operation and Maintenance Committee, I’d especially like to direct your attention to WEFTEC.08 Workshop Sessions W104 and W206. These are companion technical presentations that start in a classroom setting the first day and move outdoors to the MWRDGC John A. Egan plant the second day for hands-on activities.

IWEA’s New Secretary

Hi, I’m Laurie Riotte a Pretreatment Inspector for Fox Metro WRD. I have been with the district for seven years. Previously, I worked in the mortgage and relocation industries. It’s really risky to answer job ads that you are not sure what the job entails! I live in Oswego with my youngest daughter Grace. The other two have left the nest. I enjoy going to concerts, traveling, and gardening. I recently moved, so I spend a lot of time working on my house and landscaping. I am also a member of a knitting club that meets at a winery, a great way to multi-task my hobbies! I am looking forward to serving as your IWEA Secretary, but I am a little nervous because Mary left some big shoes to fill.

IWEA is heavily involved in the 2008 WEFTeach as well – the 14th Annual WEFTeach, I might add. Having originated in Chicago, this is not only a tribute to our MA but also a milestone in benefits to the teachers who are receiving wastewater and environmental training.

As leaders and potential leaders of IWEA, you’ll not want to ignore one event in particular – the WEF “Leadership Day Workshop” Tuesday, October 21 from 8:00 a.m. to 3:00 p.m. This is your opportunity to meet, converse with, and learn from other MAs and WEF staff about the working of WEF and the activities of the various MAs. Please peruse the entire WEFTEC.08 conference announcement you’ve recently received. You’ll find many familiar IWEA names and a plethora of activities and edifying opportunities for Y-O-U.

From Ted

The above article was written by Chuck Corley. As he mentioned, the next Director’s Corner article will not appear until after WEFTEC.08. What he did not mention is that his term as Director/Delegate from this Illinois WEA will come to an end during that conference. I would like to take the opportunity to thank Chuck for his work for the Association and the help and guidance he provided to me during my initial year as a Delegate. During Chuck’s tenure, a difficult transformation was made to the WEF governance structure.

Chuck, thanks.

IWEA Calendar of Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Meeting/Activity</th>
<th>Location</th>
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<tbody>
<tr>
<td>September 12, 2008</td>
<td>Executive Board &amp; Committee Chair Meeting</td>
<td>Starved Rock State Park, Utica</td>
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<tr>
<td>October 8 - 9, 2008</td>
<td>Illinois Water Conference 2008</td>
<td>Hilton Garden Inn, Champaign</td>
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<tr>
<td>October 18 - 22, 2008</td>
<td>WEFTEC 2008</td>
<td>McCormick Place, Chicago</td>
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<tr>
<td>November 6, 2008</td>
<td>Collections Seminar</td>
<td>Hyatt Lisle</td>
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The committee members who judged projects are pictured, left to right: Paul Clinebell, Rebecca Rose, Tom McSwiggin, Joe Koronkowski, Sandra Conrad, Sam McNeilly, Norm Rose, Larry Ziemba, Bob Brummond, Bob Kulchawik, and Andy Ftracek. The judges assembled in Champaign Friday night for a preliminary strategy meeting devoted to planning protocol, assignment of projects and an intellectual discussion of current issues of the water environment that would prompt young scholars' interests. Note the relaxed, but intellectual approach the judges exhibit in the pictures! Hey, anyway, how many people are actually successful at any activity if they don't have fun?

Eva Feldman is a 12th Grade student at Lincoln Park High School, Chicago, and she was also selected as the Illinois Stockholm Junior Water Prize winner for her project "Pollution Indicators in the Chicago River." Eva also won both these awards in 2007 and 2008. Her project studied how the macroinvertebrate populations varied at test sites along the North Branch of the Chicago River and the North Shore Channel. Eva used one apparatus, containing three multi-plate macroinvertebrate samplers, at each of seven test sites. Each apparatus was submerged for two weeks before it was removed and the macroinvertebrates living on it were identified and counted, and pollution tolerance indices were calculated. This was the second year of this study, and Eva used the "Illinois' River Watch" pollution tolerance index because it's specific to Illinois' waters and accounts for distinct species, not just family groups. In her first year, she used the Izaak Walton League of America's "Save our Streams" pollution tolerance index, which looks at family groups.

Eva found that the relative statistically significant differences (T-Tests) between the two indexes differed because the "Save our Streams" index takes into account presence but not abundance of individual organisms as the "Illinois' River Watch" index does. She concluded that this was due to the large number of scuds in three sample sites, lowering the "Illinois' River Watch" index value. Both of these indexes' results supported her hypothesis that the water upstream of the confluence of the North Shore Channel with the North Branch would contain more pollution-sensitive organisms and greater species diversity than the sites downstream of the confluence.

The Junior Division (Grades 7-8) Grand Prize Award winner was Shelby Peterson, an 8th Grade student at Southeastern Junior High School in Bowen. Shelby was honored with this prize for her project studying the "Effect of Acid Rain on the Environment." Her experiment monitored the effects of lowering pH levels on the living organisms, including the aquatic organisms paramecium and planaria. She measured germination counts with a microscope every 24 hours for six days with varying pH solutions for each organism. Planaria showed the greatest effect to acids and wasn't able to survive in pH levels lower than four. The number of paramecium began decreasing after 24 hours in pH levels less than five and by 96 hours, no paramecium were present in pH levels lower than three. Shelby's results supported her hypothesis that acid rain does have a significant effect on living organisms including aquatic organisms, and this is a major concern since, as lakes become more acidic, biodiversity is reduced. Literature reviews report that at pH levels lower than five, most fish eggs will not hatch; lower pH levels can kill adult fish; and acid rain has eliminated insect life and some fish species.

Honorable Mention Clean Water Awards were presented to five other students. These included Jennifer Cichon, a
7th Grade student at St. Paul of the Cross School, Park Ridge, for her project “When Algae Attacks.” Jennifer investigated how Global Warming affects a freshwater pond’s ecosystem. Jennifer collected water from five local ponds and experimented by keeping half of each sample at a constant temperature and subjecting the other half sample to a freeze-thaw cycle. She counted algae through a microscope for all samples and her results showed that the constant temperature samples had a higher average number of algae than the freeze-thaw cycle samples. Jennifer concluded that as water temperatures of pond waters in her area rise, the algae counts will increase, making the pond more turbid.

Michaela Kiersch, a 7th Grade student at Mark Sheridan Academy, Chicago, also received an Honorable Mention Award for her project “Waste in Water.” The purpose of her experiment was to determine whether a waste pile at a horse stable affected the ammonia, nitrite and nitrate concentrations in a nearby stream. Her data showed that samples upstream of the stable in a marsh area showed no nitrate and nitrite, and low levels of ammonia. She attributed these low levels to a marsh acting as a water purifier. The samples downstream of the horse stable waste pile contained elevated levels of all three chemicals. Michaela concluded that the downstream nitrate levels were not high enough to cause negative effects on aquatic life, but the ammonia and nitrite levels detected were detrimental to aquatic life.

Karen Perez, a 9th Grade student at Lane Tech College Preparatory High School, Chicago, received an Honorable Mention Award for her project “Using Daphnia to Monitor Water Toxicity.” The purpose of her experiment was to determine if runoff from sediments, such as oil, antifreeze and salt, would be toxic to organisms in nearby watersheds. She determined the effect of the three sediment runoffs on Daphnia magna (water fleas) by measuring Daphnia magna viability and death average to possible content in sediment. Her results showed that salt was the most toxic to the Daphnia magna. Surprisingly, the antifreeze had little effect as it had the same death average as her control, which was spring water.

Rebecca Klages, a 7th Grade student at St. Paul of the Cross School, Park Ridge, also received an Honorable Mention Award for her project “River Runoff: Shaping the Earth,” the purpose of which was to determine whether the shape of a river affects the amount of soil runoff or erosion. She used tin pans filled with topsoil and created straight, single curve and three curve river models in the top soil by scooping out the corresponding paths. Rebecca added birdseed and gravel to represent sand and rocks before pouring water into the model and collecting the pass through water and silt (i.e. topsoil, birdseed and gravel). Her results showed that the less curves in a river, the more that silt was carried away. This supported her hypothesis that the straighter the river, the larger the amount of erosion due to the lack of curves allowing a greater stream velocity.

The two Grand Prize Award winners were presented with a blue ribbon, certificate of commendation and a $200.00 US Savings Bond. The Honorable Mention Award winners were presented a red ribbon, certificate of commendation and a $100.00 US Savings Bond. As our Illinois Stockholm Junior Water Prize winner, Eva Feldman competed with other state member association winners in a national competition in Orlando, Florida, on June 19-21, 2008. Transportation and all local expenses were provided for her and her sponsor, Sandra Michalek, to participate in the national competition.

The final photo shows our seven award winners displaying their award ribbons surrounding Larry Ziemba. From left to right: Eva Feldman, Alexandra Rojek, Karen Perez, Michaela Kiersch, Jennifer Cichon, Rebecca Klages and Shelby Peterson.
The IWEA Lab Committee, in conjunction with Central States Environment Association Lab Committee, held a joint laboratory training seminar on June 17 at Crystal Lake’s city hall. This was a well attended session with over fifty attendees, and was prepared with laboratory technicians and plant operators that perform the daily testing in the laboratories in mind. Topics included Basic QA/QC by Laurie Franklin of First Environmental Laboratories, Inc., ISE Probes by Adrian Vazquez and Antonia Finlayson of Thermo Electron, Chemical Fume Hoods by Mike Bishop, PSA LabTech, and Laboratory Safety by John Eliszewski, of Lab Safety Supply, Inc. This was a successful joint seminar, and the IWEA Lab Committee sincerely hopes to continue the good relations formed with Central States Lab Committee during this venture.

Shifting gears…

The Lab Committee has regretfully accepted the resignation of past committee chair, John Lamb. Many of you are familiar with John as past president of the IWEA, but did you know that he served 12 years on the Lab Committee and six years as the committee chair? The Lab Committee has grown and has become a better organization today because of John’s professionalism, competence, contributions, and many years of guidance.

John, we thank you and recognize all of your many contributions. Best of luck to you!

Process Control

By Greg Garbs, Plant Operations Chairman

“Yeah, my plant’s doin’ alright. All I got to do is look at the place and I can tell what’s up.” So said Iam Goode. “When this here tank looks a little thick, I just open this valve until it thins out. Works good.” Iam continued, “Don’t need any computer or calculator or any of them fancy tests to tell me how to make this plant work good!” Does Iam sound familiar? Gratefully, these types of operators are quickly fading. The latest generation of operators embraces process control. It is a wonderful tool to keep us out of trouble with those adorable regulators.

Process control is “do’in some calculations” and reading the numbers to give you an idea of plant performance. Process control is the ability to forecast how the plant will behave under duress. Process control is not just looking at one day’s worth of numbers; it is looking at a trend of the numbers. Process control is the ability to make informed decisions on adjustments to ensure a clean, clear effluent.

Let’s look at a few.

Removal rates are the percentage of pollutants removed, from the waste stream. The removal rate is also a gauge to determine your ability to efficiently run the facility. To calculate the percent removal, subtract the effluent TSS in pounds from the influent TSS in pounds and divide by the influent TSS pounds ((In – Out)/In x 100). For the organic removal, just use pounds of BOD₅ instead of TSS. Take a look at your discharge permit: betcha you’ll find a minimum removal rate of 85%. The removal rates can be used to determine individual process performances. How are the primary clarifiers doing? How about the secondary clarifiers? What about the sand filters?

Percent Capacity is what percentage of your treatment ability is used. Do you know how much of the plant capacity is used? How much is available? Let’s figure out how to determine the percentage of plant capacity remains. First, get the plant design criteria. Find out what the plant was designed to treat in pounds of organics and solids. There will be other design criteria present, but let’s just look at these.

continued on page 12
Do You Have an Award-Winning Safety Program?

By Mark Termini, Safety Committee Chairman

Has your facility put together a safety program that deserves recognition? Is your record of accidents and incidents at an all time low? Are you doing more than the IDOL or OSHA standards require? If so, your safety program may be deserving of the “Burke Facility Safety Award.”

To apply for the award, go to www.iweasite.org. Click on the “About Us” tab near the top of the page. Locate and click on the “Awards” link located to the right of the page near the top. Click on the “Member Association Level Awards.” After being directed to the Awards Information page, locate and print the “Burke Award” application form. Complete the form and mail it, along with all supporting documentation, to:

Mark Termini,
IWEA Safety Committee Chairman
711 N. Addison Rd.,
Addison, IL 60101

All forms must be received by September 12, 2008. If your facility is chosen as a finalist for the “Burke Award,” you will be notified of a date for a plant inspection.

If you have any questions, contact Mark Termini at MTermini@Addison-il.org or by telephone between the hours of 8:00 a.m. and 4:00 p.m. at (630) 279-2140.

Another Successful Refresher Course / Certification Exam held in Addison!

Fifty individuals attended the Collection System Operators Refresher Course and Exam on Thursday, February 14. The course, held at the Village of Addison Municipal Building, was a refresher for the operators, engineers, and other individuals involved in the operation, maintenance, construction, and design of collection systems.

A training program was held throughout the morning and early afternoon. Topics included such fundamentals as Sewer Maintenance, Math, Electrical and Trench Safety, and Pumps. Attendees could utilize the time spent in the course as Personal Development Hours.

Following the training, a total of 37 attendees stayed to take a voluntary Collection Systems certification examination proctored by Bob Voss of the Illinois Environmental Protection Agency. We are pleased to report that a total of 82 percent passed the exam!

The Collection Systems Committee would like to thank Gregory Brunst and the Village of Addison for generously co-hosting this IWEA event. We would also like to recognize our volunteer instructors, including Mike Turley, Village of New Lenox; Gregory Cargill, Clark Dietz, Inc.; and Todd Larsen, Lee Jensen Sales.

The Collection Facilities Committee is always looking for new volunteers to assist with program development, events, and training. If you are interested in more information, contact Al Hollenbeck at (630) 682-4700.

From The Underground

A column about the design, operation and maintenance of collection systems

By Alan Hollenbeck, P.E., B.C.E.E., Collection Facilities Committee Chair
from the SHED ... promoting the understanding of nonpoint source issues, including storm water and watershed management
By Dan Bounds, Watershed Management Committee Chair

Evolving the Approach to Watershed Management

The “watershed approach” is becoming the standard for effectively managing issues that affect water quality, but existing Federal policy can create challenges that make integrated watershed scale planning more difficult. This was highlighted recently by WEF Vice President Paul Freedman before the House Water Resources and Environment Subcommittee’s hearing on comprehensive watershed planning and management (June 24, 2008). Freedman described why a watershed approach is more appropriate for assessing solutions and implementing improvement actions, highlighting several key elements for successful watershed planning, including: coordination among federal programs, watershed-scale planning, integrated land-use and water planning, the need for comprehensive data and modeling, and the need for multi-stakeholder involvement. Freedman commented on the limited scope of federal programs, lack of coordination among federal agencies, and lack of coordination between land-use and water resources planning. Freedman also noted that the Clean Water Act (CWA), although a successful tool in controlling point sources of pollution, needs to be modernized so that it can be an effective tool for watershed scale planning and management, stating: “using the CWA to deal with today’s water issues is like trying to use a 1972 repair manual to repair a 2008 automobile - it’s just not relevant. A new manual needs to be written.” Freedman asked Congress to “articulate the watershed approach as our national policy toward water resources.” WEF’s full testimony can be found at: www.wef.org/NR/rdonlyres/2ED9D44C-A50E-46A3-A4AC-43538B63287B/0/FreedmanCongressionalTestimonyFinal.pdf.

Illinois EPA uses a Targeted Watershed Approach to direct its available resources within Bureau of Water programs to watersheds where the greatest environmental benefit can be realized. To the extent that flexibility is available in mandated and delegated responsibilities under the CWA, Safe Drinking Water Act, and state statutes, Illinois EPA targets resources to those programs and watersheds that have the greatest impact on human health issues and ecosystem protection. More on how Illinois EPA uses watershed approaches can be found at: www.epa.state.il.us/water/targeted-watershed/.

WEFTEC, the Water Environment Federation’s Annual Technical Exhibition and Conference, is in Chicago this year (Oct 18-22) and has many sessions and events that would be of interest to watershed managers. WEFTEC offers water quality education and training and is a leading source for water quality developments, research, regulations, solutions, and cutting-edge technologies. Check out the full conference agenda at www.weftec.org.

IWEA Submits SJWP Proposal
By Charles Corley, Delegate 2008

In June, IWEA submitted a proposal to host the 2011 Stockholm Junior Water Prize (SJWP) competition in Chicago. The Stockholm Junior Water Prize is sponsored by WEF and is considered the most prestigious international high school level water-related science project award.

“The prize taps into the unlimited potential of today’s youth as they address current and future water challenges,” the WEF committee explains. The competition is open to projects aimed at enhancing the quality of life through water quality improvements, water resource management, or water and wastewater treatment. One project is nominated from each state.

Annually, competitors assemble in June for three and a half days of competition and judging. Competitors are treated to social activities with their host Member Associations (MA’s), tours and public appearances, and a technical program presented by the MA host. Public project presentations are an integral part of the event. The culmination is an awards banquet on last full day.

WEF accepts proposals from MA’s to host the competition. Previous MA hosts have been Texas, Florida, Georgia, Arizona, Pacific Northwest, with Alaska in 2009 and Missouri in 2010. IWEA has had a continuing role in the prize competition since 2003. The IWEA proposal to host the SJWP is posted on the IWEA website. It took many hours of work by committee members Sarah Potter, Rozanne Ferguson, and Ted Denning. Participating committees were Young Professional, Student Chapters, Public Education and Students Affairs, as well as our Directors and Board. Once we are awarded the event, (the IWEA Executive Board looks forward to it and is hopeful it will happen), involvement by the entire IWEA will be needed. Keep track of our progress at the SJWP website, www.wef.org/AboutWater/ForStudents/SJWP/.
BEATING THE HEAT: “Safeguarding Against Heat Related Hazards”
By Mark Termini, Safety Committee Chairman

Now that the “Dog Days of Summer” are here, the cool comfortable days of spring seem so long ago. The National Weather Service reported that during a 10-year period from 1995 through 2004, there were annual averages of 235 fatalities from the summer heat. During the heat wave of 1980, more than 1,250 people lost their lives. Only the cold of winter – not lightning, hurricanes, tornadoes, floods or earthquakes – takes a greater toll.

The human body functions at its best within a narrow temperature range. Move just 3 ½ degrees or more above or below the body’s core temperature of 98.6 and serious problems can begin to occur. The body dissipates heat by varying the rate and depth of blood circulation. When the body temperature begins to rise, the blood is circulated closer to the skin’s surface and excess heat drains off. At the same time, water diffuses through the skin as sweat. The skin handles about 90 percent of the body’s heat dissipation. Sweating, by itself, does nothing to cool the body unless the sweat is removed by evaporation. Under conditions of high temperature and high humidity, this process becomes more difficult. In addition, if the fluid lost as sweat is not replaced, the person becomes dehydrated and unable to sweat. The body then loses its ability to control its core temperature and serious health problems can result.

Preventing Heat Related Illness

• A person who does not drink enough fluids becomes dehydrated and less able to function in the heat. Dangerous levels of dehydration (a loss of more than 10 percent of body weight) can occur quickly under very hot working conditions. Two signs of dehydration that a worker can watch for are dark-colored urine and having to urinate less often in smaller quantities. A worker noticing either of these signs should drink more fluids. Don’t rely on thirst as an indicator of when to drink. By the time a person feels thirsty, he or she is well past the point at which more fluids should have been drunk. While the preferred fluid is water (cool, not cold), other recommended fluids include diluted fruit juice, tea or lemon tea. An electrolyte replacement drink diluted to half strength with water is also a good choice. Avoid drinks containing large amounts of caffeine such as coffee, colas, and other carbonated drinks. The caffeine acts as a diuretic, causing the body to produce more urine at a time that fluids need to be conserved. Workers should be able to get a drink at any time during the workday without going too far from their work areas. As a rough guide, under hot conditions, workers should drink approximately 8 ounces (1 cup) of fluid every 20 minutes. Salt pills are rarely required and their use is not recommended (a person can have too much salt). The normal salt content of the diet, including salt as a seasoning, is usually enough to replace salt lost through sweating. If salt replacement is a concern, try one of the electrolyte replacement drinks diluted to half strength with water.
• Wear loose-fitting, lightweight clothing, such as cotton, to allow sweat to evaporate. Light colors absorb less heat than dark colors. If possible, wear a lightweight hat with a good brim to keep the sun off your head and face. Body cooling clothing such as cooling headbands, cooling bandanas for your neck, and cooling vests are available for when you can’t escape the heat. Contact your local safety equipment supplier to find out what they offer.
• Eat small meals. Avoid foods that are high in protein; these increase metabolic heat.
• Heavy work should be scheduled during the cooler parts of the day. Whenever possible, alternate work in the heat with work in cooler areas.

Workers should be able to get a drink at any time during the workday without going too far from their work areas.

Heat Related Terms: Stages and Treatments of Heat Related Illness

• Heat wave: More than 48 hours of high heat (90°F or higher) and high humidity (80% relative humidity or higher) are expected.
• Heat index: A number in degrees Fahrenheit that tells how hot it feels with the heat and humidity. Exposure to full sunshine can increase the heat index by as much as 15°F.
• Heat Cramps: This is usually the first stage of a heat related illness. Heat cramps are muscular pains and spasms due to heavy exertion. They usually involve the abdominal muscles or the legs. It is generally thought that the loss of water from heavy sweating causes the cramps.
  – Treatment: Have this worker stop activity, rest, and drink small amounts of cool, not cold water or a commercial sports drink. Have the individual gently stretch the cramped muscle and hold the stretch for about 20 seconds, then gently massage the muscle. If no other signs of heat related illness present themselves, the person may resume activity after the cramps have stopped.
• Heat Exhaustion: This is the next, more serious stage of a heat related illness. It typically occurs from over exertion in the heat and humidity, causing a loss of fluids through excessive sweating. Fluid loss causes blood flow to decrease in the vital organs, resulting in a form of shock. Symptoms include cool, moist, pale, flushed or red skin; heavy sweating; headache; nausea or vomiting; dizziness; and exhaustion.

continued on page 10
WANTED: Award Nominations for 2009
By Pat Schatz, Awards Committee Chair

Do you know someone who should be acknowledged for his/her outstanding contributions to the water environment profession, the Federation and the IWEA? Please consider nominating them for an award!

The Awards Committee is seeking nominations for the WEF and IWEA 2009 Awards. The nomination process is relatively easy. If you know someone that you believe deserves recognition, please submit his/her name. The nomination forms are on the IWEA web site, www.iweasite.org.

Deadline for nominations is October 1, 2008.

Awards presented:
The Dr. William D. Hatfield Award acknowledges an operator of wastewater treatment plants for outstanding performance and professionalism.

The Arthur Sidney Bedell Award acknowledges extraordinary personal service to a Member Association.

The Kenneth C. Merideth Memorial Award acknowledges an individual who has performed duties above and beyond the usual employment requirements so as to elevate the status of the plant operator and promote operator professionalism within the State of Illinois.

The Laboratory Analyst Excellence Award acknowledges an individual for outstanding performance, professionalism, and contributions to the water quality analysis profession.

The Paul Clinebell Outstanding Service Award. This is a special and prestigious award to recognize an IWEA individual who has and continues to provide significant contributions to the Illinois Water Environment Association. He/She has given outstanding service to the IWEA over the longevity of his/her membership.

The Outstanding Young Professional Award. This award recognizes the contribution of a young water environment professional (35 years old or younger) for significant contributions to the IWEA and to the advancement of knowledge, technology, and practices in the operation, management, design or construction of wastewater and pollution prevention systems.

The Awards Committee is seeking nominations for the WEF and IWEA 2009 Awards. The deadline for nominations is October 1, 2008.

The awards will be presented at the IWEA annual banquet, Monday, March 16, 2009. More details about the awards and the nomination forms can be found on the IWEA website. If you have any questions about the nomination process, please contact the Awards Committee chair, Pat Schatz, at (815) 933-0487 or Peschatz@citykankakee-il.gov.

Save the Dates
WEFTEC.08 - The Water Quality Event
81st Annual Technical Exhibition and Conference
Conference: October 18-22, 2008
Exhibition: October 19-22, 2008
McCormick Place, Chicago, Illinois
Register online at www.weftec.org

IWEA/ISAWWA 2nd Joint Conference & Exhibition
March 16-19, 2009
Crown Plaza Hotel & Conference Center
Springfield, Illinois

Beating the Heat continued from page 9

- Treatment: Move the person to a cooler location and have him or her rest in a comfortable position. Give them a half glass of cool water every 15 minutes; do not let them drink too quickly. Remove or loosen tight clothing and apply cool, wet cloths. Call 911 if the person refuses water, vomits, or loses consciousness.

• Heat stroke: This is the late stage of a heat related illness. Symptoms include vomiting, decreased alertness or complete loss of consciousness, high body temperature (sometimes as high as 105°F), rapid weak pulse, and/or rapid shallow breathing. This stage of heat related illness is life threatening. CALL 911 or your local EMS number.

- Treatment: Move the person to a cooler location. Quickly cool the body. Wrap wet cloths around the person and fan them. If ice packs are available, wrap them in a cloth and place them on each of the person's wrists and ankles. Keep the person lying down until medical rescue arrives.

When the temperatures warm up, we all want to take full advantage of the weather to address landscaping the facility, painting equipment, or any other outdoor project that we've been waiting to tackle all winter. While the early and late seasons provide a challenge as far as scheduling between the rain drops, the most consistent season (summer) can also be the most dangerous. With an awareness of the conditions and their effects, and a little creative scheduling, the pitfalls of the “Dog days of summer” can be avoided.
Welcome New Members

Name               Company
April              MWRDGC
Kazimierz Bajerek  MWRDGC
Jarek Fink-Finowicki MWRDGC
Irina Lukicheva MWRDGC
Cornelio R. Natividad MWRDGC
Edward Podczerwinski MWRDGC
Nadja Serak MWRDGC
Anant Sriram MWRDGC
Mandeera Wagle MWRDGC
May                Fay Costa
Daniel Drummond    CH2M Hill
Michael Goldrich   City of Greenville
Rusty Handle       MWRDGC
Angela McBride     Westin Engineering
Robert G. Mitchard Algonquin Municipal Office
Matthew Peyton     Sanders Environmental Water Service, Inc.
Franklin Joe Sanders
June               Victor F. Ancieta
Pam Broviak        CH2M Hill
Rick Lallish       City of Greenville
Yvonne Mwende Lefler MWRDGC
Victor Olchowka    Westin Engineering, Inc.
David S. Topazian  MWRDGC
Don Wauthier
July               Amanda Arndt
Fehr Graham

Year End Financial Report
By Debra Ness, Treasurer

I have completed my first year as Treasurer for the Illinois Water Environment Association and am happy to report that the 2007-2008 Fiscal Year ended in good financial condition. The IWEA completed the fiscal year with a net gain of $32,637.00. Through the fiscal year, IWEA had total income of $103,998.00 and total expenses of $71,361.00.

The Executive Board also adopted the budget for the 2008-2009 Fiscal Year. The approved budget projects an income of $85,906.00 and expenses of $97,885.00. The budget for the FY projects a deficit. However, careful spending by the committees and a well attended annual conference should help to complete the year in the black.

The final figures for the Annual Conference are also in. All bills have been paid and deposits registered for the year ending June 30. The conference resulted in positive revenue of $40,838.00 with an income of $68,541.00 and total expenses of $27,703.00. The conference also raised $830.00 in the putting contest for the Science Fair Scholarship Fund.

Financial Statement
Bank Accounts
Community Bank ............... $77,024.13
Science Fair Fund ............. $3,195.33
Asset Accounts
12 Month Reserve CD ........ $11,413.51
24 Month Reserve CD ........ $11,405.74
Total ................ $103,038.71

ILLINOIS WATER ENVIRONMENT ASSOCIATION 2008-2009 COMMITTEE CHAIRS
I got Iam Goode's facility design criteria:
- Daily Average Flow: 3.3 MGD
- Daily Average TSS: 4575 lbs/day
- Daily Average BOD5: 6000 lbs/day

Iam Goode's plant influent numbers for one month are:
- Daily Average Flow: 2.5 MGD
- Daily Average TSS: 3600 lbs/day
- Daily Average BOD5: 4000 lbs/day

Determine the organic plant capacity utilized by dividing the influent lbs/day by the design average lbs/day. 3600/4575 = 0.78. Convert to a percentage by multiplying by 100. 3600/4575 = 0.78 x 100 = 78%. Holy cow! You mean to tell me that 78% of my plant’s capacity is utilized? I only have 22% capacity left? Yes. Never fear, the good folks in Springfield decided that you need to start worrying when your capacity is 80% exceeded on an annual basis.

Process control for the activated sludge facility involves such calculations as Mean Cell Residence Time, Gould's Sludge Age, F/M, SVI and the good ol’ West Method. The MCRT and GSA are measures of the theoretical amount of time in days the sludge is in contact with the wastewater. The MCRT looks at this time from the effluent end, while the GSA looks at the time from the influent end. Confused? Let me explain.

The MCRT is a calculation that divides pounds of MLSS divided by pounds of solids out. Huh? Well, the pounds out is almost easy enough, but the pounds of MLSS is the hard part. That is the addition of the pounds of MLSS and the pounds of MLSS in the clarifier blankets.

(lbs MLSS + lbs in clarifier blankets)/(lbs TSS wasted + lbs TSS effluent)

To make life easier, use a simplified version: the lbs MLSS/lbs TSS wasted. Here is why I say this. The pounds in the clarifiers (sludge blankets) are theoretically static. Doesn't change too much over time. The pounds of solids in the effluent are minimal if not insignificant. If you have a large facility with multiple clarifiers and a dirty effluent, then use them. If you want to do a lot of calculations, use them. Figuring out the pounds in the clarifier blankets is the fun part.

Gould’s Sludge Age is the division of pounds of MLSS divided by the pounds of influent TSS (lbs MLSS/lbs influent TSS). Easy, huh?

F/M is the Food to Mass ratio. This calculation is not a measurement of time but a ratio or comparison of how much food (lbs influent BOD5) to Mass (lbs MLVSS). The F/M calculation utilizes the volatile portion of the MLSS because, in theory, only the bugs (bacteria and protozoa) are the volatile portion of the MLSS.

The Sludge Volume Index (SVI) is a measure of the settleability of the sludge. The SVI is calculated by measuring the ml of settled MLSS solids after 30 minutes in a settlometer, then dividing by the MLSS concentration. Most folks use the 30 minute settlometer as an indicator of how well the clarifier is working. Different characteristics observed on the settlometer reflect performance in the clarifier. Slow settling fluffy sludge means waste less; fast settling compact sludge means waste more.

The West method is a means of operating facilities that use real time measurements that are available to the small package plant operator. I don't claim to be proficient at the West method and urge you to request information from the IEPA. It is a good method to use for plant process control.

Process control methods will give your skills credibility. A wall full of trend charts is a beautiful thing. The friendly regulators love 'em, City officials are awed by them, and you may even get a new truck out of the deal.