“The Beat Goes On”
Past President Ratzki passes the Gavel to President Scherer

In This Issue:
• Remembering Leo Ebel and Kurt Bordewick
• Annual Meeting Photo Essay
• Biosolids Nutrient Management Impacts
Note from the Editor

It is with sadness that I report that Leo Ebel, Past President, and Kurt Bordewick, long-time member, have passed away. Our thoughts and prayers go out to their families. I had the privilege of working with Leo as we were both very involved in MWEA, and working with Kurt during my days at MSD St. Louis. They both have left us too soon. Articles on both are included in the newsletter.

The Annual Meeting was an exciting time. Starting out with the snow, many still remember when the MWEA Annual Meeting was held in February, and we were never sure if the golf outing was going to happen. This is the second year out of the last three where we again had to cancel the golf outing due to snow. So much for the golf pictures. The meeting was a great opportunity to see the folks we hadn’t seen from last year, rekindle those friendships and start new ones. The technical program was again great. A good time was had by all.

We continue to provide the “Current” in electronic format. If you prefer to receive a hard copy, please send me an email at Bob.Campbell2@Stantec.com and we will put you on the mailing list to receive a hard copy.

We are always looking for articles of interest to share with the membership. If you have information to share, please email them to me for possible inclusion in the next addition. Please do not embed photos into the articles, send them separately as .jpg files and we will see they get added into the article.

I would like to thank our previous contributors and encourage all to submit articles to maintain the quality of our newsletter.

-Bob Campbell
President’s Message

I trust everyone made it back home safely after this year’s annual conference, and what a conference it was! This year’s annual conference tallied record vendor booth registration, record donations for Water for People, and near record attendance! I was also impressed that there were only 2 cancellations due to the inclement weather. This proves that the annual conference is the Best of the Best in the Midwestern region. Many thanks to all who braved the record snowfall to attend the meeting. I wish to thank all of those who participated in organizing this year’s annual conference. Through the dedication of all of the MWEA executive officers and committees this turned out to be one of the best conferences ever. The next year proves to be a very busy one for MWEA with several workshops already on the books.

Starting in May, the Young Professionals have 3 events planned, and the Plant Managers have 2 events planned. In September the MWEA will be sponsoring a golf tournament to raise funds for Water for People. There will be a Lab Practices workshop, and a Watershed Management workshop. October will bring WEFTEC which will be in Chicago this year and a Collection System Outreach program to be held in the boot heel area of the state and of course who could forget the Fall Technical Symposium in November. Please consult the MWEA web site for dates and times for all of these events. We are always striving to provide the best of programs for the membership association (MA) but we cannot do it without input from you. Please take a few moments and go on line to participate in the survey for the annual conference, through this survey we can see where we excelled in your expectations and also see where we lagged in your expectations. The survey can be found at https://www.surveymonkey.com/s/WM9P6HW, or just visit the MWEA website at mwea.org and look for the “survey” link. Another item that we will be working on this year is a phone application that will make it easier for the MA to connect to the MWEA website and see what’s going on.

At this time, I would like to encourage every member to get involved with MWEA, be it in the form of committee participation or just by filling out the survey for the annual conference. There are some committees that need help and support from the MA; I guarantee that once you get involved you will see what a great organization this is. Hope everyone has a great spring and is looking forward to the warmer days of summer. If anyone has any questions regarding MWEA or any of the committees, please feel free to contact me at dscherer@ofallon.mo.us.

-Dan Scherer
City of O’Fallon W&S

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www.mwea.org
Leo Ebel - Past President & WEF Director passed away on May 16, 2013. Leo Ebel was an Active member of MWEA. He was a graduate of Washington University in St. Louis, having attained a B.S. in Civil Engineering in 1970, and a M.S. in Environmental Engineering in 1973.

He had over 35 years’ experience in the environmental consulting engineering field; with an emphasis on collection and treatment of wastewater from municipalities, but also including substantial experience in the areas of industrial wastewater treatment, municipal and industrial water supply, stormwater management, and solid / hazardous waste control.

Mr. Ebel retired from Horner and Shifrin consulting engineers in St. Louis, Missouri; and was previously employed by the firms of Consoer-Townsend & Associates, Sverdrup Corporation, and Burns & McDonnell Engineering Co. during his career in St. Louis. He was active in a number of professional organizations including WEF, AWWA, NSPE, CEC, ASCE, AAEE, and the Engineers Club of St. Louis; but has been most involved in the activities of the Missouri Water Environment Association which he joined in 1971.

Leo had served on numerous MWEA committees and chaired the Tellers, Program, Local Arrangements, and Industrial Waste Committees and worked diligently for “Water for People”. He served on the MWEA Executive Committee and was President in 1998, He was inducted into the Select Society of Sanitary Sludge Shovlers in 1992. He also presented numerous technical presentations at the meetings. For the Water Environment Federation, Mr. Ebel was primarily involved with the Technical Practices Committee, having served as the chair of the Task Force for updating the Manual of Practice for Preliminary Treatment.

Leo was honored with numerous awards for his dedication to the Association and the Water Environment. He will be missed.

Kurt Borderick, PE
Kansas City Water Services, Wastewater Division Manager | September 8, 1957 – March 13, 2013

For more than twelve years, Kurt Bordewick served as integral part of Kansas City, Missouri Water Services. His accomplishments as Wastewater Treatment Division Manager were many, and are outlived only by Kurt’s true enthusiasm for work and life. Kurt was proudly, “Green before it was cool.” His work at Water Services reflected his strong commitment to preserving our natural resources. During his tenure, Kurt and the staff who supported him received several awards for achievements at each of Kansas City’s six wastewater treatment plants. Kurt and his teams also received recognition for their work at Kansas City’s Birmingham Farm, which operates at a profit through the use of land-applied biosolids at the farm, which grows corn and soybeans. Kurt touched the lives of many people, giving his time and sharing his experiences. His disarming personality and charm made others feel at ease, even in difficult situations. Kurt will be sorely missed by all.
Annual Meeting Wrap-Up | Photo Essay
WEF Arthur Sidney Bedell Award
Richard Johannes

The Bedell Award was established to acknowledge extraordinary personal service to a WEF Member Association. The award is named for Arthur Sidney Bedell, WEF’s second president for his long devotion and service to the New York Sewage and Industrial Wastes Association.

The 2013 Author Sydney Bedell Award is presented to Richard Johannes. Richard has been a member of MWEA since 2001 and has served as Chair of the Industrial Waste Committee 2004 – 06 and Chair of Program from 2006 – 08. He is also a member of the Select Society of Sanitary Sludge Shovelers. Richard is the Senior Program Manager of Water / Wastewater / Stormwater at URS /Overland Park and is a licensed Professional Engineer in Missouri, Kansas and Iowa.

William D. Hatfield Award
Bob Campbell

Bob Campbell is the latest recipient of the Water Environment Federation’s William B. Hatfield Award. The award is presented to operators of wastewater treatment plants for outstanding performance and professionalism. Ask just about anyone, and they would say that statement accurately describes Bob’s career.

Bob has worked in wastewater for more than 41 years, and has been a member of the Missouri Water Environment Association since 1977. He has remained an active member for all these 36 years, and is currently serving as the association’s newsletter chairperson.

Outside of the organization, Bob’s experience is extensive. He has been responsible for wastewater operations in Oklahoma, Missouri, Illinois and Ohio. The facilities he has been responsible for guiding, building, and maintaining, have received over 50 awards for management, safety, and compliance. He served many years as the Executive Director for the Metropolitan Sewer District of Greater Cincinnati, and helped the organization navigate, develop, and abide by consent decrees.

The William B. Hatfield Award is the latest in a great list of accolades for Bob. He is one of only four people to receive the Missouri Water Environment Association’s Golden Fleece Award. He has also been recognized by many other organizations for outstanding work in management, communications, planning, and lifetime achievement.

Burke Award
Environmental Management Corporation - St. Charles WWTP

The George W. Burke, Jr. award was established in 1982 to honor Mr. Burke’s many years of service to both the water and environment field and the Federation’s as staff manager of technical services. The purpose of the award is to encourage an active and effective safety program in municipal and industrial wastewater facilities and acknowledges a documented and illustrated safety program and safety record of the facility for the preceding calendar year.

With great pleasure, the MWEA Safety and Occupational Health Committee would like to congratulate EMC and the City of St. Charles, Missouri both the Missouri and Mississippi River wastewater Treatment Plants for having an active and comprehensive Safety Program for 2012.

The safety program is pro-active and very well documented. The safety program has the full support of EMC and the City of St. Charles, and most importantly, the active implementation of the program at the plant level. The Safety Committee commends the entire staff for their effort and example.
Quarter Century Operator Club

The Quarter Century Operator Club recognizes operators of wastewater treatment facilities for their service and dedication in a difficult and dangerous profession. Eligibility requirements include being a member of WEF for a minimum of five consecutive years and a significant/full-time participant in the water environment profession for a minimum of 25 years.

Neig Frankenberg is currently employed with MSD, St. Louis, as the Operations Division Manager.

Charles Parott, Jr. is currently employed with the City of Springfield as the Plant Supervisor of the North West Treatment Plant.

Ray Seidelman, Jr.

Virgil Carr, PhD, PE, Environmental Engineer, Retired CAPT-USPHS

Virgil is now self-employed after spending much of his time with the US Public Health Service.

MWEA Awards

WEF Life Members

WEF honors members with a Life Membership when they are 65 or older and have been a member with WEF for 35 years or longer.

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Young Professionals Award
by Rhoda Hall (ABNA Engineering, Inc.)

Upon completion of the dual degree program in 2003, she graduated from Webster University and Washington University in St. Louis with a BS in Mathematics and Chemical Engineering, respectively. Two years, two advisers, and a thesis later she received a MS degree in Environmental Engineering from Wash U.

As soon as she graduated with her Master’s, she was hired by Horner & Shifrin, Inc., and worked as a Project Engineer there for 7 years and 3 months. While there she performed many tasks with minimal supervision or manager’s assistance. Her tasks included: Water and Wastewater Treatment Planning and Design, managing small, multi-disciplined engineering facility planning, design, bidding, construction management, cost estimating, to name a few. She joined TREKK Design Group, LLC in August of 2012, and presently serves as a Project Manager for Wastewater Treatment and Collection Systems. Cliff Cate, one of the owners of TREKK Design Group, had this to say, “Rebecca has been a proponent for both wastewater and young professionals since her college days leading the Washington University chapter of WEF. She continues to be enthusiastically involved in MWEA as the local arrangements chairperson and involved in Young Professional activities. Her enthusiasm carries over to her professional career where she continues to pursue improvements to our environment. She is joy to work with and a handful to keep up with”.

She is a Professional Engineer, licensed to work in Missouri, Illinois, Kansas, and Tennessee. She is a 2012 graduate of the Water Leadership Institute and was inducted into the Select Society of Sanitary Sludge Shovelers that same year. She is currently the MWEA Local Arrangements Chair, a position she has held for the past two years, and did an awesome job helping to make this year’s conference a success. With all this, she manages to mentor Engineering students at Washington University.

Some interesting things about her personally:
She loves the outdoors. She got married in the Canadian Rockies, a trip where she and her husband camped in a mini-van there and back. She also enjoys whitewater kayaking. She is an avid gardener.

Ladies and Gentlemen I am honored to present the 2012 Young Professional Award to my fellow Wash U Alumni and friend, Rebecca A. Elwood!

Laboratory Analyst Excellence Award
Mike Henderson

The 2013 recipient of the Water Environment Federation Laboratory Analyst Excellence Award has worked in the wastewater field for eleven years. Mike Henderson graduated from Highland High School, Ewing (you-wing), MO in 1985 and Hannibal-LaGrange College, Hannibal, MO in 1989. Mike holds a “C” Water Operator certification and received his “A” Wastewater Operator certification from the State of Missouri in 2007 shortly before being named the Wastewater Superintendent for the City of LaGrange in 2008. Mike joined the Missouri Water Environment Association Laboratory Practices Committee several years ago and has been an active participant of that committee since then.

Besides doing all the NPDES laboratory requirements, Mike does any operation control testing that is needed to keep his plant running efficiently. As is usual in a smaller town Mike has numerous other responsibilities including wastewater plant maintenance, related line maintenance work for the collections system and doing the winter snow plowing for the City as well as dealing with his City Council. He is also a member of the LaGrange volunteer fire department and has achieved the rank of Captain in that role.

In his spare time, Mike is married to “a great lady,” Debbie and they are busy parents to two sons. The whole family enjoys deer hunting and Mike and his sons are involved in competitive trap shooting going to national competitions in the summer of 2012.
MWEA Awards

MWEA Biosolids Award

Large Facility (5MGD or greater)
Kansas City, Mo – Water Services Department
Wastewater Treatment Division
Resource Recovery Program
Birmingham Farm

Consists of 5 WWTP’s with a total design flow of 151.8 MGD. They produced 5566 dry tons and have 1350 acres in their program. The Birmingham Land Application Facility is used for temporary storage and land application. Over 1050 acres are tillable and approximately 300 acres are in the agroforestry project. There are about 5 acres in tree nursery in partnership with the Kansas City, Parks and Recreation Department to grow nursery grade trees to be planted on the streets of Kansas City.

The rest of the acres are used for crops and the Kansas City took in revenue of over $2.7 million from 2006-2011. The crops grown include a rotation of corn and soybeans. This relates to a Net Income of $2.1 million during this time period. Some of the bottom land has been converted to a mixed hardwood forest to increase wildlife habitat.

Small Facility (5MGD or less)
Moberly Wastewater Treatment Plant

The facility has a 2.5 MGD average daily flow. They produced 489 dry tons and have 84 acres in their program. The plant was constructed in 1997. The process consists of Screening, Grit removal, Sequential Batch Reactors (SBR), Aerobic sludge digesters, Biosolids holding basins, and UV disinfection.

Biosolids are land applied on property owned by the City of Moberly. Half of the land is leased out for crop production and the other is in timber.

Industrial Wastewater Awards

The Industrial Wastewater technical program during the Annual Meeting was outstanding and included five technical presentation topics including:

1. Co-Digestion of Food Wastes
2. Industrial Wastewater Pre-Treatment at Small Caliber Arms Facility
3. Compliance with Copper Effluent Limits
5. Biological Treatment Systems Case Study

The technical program was very successful attracting a total of 132 professionals to attend the presentations.

The Industrial Wastewater Committee awarded over 220 awards for safety performance, compliance performance, and commitment to protect water quality, and presented the following awards to the recipients attending the Awards Luncheon on Monday, March 24, 2013:

Water Quality Award
Alliant Techsystems Operations LLC, Independence

Safety Award for Large Flow Facility
Alliant Techsystems Operations LLC, Independence

Platinum Pretreatment Award
EFCO Corporation, Monett

Gold Pretreatment Award
EFCO Corporation, Monett

National Beef Leathers, St. Joseph
Alliant Techsystems Operations LLC, Independence
Dairy Farmers of America, Monett
Merrell Brothers St. Louis Disposal, St. Louis
EnerSys Energy Products
Facilities & Plants of the Year

Small Facility Operator of the Year
Joe Richardson, Facility Manager - Northeast Public Sewer District

- MWEA member
- Class A Wastewater license
- Class C Wastewater Analyst license

Joe has worked for Northeast Public Sewer District for 127 years. Starting as a laborer he has worked his way up the ladder in the Operations Department to his present position as Facility Manager.

When Joe entered the Operations Department it was floundering in the crosshairs of the Department of Natural Resources regulatory enforcement. Joe worked tirelessly over the years improving the work ethic and perception of the Northeast Public Sewer District Operations Department. Thanks to Joe’s efforts Northeast Public Sewer District’s main facility, The Saline Creek Treatment Facility is a shining example of how a treatment facility should run.

You would be hard pressed to find a person in the field of wastewater operations who works harder to achieve better plant operations and effluent quality than Joe Richardson. He is well respected by his peers of whom I will list a few below who will say much the same about Joe.

Joe is married to Missy Richardson and has two children, a daughter Chelsea and a son Jack. He lives in Festus Missouri and spends his time away from work with him family enjoying the outdoors.

Other Platinum Pretreatment Awardees that were unable to attend the luncheon included:

- Tyson Foods, Monett
- AFB International, Aurora
- OUR 365, St. Charles
- Sierra The Bulletsmiths, Sedalia
- Cintas Corporation, Springfield
- Enterprise Laundry
- Milky Way Transport
- Air Product Prism Membranes, St. Louis
- BERCO Inc., St. Louis
- Elantas EDG Inc., St. Louis
- Mallinckrodt Inc., McDonnell Blvd, St. Louis
- Metal Container Corporation, St. Louis
- Trigen St. Louis Energy Corporation, St. Louis
- LPF High Performance Coatings, Kansas City
- Missouri Plating Company, Kansas City
- St. Joseph Medical Center, Kansas City
- Solvent Recovery LLC, Kansas City
- Southeast Sanitary Landfill LLC, Kansas City
MWEA Awards

Large Facility Operator of the Year
Matt Bequette - Treatment Plant Manager

Matt Bequette was hired as an “A” licensed Treatment Plan Manager in January, 2011. Matt is very passionate about operating and maintaining the west plant with high efficiency and attention to detail. He has the knowledge to accomplish his job and consistently analyzes problems and yields sound decisions.

Matt understands background knowledge, techniques, principles, technical disciplines, procedures, etc., required for effective job performance. He identifies problems, secures and evaluates the facts, determines possible causes of problems, explores alternatives and reaches sound conclusions, weighing the impact of the actions in advance.

Matt demonstrates reliability and accuracy in work performance. Effectively and thoroughly applies job knowledge, taking action when necessary, i.e., a “self-starter”. He possesses the ability to plan and organize projects to ensure efficient use of resources. Monitors progress to complete the task and requires little supervision or guidance.

Matt completes complex assignments accurately and reliably with minimal supervision. He frequently anticipates needs and often starts appropriate action without being directed. He is willing to accept extra work beyond the minimum job requirements. Plant efficiency has improved to a CBOD removal of 98% average. TSS removal is currently at an average of 97%.

Matt understands and applies safe working practices. He observes work methods to detect and correct unsafe actions and conditions. Matt continues to perform all work in accordance with established policies and procedures. He frequently observes methods for unsafe actions and often offers suggestions for improvement.
Small Facility Plant of the Year

Chad Davis - Utility Director
Bob Hutchinson - Wastewater Treatment Supervisor
Jeff Bowden - Operator
Dustin Gott - Operator
John Simpson - Operator
Brady Feigly - Operator

The city of Trenton is located in northwest Missouri and has a population of 6200 people. The wastewater plant was built new in 1980 with three upgrades. The second upgrade in 1999 and the last one completed in 2009. The wastewater plant is owned and operated by the city under the management of Trenton Municipal Utilities (TMU). The plant has a design flow of 1.9 mgd with a peak design flow of 7.0 mgd. Design sludge production of the 1080 dry ton/year. In the year of 2012 the staff land applied 620 dry ton of sludge. The operation of the facility is under the supervision of a certified A operator. The plant is made up of Bar screen/grit removal/extended aeration/three secondary clarifies/sludge holding with aeration/belt press/lime stabilization/sludge storage/land application. The organic strength of wastewater is measured by Bod. The average influent BOD is 872 mg/l. However this is significantly higher than normal domestic wastewater due to a big food processing plant located in town. The result of this causes TMU to treat a total load that at times is equivalent to a town with a population equivalent of 63,000. The wastewater plant and staff are also responsible for enforcing and operating the cities pretreatment ordinance to the industrial users. The staff at the plan is also responsible for the operation and maintenance of 16 wastewater lift stations around town.

Large Facility Plant of the Year

Nevada Wastewater Treatment Plant

Staffing
• 3 full time employees, Supervisor – Mark Mendenhall, Operator/Maintenance Mechanic – Bob Kerbs and Maintenance Worker – Johnny Peavler. Local Manager – Shawn Middendorf.

Plant Information
• 2 secondary clarifiers, 2 overflow clarifiers, 2 aeration basins, 2 aeration digesters, 1 sludge holding tank, UV disinfection, sludge is land applied by staff. Design flow 2.0 mgd, actual flow 1.4 mgd.
• 498.08 mg treated in 2012 average 1.35 mgd, 68% of design flow
• Staff land applied 82.3 dry tons of sludge in 2012
• No NPDES violations in 2012

Industrial Pretreatment Program
• Staff monitors 3 industries that discharge to the system

2012 plant Improvements
• Cooperation with RE Pedrotti to complete SCADA communication between plant and lift stations
• Added a new hydraulic system center to allow independent operation of 2 UV channels
• Safety improvements including installation of 1st aid kits (1 large wall mount and small kits in fleet vehicles), added signage to improve confined space identification and updated emergency exit signs and lighting

Challenges
• Collection system is near the end of its useful life. Extreme I&I issues throughout
• Continue fine tuning the process to identify opportunity for cost savings
MWEA Awards

Safety Awards
The following are short information write-ups for the Safety Awards given at the MWEA Spring Conference. I want to commend all those who submitted Safety Award Applications not only for their work in submitting but for their diligence throughout the year to prevent accidents and improve the safety of each employee.

Small Treatment Facilities
The City of O’Fallon Wastewater Treatment Facility was the recipient of the Safety Award for Small Treatment Facilities with 9 employees, an average daily flow of 6.75 MGD serving a population of 21,800 people. The Treatment Facility had no reportable accidents for 2012.

Small Collection Systems

Large Collection Systems
The City of Columbia Sewer Utility Collection System received the Large Collection System Safety Award by having only one accident for 2012 with 18 employees. Their Collection System has an average daily flow of 15.5 MGD serving a population of 110,000, and an estimated 667 miles of sewers.

Large Treatment Plant
The City of St. Charles operated by American Water/Contract Services Group/EMC received the Large Treatment Plant Safety Award with 14 employees. The St. Charles operation experienced no accidents for the 2012 calendar year. St Charles treats 8.234 MGD average daily flow and serves 90,000 people from two facilities.

George W. Burke Jr. Safety Award
American Water/Contract Services Group/EMC/St. Charles was the recipient of the George W. Burke Jr. Safety Award. This prestigious award is presented by the Water Environment Federation (WEF) and is based on the Safety Program of the facility and the implementation of that program.

Appreciation Awards
The following appreciation awards are given to outgoing Committee chairs for their many years of service.

| Jane Hood | In Appreciation For Service As Laboratory Practices Committee Chair 2009-2013 |
| Nicole Young | In Appreciation For Service As Public Relations Committee Chair 2009-2013 |
| Jeff Gratzer | In Appreciation For Service As Student Activities Committee Chair 2010-2013 |
| Bently Green | In Appreciation For Service As Program Committee Chair 2011-2013 |
| Craig Rippey | In Appreciation For Service As Safety, Security & Occupational Health Committee Chair 2008-2013 |
| Steven Spydell | In Appreciation For Service As Tellers Committee Chair 2006-2013 |
Ronald Layton Scholarship Winners

Scholarship winners were presented at the awards luncheon, and the winners were:

- Elise Kittrell (Missouri S&T)
- Tim Canter (Missouri S&T)
- Sandhya Poleneni (University of Missouri)

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Dave Ornduff | Regional Manager
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WEFMAX Delegate Report

The WEF House of Delegates had a meeting that corresponded with a WEFMAX. Fortunately for me, the meetings were located in Honolulu and I was able to attend both the House of Delegates meeting and the WEFMAX meeting. Unfortunately, that meant that I spent the better part of three days in a conference room with no windows!

Mr. Ed McCormick, WEF Vice President, provided an update and mentioned that the term Water Resource Recovery Facility would become more common. Mr. McCormick referenced the name change from Water Pollution Control Federation to Water Environment Federation as a similar transition. It seems that the change from sludge to biosolids would also fall into this category.

During the House of Delegates session, we were provided with updates on the Standing Committees and Workgroups. The workgroups consist of HOD Strategic Planning, MA Sustainability, Operator Outreach, and Non-Dispersible, and the presentations were made by committee members. The first two workgroups are focused on initiatives to continue the success of the state associations. The Operator Outreach workgroup is looking at a coordinated effort for the education and training of current and future operators, and this includes pilot programs with the U.S. Department of Labor and community colleges. The Non-Dispersible group is working with industry associations to address the problems associated with all of the “convenience” products that are manufactured and marketed to “flush” after use. As the uses of these products have increased, so have the plugging problems in the collection systems.

The next day and half was spent on presentations and discussion on how each association addresses common needs. The discussion focused on Operator and Committee Engagement, Professionalism, Public Outreach efforts, and a presentation on the activities of the host association, the Hawaii Water Environment Association.

We will discuss the procedural items at our next board meeting. Of interest were the efforts in place by other associations in the Public Outreach/Education arena. Indiana has a picture contest of wastewater treatment systems and publishes a calendar that includes the winning photos. Indiana has an Adopt-a-School program in which any member can adopt a school and work with them to coordinate student activities/contests, and incorporate the World Water Monitoring Day challenge. The Iowa association participates in the Iowa Children’s Water Festival. This program was started only 8 to 10 years ago, and last year they had over 2,000 fifth graders attend this function. The common theme to these discussions was ways to get the community as a whole, and the grade school kids in particular, involved.

We also discussed fund raising activities, and one of the more interesting ideas was a tennis ball race. This association has a race in which they drop a tennis ball in a manhole, and then race it to the bar screen at the treatment plant. They even incorporate the used tennis ball into the winner’s trophy!

Other Board members attended a different WEFMAX meeting, and hopefully their experience was as beneficial as mine. If you are not actively involved in a committee, please take the time to join one that interests you. The Missouri association is all volunteer whereas most of the other associations at the WEFMAX meeting have at least one paid staff member. The more volunteers we have the more we can accomplish. Remember the Federations motto – “Water’s Worth It”!

Bobby Lyerla
Delegate - Missouri

PS: In case you were wondering, the first picture is on Oahu and the background is Diamondhead. The second picture is a local snack of “SPAM sushi” that was purchased on the street off of Waikiki Beach…can’t say I recommend it, but I did try it!

(Editor’s Note: The expenses for the trip to the Hawaii WEFMAX meeting were not funded nor reimbursed by the Missouri Water Environment Association.)
Project Managers Meet

One of the aspects of the Plant Managers Committee that really works well is our networking lunches between regional plant managers. Recently, we organized a meeting in the SE Region of the Plant Managers Committee and Kent Peetz from Jackson MO led a tour of their facility. Three operators from Cape Girardeau joined the tour. Jeremy Meyer came from Perryville. Donald Jones with MDNR came from Poplar Bluff. Quinton Overbeck and Todd Fulton, Kent Peetz, Jeff shook, Jeremy Meyer, and Don Jones had lunch at Delmonico’s. Kent Peetz stated the group had a good discussion of activated sludge vs. trickling filters since that is what Perryville and Cape Girardeau have, and Cape is getting a new SBR. We discussed nocardia (a specific filamentous bacteria) infections at activated sludge plants. We discuss various ways to try to cure them with chlorine sprayed on the foam and then sucking the foam off the oxidation ditch with a vacuum machine, treating the return activated sludge with chlorine or bromine, and adding beneficial bacteria and enzymes to the influent. By the way, it has worked and we no longer have a foaming issue.

Additional topics discussed were the aerobic treatment of biosolids and how the various plants represented ultimately dispose of their biosolids, sewer maintenance and the advantages of rodding machines vs hydroflushing the energy savings at our plant since we installed turbo blowers in place of the positive displacement blower and the difficulties of running a good pretreatment program and getting restaurants to keep up with grease trap maintenance.

The St Louis Section recently met at the Washington WWTP. We had a great turnout (14) from all over the St Louis region. Our networking lunch covered many topics including odor control using carbon and biofilters. Washington uses the Cannibal process which made for an interesting discussion in and of itself.
Sludge is removed from the main process and digested to provide further treatment. Digested sludge is then dewatered using a belt press and/or thickener. The caked sludge, from the press, is hauled to the compost facility and/or drying beds. Land application, by plant personnel, for disposal is done for removal of product from the drying beds which are a Class B bio-solid. Composted sludge is turned into a Class A bio-solid. 95% of the class ‘B’ biosolids produced at the Wastewater treatment facilities are composted here at the Compost facility. In 2011 the Compost facility processed over 4100 tons of compost with 1780 tons being the biosolids from the WWTPs.
The St. Peters Spencer Creek WWTP was recently expanded from 6.9-mgd to 9.5 mgd. Headworks consist of submersible pumps, with two JWC auger monsters for screening, and mechanical grit removal.

Two Eimco extended aeration basins, three final clarifiers, UV disinfection, re-aeration, effluent gravity flows to Spencer Creek. Aerators in the Eimco basins are controlled by DO probes and variable speed drives.

Sludge is sent to two aerated holding tanks and then dewatered with two belt filter presses. Biosolids are mixed with yard waste and then composted in eight computerized controlled aerated static bunkers. Odor control at the composting process is handled in two biofilters.
The Macon WWTP trickling filter plant was built in 1959. In 1985 a tower style plastic media trickling filter was added as a secondary filter. In 1988 a new headworks and a second primary clarifier were added. In 2000 a 150 square foot vacuum coil filter was added and is operated in conjunction with a 100 square foot vacuum coil filter for sludge processing. We land apply all our sludge with a Knight Slinger truck on surrounding farm ground. We produce an average of 1,100 dry tons per year which includes sludge from our water treatment plant. The WWTF has an average flow of 1.7 mgd with average effluent BOD5 10.5, TSS 9.5 and ammonia 0.8.

Micro Dynamics UV disinfection was added to the plant in 2012.
Don Gilpin of St Joseph Wastewater shared the City’s plans to abandon the well equipped digested sludge land application program in favor of a new sludge dryer/pelletizer in which the pellets are sold to fertilizer companies. The dryer will be one of the largest in the nation when implemented. Don said recent policy changes by farm subsidy departments will require limits on sludge application to farm land receiving government payments to the agronomic limit of P; this may severely limit the land application sites in the future.
Leaders are often take-charge kind of people who accept responsibility and get things done one way or the other. This strong work ethic is how most people eventually wind up in leadership roles. However, once in a leadership role, it is often hard for leaders to let loose of certain tasks and delegate effectively to others.

For a leader to grow in their effectiveness, being able to delegate is a must. A leader must learn to “give some rope” to others in their organization. This does not mean that you give up full responsibility for a task, but rather you delegate it to a capable person and monitor their progress accordingly. You don’t want to give the entire spool of rope to someone who is not capable of the task, but learning to give a little rope at a time is a necessity.

For instance, you may want to give a small amount of rope to a new employee until they demonstrate that they consistently get the job done right. Then, as time goes on, you can slowly give them more and more rope as long as the assigned tasks match their capabilities. If the tasks get to be too much for the employee and they are not living up to your expectations, then you can pull a little rope back in and reevaluate the situation.

You should anticipate some minor failures along the way. Not every task that you delegate will be completed, and not every person that you delegate to will proceed in the exact same manner as you would. However, as long you manage risks and communicate your expectations along the way, the minor failures that do occur will turn into learning lessons for all involved. You don’t want to bet the farm when giving someone their first piece of rope, but rather control risks by only betting a small piece of the farm until the appropriate level of trust has been established and the appropriate skills have been gained.

In summary giving rope to others is imperative to your growth as a leader, the growth of your employees, and the growth of your organization as a whole. You will soon build a network of trustworthy people who can help you achieve performance objectives that you otherwise could not have accomplished on your own.

- Danny Rowatt (pH 7)
  Chairman of the SSSSS Committee
Teaching Rivers in an Urban Environment

On March 28, 2013 volunteers with Blue River Watershed Association met Frontier Trails Middle School in Olathe, Kansas in a park along Indian Creek. Although snow was still on the ground from precipitation a few days earlier, the weather that day was beautiful. The students loved getting outside and learning about water quality and how different activities such as fertilizing their lawns can affect nearby stream health. Kansas City, Missouri employees that volunteered for this event included Denise Burkett, Denise Lenox and Bill Fessler.

The park is located behind Heritage Elementary School, about 10 miles before Indian Creek flows into the Blue River near the south side of the 435 interchange in Missouri. Indian Creek begins in a largely residential area. By the time the creek reaches the Blue River, it passes several business and industrial facilities. The City of Kansas City, Missouri monitors the Blue River at Indian Creek as part of its MS4 program.

The outing is part of the Teaching Rivers in an Urban Environment (T.R.U.E.) program, a curriculum designed to increase watershed literacy among K-12 students. School teachers signup to incorporate the program within the normal school day. There is a classroom segment where both students and teachers learn how to perform nine chemicals tests and follow with instream testing. Other classroom training includes macro-invertebrates as bio-indicator, visually identifying nearby land uses, as well as stream bank conditions and vegetation (see http://www.brwa.net/newtrue.htm for more details).
The month of March was a busy time for MWEA young professionals. In addition to our monthly YP Facility tours and networking events, there was the YP summit and the MWEA/AWWA-MO joint annual conference at Tan-Tar-A.

The 9th annual YP summit hosted by WEF and AWWA was held in Glendale, Arizona, this year. Many talented, young professionals from Canada, Puerto Rico, and various parts of the United States were in attendance. We all engaged in activities surrounding this year’s theme - “Managing Your Career: Enhancing Your Future through Negotiation and Communications”. With less than a year in service as Co-Chair of the MWEA YP Committee and a new leadership position on my job, this theme was fitting. As a first-time attendee, I found the summit very rewarding and came away with a better understanding of what it takes to become a successful, young professional. Simply, we must marry the technical aspect of our jobs with soft skills, which includes emotional intelligence, effective communication, and most importantly, the ability to listen well. Seasoned professionals like Mr. Cordell Samuels (WEF President) and Jeff Eger (WEF Executive Director) shared their insights on transitioning from technical expert to being a manager of people. They acknowledged the fact that modern-day engineers are tasked with more – fieldwork, management, interaction with clients – and offered time-management advice and tips on how to prioritize effectively. They also encouraged us to create strategic plans for ourselves with clearly set goals of what we want to achieve in the future, and what our plans will be for securing a future for our children.

Later in March, YPs from Missouri gathered for a bowling event at Tan-Tar-A during the MWEA/AWWA-MO joint annual conference. Not only was it fun to engage in friendly competition and stress-relieving to knock down some pins with a heavy ball, but it was great to witness the interaction between YPs, student members, and seasoned professionals from the various disciplines in water and wastewater. Throughout the conference we, as YPs, were challenged again to think about our future and the future of MWEA and WEF.

Talk of the organizations’ future led to inevitable questions of attendance. There were only a handful of YPs attending the MWEA Joint Conference. Why? Why weren’t there more YPs at the summit? A quick survey showed many attendants would not have attended if their companies did not pay for the trip.

The MWEA YPs are committed to securing our and subsequent generations’ futures in Water and Wastewater and in WEF and MWEA. A small group of us met with a few seasoned professionals during our time in Tan-Tar-A. This brainstorming/pow-wow session produced lots of ideas that we plan on implementing in months to come. In forthcoming newsletters the MWEA YPs will address our current membership demographics, do a survey to understand the reasons for decline in membership, and discuss our new YP initiative to reverse that trend.

Meanwhile, I leave you with some Food for Thought:

- The 2014 YP Summit will be held in Savannah, GA on 2/25/14. Is your company providing sponsorship for at least two of its Young Professionals to attend?
- As a company, are you covering the cost of WEF/MWEA membership fees to your YPs as part of their compensation package? Are you providing opportunities for your young professionals to be actively involved in WEF and MWEA?
- As seasoned professionals, what are you doing to help shape the minds and careers of the YPs you work with? Are you a mentor? Are you molding great, young followers into good leaders?
  - As a student chapter, what are you doing to ensuring your graduating members become YPs? Are you sharing the benefits of becoming a YP in WEF/MWEA with your graduating chapter members? Are you providing WEF/MWEA YP memberships as a parting gift for your graduating members?

To be continued...

- Rhoda Hall
Wastewater Treatment Tour & Social
Friday, June 7th - 3:00 pm

The MO AWWA, MWEA, KS AWWA and KWEA Young Professionals will be co-hosting this event. The tour will be at the ATK Lake City Ammunition Plant located at Lake City Rd., Independence, MO 64056 (Intersection of Hwy 7 & 78).

Social will immediately follow the tour at The Courthouse Exchange located at 113 West Lexington Ave, Independence, MO 64050.

Drink tickets and appetizers will be provided.

Seasoned professionals are also welcome!

RSVP to Molly Pesce by Friday, May 31st at PesceM@bv.com

For more information, see the flyer at: http://mwea.org/formsetc/June_YP_Ammo_Plant_Tour.pdf
Fundraising

Once again, the generosity of our members and sponsors was evident, as we raised $17,846 for Water For People, and the MWEA and MO-AWWA Scholarship funds.

Bill Clarke was busy enjoying retirement, so we had to enlist the help of several guest auctioneers for the oral auction. Bob Campbell, Jeff Gratzer, Mickey Bernard, Bobby Lyrsla and Phil Walsack graciously agreed to try to fill Bill’s large shoes and hats. All of them had their own unique style and filled in admirably for Bill. Bobby’s style left everyone wondering as to who was actually bidding on the item! It was a huge success, as we raised a record $3,300 at the oral auction. Items included a Cardinal Suite, Royals Diamond Box tickets, Mizzou football tickets, prime Cardinals-Royals game tickets with a gift basket, and a weekend at Tan-Tar-A. The wheelbarrow of booze was also popular, as was the silent auction table. Two generous cash donations helped us attain a record setting year.

Unfortunately, the golf tournament was again cancelled due to a snow storm, for the second time in three years. Prior to that, we had a long string of playing every year in good, and sometimes not so good, weather conditions. There will be discussion about whether to continue the golf tournament or try another event instead. Your comments and suggestions are welcomed. There will be a golf tournament in Columbia on Monday, September 9 at the Country Club of Columbia to benefit Water For People. It is open to all water professionals in the state. Organizer Tom Ratzki guarantees there will be no snow at this event!

A total of $17,440 was donated to Water For People this fiscal year, when including the $6,100 raised at the golf tournament held in St. Louis in June 2012.

Thanks go out to all of the individuals and companies who donated items for the silent and oral auctions, to those of you who purchased items and raffle tickets, and to our generous sponsors. Thanks also to the 5S members who helped at the silent auction tables.

- Ken Gambaro
  Water For People Chair
EDEN BROTHERS

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Across the country stormwater guidance and regulations call for stormwater managers and planners to be aware of weather conditions. Some regions have specific requirements for use of National Weather Service (NWS) forecast precipitation data. It may not be feasible or economical to check the NWS website for every permit location. How does a busy stormwater professional keep track of the what, when and where of rainfall forecasts?

To simplify the time and effort of tracking rainfall forecasts, Stormwater Forecast notifies users of precipitation forecasts to support a range of applications—like pre-event site inspections, rain event action plans, stormwater sampling schedules, staffing decisions, construction and industrial site management and asset protection activities. This is accomplished by letting users select where, what and when they want to receive rainfall forecast information. Site-specific rainfall forecast notifications are emailed when the selected thresholds of probability of precipitation or rainfall depth are met.

The weather forecast and river condition information is the focus of services provided to the City of Irving, Texas, which provides for the rehabilitation of more than 17,200 feet of 96-inch sewer pipelines in the City of Irving, Texas. The conservation and reclamation district provides water and wastewater treatment for municipalities within the nearly 18,000-square-mile Trinity River basin. The interceptor rehabilitation project for rehabilitation started in the fall 2012 and will continue through the winter. Because of the complexity associated with the site location, nearly all of it within the floodplain, close monitoring of weather forecasts and river flow conditions is necessary to avoid unnecessary interruptions and/or damage to equipment and materials during the cure-in-place lining installation.

Vieux & Associates, Inc. monitors current and forecast precipitation is the main driver of the hydrologic system composed of controlled drainage areas upstream of reservoirs that drain to the site, and uncontrolled drainage below these reservoirs. The status of hydrologic risk is monitored by multiple data feeds that are integrated in a display and notification system.

The motivation for making this information available as configurable, inexpensive and automated web service was a California stormwater regulation that requires a rainfall action plan to be filed if the NWS issues a probability of precipitation of 50% or more for a construction or industrial site.

Many municipalities and regulatory agencies distribute information about what to do to prepare for heavy rainfall, like http://www.sd1.org/CustomerService/RainEventPreparations.aspx and EPA but it is not clear when to take action to make the preparations. Our service can pinpoint the time, place and amount of the rainfall forecast.
The use of nutrient additions to soils is vital to agricultural production but can present a concern due to the potential run-off and intrusion into ground and surface water resources. If applied correctly, phosphorous and other nutrients can be safely and responsibly used to help increase crop yields, which in turn help stimulated local economies while meeting public nutrition needs. Recommendations and regulations are designed as a safeguard, but when not followed, can create a nonpoint pollution issue that adversely affects the environment.

One of the guides used for the management of soil and plant nutrients is the Natural Resources Conservation Service’s (NRCS) Nutrient Management Conservation Practices Standard (Code 590). Over the past few years there are some misconceptions regarding the intent and scope of this document that have been expressed regarding how guidance contained in the 590 standard could affect crop nutrient management plans (CNP), including land application of biosolids in the State of Missouri.

This paper will give the reader an understanding of what the 590 standard is, how it is incorporated into the NRCS’s nutrient management conservation plans, and how the land application of biosolids in the State of Missouri might be affected. It must be noted that regulations can change anytime, so as a generator of biosolids, it is up to each program manager to stay currently with the regulations governing land application of biosolids.

**Code 590**

The first question that must be answered is “What is the NRCS’s 590 standard?” The official definition is taken from the Federal Register/Vol. 76, No. 7/Tuesday, January 11, 2011 which states;

>“This standard has been updated to promote enhanced nutrient management planning activities at the State level. The standard delivers the minimum requirements for nutrient planning associated with USDA programs. Focus has been added on erosion control, nutrient use efficiency, adaptive nitrogen management tactics, tile drainage, and better management of the 4Rs of nutrient application (Right source, Right timing, Right amount, and Right placement).”

At the outset it is most important that those reading and interpreting the guidance contained in the 590 standard realize that it is not a regulatory document. It is voluntary technical guidance written for those who desire to follow USDA standards as part of conservation planning. Those individuals may wish to receive government assistance for implementing a practice or several practices, or they may perceive that USDA guidance provides desired environmental benefits. In either case participation is up to you. The 590 standard was not written with a regulatory goal in mind, and, as such, is a very poor regulatory document. Those wishing to interpret the 590 standard as a regulatory document should be aware of its intent and utility, and realize that USDA does not envision 590 as regulation.

The 590 standard is written guidance used by USDA when conservation planning involves budgeting for the amounts of nutrients (that is, the nutrients applied, nutrients utilized by crops, and the residual left in the soil) as part of a complete conservation plan. Each State develops their own revised 590 standard within the framework of the Agency’s General Manual policy, General Manual 190, Part 302 and Part 402.

When the conservation planning is for an animal feeding operation (AFO) that require the safe and effective application of manures and organic by-products produced and stored by the AFO, nutrient management will be an element of a comprehensive nutrient management plan (CNMP) that will also incorporate engineering and land treatments that prevent the offsite loss of manures. Guidance for CNMPs is contained in General Manual-180 Part 409.10.

Overall, the purpose of a NMP or CNMP is to mange the amount, location, and timing of the nutrients in order to maintain acceptable crop yields, while minimizing pollution risks. Without these practices, the possibilities of nutrient run-off exist. However, with a well designed conservation plan, the risk of nutrients migration is reduced substantially.
Nutrient Management Code 590 Continued...

“Who must follow a NMP/CNMP or 590 standard?” As stated earlier, the USDA is not a regulatory agency and application of 590 is most often linked to USDA program use. An example would be for a program participant voluntarily desiring to implement nutrient management through the Environmental Quality Incentives Program (EQIP).

The 590 standard is designed as guidance to help producers to adequately plan to manage farm nutrients based on the best available science. Because the standard has been written to address many situations, it has been referenced by other entities outside of USDA to serve other purposes. The result is that the 590 standard can often be proposed to solve every unique situation—which isn’t necessarily true.

According to Glenn Davis, Missouri’s NRCS Agronomist responsible for revising the 590 standard for Missouri, “it is (the 590 standard) not a regulatory document and never was intended to be one. It would not stand on its own due to its intended purpose and the way it is constructed.” Steve Hefner, Missouri’s NRCS Water Quality specialist also confirmed this and stated; “from the USDA perspective, 590 development with a producer begins when a nutrient resource concern is present and NRCS assistance is involved.”

University of Missouri Extension: Water Quality Standards

Since Missouri is not a delegated State as it pertains to the Clean Water Act/Sludge Management, the Federal 503 guidelines must be followed. The twist here is that Missouri has adopted a more stringent set of rules related to the land application of biosolids. Water Quality Standards (WQS, updated 2005) developed by the University of Missouri Extension in conjunction with Missouri Department of Natural Resources (MODNR), Environmental Protection Agency (EPA) Region VII staff, and Professors from the University of Missouri Department of Agricultural Engineering and Natural Resources are considered current. The WQS’s are tied into the Water Quality Statues of the State of Missouri and NPDES permits/State Operating Permit for Public Operated Treatment Works (POTW) and are regulated by the Missouri Department of Natural Resources (MODNR).

As it relates to phosphorus, “WQ426-Best Management Practices for Biosolids Land Application”; states that you cannot apply biosolids to soils that contain more than 800 pounds of available phosphorus per acre, based on the Bray P-1 soil test from the application site. There have been studies conducted in Greene County, Missouri showing there is a higher phosphorus content in runoff from fertilized urban lawns than in surrounding agricultural lands. This can be further validated by a three year research study (2008-2011) conducted by Ozarks Environmental and Water Resources Institute (OEWI) and Missouri State University (MSU) in cooperation with the City of Springfield, Missouri. The research was conducted over three years and tracked the “Nutrient Transport and Fate from Municipal Biosolids Land Application”. This project showed that the current guidelines and regulations that are in place for the land application of biosolids provide for minimal risk of nutrients from biosolids to enter surface water if they are properly followed.

Discussions with the MODNR staff that oversees Confined Animal Feeding Operations (CAFO) and the land application of biosolids indicated there is nothing driving the State of Missouri to replace nitrogen with phosphorus as the limiting factor for applying biosolids. If there were to be some type of limitations using phosphorus, the guidance used in the “Missouri Concentrated Animal Feeding Operation Nutrient Management Technical Standard” could be considered as the template for phosphorus being used as the agronomic rate to land apply biosolids instead of the 590 standard.

Code 590 and Biosolids

There is a section in the Missouri Code 590 that specifically addresses biosolids as source of nutrients. It is located under the heading of Additional Requirements. It states that;

“Biosolids (sewage sludge) shall be applied in accordance with USEPA regulations (40 CFR Parts 403 (Pretreatment) and 503 (Biosolids) and other state and/or local regulations regarding the use of biosolids as a nutrient sources…….”

This indicates that if you are a producer and you want to use biosolids as a source of nutrients, and you are in a NMP/CNMP, you first must adhere to Federal, State and local regulations for land application of biosolids. Secondly, you must meet the guidelines set forth in your NMP/CNMP. It is that simple. As a municipality that generates biosolids, if one of your clients is enrolled in a USDA NMP/CNMP activity, then you must follow the Code 590 and other specifications that are
Nutrient Management Code 590 Continued...

applicable in the farmer/producers conservation plan. If they are not enrolled in a USDA NMP/CNMP activity, then you do not have to meet the requirements of the Code 590, so you land apply biosolids according to the 503 regulations and the University of Missouri Extension WQS’s.

Conclusion

With all of the uncertainty and misconceptions concerning if the land application of biosolids could be restricted due to phosphorus and the NRCS’s Code 590, listed below is the current thinking about the future of land application of biosolids in the State of Missouri:

• Unless a regulatory action is specified by the State of Missouri, Code 590 only applies to those individuals that are participating in NRCS nutrient management activities.

• In Missouri, NRCS has no plans to use the Code 590 as a regulatory instrument outside of its own voluntary programs.

• Missouri Department of Natural Resources Water Quality has no plans for implementing any type of restrictions to land application of biosolids via phosphorus restrictions at this time.

• As the land grant institution, the University of Missouri’s Water Quality Standards describe the nitrogen and phosphorus limitations for land applications of biosolids in WQS 426. These are the standards the Missouri Department of Natural Resources adopts in regulating the application of biosolids.

• An entity has the right to land apply biosolids on their land according to federal, state and local standards and guidelines. If a farmer/producer is in a USDA NRCS nutrient planning activity then they need to honor their contractual agreements made with the USDA concerning 590. This may or may not include the application of biosolids depending upon the producers objectives.

• In the future, “Could phosphorus be used as the agronomic rate for the land application of biosolids in the State of Missouri?”

The answer is yes it could be however, the regulations could differ across the state. There are too many different soils, topography, and other variables. Each area/region of the State will have to be looked at individually.

Author’s Note:
I would like to thank Glenn Davis, Missouri NRCS Agronomist and Steve Hefner, Missouri NRCS Water Quality Specialist for their input and insight related to this document and the 590 standard. Their help was invaluable.
Ducket Creek Sanitary District (DCSD), located in O'Fallon, Missouri, experienced inflow and infiltration problems causing backups and overflows. Annual bypass reports submitted to the Environmental Protection Agency (EPA) indicated noncompliance with federal regulations. Keith Arbuckle, DCSD director of engineering, collaborated with EPA officials to improve system operation and maintenance. Both parties agreed to implement a CMOM program to circumvent noncompliance fees and reduce bypasses. For the past six years, DCSD has worked diligently to create a more efficient system, reduce costs and eliminate backup events.

Inflow and Infiltration Defined
Inflow and infiltration (I and I) are persistent problems that plague all sewer collection systems. Inflow refers to storm water that flows into sewer systems through direct connections such as roof and foundation drains, storm drain connections and uncapped cleanouts. These sources are typically improperly or illegally connected to sanitary sewer mains. Infiltration is groundwater that seeps into sanitary sewer systems through faulty joints, cracks and areas of rood intrusion in the sewer pipes. Sources of infiltration are generally the result of aging infrastructure.

Sanitary Sewer Overflows (SSOs) occur as a result of inflow and infiltration. When stormwater and groundwater enter the sanitary sewer system, it must be treated like wastewater. Increases in flow during rain events often cause sewer backups and overflows. SSOs overburden treatment facility equipment, reduce treatment facility sustainability and contribute to increases in regulatory fines for noncompliance. Implementing preventive measures to eliminate SSOs and CCOs is more cost effective than correcting problems as they occur.

Detecting the Problem
The integrity of a sewer collection system is most accurately gauged through recording and analyzing flow measurements at important points throughout the system. Conventional methods of recording flow data can be expensive. For initial inspection Arbucke used the Runtime vs. Rainfall report provided by Mission Communications as a cost effective alternative. This report is used during wet and dry seasons to evaluate sewer systems for potential inflow and infiltration problems. With the report, users can determine if inflow or infiltration is the primary source of entry into the sewer system during rainfall events. If Runtime vs. Rainfall report shows that I and I are present, flow measurement tools can be used to more accurately measure the problem.

Consistent and continuous flow monitoring data is a key component of a well-designed Sewer System Evaluation Study (SSES). An SSES is a long-term system analysis...
aimed to ascertain the scope of the problem and assess various solutions. Smoke testing, manhole inspections, dye testing and video inspection can also be used to locate points of inflow and infiltration. The extent of the problem can be determined by quantified or observed overflows and surcharges, reported bypasses, backup complaints and excessive maintenance activities.

Evaluating the Problem
Arbuckle began the sewer system investigation by observing the Runtime vs. Rainfall report. “When we had a significant rain event I looked at the data and it indicated that we had more inflow than infiltration because peak flow occurred directly after a rain event. We had to battle infiltration, but it wasn’t as bad as the inflow,” explained Arbuckle. The Mission report helped Arbuckle identify problem areas by determining where to place video cameras along the trunk and lateral lines. Video inspection unveiled multiple cracked pipes and root intrusion. The data from the Runtime vs. Rainfall report and video inspection was used to plot locations on district maps that were urgently in need of repair.

Putting the Plan into Action
DCSD subsequently received a $200,000 state-wide grant to assist with infrastructure rehabilitation. “We made the decision early on in the process to focus our attention on the manholes first,” stated Arbuckle. “We identified leaks in manhole covers and vandalism as a major source of our inflow problem.”

Excess water from golf course fairways and farm field was being dumped into nearby manholes. “Objects ranging from large plastic Easter eggs to car transmissions obstructed the flow and had to be removed. One of our goals was to eliminate vandalism,” explained Arbuckle. “The EPA doesn’t recognize these kinds of things in reports, but it is our job to make sure they don’t happen.” DCSD replaced the lids on 500 manholes with sealed and locked lids. Manholes with severe cracks and holes were lined with cement. DCSD sent notification letters to homeowners when root intrusion or cracks were found in lateral lines to prevent backups from occurring. Homeowners were very pleased with DCSD for their proactive efforts.

Continuous Improvements
DCSD was the first district in Missouri to implement Membrane Bioreactor (MBR) technology at several of the district treatment plants. This new technology is used to release effluent that is five times cleaner than local creek water. The two MBR treatment plants were engineering and designed to fit in with other nearby
structures. One of the treatment plants is camouflaged inside of a home, while the other is enclosed in a red barn.

“The treatment plants came with SCADA systems, but we didn’t like them. We preferred the Mission Communications SCADA system because the call out system is more efficient and it works great in conjunction with everything else,” Arbuckle said. Instead of occupying a larger footprint by building remote facilities, DCSD decided that the home and barn were the best options for environmental sustainability and future expenses.

“We are still in the process of rehabilitating the system, but costs have dramatically decreased as a result of our efforts to eliminate I and I. The Runtime vs. Rainfall report from Mission Communications gave us great insight into our problems,” Arbuckle explained.
# MWEA Executive Committee

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# MWEA Committee Chairs

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Eight Circuit Vacates EPA Prohibition on POTW Blending and Bacteria Mixing Zones

On March 25, 2013, the U.S. Court of Appeals for the Eighth Circuit handed down an opinion in Iowa League of Cities v. EPA, which overturned EPA’s assertions that blending is prohibited at POTWs and that mixing zones are not allowable for bacteria criteria. The court held that EPA’s prohibitions on blending and bacteria mixing zones were imposed via agency letters, which were improperly promulgated regulations. Moreover, the court held that the blending “rule” exceeded EPA’s Clean Water Act authority—which is limited to imposing end-of-pipe secondary treatment standards and not regulating how a POTW meets those standards. This is a very significant decision for the municipal community nationwide.

EPA’s Prohibition on Mixing Zones for Bacteria is Procedurally Invalid

The court first addressed a June 2011 letter from EPA which stated that bacteria mixing zones should not be permitted in waters with a “primary contact recreation” designated use. Despite the fact that EPA’s regulations at 40 C.F.R. § 131.13 give states discretion to “include mixing zone policies in their state water quality standards,” the June 2011 letter did not even allow states to permit bacteria mixing zones in waters where there would be no risk to public health or recreation.

The court found that the letter is subject to judicial review because it included an effluent limitation with a “binding effect on regulated entities,” setting forth the agency’s position in “mandatory terms” and reasonably leading private parties “to believe that failure to conform will bring adverse consequences.” The court held that EPA effectively “created a new effluent limitation: state permitting authorities no longer have discretion to craft policies regarding bacteria mixing zones in primary contact recreation areas” because such mixing zones were forbidden by EPA’s letter. The letter created a new legal norm for bacteria mixing zones and, therefore, constituted a legislative rule which cannot be properly promulgated except in compliance with the notice and comment procedures set forth in the Administrative Procedure Act (“APA”). EPA issued its prohibition on mixing zones without fulfilling those APA requirements, so the court overturned the ban on bacteria mixing zones in recreational waters.

EPA Cannot Regulate Blending - Only End-of-Pipe Compliance with Secondary Treatment Limits

A second letter from EPA, dated September 2011, stated that, unless no feasible alternatives exist, flow cannot be diverted from a POTW’s traditional biological secondary treatment facilities, treated through an alternative physical or chemical process, and recombined with the biologically treated flow stream prior to discharge. The letter relied upon a draft 2005 EPA policy that deemed diversions around secondary treatment to be bypasses, which are prohibited under 40 C.F.R. § 122.41 unless there are “no feasible alternatives.” Discretion to “include mixing zone policies in their state water quality standards,” the June 2011 letter did not even allow states to permit bacteria mixing zones in waters where there would be no risk to public health or recreation.

Again, the court found that the September 2011 blending letter was a legislative rule promulgated in violation of the APA. The letter conflicted with EPA’s secondary treatment and bypass regulations by requiring certain technologies to be used in secondary treatment, excluding non-biological technology even if the secondary treatment rules are satisfied at the end-of-pipe discharge point. The secondary treatment rules at 40 C.F.R. § 122.45(h) provide that effluent limitations apply at the end of the pipe, where wastewater flows are discharged. In contrast, EPA’s September 2011 blending letter would apply the effluent limitations to flows diverted around biological secondary treatment facilities while still in the POTW treatment system, prior to recombination with the other flows and discharge.

The court went on to hold that, even if EPA had complied with the requisite APA notice and comment requirements, the blending rule would still be invalid because it exceeds EPA’s authority under the Clean Water Act. EPA has statutory authority to set secondary treatment effluent limitations governing the discharge of a pollutant from a point source to a water of the United States. However, EPA may not “apply effluent limitations to the discharge of flows from one internal treatment unit to another.”

The Decision is a Game Changer for POTWs and EPA both Substantively and Procedurally

This decision is a game changer for sanitary sewer systems that either employ or wish to employ blending at their treatment plants, particularly in the Eighth Circuit (Arkansas, Iowa, Minnesota, Missouri, Nebraska, North and South Dakota). Although the decision is only binding in Eight Circuit states, it is significant advisory precedent elsewhere, and you should assert it to the extent that EPA refuses to allow blending at your facilities. Many POTWs built blending infrastructure into their treatment plants only to be forced to abandon it. Others are in the process of doing so. Still others are grappling with massive SSO control programs and may now have the opportunity to include blending as a cost-effective solution. That said, POTWs need to also carefully consider any state laws or regulations which were enacted out of deference to
EPA’s anti-blending position over the years. Those laws may have to be changed before blending will be permissible in your state. This decision is also helpful for POTWs that may wish to press their states to allow mixing zones for bacteria limita (although many states will have to change their water quality standard and/or NPDES permitting rules to take advantage of this new flexibility).

Beyond the specific issues of blending and bacteria mixing zones, the decision is significant because it is another major legal blow to EPA. Communities across the country have been frustrated by EPA’s use of guidance and letters to avoid rulemaking on the multi-billion-dollar blending issue. Moreover, EPA has asserted aggressive civil and, in a couple of cases, criminal liability over blending, and the Eighth Circuit finally ruled on the substance of EPA’s position and handed the agency a crushing substantive rebuke.

The decision also is yet another stern procedural rebuke to EPA. The Courts will not accept EPA attempts to avoid the public safeguards of rulemaking through attempts to regulate by guidance or letters.

This excellent legal decision comes courtesy of the leadership and determination of the Iowa League of Cities and their counsel, Hall & Associates.

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Do you or someone you know have 25 years or more in the wastewater field? Has at least 10 of those years been active in the operations of treating wastewater? Do you have at least 5 consecutive years as a member of the WEF from today? If so you may be a Quarter Century Operators Club member. To find out more and view the simple application process go to www.wef.org then click on members title. Check out the Awards and Recognitions sub title. If you have questions please feel free to contact Kent Spainhour at kent.spainhour@yahoo.com or (660) 646-6373. Our members deserve the recognition for the years of service so please pass the word.

Thank you in advance for your help as this is a personal goal of mine to seek out these deserving individuals. I know there are several out there and would truly enjoy seeing them rewarded at our annual meeting.

Kent A. Spainhour
MWEA PWOD Representative

**New Pricing Structure Makes WEFTEC 2013 in Chicago, IL**

**More Accessible than Ever!**

Scheduled for October 5-9, 2013 at McCormick Place South in Chicago, Ill., this year’s event includes a new pricing structure that accommodates for ongoing economic challenges and gives greater access to the hallmarks of WEFTEC: the highest quality educational, business, and networking opportunities available in the water sector recently.

“Of the many activities and programs that WEF provides to our members and to the water sector as a whole, nothing surpasses WEFTEC as the tangible proof of our ongoing commitment to water professionals and to our shared mission of supporting clean and safe water worldwide,” said WEF Executive Director Jeff Eger. “WEF wants the Water Quality Event to be your Water Quality Event so we have taken steps to make WEFTEC more accessible than ever. To help do that, we are pleased to be able to offer a new pricing structure that will help streamline registration, reduce technical session prices for most participants, and offer complimentary exhibition registration to all attendees.”

As the largest annual water quality conference and exhibition in the world, WEFTEC 2013 will use more than one million net square feet of exhibition and meeting space at Chicago’s famed McCormick Place Convention Center. To date, the 2013 technical program includes nearly 1,000 expert speakers, 140 technical sessions, 27 workshops and ten local facility tours. A wide range of topics and focus areas allow attendees to design their own, unique learning experience with the opportunity to earn continuing education credits.

The 2013 focus areas include: resource recovery including nutrients and energy; energy management; stormwater; collection systems; wastewater treatment design; facility operations and maintenance; utility management and leadership; residuals and biosolids management; water reclamation, reuse, and desalination; disinfection and public health; watershed management and sustainability; industrial issues including petrochemical, refinery, and food/beverage industries; and innovation across all topics.

Contained on one level of the convention center, WEFTEC’s unrivaled exhibition will complement the technical program by providing access to more than 900 exhibiting companies and their technical experts who will show the latest developments, research, solutions, and cutting-edge technologies in the field. Also featured on the exhibition floor will be mobile sessions and the popular Innovation Pavilion and Stormwater Pavilion.
Building on the success of its expanded stormwater focus, WEF will also launch its first-ever Stormwater Congress. Co-located with WEFTEC 2013, the event will be held at the Hyatt Regency McCormick Place from October 7-9. It will feature focused programming on stormwater-related issues and provide access to all WEFTEC exhibitors, including those in the Stormwater Pavilion and other conference exhibitors that feature equipment and services on stormwater and wet weather-related issues.

Other conference highlights will include the Opening General Session and the Water Leaders Session on Mon., Oct. 7; the annual community outreach project, poster sessions, the design competition, the 26th annual Operations Challenge competition, and more.

“When considering the thousands of water professionals who travel from around the world to attend WEFTEC each year, there’s little doubt that it’s the place to be for those who strive to be bold and innovative managers of our water resources,” continued Eger. “We’re excited about the new ideas, new connections and fantastic business opportunities that await us in Chicago this October.”

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