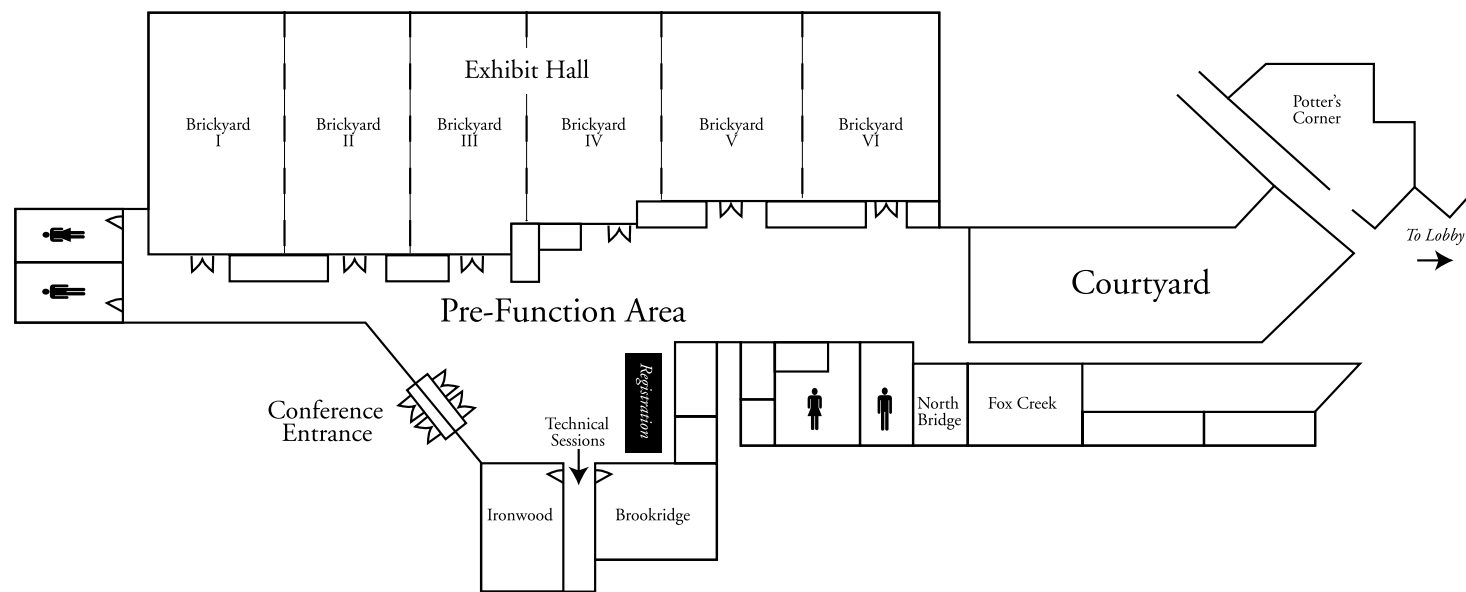


## 2006-2007 Conference Facility Map

### DOUBLETREE HOTEL & CONFERENCE CENTER



## President's Welcome



**LOU KOLLIAS**

*Illinois Water Environment Association  
President*

Welcome to the 28th Annual Conference and Exhibition of the Illinois Water Environment Association.

On Monday at 10:00 a.m. the conference opens with our annual Business Meeting. This meeting gives the association leaders the opportunity to report on all of the successes we have had throughout the past year. We will also be voting on the new slate of officers for the Executive Board.

Our Local Arrangements and Program committees have been working throughout the year to assemble a brilliant conference this year. I want to take this opportunity to thank all of our dedicated members for the many hours spent in organizing this year's conference. Many people have been involved in the overall planning and execution of this annual conference. Please take the opportunity to thank those individuals for their hard work and enthusiasm. I would like to personally thank the Executive Board and Committee Chairs and their members for their hard work and dedication this past year.

In closing, I encourage you to become actively involved in your association if you have not done so already. Only through active participation will our association grow and prosper. I think you will agree as our conference proceeds that we have exceptional people actively involved in this annual conference program. You should also recognize that your participation will add even more to our prosperity. I hope you have a rewarding conference experience and choose to be more involved in IWEA activities over the coming year!

Yours truly,

*Lou Kollias*

Lou Kollias  
IWEA President

March 17-19, 2008

29<sup>th</sup>  
Annual  
Conference  
and Exhibition

Save  
the  
Date

Holiday Inn • Peoria

## 2006-2007 Conference Sponsors

### PRESIDENT'S LEVEL

Crawford, Murphy & Tilly, Inc.

Consoer Townsend  
Envirodyne Engineers, Inc.

### GOLD LEVEL

Ley and Associates

Visu - Sewer

Drydon Equipment Company, Inc.

PDC Laboratories, Inc.

### SILVER LEVEL

Flow-Technics, Inc.

Gasvoda & Associates

## 2006-2007 Executive Committee

**President**  
**Lou Kollias**  
Chicago, IL

**Second Vice-President**  
**Amanda Withers**  
Springfield, IL

**Past President**  
**Larry Ziemba**  
Goreville, IL

**President Elect**  
**John Lamb**  
St. Charles, IL

**Secretary**  
**Mary Johnson**  
Rockford, IL

**Director**  
**Rich Helm**  
Peoria, IL

**First Vice-President**  
**Kathy Cooper**  
Rochelle, IL

**Treasurer**  
**Dennis Priewe**  
Rockford, IL

**Director**  
**Charles Corley**  
Rockford, IL

### SUBURBAN LABORATORIES

Jarrett Thomas  
708-544-3260  
jarrett@suburbanlabs.com

Suburban Laboratories, established in 1936, is an Illinois EPA accredited laboratory performing first rate NPDES, pretreatment and drinking water compliance services including cost effective sample collection and analytical testing, automatic bottle shipping program, electronic data deliverables, cost effective analysis, expert project management and emergency response services.

### SYNECO SYSTEMS, INC.

Peter J. Nelson  
218-435-1703  
petern@synecosystems.com

Syneco Systems, Inc. is an odor control company specializing in equipment and chemicals for the removal of malodors in the municipal & industrial wastewater industries. Our Peacemaker line of Oxidizing Dry Air Scrubbers are specifically designed for the removal of hydrogen sulfide, mercaptans, ammonia, amines and other malodorous compounds generated in wastewater collections and treatment facilities. We have over 20 years experience in the odor control industry and offer a complete solution for your odor problems. For more information on our products and technologies please visit our website [www.synecosystems.com](http://www.synecosystems.com). "Odor Control Made Easy"

### THERMO SCIENTIFIC

Doug Sterner  
815-713-1884  
doug.sterner@thermofisher.com

Look to Thermo Scientific for a complete range of analytical instruments plus reagents and consumables, laboratory equipment, software and services for more effective laboratory workflows. Orion brand Water Analysis Products include pH, ISE, conductivity and dissolved oxygen meters, electrodes and solutions, along with colorimetry titration and on-line process monitors. Our products are recognized worldwide for quality and accuracy. Only one manufacturer can supply instruments to suit every technique, from AA and ICP to ICP-MS, Combustion Analyzers, XRF/XRD and OES. Combining reliability, superior performance, versatility and ease of use, our elemental analysis solutions are able to analyze just about any sample – saving you time and money.

### TNEMEC COMPANY, INC./ TAYLOR COATING SALES, INC.

Erik Otten  
708-387-0305  
eotten@tnemec.com

Tnemec Company manufactures hi-performance protective coating and lining systems for water and wastewater treatment & storage. We are featuring Series 435 Perma-Glaze, which is specifically designed to withstand hydrogen sulfide (H<sub>2</sub>S) gas permeation. Series 435 can be used as thin-film coating or high-build liner to protect concrete and steel substrates exposed to wastewater environments such as wet wells, sludge holding tanks, digesters, clarifiers and sewage pipelines.

### UNISON SOLUTIONS, INC.

Jan Scott  
563-585-0968  
jan.scott@unisonsolutions.com

Unison Solutions is an industry leader in biogas conditioning, compression and distributed generation. Our custom designed systems can include a variety of blowers, compressors, filtration equipment (siloxanes, H<sub>2</sub>S, etc.) and chillers for complete gas conditioning. We also provide gas testing, generation equipment and automation systems from UL panel shop.

### VARIAN, INC.

Chip McCauslin  
630-640-2325  
chip.mccauslin@varianinc.com

Varian, Inc., is a diversified global technology leader solving critical challenges and creating breakthrough innovations for science and industry. Please think of Varian for AA, ICP, ICP-MS, GC, GC-MS, FTIR, HPLC, UV-VIS, NIR, and consumable supplies. Visit us at [www.varianinc.com](http://www.varianinc.com) for a complete online database of application notes.

**PRAIRIE ANALYTICAL SYSTEMS**

Jean Pierre Rouanet  
 217-753-1148  
 j-p@prairieanalytical.com

Prairie Analytical Systems, Inc. is a full service environmental laboratory established in 1993. With state of the art instrumentation, Prairie Analytical Systems, Inc. specializes in the analysis of drinking water, ground-water, waste water, soils, sludges, oils and special wastes. Clients include: environmental consulting firms, engineering firms, industrial companies, landfills, municipalities, utilities and the Illinois Environmental Protection Agency.

**PRECISION SYSTEMS**

Ed Dunn  
 708-891-4300  
 edunn@precision-systems.com

Precision Systems has manufactured enclosed packaged stand-by power generator systems for over 30 years. Over time, the product line was expanded to include a complete factory built pump station. All components are factory assembled and tested prior to shipment to ensure smooth start-ups and customer satisfaction.

**RADIOMETER ANALYTICAL  
 (A HACH COMPANY BRAND)**

Scott Schroeder  
 262-670-1379  
 scott.schroeder@lachatstruments.com

Radiometer Analytical, A Hach Company Brand, develops, manufactures and distributes an extensive range of electrochemical systems dedicated for routine testing, research and teaching in the laboratory and on the plant. The company enjoys a reputation for excellence in pH, ion, and conductivity measurements, titration, voltammetry.

**R. H. TAUSER & ASSOCIATES**

Steve Tauser  
 636-530-0351  
 rhtauser@aol.com

**ROOTRIPPER, INC.**

Mike Jankovic  
 630-207-3655  
 rootripper@comcast.net

The RIPPER is a root clearing tool that attaches to your existing hydraulic root cutting motor and cleans the complete pipe diameter. The Ripper's design allows you to cut roots without difficulties encountered by offset joints, protruding taps and pipe alignment problems. Your operators will rip roots and clean pipes more effectively due to better cleaning action and less potential for having to excavate to retrieve your root cutting apparatus.

**RJN GROUP INC.**

Karen Catena  
 630-682-4700  
 kcatena@rjn.com

RJN Group, Inc., provides public works engineering and information technology services for infrastructure systems including sewer, water and drainage. RJN serves a wide range of clients including municipal, county, state, and federal agencies and sanitary districts. Representative projects include engineering studies, preliminary and detailed design, construction engineering, and ongoing maintenance management.

**SHERWIN INDUSTRIES, INC.**

Al Schultz  
 414-281-6400  
 aschultz@sherwinindustries.com

Sherwin Industries, Inc. is a distributor of many pavement maintenance related products, and safety equipment. We have been in business for over 60 years, and have supplied DPWs and water departments with their safety products, pavement marking, pavement maintenance, and patching materials since the beginning. Thanks for your business.

**SPECTRASHIELD LINER SYSTEM**

Bob Klopfenstein  
 904-268-4951  
 bklopfenstein@ccispectrum.com

Patented SpectraShield™ liner is a spray applied, multi-layered, silicone modified polyurea system that is used to rehabilitate and protect wastewater structures such as manholes, wet wells, or wastewater treatment plant facilities. It has a 10-year warranty and is applied by licensed contractors in exclusive territories. [www.spectrashield.com](http://www.spectrashield.com)

*Table of Contents*

President's Welcome . . . . . 1

Conference Sponsors . . . . . 2

Executive Committee . . . . . 2

Opening Address Speaker . . . . . 4

Luncheon Speaker . . . . . 5

Science Fair Award Winners . . . . . 6

Conference Highlights . . . . . 7

Technical Session Index . . . . . 8

Technical Session Abstracts . . . . . 10

Professional Development Hours (PDH) Tracking Form . . . . . 20

IWEA Committees . . . . . 22

Past WEF Awards . . . . . 24

IWEA History. . . . . 25

Past IWEA Awards . . . . . 26

ISSSSS . . . . . 28

Exhibitor List . . . . . 29

Future IWEA Annual Conference . . . . . 36

Facility Map . . . . . 36

## Opening Address Speaker

J. Michael Read is the Immediate Past President of the Water Environment Federation (WEF), a technical, scientific, and educational water quality organization headquartered in Alexandria, Virginia.

He is currently a Vice President with HDR Engineering, Inc. Prior to his current position, Michael was the Director of Water Environment Services (WES), a department of Clackamas County Oregon; and was Director of Wastewater Management for the City of Portland's Bureau of Environmental Services.

A WEF member since 1980, Michael served on the Executive Committee (now Board of Trustees) from 2000-2002 and has been active on numerous Federation committees. He was the Chair of the Long Range Planning Committee, where he led efforts to change the Federation's Governance and update the Strategic Plan. Michael also served as the Frontier Region Government Affairs Liaison and on the Developing Countries Task Force.

In addition, he has been an active member of the Pacific Northwest Clean Water Association (PNCWA) serving as President, Vice-President, and WEF Director. He is currently the Chair of PNCWA's Constitution and Bylaws Committee.

Michael has also served as a Director of AMSA from Region 10 and as an officer of the Oregon Association of Clean Water Agencies. He has served on the Clackamas River Basin Council, several Oregon Department of Environmental Quality Technical Advisory Committees, and is a member of the Aircraft Owners and Pilots Association.

He is a certified Wastewater Systems Operator in Oregon and in New York State. Michael attended the State University of New York at Oswego and received his NYS Wastewater Systems Operations and Management training through the Department of Environmental Conservation training program conducted by Syracuse University's Department of Civil Engineering.



**J. MICHAEL READ**

*Water Environment Federation  
Immediate Past President*

### About WEF

Founded in 1928, the Water Environment Federation (WEF) is a not-for-profit technical and educational organization with members from varied disciplines who work toward the WEF vision of preservation and enhancement of the global water environment. The WEF network includes water quality professionals from 76 Member Associations in 30 countries.

### METROPOLITAN INDUSTRIES

Joseph Sanchez  
815-886-9200  
jsanchez@metropolitonind.com

Metropolitan Industries is a single source supplier of pumps, control systems and ancillary equipment for the water and wastewater industry. They specialize in packaging pump systems such as housed booster pump stations, domestic water booster systems, lift stations, WWTPs, pressure reducing valve vaults, complete with controls, SCADA integration and more.

### MIELE PROFESSIONAL LAB GLASSWARE WASHERS (REPRESENTED BY KEY SCIENTIFIC)

Becky Smith  
800-747-4539  
bsmith197@juno.com

Miele Laboratory Glassware Washers are the Industry Standard undercounter washers designed to handle a variety of glassware cleaning applications. With numerous energy saving and environmentally friendly design features, Miele has become known in the Illinois Water Pollution Control Industry for exceptional cleanliness, reliability and performance.

### MWH SOFT

Killion Tobin  
312-831-3132  
killian.tobin@mwhsoft.com

MWH Soft is a leading global provider of technical and infrastructure software and professional solutions designed to meet the technological needs of utilities, government industries, and engineering organizations worldwide. Its clients include the majority of the largest North American cities and ENR top design firms. The multifaceted, state-of-the-art GIS and CAD enabled products created by MWH Soft empower thousands of engineers across the globe to competitively manage, design, operate, and maintain highly efficient and reliable infrastructure systems. For more information, call MWH Soft at (312) 831-3132, or visit [www.mwhsoft.com](http://www.mwhsoft.com)

### NORTH COAST ENVIRONMENTAL, INC.

Bruce Wilbee  
630-208-1265  
bwilbee@northcoastenvironmental.com

North Coast Environmental, Inc. is a Manufacturer's Representative of Water and Wastewater treatment equipment including Odor control – specifically Activated carbon, chemical wet scrubbers, biofilters and a full line of odor counteractants, ductwork dampers and covers. Also Fiberglass storage tanks, fiberglass pipe, Belt and Filter Presses.

### OPEN CONTROL SOLUTIONS

H.R. "Skip" Hall III  
903-561-6087  
skip@opencontrolsolutions.com

OCS is a division of Data Flow Systems, Inc., manufacturer and turn-key supplier of the TAC II SCADA System since 1981. By customer request and capitalizing on over 25 years of experience in municipal monitoring and control systems, Open Control Solutions was formed to supply open-architecture solution products to municipal utilities.

### PDC LABORATORIES

Holly Cooper  
309-688-0760  
hcooper@pdcare.com

PDC Laboratories, Inc. provides environmental testing services for industries, municipalities, landfills, and consultants. Areas of expertise include NPDES, SDWA, RCRA, and other regulated programs. With a staff of over 90 qualified chemists, biologists, microbiologists, field technicians, and other support staff, PDC Labs is equipped to handle most environmental testing needs.

### PERKIN ELMER

Jeff Kukuk  
800-762-4000  
jeff.kukuk@perkinelmer.com

Perkin Elmer is the world's leading provider of instrumentation for environmental analysis; offering a solution for every sample type. Our inorganic product range includes: atomic absorption spectroscopy, inductively coupled plasma (ICP) and ICPMS, automated mercury analysis, and microwave sample preparation. Our comprehensive line of chromatography tools includes: GC, GCMS, HPLC, and chromatography data systems. We also offer a complete line of UV/VIS spectrometers.

### PETERSON AND MATZ, INC.

Dean M. Wiebenga  
847-844-4405  
pmatzil@aol.com

Peterson and Matz, Inc. is a manufacturers' representative firm specializing in municipal and industrial water and wastewater treatment. Founded in 1969, the company has focused on providing exceptional customer service; representing top quality companies providing process oriented equipment and technologies.

**HYDRO-THERMAL CORP.**

Tom Podwell  
800-952-0121  
tpodwell@hydro-thermal.com

Hydro-Thermal Corporation is a leader in engineered fluid heating systems. We employ a direct contact method of heating, which utilizes Direct Steam Injections. This method of heating optimizes temperature control, eliminates plugging and fouling, and provides trouble free operation, improving process performance and reliability. We specialize in providing engineered heating solutions for difficult applications such as sludge, slurry, and water heating applications.

**INSITUFORM TECHNOLOGIES, INC.**

Kevin Coburn  
630-842-8539  
kcoburn@insituform.com

Insituform Technologies®, Inc. rehabilitates sewers and other pipelines using proven trenchless technology. Insituform products are jointless, leakproof and corrosion resistant. Our family of products solutions is widely accepted for restoring structural integrity and includes our cured-in-place-pipe (CIPP) product and iPlus Composite™, which is ideal for restoring medium and large pipes.

**JM PROCESS SYSTEMS, INC.**

Jim McDermott  
708-429-3040  
jem@jmprocess.com

For over 25 years JMPS has been assisting our customers in the control, conveyance and treatment of wastewater. Product lines include traveling screens, belt presses, centrifuges, odor control systems, mixers, pumps, chlorination equipment, flowmeters, sludge conveyors, samplers, SBR's, oxidation ditches, and SCADA.

**LACHAT INSTRUMENTS  
(A HACH COMPANY BRAND)**

Scott Schroeder  
262-670-1379  
scott.schroeder@lachatinstruments.com

Lachat Instruments provides comprehensive solutions for ion analysis requirements based on the technologies of flow injection analysis, ion chromatography, and discrete analysis. Our products are designed to increase productivity, improve data quality and guarantee accuracy of results, and increase profits by reducing labor costs and reagent consumption.

**LEY & ASSOCIATES**

Toby Duckett  
847-382-0990  
toby@leyassociates.com

Ley & Associates represents many top manufacturers of every part of a water or wastewater plant from valves, gates, pumps, blowers, scrubbers, disinfection, controls, process, and more. Whether you are a consulting engineer or plant operator, our staff will be very glad to assist you. Please call or email our office shown above for your salesman. We look forward to assisting you.

**LOWE ENGINEERING/HIGHLAND TANK**

Mickey Morocco  
814-443-6800  
staff@lowe-engineering.com

Leading producers of automatic, passive and manual grease interceptors, solids removal systems, patented oil/water separators, sand/oil interceptors, filtration systems, pressure vessels, aboveground & underground tanks, lube oil tanks and all types of water tanks. Worldwide distribution. www.lowe-engineering.com & www.highlandtank.com

**MARSHALL-BOND PUMPS**

Ron Bond  
630-978-7867  
marbond7@hotmail.com

**MARTIN MARIETTA MAGNESIA SPECIALTIES**

Steve Laykauf  
410-780-5500  
magchem@martinmarietta.com

Thioguard® is a concentrated alkaline buffer that neutralizes acids, prevents the formation of hydrogen sulfide odor and dramatically reduces the accumulation of fats, oils and grease (FOG) by controlling wastewater pH. Thioguard is a safe and effective treatment strategy offering significant cost saving opportunities to municipal wastewater treatment systems.

**MERRELL BROS., INC.**

Ted Merrell  
574-699-7782  
ted@merrellbros.com

Merrell Bros., Inc. is a biosolids management company specializing in beneficial reuse programs. Our services include land application, dewatering, dredging, digester cleaning, lagoon cleaning, and project management. Contact Merrell Bros. for honest dependable service you can trust.

***Luncheon Speaker***



**JASON BEVERLIN**

*Illinois River Project Director  
Illinois Chapter of  
The Nature Conservancy*

***Emiquon is the premiere demonstration site for The Nature Conservancy's work on the Illinois River and may ultimately help guide large floodplain river restoration efforts around the world.***

**Emiquon Wetlands Restoration Project**

The Emiquon Project provides an opportunity for restoration of approximately 1,000 acres of uplands and 6,000 acres of wetlands and floodplain habitat to support native plant and animal communities. With proper planning and implementation, this effort will be a model for restoration and management of large floodplain river systems, demonstrating their tremendous capacity for regeneration despite having been significantly altered and impacted.

The primary objective for the restoration and management of the lands within the boundaries of the Conservancy's Emiquon Project is to restore natural ecological processes and habitats that promote and sustain the native species and aquatic and terrestrial communities once found in this region of the Illinois River. Restoration and management of lands at the Conservancy's Emiquon Project and other strategically located places along the Illinois River are key to returning the river's natural resources toward their former richness and productivity and to sustaining the restored natural communities for generations yet to come.

A secondary strategy that has been identified for Emiquon is to promote the ecological and cultural importance of the Emiquon area by developing and implementing educational and recreational programs.

A restored complex of backwater wetland communities will support an abundance of fish and wildlife including recreationally important species, thereby providing opportunities for recreation and associated compatible economic opportunities.

The Emiquon Project will become a showcase for landscape restoration and management of floodplain habitat. It will raise awareness about the benefits of recovering large floodplain river systems and thereby build a constituency for this and other restoration efforts.

Jason Beverlin is the Illinois River Project Director for the Illinois Chapter of The Nature Conservancy. Jason started with the Conservancy two years ago as a Project Manager. Prior to that Jason was Site Superintendent for the Rock Island State Trail and Jubilee College State Park with the Illinois Department of Natural Resources. Jason has also worked as an Ecosystem Administrator for IDNR and as Curator of Education at Peoria's Glen Oak Zoo. Jason did his graduate and undergraduate work at Southern Illinois University at Carbondale.

## Science Fair Winners

Eva Feldman

10th Grade student at Lincoln Park High School, Chicago  
**The Effect of River Bank Conditions on Aquatic Ecosystems**

Eva investigated whether the river bank conditions on three sites of the North Branch of the Chicago River had an effect on water quality or macroinvertebrate populations. These sites represented three different conditions: a natural bank, aged lining of a deteriorated concrete bank and a recent bank lining of new concrete. At each bank, nine different water quality tests were performed to calculate Water Quality Index (WQI) values. Also, two Multi Plate Samplers were placed in the river at each site to collect the macroinvertebrates. The samplers were retrieved after one month and the macroinvertebrates living on them were identified.

Eva's results showed that there was not a statistically significant difference between the water qualities or the average pollution tolerance of the macroinvertebrate species at the different sites, as she had expected. She concluded that one of the reasons that the data from the three different sites were so similar could be due to frequent straightening of the Chicago River which causes an increase in bank erosion and increased flow rates. These high flow rates can undercut river banks and cause a loss of riparian vegetation. Also, the high flow rates could keep solids in suspension over a longer distance. To better assess the effects of bank conditions on water quality and macroinvertebrate populations, she concluded that it would be better to compare the North Branch to a more natural, less modified, river since the North Branch of the Chicago River has been so heavily modified by straightening and bank and/or bottom lining.

David Markiewicz

7th Grade student at St. Mary of the Annunciation, Mundelein  
**Monkey Sea Monkey, What Will They Do?**

David investigated whether everyday household chemicals contribute to pollution by their effects on sea life. He conducted bioassays with Brine Shrimp, also known as Sea Monkeys, since scientists have been using them to determine the effects of chemicals on sea life. David placed the Brine Shrimp into individual habitats and exposed them to Clorox (bleach), Ammonia, Vegetable Oil and Sweet n' Low (dextrose and saccharin). Hatch rates, growth and activity were observed and measured by David. He concluded that "the project was a blast and adds tons of knowledge to a growing brain. It can teach anyone to be cautious with chemicals and try to help prevent pollution. It is hoped that one day this information will be useful in preventing pollution. Everyone needs to help prevent pollution or else it could affect our entire ecosystem."



**EVA FELDMAN**

*2006 Senior Grand Prize Clean Water Award  
& Stockholm Junior Water Prize Winner*



**DAVID MARKIEWICZ**

*Junior Division Grand Prize  
Clean Water Awards Winner*

### ENVIRONMENTAL MONITORING & TECHNOLOGIES, INC.

Greg Denny  
847-324-3306  
gdenny@emt.com

Founded in 1984, EMT has extensive experience providing expert field sampling and analytical services throughout the Midwest. EMT's 40hr. OSHA trained personnel utilize automated equipment to conduct time or flow-based monitoring of wastewater, NPDES and stormwater discharges. EMT fabricates and installs temporary or permanent flow measurement devices. EMT's laboratory is NELAC-accredited for an extensive list of analytical parameters

### ENVIRONMENTAL RESOURCES TRAINING CENTER

Nancy Harris  
618-650-2032  
nharris@siue.com

The Environmental Resources Training Center (ERTC) provides state-wide training opportunities/materials for personnel involved in operation, maintenance, and management of wastewater treatment facilities and public water supplies. ERTC programs/materials are designed for persons wishing to upgrade job skills as well as those wishing to enter the field of water quality operations.

### FRABIMOR EQUIPMENT & CONTROLS

Jeff Stark  
847-438-4360  
jeffs@frabimor.com

Since 1946 Frabimor Equipment has been a manufacturer's representative serving the water and wastewater industries in Northern Illinois and Northwest Indiana with product lines that include valves and valve automation, including electric, pneumatic and hydraulic Filtration equipment, Ultra Violet Disinfection, Flow Measurement and Control Equipment

### FLOLO CORPORATION

Terry Locke  
630-595-1010  
tjlocke@flogo.com

Flolo Corporation Systems Group is UL listed for 508A, 698A & 698B, and a CSA recognized panel builder, specializing in industrial control systems from concept through design engineering, software, assembly and start-up. Our engineering staff has extensive experience designing coordinated drive systems utilizing SCADA systems for water and wastewater industries.

### FLOW-TECHNICS

Michael E. Carney  
Phone: 708-877-2600  
E-Mail: mikec@flowtechnics.com

Flow-Technics is a manufacturer's representative of a complete line of water and wastewater equipment specializing in pumping and control systems. We offer other equipment such as flow meters, grinders, fine screens and package pumping systems. Flow-Technics has its own Service Department offering 24 hour emergency service.

### FORMOST INDUSTRIAL TECHNOLOGIES

Jeff Bahnsen  
800-747-8423  
sales@foremost-fit.com

Foremost sells and services electric motors, variable frequency drives, soft-starters, mechanical speed reducers and sensors for the wastewater industry.

### FLUID & THERMAL SYSTEMS

Tim Setser  
317-308-6300  
tsetser@fluidandthermalsystems.com

### GASVODA & ASSOCIATES, INC.

John J. Duschene  
708-891-4400  
jduschene@gasvoda.com

Gasvoda and Associates, Inc. provides full service support to the Water & Wastewater industry including engineering, design, field service and sales for new and used equipment for treatment and transfer equipment. Electrical controls, VFD's, SCADA, process monitoring, process equipment, pump stations. Our professional staff is ready to serve you.

### HYDROAIRE, INC./KTI HYDRO

Denny Weber  
312-738-3000  
dweber@ktihydro.com

Hydroaire Inc. is the Chicago based distributor for KTI Hydro Pumps and Control Systems. We offer a full range of submersible non-clog wastewater pumps, axial flow and mixed flow pumps, and submersible mixers and in-line pumps. In addition, we offer the most extensive pump service and re-build capability in the state.

**CLARK DIETZ, INC.**  
Greg Cargill, Chuck Johnson  
217-373-8900 (Champaign)  
312-648-9900 (Chicago)  
gregc@clark-dietz.com

Clark Dietz has been active in the water quality and wastewater engineering service industries for five decades. Our experience includes facilities planning & other studies, municipal and industrial wastewater collection and treatment plant design, plus stormwater management. Our services range from conceptual development through design, construction management, and operation of wastewater and stormwater facilities.

**CRAWFORD, MURPHY & TILLY, INC.**  
Amanda Withers  
217-787-8050  
awithers@cmtengr.com

Crawford, Murphy & Tilly, Inc., consulting engineers, has been active in the field of wastewater engineering for six decades. CMT offers wastewater collection and treatment project services from concept development through the planning, design and construction phases. We strive for 100 percent client satisfaction by understanding and fully meeting the needs and expectations of our clients. CMT also provides services in water treatment and distribution, surveying, land development, and transportation services. Visit our web site at [www.cmtengr.com](http://www.cmtengr.com) for more information.

**DRYDON EQUIPMENT**  
Steve Truitt  
815-885-1107  
struitt@drydon.com

Drydon Equipment – Manufacturers Representatives in Northern Illinois, Northwest Indiana and Wisconsin for water and wastewater equipment.

**EIMCO WATER TECHNOLOGIES**  
Simon Randle  
262-377-6360  
Simon.randle@glv.com

Eimco Water Technologies specializes in the development and worldwide marketing of equipment used for treating water destined for household consumption and various industrial processes, as well as for treating municipal and industrial wastewater.

**ELAN TECHNOLOGIES, INC.**  
Ray Sowinski  
815-463-8105  
rsowinski@elantechnologies.net

ELAN has been a trusted equipment supplier for the water/wastewater industry for over 30 years. Allow us to assist with your project. We provide plastic-fab fiberglass flumes, slide gates, shelters, and packaged metering manholes: open channel flow meters; wastewater samplers: meter and sampler calibration and repair; and flow studies and confined space entry. We are a MDS radio full service supplier.

**ENDRESS & HAUSER, C/O ANTEL**  
Judy Manning  
630-887-8910  
judymanning@antelcorp.com

Endress & Hauser is a worldwide leader in manufacturing and sales of process instrumentation and automation solutions for water and wastewater and industrial applications. We are represented by Antel Corporation. Please stop by our booth.

**ENERGENECS, INC**  
Larry Henderson, P.E.  
262-377-6360  
larry@energeneecs.com

Energeneecs provides system integration services, application engineering, equipment, and field services for water and wastewater treatment and control systems.

**ENTECH DESIGN, INC.**  
Randy Minnis  
940-898-1173  
rminnis@entechdesign.com

Entech Design, Inc. is a manufacturer of industry leading ultrasonic interface level analyzers, cost effective and reliable single-sensor and multi-channel sludge level analyzers, and filter media expansion analyzers. Independently field tested by Instrumentation Testing Association in municipal wastewater treatment applications. Limited open territories.

## Conference Highlights

### MONDAY, MARCH 5TH

- 8:00 am Registration Opens
- 10:00-12:00 pm Opening Address & Business Meeting - Brookridge
- 12:00-2:00 pm Emiquon Wetlands Restoration Project Luncheon with Keynote Speaker - Pre-Function Area
- 2:00-5:00 pm Session 1 Industrial Pretreatment/Safety and Security
- 2:00-5:00 pm Session 2 Collection Systems
- 5:00-7:00 pm Exhibitor's Reception & Exhibits

### TUESDAY, MARCH 6TH

- 8:00-2:00 pm Exhibit Hall Open
- 8:00-10:00 am Continental Breakfast in Exhibit Hall
- 8:30-12:00 pm Session 3 Managing Biosolids Phosphorus
- 8:30-11:30 am Session 4 Quality Lab Time
- 12:00-1:00 pm Buffet Lunch in Exhibit Hall
- 2:00-5:00 pm Session 5 WWTP Operations
- 2:00-5:00 pm Session 6 Facility Planning and Water Topics
- 2:00-3:30 pm Session 7 Lab Times Too - Northbridge
- 5:00-6:00 pm New Member & Young Professionals Reception - Potter's Corner
- 6:00-9:00 pm Annual Banquet: Hope Springs Eternal - Brickyard V & VI
- 6:00-7:00 pm Cocktails
- 7:00-8:00 pm Dinner
- 8:00-9:00 pm Awards

### WEDNESDAY, MARCH 7TH

- 7:30-8:30 am Member Breakfast - Brickyard I
- 9:00-12:00 pm Session 8 Biological Nutrient Removal
- 9:00-12:00 pm Session 9 Engineering Management
- 12:15-2:00 pm Session 10 Plant Tour - Meet at Registration Desk

## Session Index

### Session 1 Industrial Pretreatment/Safety and Security

Treatment and Disposal of High Strength Fruit and Vegetable Processing Wastewater

*Dennis E. Totzke, P.E., Applied Technologies, Inc*

Stormwater Management at a Cement Manufacturing Site

*Judy Y. King, PE, BCEE, Environmental Engineer, Buzzi Unicem USA*

Emergency Equipment

*Ed Dunn, Division Manager, Precision Systems*

Electrical Safety in the Work Place

*Barry M. Williams, Senior Electrical Engineer, Symbiont*

Utilities Helping Utilities—

Illinois Public Works Mutual Aid System

*Tammy Bennett, P.E., Project Manager, Clark Dietz, Inc.*

*John Flannery, Safety & Training Instructor, & Asst. Emergency Operations Manager, City of Naperville*

### Session 2 Collection Systems

Dissecting the Wastewater Flows: A Primer

*Rizwan Hamid, P.E, President, Aqualyze, Inc.*

Addressing Combined Sewer Overflows

and Basement Flooding at the Same Time

*Lin Wu, Project Manager, CDM*

Evaluation of the Technologies and Costs of End-of-Pipe Combined Sewer Overflow Treatment for Chicago Area Waterways

*David R. Zenz, Senior Associate, Consoer Townsend Envirodyne Engineers, Inc.*

A Tale of More Than Two Agencies: Flagg Creek Water Reclamation District's Sewer Capacity Assessment Program (SCAP)

*Christopher Buckley, P.E., Project Manager and Shalini Trivedi, E.I.T., Project Engineer CTE*

Determining First Flush Volume for Combined Sewer Overflow Control for the City of Rock Island, Illinois

*Amy Post, E.I., Project Engineer, Symbiont*

### Session 3 Managing Biosolids Phosphorus

Pending Changes in State Regulations Governing the Land Application of Sewage Sludge

*Jeff Hutton, Permit Section, Division of Water Pollution Control, Illinois EPA*

Nutrient Management-An USDA/NRCS Perspective

*Brett Roberts, State Conservation Agronomist*

Sustaining Biosolids Recycling Under Phosphorus-Based Nutrient Management

*Herschel A. Elliott, Professor, Agricultural and Biological Engr Dept, Penn State University*

The Agonomic and Environmental Availability of Biosolids-P

*George A. O'Connor, Professor, University of Florida*

Plant Availability of Phosphorus in Biosolids-amended Soil

*Albert Cox, Soil Scientist, MWRD-Chicago*

Potential for Phosphorus Runoff and its Control in Biosolids-amended Soil

*Kuldip Kumar, Soil Scientist, MWRD - Chicago*

### Session 4 Quality Lab Time

New Initiatives in Illinois Water Quality Standard Regulations

*Bob Mosher, Supervisor, Water Quality Standards Section, Bureau of Water*

Water Methods Update Rule and Other Developments

*Scott D. Siders, Laboratory Quality Specialist, Division of Laboratories, Illinois EPA*

Changes to Sampling, Holding Time and Preservation Requirements in 40 CFR Part 136

*Jarrett Thomas, Vice President, Suburban Laboratories, Inc.*

Out on a LIMS with Trinity River Authority

*Dave Hagen, Senior IT Consultant, Westin Engineering, Inc.*

Sewage Treatment by Metropolitan Water Reclamation District of Chicago WRPs Reduces the Numbers of Antibiotic Resistant Fecal Coliform Bacteria in Wastewater

*Geeta K. Rijal, Microbiologist, MWRDGC*

### Session 5 WWTP Operations

The Cost Effective Use of Airlifts on Primary Sludge at Metropolitan Water Reclamation District of Greater Chicago

*Kendra Sveum, Environmental Engineer, Camp Dresser & McKee*

Out of Control? Activated Sludge Process Control and Troubleshooting Review

*William Bowles, Wastewater Specialist, Biotek Corporation*

Fox Metro Water Reclamation District Solves Filtration Problems with Innovative AquaDiamond® Cloth Media Filter

*Thomas Sichz, P.E., Regional Manager, Midwest*

Is Your SCADA System Experiencing a Mid-Life Crisis?

*Eric Durdou, Sphere Manager, Westin Engineering, Inc.*

Evaluation of Odor Control Systems at the North Side Water Reclamation Plant

*Mary F. Moscinski, Assistant Engineer of Treatment Plant Operations, MWRDGC*

## Exhibitor List

### ABBA PUMP PARTS & SERVICE

Jim Miller

905-333-2730

michelle\_c@abbaparts.com

### A & L GREAT LAKES LABORATORY

Keith Henley

260-483-4759

khenly@algreatlakes.com

The need for quality analytical services to monitor our changing environment is greater than ever before. As part of an international network of eight independent laboratories, A & L Great Lakes is growing to meet the challenge. Our staff of experienced chemists, environmental scientists, microbiologists, soil scientists, computer specialists, and laboratory technicians is keeping pace with tomorrow.

### ALLIED-LOCKE INDUSTRIES, INC.

Dan Dummett

800-435-7752

dad@alliedlocke.com

Allied-Locke is a U.S. manufacturer of Environmental Product Components and Clarifier Systems for the Wastewater and Potable Water operations. Offering stainless steel, malleable, non-metallic Chain & Sprocket systems. In addition, we supply all other components necessary to construct or rehab a rectangular clarifier, including – Drive Units, Shafts, Wear Shoes, Return Rail, Wall Bearings, Chain Tightners, Torque Limiters, Weirs, Baffles, Flights and more.

### AMERICAN MUNICIPAL SUPPLY, INC.

Brian Stegall

630-514-5972

brianstegall@comcast.net

### APPLIED TECHNOLOGIES, INC.

John Callan

(630) 468-5077

jecallan@ati-ae.com

A full service engineering and architectural firm specializing in water/wastewater management for both the public and private sectors. We maintain the staff necessary to undertake complex projects involving environmental sciences, negotiations with regulatory agencies, rate studies, and traditional engineering, design, and construction services.

### AQUA-AEROBIC SYSTEMS

Thomas Sichz P.E.

815-654-2501

tsichz@aqua-aerobic.com

Since 1969, Aqua-Aerobic Systems, inc. has been a leader in the design and manufacture of wastewater treatment systems for municipal and industrial markets. Our experience in Aeration and Mixing coupled with our expertise in Biological Processes and Solids/Liquid Separation allows us to provide advanced treatment solutions at the lowest life-cycle cost.

### BEL-ART PRODUCTS & RICCA CHEMICAL

Ron Leamon

773-573-6784

rleamon@belart.com

### BIOTEK CORPORATION

Michael Gluck

708-343-4470

mgluck@biotekcorp.com

### BROWN BEAR CORPORATION

Phillip Brown

641-322-4220

brnbear@mddc.com

### CADY AQUASTORE, INC.

Dave Friederick

815-899-5768

davef@cadyaquastore.com

Cady Aquastore provides turnkey Aquastore® and TecStore® water tanks that will provide low maintenance service. PE stamped submittal drawings and design calculations are available fore each tank. Aquastore and TecStore tanks are manufactured by Engineered Storage Products Company of DeKalb, IL with over 50 years experience producing bolted storage structures.

## Illinois Select Society of Sanitary Sludge Shovelers

### Charter Members, 1981

Paul W. Clinebell  
Lawrence M. Madden  
John J. Fomeris  
Hugh H. McMillan  
Miles Lamb  
Ralph E. Pfister  
Jeremiah F. Reynolds  
George H. Stevens  
Carl D. Wright

### Members

1981 William H. Busch, Ralph Evans, George Hankammer, Leo Rehm, Edward C. Rubin, Kenneth S. Watson  
1982 Harold I. Goldsmith, Edward L. Marek, John T. Pfeffer  
1983 Harris Chien, Larry N. Hughes, Gregory L. Maxwell  
1984 Toby H. Duckett, Robert M. Randolph, Raymond R. Rimkus  
1985 G. Tim Bachman, Robert B. Klausegger, David R. Zenz  
1986 Theodore R. Denning, William L. Munch, Don R. Ort  
1987 Gregory J. Brunst, J. Mark Crump, Lawrence E. Ziemba  
1988 Charles Corley, Donald Harper  
1989 Greg Cargill, Richard Eick  
1990 Abbot Burton, Dave Sullivan  
1991 J. Michael Botts, Lloyd Lambertson, Charles Muchmore  
1992 Herb Anderson, Richard Schultz  
1993 Timothy Kluge, Gayle O'Neill  
1994 Michael Burnett, Richard Helm  
1995 Robert Brummond, Norman Rose  
1996 Patricia Schatz, Tim Zook  
1997 Andrew P. Ftacek, Jr., Jay Patel  
1998 Fred Dale, Prakasam Tata  
1999 Mary Johnson, Laura McGovern  
2000 John Drake, Terry Jenkins  
2001 Charles Williams, Russell Baker  
2002 John Lamb, Lou Kollias  
2003 Shirley Burger, Tony Bouchard  
2004 Eliana Brown, Sam McNeilly  
2005 Amanda Withers, Dennis Priewe  
2006 Kathy Cooper, Greg Garbs

### Honorary Members

1981 Charles H. Jones  
1982 E. Jack Newbould  
1983 Earnest F. Gloyna  
1984 Harry A. Tow  
1985 Henry Gerry Schwartz  
1986 Carl V. Huber  
1988 James E. Abbott  
1989 Beth A. Turner  
1990 Arthur W. Saarinene, Jr.  
1991 Roger Dolan  
1992 Charles B. Kaiser, Jr.  
1993 Dr. Charles A. Sorber  
1994 Philip E. Gerwert  
1995 Billy G. Turner  
1996 Michael Pollen  
1997 Stanton Le Sieur  
1998 Albert Goodman  
1999 C. Dale Jacobson  
2000 Rhonda Harris  
2001 Joe C. Stowe, Jr.  
2002 James H. Clark  
2003 Erwin J. Odeal  
2004 Robert McMillon  
2005 Lawrence Jaworski  
2006 Lynn Orphan

### Session 6 Facility Planning and Surface Water Topics

Permitting Wastewater Treatment Plant Expansions in NE Illinois in the 21st Century

*James E. Huff, P.E., Vice President, Huff & Huff, Inc.*

Study of Effluent Disinfection for Urban Rivers in Chicago

*Kam P. Law, Consoer Townsend Envirodyne Engineers, Inc.*

Computer Simulation Development of the Stickney Water Reclamation Plant Imhoff Tank Process

*Doris Bernstein, Research Scientist, MWRDGC*

Design of a 10 MGD Biological Aerated Filter for Wastewater Treatment and Wet Weather Flows at Evansville, Indiana

*Terrence Boyer, P.E., Senior Project Manager, Clark Dietz, Inc.*

Forward-Thinking Wastewater Facility Planning—Combining Collection System and Treatment Facilities Assessments

*Benjamin Clapp, P.E. and Kathryn Kalscheur, P.E., Staff Engineers, Black & Veatch*

### Session 7 Lab Times Too

The Effect of River Bank Conditions on the Aquatic Ecosystem

*Ms. Eva Feldman, Lincoln Park High School*

Implementing a Continuity of Operations Plan—Essential (COP-E) for Pandemic Influenza: A Pandemic-specific Business Planning Guide to Ensure Wastewater Operations Cope to Sustain Essential Operations

*John Laws, Water Sector Infrastructure Analyst, Infrastructure Partnerships Division, Department of Homeland Security*

Wastewater Sample Collection, Working with Contract Labs

*Kurt Stepping, Director of Client Services, PDC Laboratories, Inc.*

### Session 8 Biological Nutrient Removal

Taking the Mystery Out of Troubleshooting an Enhanced Biological Phosphorus Removal System

*Troy W. Stinson, P.E., Project Manager/Engineer, Strand Associates, Inc.*

Preparing To Meet Future Phosphorus Limits

*Mark Steichen, Senior Process Engineer, Black & Veatch*

Ammonia Nitrogen Limits and Small System Compliance

*Gary Davis, Principal, Farnsworth Group, Inc.*

BNR at the Broomfield WRF using AnoxKaldnes' IFAS Process

*Laura Marcolini, Eastern Regional Manager, AnoxKaldnes, Inc.*

Full-Scale Study on Biological N Removal and Chemical P Removal at the John Egan Water Reclamation Plant

*Heng Zhang, Research Scientist*

### Session 9 Engineering Management

Cost Management Through Electric Bill Awareness

*Patrick E. Clifford, Associate, CTE Engineers*

Consideration Involved in a Digester Cleaning Contract

*Manickam Annamalai, Principal Civil Engineer, MWRDGC*

Streamlining Decision Support

*Steve Arnett, Senior Consultant, Westin Engineering, Inc.*

A Better Understanding of Grit

*George E. Wilson, PhD, PE, EUTEK® Systems, Inc.*

Innovations in Vortex Grit Technology for the Modern Headworks

*Simon Randle, Regional Sales Manager, EIMCO Water Technologies*

### Session 10 Plant Tour

Bloomington-Normal Water Reclamation District Southeast Wastewater Treatment Facility

New 7.5 MGD WWTP

*Rated capacity- DAF .....7.5 million gallons/ day  
Maximum permitted capacity DMF .....16.875 million gallons/ day  
Total number of structures built .....20  
Cubic yards of concrete poured .....17,000  
Length of interceptor sewer .....7 miles  
Cost of engineering and construction .....approximately \$50 million*

- Primary Clarifiers
  - Two 85-ft-dia Primary Clarifiers 8.44 mgd each
- Aeration
  - Five Aeration basins designed for parallel or series configuration
  - Fine bubble diffusers
- Secondary Clarifiers
  - Two 115-ft-dia Secondary Clarifiers.
- Tertiary Treatment
  - Three 75-ft x 16-ft Traveling Bridge Filters
  - Ultra-violet disinfection system
- Residuals
  - Gravity thickeners
- Digester
  - Two 75-ft-dia anaerobic digesters (1-primary, 1-secondary) 686,000 gal. each.
- Controls
  - State-of-the-art SCADA capable of 24-hr unattended operation

## Session Abstracts

### TREATMENT AND DISPOSAL OF HIGH STRENGTH FRUIT AND VEGETABLE PROCESSING WASTEWATER

**Presented by Dennis E. Totzke, P.E., Applied Technologies, Inc.**  
**Session 1: Monday, March 5th at 2:00 pm**

Food processors are often confronted with the need to upgrade an existing wastewater treatment system. The driving force could be regulatory, related to unacceptable performance, caused by varying waste loads, or any combination thereof.

Van Drunen Farms, located in Momence, Illinois, is a producer of freeze-dried and dehydrated fruits and vegetables and infused fruits. In addition, they are the largest supplier of organically grown culinary herbs in the country. Expanding production and increased wastewater discharge costs from the City prompted Van Drunen to investigate process wastewater treatment alternatives, ranging from high load anaerobic treatment to low load aerated lagoon treatment.

Process wastewater is characterized by intermittent discharge, high organic strength (chemical oxygen demand levels of 5,000 to 15,000 mg/L) and low total suspended solids (less than 400 mg/L). The design basis for the wastewater was established at an average flow of 32,000 gpd, a chemical oxygen demand load of about 2,500 lbs/d, and a total suspended solids load of about 100 lbs/d. A preliminary engineering study was completed and recommended the use of flow and load equalization followed by aerated lagoon treatment and land disposal of biosolids and treated wastewater. High load anaerobic treatment, although ideally suited to handle high strength soluble process wastewater, was not economically competitive.

The treatment system was designed and submitted for permitting in late 2002. It was constructed from March 2003 through November 2003. Startup took place in early 2004 with minimal problems. Performance of the system has been exemplary. Chemical oxygen demand removal has averaged over 98%. Treated wastewater and biosolids are land applied as seasonal weather and crop-growing conditions allow. Operating costs are very low, with little operator attention required. The wastewater treatment system has met the goals established during design and has provided Van Drunen Farms with a reliable and cost effective treatment plant.

### STORMWATER MANAGEMENT AT A CEMENT MANUFACTURING SITE

**Presented by Judy Y. King, PE, BCEE, Environmental Engineer, Buzzi Unicem USA**  
**Session 1: Monday, March 5th at 2:30 pm**

Cement manufacturing began along the Vermillion River in 1894. In the early 1990s, stormwater control became an issue. Discharges are monitored for pH, TSS, dissolved solids, and sulfates. Stormwater tends to have elevated (above 9 pH) in most of the discharge points. Paper describes the site's pollution prevention and stormwater management plans and the role of the Illinois SIP for particulate control.

### EMERGENCY EQUIPMENT

**Presented by Ed Dunn, Division Manager, Precision Systems**  
**Session 1: Monday, March 5th at 3:30 pm**

The focus of this presentation is to provide municipalities with specific information regarding the machines used to maintain water distribution and/or wastewater collection systems during either a short or long term power outage event. Given the questions of today's deregulated electrical power generation industry, an aging and poorly maintained distribution system, the threat of terrorist action, and the every present possibility of natural disasters, every municipality should take steps to be prepared for these outages. This presentation is a comparison of the three major types of equipment currently used by many municipalities to maintain its collection/distribution system during a power outage, specifically: portable pumping, portable power generation, and stationary power generation.

The presentation begins with a general discussion of the requirements/recommendations for emergency operation as outlined by the EPA highlighting the need for this equipment to the attendee. It then proceeds to a comparison of the three aforementioned types of emergency equipment. Application considerations for each of the three bypass methods are discussed with a pro and con discussion using experiences from other municipalities to emphasize the strengths and weaknesses of each system. Some of the specific items that are discussed include: Pump Station Design, Generator Sizing, Towing Requirements, Sound Attenuation, and Fuel Selection and Sourcing. The specific topics, and real world experiences, have been selected to benefit either the smallest municipality with no current emergency plans or equipment in place, to a large municipality with contingency plans and equipment already in place, or the consultant engineer for either municipality.

Precision Systems has used its thirty plus years of providing emergency equipment to municipalities throughout the United States to develop this presentation. The Precision Systems product line includes packaged stand-by power generators, complete pump stations with stand-by generators, as well as permanently mounted bypass pump connections. The examples discussed during this presentation are taken from either published sources or Precision Systems direct experience with municipalities that have struggled with system wide power outages.

### LABORATORY ANALYST EXCELLENCE AWARD

*Acknowledges an individual for outstanding performance, professionalism, and contributions to the water quality analysis profession.*

1995	Gayle O'Neill
1996	Mary G. Johnson
1997	Patricia Schatz
1998	Norman Rose
1999	Terry Jenkins
2000	Prakasam Tata
2001	John Lamb
2002	Kurt Stepping
2003	Randall Hummer
2004	John Gemoules
2005	Colleen Ozment
2006	William Lazouskas

### GEORGE W. BURKE SAFETY AWARD

*Established to encourage municipal and industrial wastewater facilities to participate in promoting an active and effective safety program and to stimulate the collecting and reporting in injury data. The recipient is chosen based on the quality of their documented safety program as well as innovative actions taken to prevent injuries and corrective measures taken when an injury occurs.*

1984	Lake County Public Works - Grandwood Park Sewage Treatment Plant
1985	Yorkville - Bristol Sanitary District
1986	City of Moline
1987	Metropolitan Sanitary District of Greater Chicago
1988	Vernon Hills New Century Treatment Plant - Lake County Public Works Department
1989	Village of Addison
1990	Village of Bloomingdale
1991	The Greater Peoria Sanitary and Sewage Disposal District
1992	City of Mount Vernon
1993	City of Pontiac
1994	Salt Creek Sanitary District
1996	City of Moline - South Slope Plant
1997	West Chicago Regional Wastewater Treatment Plant
1998	Village of Addison North Treatment Plant
1999	Village of Streator
2001	City of Moline, North Slope Plant
2002	Lincoln Wastewater Treatment Plant
2004	City of Moline - South Slope Treatment Plant
2005	American Bottoms Wastewater Treatment Facility
2006	OMI, Inc., Carol Stream

### PAUL CLINEBELL OUTSTANDING SERVICE AWARD

*Recognizes an individual who has and continues to provide significant contributions to the Illinois Water Environment Association. The recipient will have given outstanding service to the IWEA over the longevity of their membership.*

2005	Paul Clinebell
2006	Gregory Brunst

### TECHNICAL PRESENTATION AWARD

*Acknowledges outstanding presentations at the IWEA Annual Conference. The award recipient is chosen based on evaluations submitted by conference attendees.*

2005	Jack Pizzo
2006	Daria Zelasko

### QUARTER CENTURY OPERATORS CLUB MEMBERS

George L. Hankammer  
Miles Lamb  
John E. Rothweiler, Jr.  
Richard C. Rohr  
Charles L. Williams  
Herbert J. Anderson, Jr.  
George H. Stevens  
William L. Munch  
Robert Klausegger  
Joseph W. Larson  
Earl W. Knight  
Gregory J. Brunst  
Ralph E. Pfister  
David J. Sentman  
Gregory D. Cargill  
Gary E. Ziols  
James Camenisch  
Craig Klenzman  
David L. Sullivan  
John Bowman  
Frederick Dale  
Patricia Schatz  
Rich Schultz  
Hugh McMillian  
J Michael Patterson  
Shirley Burger  
Daniel T. McCarthy  
Mitch Patterson

## Past Illinois Water Environmental Association Awards

### OPERATOR OF THE YEAR

1985	Dave Sullivan
1986	Larry D. Lawson
1987	Phillip E. Brandenburg
1988	Tim Bachman
1989	Larry Werner

### KENNETH C. MERIDETH MEMORIAL AWARD

*This 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.*

1981+	Jacob Rohrich
1982+	George Hankammer
1983+	Robert Klausegger
1984+	Abbott Burton
1985+	Lawrence Ziemba
1986+	Jerrold Olmstead
1987	William Busch
1988	Joseph Schaberger
1989	Gregory J. Brunst
1990	Lloyd Lamberton
1991	J. Michael Botts
1995	Michael Burnett
1996	Joyce Felgar
1997	Frederick Dale
1998	Herbert J. Anderson, Jr.
1999	Russell Baker
2000	George Stevens
2001	David Sullivan
2002	Gregory Garbs
2003	H. Scott Wallis
2004	Kathy Cooper
2006	Charles Corley

### SYLVANUS JACKSON SCHOLARSHIP

1984+	Jeffery Stone student at Environmental Resources Training Center, SIU-Edwardsville
1985+	Greg Bargs, Debra Fey and Robert Tolbert students at Environmental Resources Training Center, SIU-Edwardsville
1987	Tony Maze, Village of Goreville Mark Kuhfuss, Lake County Public Works Department
1989	Joseph Nowak, ERTC - Edwardsville Michael Schweiger, ERTC - Edwardsville
1990	Mike Rizzo, Highland Park
1992	James Goodall, Marine Steven R. Vickrey, East Alton
1994	George A. Fisher, Herrin Jimmie L. Hartwick, Godfrey
1995	Todd Dodson, Collinsville
1996	Mary DeRuntz, ERTC - Edwardsville Chris Eddings, ERTC - Edwardsville
1997	Joseph Mueller, Okawville

+ Denotes award given by Illinois Association of Water Pollution Control Officers

### WILLIAM D. HATFIELD AWARD

*Acknowledges an operator of a wastewater treatment plant for outstanding performance and professionalism.*

1981	George L. Hankammer
1982	Ralph E. Phister
1983	Raymond R. Rimkus
1984	Jerrold L. Olmstead
1985	Abbott L. Burton
1986	Robert B Klausegger
1987	Larry Hughes
1988	Tim Bachman
1989	George Stevens
1990	Richard Schultz
1991	Richard Eick
1992	Charles L. Williams
1993	Lloyd Lamberton
1994	David Sullivan
1995	Timothy Cardella
1996	William L. Munch
1997	William Bowles
1998	Gregory J. Brunst
1999	Hugh McMillan
2001	Gary Ziols
2002	Frederick Dale
2003	Gregory Cargill
2004	Robert Brummond
2006	George Schillenger

### ARTHUR SIDNEY BEDELL AWARD

*Acknowledges extraordinary personal service to a Member Association.*

1981	Paul W. Clinebell
1982	Kenneth S. Watson
1983	Jeremiah F. Reynolds
1984	Hugh McMillan
1985	Lawrence M. Madden
1986	Richard Helm
1987	William L. Munch
1988	Harold I. Goldsmith
1989	William H. Busch
1990	Richard Eick
1991	Gregory D. Cargill
1992	Ralph E. Phister
1993	Charles E. Corley
1994	Toby Duckett
1995	Gregory J. Brunst
1996	George H. Stevens
1997	Theodore Denning
1998	David Zenz
1999	Robert Brummond
2000	Andrew P. Ftacek, Jr.
2001	Richard Schultz
2002	Mary G. Johnson
2003	Laura McGovern
2004	Larry Ziemba
2005	Tim Kluge
2006	Herb Anderson

### ELECTRICAL SAFETY IN THE WORK PLACE

**Presented by Barry M. Williams, Senior Electrical Engineer, Symbiont**  
**Session 1: Monday, March 5th at 4:00 pm**

The NFPA and NEC documents provide mandatory requirements on heating, ventilation, and air conditioning (HVAC) and electrical design practices.

At this time, many states, have not adopted NFPA 820 into their administrative codes. However, the standard serves as the manual of practice for design professionals working on publicly owned treatment works. Many owners are unfamiliar with the standard and the National Electrical Code requirements for Arc-Flash hazards.

As a matter of maintaining worker safety, the NFPA and NEC requirements should be evaluated for compliance. Many municipal and industrial facilities have instituted NFPA and NEC safety standards into their standard operating procedures and in site construction contracts.

This presentation provides an overview of electrical site safety requirements and reviews NFPA and NEC Arc-Flash requirements and provides examples of solutions that have been applied to previous projects to minimize project costs and improve safety.

**UTILITIES HELPING UTILITIES - ILLINOIS PUBLIC WORKS MUTUAL AID SYSTEM**  
**Presented by Tammy Bennett, P.E., Project Manager, Clark Dietz, Inc. and John Flannery, Safety and Training Instructor & Asst. Emergency Operations Manager, City of Naperville**  
**Session 1: Monday, March 5th at 4:30 pm**

The Illinois Section of AWWA (ISAWWA) and the Illinois Chapter of American Public Works Association members have taken the lead to develop a state-wide mutual aid system which will include water, wastewater and public work systems. This system will model similar systems previously established by Florida and Texas. This presentation will provide an update on the status of this program.

### DISSECTING THE WASTEWATER FLOWS: A PRIMER

**Presented by Rizwan Hamid, P.E, President, Aqualyze, Inc.**  
**Session 2: Monday, March 5th at 2:00 pm**

A thorough flow analysis of system metering data is a critical step towards addressing the separate or combined sewer overflow (SSO/CSO) issues and developing a capital improvements plan (CIP). Hydraulic modeling of collection systems is an acceptable approach to determine hydraulic capacities, determine deficient areas, and develop a system wide CIP. While hydraulic modeling provides an effective tool to conduct capacity analysis of a collection systems, its accuracy depends on two key factors: flow projections and model calibration. This paper focuses on the flow projections component by exploring three different hydrologic methods for conducting flow analysis. The underlying hydrologic theory of each method is analyzed to better predict future flows. Case studies from various parts of the country were selected to provide a good mix of meteorological as well as geological conditions

### ADDRESSING COMBINED SEWER OVERFLOWS AND BASEMENT FLOODING AT THE SAME TIME

**Presented by Lin Wu, Project Manager, CDM**  
**Session 2: Monday, March 5th at 2:30 pm**

Chicago has historically experienced two main challenges: combined sewer overflows (CSOs) and basement flooding. Currently, there are a few CSOs in the City that are not directly connected to MWRDGC's interceptors or deep tunnels. This paper presents a unique approach to reduce/eliminate indirectly connected CSOs while addressing basement flooding problems at the same time. The approach includes several elements, including catch basin restriction, roof downspout disconnection, sewer redirection, and elimination of the indirectly connected CSOs. Real world experience is used to illustrate the approach.

### EVALUATION OF THE TECHNOLOGIES AND COSTS OF END-OF-PIPE COMBINED SEWER OVERFLOW TREATMENT FOR CHICAGO AREA WATERWAYS

**Presented by David R. Zenz, Senior Associate, Consoer Townsend Envirodyne Engineers, Inc.**  
**Session 2: Monday, March 5th at 3:30 pm**

The Illinois Environmental Protection Agency (IEPA) is conducting a Use Attainability Analysis (UAA) for the Chicago Area Waterways. As part of the UAA process, the IEPA requested that the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) determine the technologies and costs for end-of-pipe treatment of Combined Sewer Overflows (CSOs) on the North Shore Channel, North and South Branches of the Chicago River and the Chicago River. Consoer Townsend Envirodyne Engineers, Inc. (CTE) was commissioned by the MWRDGC to conduct the IEPA requested study of end-of-pipe treatment of CSOs.

Based upon an evaluation of various CSO treatment alternatives and an analysis of state and federal CSO regulations, CTE determined that the end-of-pipe treatment plants should consist of; Coarse Screening, Submersible Centrifugal Pumps, Catenary Bar Screens (Fine Screens), Vortex Separators and High Intensity UV Disinfection.

To provide end-of-pipe treatment for the 105 of the 170 CSO outfall sites in the study area would require an estimated total capital expenditure of approximately \$893 million and have a continuing estimated annual cost of nearly \$3.8 million. Sixty-five other sites had insufficient available space to accommodate a CSO treatment plant. It should be noted that the construction of 105 end-of-pipe treatment plants would involve overcoming numerous political, aesthetic and economic obstacles. There are countless stakeholders in the study area all of whom would need to reach consensus to overcome these obstacles.

### A TALE OF MORE THAN TWO AGENCIES: FLAGG CREEK WATER RECLAMATION DISTRICT'S SEWER CAPACITY ASSESSMENT PROGRAM (SCAP)

Presented by Christopher Buckley, P.E., Project Manager and Shalini Trivedi, E.I.T., Project Engineer CTE

Session 2: Monday, March 5th at 4:00 pm

The Flagg Creek Water Reclamation District (FCWRD), located in southwest suburban Chicago, IL, was concerned about surcharges and overflows within its collection system which caused its WWTP to operate in excess of its rated capacity. The situation was particularly complicated due to the presence of multiple government agencies within the service area to which FCWRD did not have direct control. This paper describes how the FCWRD conducted a comprehensive study in order to identify and quantify the problems, evaluate potential solutions, and then seek out the cooperation of its member communities to mitigate these issues.

### DETERMINING FIRST FLUSH VOLUME FOR COMBINED SEWER OVERFLOW CONTROL FOR THE CITY OF ROCK ISLAND, ILLINOIS

Presented by Amy Post, E.I., Project Engineer, Symbiont

Session 2: Monday, March 5th at 4:30 pm

The City of Rock Island Draft Combined Sewer Overflow Long Term Control Plan proposes the construction of a wet weather treatment facility downstream of its Black Hawk Lift Station (BHLS) as an alternative to relieving its South Interceptor Sewer. A critical step in planning wet weather treatment facilities involves determining the time and volume of the first flush. This information is critical because the State of Illinois requires full secondary treatment of the first flush. The City of Rock Island's consultant, Symbiont, designed a monitoring program and field investigations to comply with the requirements of 35 IAC 375 to compute the first flush at the BHLS. Among the 20 measured events, there was a significant degree of variability in rainfall, flows, and water quality. As a result of the monitoring program, the first flush volume was calculated at 0.43 MG with an average duration of 3 hours. The States of Indiana and Michigan require full capture and treatment of the 1-year, 1-hour storm as part of their CSO control approaches. The monitoring data indicates this approach yields a significantly higher treatment volume than the Illinois approach.

### PENDING CHANGES IN STATE REGULATIONS GOVERNING THE LAND APPLICATION OF SEWAGE SLUDGE

Presented by Jeff Hutton, Permit Section, Division of Water Pollution Control, Illinois EPA

Session 3: Tuesday, March 6th at 8:30 am

The existing Illinois state Regulations regarding the land application of sewage sludge were adopted and codified on December 14, 1983. Illinois EPA is in the process of updating its rules to reflect the research done since 1983. Specific changes will include less restrictive requirements on soil pH and setback zones. Metal cumulative loading and ceiling limits, pathogen reduction and vector attraction requirements as well as other management practices from 40 CFR Part 503 will be included in the new document. Possible changes in the sections of the rules dealing with phosphorous may be based at least in part on ongoing research by the Metropolitan Water Reclamation District of Greater Chicago.

### NUTRIENT MANAGEMENT- AN USDA/NRCS PERSPECTIVE

Presented by Brett Roberts, State Conservation Agronomist

Session 3: Tuesday, March 6th at 9:00 am

The Natural Resource Conservation Service is an agency within the United States Department of Agriculture. The mission of the agency is to assist landowners and land users to develop conservation plans that will solve or alleviate identified natural resource problems on a voluntary basis. Conservation plans contain a list and schedule of individual conservation practices that will address site specific problems. NRCS establishes technical criteria, standards and specifications for each conservation practice. A common natural resource problem in Illinois is excess plant nutrients in the State's waters. Most of the nutrients are from non-point sources including agricultural land. NRCS now emphasizes water quality considerations during the conservation planning process with recipients of NRCS financial and technical assistance. Specifically initiatives for nutrient management have been established.

### SUSTAINING BIOSOLIDS RECYCLING UNDER PHOSPHORUS-BASED NUTRIENT MANAGEMENT

Presented by Herschel A. Elliott, Professor, Agricultural and Biological Engr Dept, Penn State University

Session 3: Tuesday, March 6th at 9:30 am

Concern over water quality impacts from agricultural watersheds has led states to address phosphorus (P) in nutrient management practice standards. Biosolids have not been explicitly addressed in most states, and P-based management will be implemented before the impact on biosolids recycling is fully appreciated. The difficulties imposed on biosolids reuse by P-based nutrient management will be reviewed. Specific reference will be made to the P index site assessment tools used in Illinois and other states.

## Illinois Water Environmental Association History

#### WPCF PAST PRESIDENTS

Kenneth Watson, Chicago 1958-1959

#### IWEA PAST PRESIDENTS

Paul Clinebell	1979 - 1980	Organizational MA
	1980 - 1981	Official MA
Larry Madden	1981 - 1982	
George Stevens	1982 - 1983	
Ralph Evans	1983 - 1984	
Robert Randolph	1984 - 1985	
William Busch	1985 - 1986	
Harold Goldsmith	1986 - 1987	
Toby Duckett	1987 - 1988	
Ted Denning	1988 - 1989	
Don Ort	1989 - 1990	
David R. Zenz	1990 - 1991	
Charles Muchmore	1991 - 1992	
Ralph Pfister	1992 - 1993	
J. Mark Crump	1993 - 1994	
Gregory D. Cargill	1994 - 1995	
Gayle O'Neill	1995 - 1996	
Gregory Brunst	1996 - 1997	
Richard Schultz	1997 - 1998	
Timothy Kluge	1998 - 1999	
Richard Helm	1999 - 2000	
Andrew P. Ftacek, Jr.	2000 - 2001	
William L. Munch	2001 - 2002	
Charles E. Corley	2002 - 2003	
Mary Johnson	2003 - 2004	
John Drake	2004 - 2005	
Larry Ziemba	2005 - 2006	

#### IWEA PAST SECRETARY/TREASURERS

Ralph Pfister	1979 - 1984
Toby Duckett	1984 - 1986
J. Mark Crump	1986 - 1989
J. Michael Botts	1989 - 1992
Herbert J. Anderson, Jr.	1992 - 2005

The Secretary/Treasurer Position was split into two positions, Secretary and Treasurer, in 2002.

#### IWEA PAST DIRECTORS

John J. Foneris	1980 - 1983
Hugh H. McMillan	1981 - 1984
John T. Pfeffer	1983 - 1986
Raymond R. Rimkus	1984 - 1987
Robert M. Randolph	1986 - 1989
Earl W. Knight	1986 - 1990
William H. Busch	1989 - 1992
Hal Goldsmith	1990 - 1993
George Stevens	1992 - 1995
David Zenz	1993 - 1996
Ralph Pfister	1995 - 1998
Paul Clinebell	1996 - 1999
Gregory D. Cargill	1998 - 2001
Gregory Brunst	1999 - 2004
Toby Duckett	2002 - 2005

#### PAST WASTEWATER OPERATIONS

##### DIVISION CHAIRS

Larry Hughes  
Ralph Pfister  
Timothy Cardella  
Tim Bachman  
Lloyd Lambertson  
Russell Baker  
Gerald Olmstead  
Michael Burnett

#### GOLDEN MANHOLE RECIPIENTS

George Stevens  
Greg Brunst  
Laura McGovern  
Mike Jankovic  
Alan Hollenbeck  
Dan Petersen  
Doug Severson

#### THE FOUNDING MEMBERS OF THE ILLINOIS WATER ENVIRONMENT ASSOCIATION

Paul W. Clinebell, Mahomet  
John J. Foneris, Springfield  
Miles Lamb, Chicago  
Lawrence M. Madden, Freeport  
Hugh H. McMillan, Chicago  
Ralph E. Pfister, Yorkville  
Jeremiah H. Reynolds, North Aurora  
George H. Stevens, Moline  
Carl D. Wright, Chicago

## *Past Water Environmental Federation Awards*

### **CHARLES ALVIN EMERSON MEDAL**

*Presented to an individual whose contributions to the wastewater collection and treatment industry most deserves recognition. Particular emphasis is placed on the nominee's involvement in the problems and activities of the Water Environment Federation, including the stimulation of membership, improving standards of techniques of wastewater treatment, water resource protection, and fostering fundamental research.*

1986 Cecil Lue-Hing

### **COLLECTION SYSTEM AWARD**

*Presented to an individual for contributions to the advancement of the state of the art of wastewater collection.*

2003 Alan Hollenbeck

### **GORDEN MASKEW FAIR MEDAL**

*Presented for outstanding service in the training and development of future engineers.*

1988 Dr. John T. Pfeffer

### **PHILIP F. MORGAN MEDAL**

*Recognizes valuable contributions to the in-plant study and solution of an operation problem. Awards are given in two categories: (1) work accomplished in plants serving more than 5000 people and (2) work accomplished in plants serving less than 5000 people.*

1983 Robert F. Klausegger  
1984 Ralph E. Phister

### **OUTSTANDING ACHIEVEMENT IN WATER QUALITY IMPROVEMENT AWARD**

*Presented annually to the water quality improvement program that best demonstrates significant, lasting and measurable excellence in water quality improvement or in prevention of water quality degradation in a region, basin or water body.*

1989 Metropolitan Water Reclamation District of Greater Chicago  
1999 Metropolitan Water Reclamation District of Greater Chicago

### **GEORGE J. SCHROEPFER MEDAL**

*Presented to an engineering consultant, municipal engineer, or industrial engineer who is a professional engineer in responsible charge of the design of facilities for the conveyance, treatment, or disposal of wastewater and/or treatment residues. The recipient must demonstrate excellence in conceiving and directing the design of a project to achieve substantial cost savings or economic benefit over other alternatives, while achieving environmental objectives.*

1988 Michael Klinger

### **THE AGONOMIC AND ENVIRONMENTAL AVAILABILITY OF BIOSOLIDS-P**

**Presented by George A. O'Connor, Professor, University of Florida**  
**Session 3: Tuesday, March 6th at 10:30 am**

Recent regulations pertaining to land application of biosolids focus on P and threaten to severely impact biosolids recycling. The goal of a Water Environment Research Foundation (WERF)-sponsored project was to provide critical biosolids-P phytoavailability and runoff potential data to validate the regulations. Research showed that all biosolids-P was not the same. Conventionally treated biosolids exhibit both less agronomic and environmental P lability than manures and fertilizers. Biosolids processed for biological P removal (BPR), however, mimic fertilizer-P and require special management to reduce environmental impact. Water extractable P (WEP) is a good predictor of biosolids agronomic and environmental lability.

### **PLANT AVAILABILITY OF PHOSPHORUS IN BIOSOLIDS-AMENDED SOIL**

**Presented by Albert Cox, Soil Scientist III, MWRD-Chicago**  
**Session 3: Tuesday, March 6th at 11:00 am**

A two-year greenhouse study was conducted to compare the plant P uptake in a P-deficient soil amended with varying rates of biosolids and inorganic P fertilizer. The data showed that the P loading rate required for optimum crop production is higher when added in biosolids than when inorganic fertilizer is used as a P source. Data from a field component of this study will be presented also

### **POTENTIAL FOR PHOSPHORUS RUNOFF AND ITS CONTROL IN BIOSOLIDS-AMENDED SOIL**

**Presented by Kuldip Kumar, Soil Scientist, MWRD - Chicago**  
**Session 3: Tuesday, March 6th at 11:30 am**

Field, laboratory, and simulated rainfall runoff studies are being conducted to (i) estimate the critical cumulative biosolids application rate to farmland (environmental impact threshold), above which the potential for P losses in surface runoff increases significantly, and (ii) evaluate the effectiveness of vegetated buffer strips established in the setback zone of land application fields in controlling P runoff. The data from laboratory and rainfall simulation studies showed that aluminum and iron compounds in biosolids provide P-binding which controls the critical loading for soluble P runoff from biosolids-amended fields. In this paper we will also present data on the effectiveness of the vegetated buffer strips in controlling biosolids P runoff in the field.

### **NEW INITIATIVES IN ILLINOIS WATER QUALITY STANDARD REGULATIONS**

**Presented by Bob Mosher, Supervisor, Water Quality Standards Section, Bureau of Water**  
**Session 4: Tuesday, March 6th at 8:30 am**

Recent changes to water quality standards for metals entailed changing the regulated form from total to dissolved metal. Effluents must be regulated using total metal limits by federal statute. Many effluents have only a portion of the metal present in the dissolved form. A process has been created at USEPA to determine the proportion of dissolved metal vs. total metal in effluents. Once the dissolved fraction is known, a total metal limit protective of the dissolved metal water quality standard can be determined. This is known as the "Metal Translator" procedure. Specific instructions on performing this procedure are available. Facilities may use this procedure to raise or eliminate permit limits for metals.

### **WATER METHODS UPDATE RULE AND OTHER DEVELOPMENTS**

**Presented by Scott D. Siders, Laboratory Quality Specialist, Division of Laboratories, Illinois EPA**  
**Session 4: Tuesday, March 6th at 9:00 am**

This presentation will discuss the USEPA Office of Water's Method Update Rule (MUR) and other developments that impact on environmental testing laboratories and those organizations involved in water and wastewater monitoring. At the time of this abstract submittal, the MUR had been signed by the USEPA Administrator and is due to be published as a final rule in the Federal Register sometime in mid-September, 2006.

Two other ongoing developments to be mentioned are; status on the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act (CWA) Programs (FACDQ); and changes in the National Environmental Laboratory Accreditation Conference (NELAC).

### **CHANGES TO SAMPLING, HOLDING TIME AND PRESERVATION REQUIREMENTS IN 40 CFR PART 136**

**Presented by Jarrett Thomas, Vice President, Suburban Laboratories, Inc.**  
**Session 4: Tuesday, March 6th at 9:30 am**

USEPA has proposed changes to sampling procedures, approved methods, sample temperature and preservations, and field testing requirements found in 40 CFR Part 136. This presentation will summarize the changes and discuss the impact on the regulated waste water community.

**OUT ON A LIMS WITH TRINITY RIVER AUTHORITY**  
Presented by Dave Hagen, Senior IT Consultant, Westin Engineering, Inc.  
Session 4: Tuesday, March 6th at 10:30 am

This paper explores the steps that The Trinity River Authority (TRA) of Texas took to replace their Laboratory Information Management System (LIMS) with a modern system that integrates seamlessly with other applications and makes use of mobile wireless technology and the integration of LIMS with other information systems. The methodology for requirements, software and implementation is discussed as a standard process that is used to select and implement any software. Many water utilities are facing this situation because old systems are no longer meeting their needs. Systems to support laboratories needs are critical because they manage information needed to maintain compliance and protect public health. A standard methodology for selecting a LIMS is of significant benefit to other utilities. Finally, TRA's use of advanced mobile and wireless technologies, including wireless tablet PCs, Bluetooth-enabled barcode scanners, and handheld PDAs, will be presented as options for improving laboratory efficiency.

**SEWAGE TREATMENT BY METROPOLITAN WATER RECLAMATION DISTRICT OF CHICAGO WRPS REDUCES THE NUMBERS OF ANTIBIOTIC RESISTANT FECAL COLIFORM BACTERIA IN WASTEWATER**  
Presented by Geeta K. Rijal, Microbiologist IV, MWRDGC  
Session 4: Tuesday, March 6th at 11:00 am

The Metropolitan Water Reclamation District of Greater Chicago (District) measured the numbers of fecal coliform (FC) bacteria resistant to three antibiotics commonly prescribed by physicians (ampicillin, gentamycin, tetracycline, and mixture of three antibiotics) entering District's seven Water Reclamation Plants (WRPs) in the raw sewage (RS) and in the final effluents (FE). The study was primarily undertaken to determine whether secondary sewage treatment at the District WRPs adequately reduces the numbers and percentages of antibiotic resistant FC in the FE. The results of univariate and multivariate regression analysis demonstrated that the percentages of antibiotic resistant FC in the FE from seven District WRPs were lower than the percentages of these organisms in RS ( $p < 0.01$ ). These results support the conclusion that secondary sewage treatment in the District effectively reduces the number of antibiotic resistant FC and that the environments of the District's seven WRPs are not conducive to the propagation or survival of antibiotic resistant fecal coliform bacteria.

**THE COST EFFECTIVE USE OF AIRLIFTS ON PRIMARY SLUDGE AT THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREAT CHICAGO**  
Presented by Kendra Sveum, Environmental Engineer,  
Camp Dresser & McKee  
Session 5: Tuesday, March 6th at 2:00 pm

The Metropolitan Water Reclamation District of Greater Chicago has used airlifts to remove sludge from the primary settling tanks at Stickney Southwest Water Reclamation Plant since 1936. As part of the new preliminary settling tanks being designed for both Stickney and Calumet WRPs, the airlift was evaluated against other technologies such as: screw impeller pumps, recessed impeller pumps, single-vane non-clog pumps, multi-vane non-clog pumps, and a new type of airlift called the bubble lift. A life cycle cost analysis was completed including capital cost, and energy, maintenance, and operation costs over 50 years. The airlift and bubble lift systems were found to be the most cost effective method of primary sludge conveyance, due to low energy and maintenance cost as well as long life times. As the settling tank project continues, a bubble lift will be put into operation at SWRP so the operation of the two lifts can be evaluated under the expected design conditions for the new system.

**OUT OF CONTROL? ACTIVATED SLUDGE PROCESS CONTROL AND TROUBLESHOOTING REVIEW**  
Presented by William Bowles, Wastewater Specialist,  
Biotek Corporation  
Session 5: Tuesday, March 6th at 2:30 pm

The goal of this discussion is to review the major activated sludge process control methods: Sludge Age, Constant MLSS/MLVSS, Constant F:M Ratio, MCRT, and Sludge Quality Control. Factors to consider when choosing a control method are the size of the facility, the staffing, and the laboratory equipment available. What records and data will need to be kept and the calculations for each method will be shown. What are the advantages and limitations of each control method? Finally, what methods are most effective and when problems develop, what steps to take to bring the system back into balance will be highlighted.

<b>Plant Operations</b>	<p><b>Greg Garbs, Streator</b> Mitch Patterson, Addison Lawrence Quick, Robinson Bob Shull, Ottawa</p>	<b>Safety</b>	<p><b>Mark Termini, Addison</b> Georgia Kiger, Mount Sterling Glen Sullivan, Itasca</p>
<b>Program</b>	<p><b>Amanda Withers, Springfield</b> <b>Paul Rom, Chicago</b> Phil Brandenburg, Du Quoin Sandy Conrad, Chicago Greg Garbs, Streator Wayne Grooms, Chesterfield, MO Mark Halm, Aurora John Lamb, St. Charles Mark Zachar, Chicago</p>	<b>Student Chapters</b>	<p><b>Greg Cargill, Palos Heights</b> <b>Mark Zachar, Chicago</b> Russel Martin, Alsip Kristen Rehg, Crystal Lake Lou Storino, Chicago Kendra Sveum, Chicago Scott Trotter, St. Charles Maria Winegar, Chicago Derek Wold, Mokena</p>
<b>Public Education &amp; Student Affairs</b>	<p><b>Robert Kulchawik, Chicago</b> Russ Baker, Elburn Tammy Bennett, Champaign Doris Bernstein C. Eliana Brown, Champaign Robert Brummond, Lake Zurich Bruce Butler, Urbana Gregory D. Cargill, Palos Heights Harris Chien, Rockford Paul Clinebell, Champaign Charles Corley, Rockford Fred Dale, Villa Park Jeff Flowers Andrew P. Ftacek, Jr., Chicago Susan K. Fullerton, Oak Brook Marla Gabie, Evanston Greg Garbs, Streator Mark Halm, St. Charles Charles Johnson, Champaign Joseph Koronkowski, Champaign Thomas McSwiggin, Springfield Art Malm, Libertyville Helen T. May, Oak Brook Robert Miller, Edwardsville Bruce Murphy, Wood River James P. Quinn, Evergreen Park Tony Quintanilla, Schaumburg Norm Rose, Cicero Richard Schultz, Kankakee Alkesh Trivedi, Springfield Robert Whitworth, Edwardsville Lawrence Ziemba, Goreville</p>	<b>Watershed Management</b>	<p><b>Steve John, Decatur</b></p>
		<b>Website</b>	<p><b>Mary Johnson, Rockford</b> Mark Termini, Addison</p>
		<b>Young Professionals</b>	<p><b>Mark Halm, Aurora</b></p>

## 2006-2007 Committees

Audit	Lou Kollias, Chicago	Laboratory	Sandy Conrad, Chicago Antonia Finlayson Nancy Gorski, Woodridge Andy Groeper, Peoria Sharon Hawkins, Rochelle Randy Hummer, Oswego Terry Jenkins, Addison Mary Johnson, Rockford John Lamb, St. Charles Becky Rose, Westmont Norm Rose, Westmont Pat Schatz, Kankakee Kurt Stepping, Peoria
Awards	Patricia Schatz, Kankakee Robert Brummond, Lake County Terry Jenkins, Addison Tim Kluge, Springfield John Lamb, St. Charles Dennis Priewe, Rockford Larry Ziemba, Goreville	Local Arrangements	John Drake, Springfield
Biosolids	Thomas Granato, Stickney John Lamb, St. Charles Thomas Liston, Chicago Brian Perkovich, Chicago Ralph Pfister, Yorkville Eric Port, Chicago Sergio Serafino, Chicago Ed Staudacher, Chicago Mark Zachar, Chicago Jianpeng Zhou, Edwardsville	Marketing	Linda Smith-Vargo, Aurora Susan Laitas, Wheaton Susan Pautz, Aurora
Collection Facilities	Al Hollenbeck, Wheaton Gregory Brunst, Addison John Frauenhoffer, Champaign Mike Jankovic, Wheaton Laura McGovern, Chicago Daniel T. Peterson, Round Lake Doug Severson, Pewaukee, WI Mark Straughn, Naperville	Membership	Theodore Denning, Chicago Rajesh Ojha, Chicago Robert Brummond, Lake County Gregory Cargill, Palos Heights Lou Kollias, Chicago Byron Marks, Marion Brian Tucker, Glendale Heights
Conference	Kathy Cooper, Rochelle John Drake, Springfield Mary Johnson, Rockford John Lamb, St. Charles Linda Smith-Vargo, Aurora Amanda Withers, Springfield	Newsletter	Eliana Brown, Champaign Dennis Conner, Rockford Sandra Conrad, Chicago Charles Corley, Rockford Ted Denning, Chicago Mary Johnson, Rockford Tim Kluge, Springfield Lou Kollias, Chicago Richard Helm, Peoria Landon Niedringhaus, Springfield Dennis Priewe, Rockford Pat Schatz, Kankakee Amanda Withers, Springfield
Governmental Affairs	Jay Patel, Des Plaines Lou Kollias, Chicago Debra Ness, Oswego	Nominating	Larry Ziemba, Goreville Greg Cargill, Palos Heights Tim Kluge, Springfield Brian Perkovich, Chicago
Industrial Pretreatment	Kam Law, Chicago James Czarnik		

### FOX METRO WATER RECLAMATION DISTRICT SOLVES FILTRATION PROBLEMS WITH INNOVATIVE AQUADIAMOND® CLOTH MEDIA FILTER

Presented by Thomas Sichz, P.E., Regional Manager, Aqua-Aerobic Systems  
Session 5: Tuesday, March 6th at 3:30 pm

The existing traveling bridge sand filters at Fox Metro Water Reclamation District, located in Oswego, Illinois were costly to maintain and operate. In addition, heavy rainfall and melting snow often produced peak flows greater than 378,544 m<sup>3</sup>/d (100 mgd) which can upset the clarifiers and deposit more than 100 ppm of total suspended solids (TSS) in the filters, far beyond the filters' design capabilities. The result was limited hydraulic throughput and periodic temporary degradation of effluent quality.

To solve the problem, the plant retrofitted one of its nine existing 4.9 m x 34.1 m (16 ft x 112 ft) traveling bridge sand filters with an AquaDiamond cloth media filter in January, 2005. The diamond cloth media filter can process up to 90,850 m<sup>3</sup>/d (24.0 mgd), more than double the maximum hydraulic flow of the sand filter. In September 2005, two additional AquaDiamond filters were brought on-line. Together, the three retrofitted filters provide an average design flow capacity of 136,275 m<sup>3</sup>/d (36 mgd) and peak flow capacity of 272,551 m<sup>3</sup>/d (72 mgd), while maintaining the effluent objectives. Future installation of two additional AquaDiamond filters will provide 30% more hydraulic capacity than the original nine traveling bridge sand filters, while realizing a 45% decrease in footprint.

### IS YOUR SCADA SYSTEM EXPERIENCING A MID-LIFE CRISIS?

Presented by Eric Durdov, Sphere Manager, Westin Engineering, Inc.  
Session 5: Tuesday, March 6th at 4:00 pm

Over their 7 to 10 year lifespan, most SCADA systems are expanded, upgraded or integrated. In the best cases, such change provides utilities an opportunity to improve process automation, reduce overtime, or increase access. In other cases, systems evolve without a plan, jeopardizing performance and security.

Using examples of Northern California wastewater agencies, this presentation addresses how utilities have used a mid-term assessment to plan and improve their SCADA system implementations. Through the assessment, these utilities have:

- Optimized investments in existing SCADA hardware and software.
- Identified opportunities to improve performance and security considerations.
- Aligned existing SCADA systems with new business strategies and operational needs.
- Planned system upgrades over the next 3-5 years.
- Established technical priorities based on business needs.
- Established cost ranges for budgeting including expected savings and cost reductions.
- Proactively managed implementation of upgrades.
- Avoided down time and ensured continued operations

### EVALUATION OF ODOR CONTROL SYSTEMS AT THE NORTH SIDE WATER RECLAMATION PLANT

Presented by Mary F. Moscinski, Assistant Engineer of Treatment Plant Operations III, MWRDGC  
Session 5: Tuesday, March 6th at 4:30 pm

The Metropolitan Water Reclamation District of Greater Chicago's North Side Water Reclamation Plant has in recent years, received odor complaints mainly attributable to the collection system. Current odor control for the NSWRP collection system and WRP headworks consisted of dosing sodium hypochlorite to one of the three main interceptors feeding the NSWRP. In an effort to further minimize odors and determine the cost effectiveness of different odor control systems, operations personnel at NSWRP proposed testing different types of odor control technology over a three year period. This paper will present a summary of the odor control system at NSWRP, the advantages and disadvantages of the odor control chemicals that have been utilized, the findings pertaining to hydrogen sulfide generation and testing conducted during these tests, and the future plan for effective odor control at the NSWRP.

### PERMITTING WASTEWATER TREATMENT PLANT EXPANSIONS IN NE ILLINOIS IN THE 21ST CENTURY

Presented by James E. Huff, P.E., Vice President, Huff & Huff, Inc.  
Session 6: Tuesday, March 6th at 2:00 pm

Several regulatory changes in recent years impacted the process of wastewater treatment plant expansions significantly. These changes have created long delays in bringing new capacity on line. These changes include the TMDL program that identifies impaired waterways, the Illinois Department of Natural Resources Consultation process on Threatened and Endangered Species, emerging concerns over the discharge of endocrine disruptors, discharge in areas with mussel beds and the 2002 adoption of the Antidegradation Regulations by the Illinois Pollution Control Board. Each of these items can dramatically alter the selected remedy over what is recommended in the Facility Plan. The Clean Water Act contemplated that local citizens as well as statewide environmental groups could have input into wastewater expansions, and with the recent changes, these groups are demanding input into the degree of treatment that will be provided, based on the recent regulatory changes.

Alternative processes that will minimize delays and allow all of the stakeholders to be involved throughout the project will be described for wastewater treatment plant expansions and as well as new facilities. Involving stakeholders earlier in the degree of treatment, biological and chemical stream specific data collection, completing the antidegradation analysis based on stream-specific data, addressing any impaired waterway designations, and early consultation with the Illinois Department of Natural Resources, all co-currently with the Facility Plan preparation will be described.

**STUDY OF EFFLUENT DISINFECTION FOR URBAN RIVERS IN CHICAGO**

**Presented by Kam P. Law, Consoer Townsend Envirodyne Engineers, Inc. Session 6: Tuesday, March 6th at 2:30 pm**

Most of the reaches of the Calumet and Chicago River Systems in metropolitan Chicago, IL are classified as Secondary Contact waters by the state of Illinois. As such, these waters do not meet the swimmable goal of the Clean Water Act and effluents discharged to these river systems are not required to be disinfected. In 2003, the Illinois Environmental Protection Agency (IEPA) began a Use Attainability Analysis (UAA) of these waters for the purpose of either upgrading their use classification to meet the goal or to justify their continued classification. As part of this analysis, the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) was asked by the IEPA to conduct a study into appropriate technologies for effluent disinfection at the three largest MWRDGC Water Reclamation Plants (WRPs) and to estimate the probable cost of implementation. CTE Engineers, Inc. was commissioned by the MWRDGC to conduct the IEPA requested study of effluent disinfection.

Effluent disinfection alternatives were evaluated using a matrix containing both qualitative economic and non-economic criteria. It was concluded that both UV (high intensity-medium pressure) and ozone (oxygen generated) be carried forward for a detailed cost estimate. Effluent disinfection at the three largest MWRDGC's WRPs was estimated to cost more than \$1.0 billion in construction costs.

**COMPUTER SIMULATION DEVELOPMENT OF THE STICKNEY WATER RECLAMATION PLANT IMHOFF TANK PROCESS**

**Presented by Doris Bernstein, Research Scientist I, MWRDGC Session 6: Tuesday, March 6th at 3:30 pm**

The model development of Imhoff tanks with the Hydromantis' GPS-X software is reviewed. The development includes operational and analytical data evaluation and verification with mass balances. Special sampling approach and results are discussed. Calibration techniques and dynamic simulation will also be demonstrated.

**DESIGN OF A 10 MGD BIOLOGICAL AERATED FILTER FOR WASTEWATER TREATMENT AND WET WEATHER FLOWS AT EVANSVILLE, INDIANA**

**Presented by Terrence Boyer, P.E., Senior Project Manager, Clark Dietz, Inc. Session 6: Tuesday, March 6th at 4:00 pm**

The City of Evansville is planning on increasing the plant capacity at the City's Westside WWTP from 20.6 MGD to 30.6 MGD. A key goal of this project was not only to provide for additional wastewater treatment capacity, but to also maximize the amount of wet weather treatment at the treatment plant. A variety of newer technologies, such as membrane bioreactors, biological aerated filtration, and integrated fixed film activated sludge were evaluated for this expansion. The City selected biological aerated filtration technology for the plant expansion. The equipment was bid separately and pre-purchased prior to starting the design. The design has been completed and sent in for permitting. Construction is anticipated to start in the summer of 2007.

**FORWARD-THINKING WASTEWATER FACILITY PLANNING – COMBINING COLLECTION SYSTEM AND TREATMENT FACILITIES ASSESSMENTS**

**Presented by Benjamin Clapp, P.E. and Kathryn Kalscheur, P.E., Staff Engineers, Black & Veatch Session 6: Tuesday, March 6th at 4:30 pm**

The Rock River Water Reclamation District and Black & Veatch used a forward-thinking planning approach to develop a facilities plan to address needs for both the District's collection system and treatment facilities. Modeling software was used to analyze the existing collection system and plan for future, larger collection areas and population. Increased future peak flows and future phosphorus regulations required challenging planning efforts at the treatment plant. This presentation will discuss how the collection system was modeled and present recommendations that resulted from the planning efforts.

	Time	Minutes	Actual Minutes
<b>Session 6: Tuesday, March 6th 2:00-5:00</b>			
<i>Permitting Wastewater Treatment Plant Expansions in NE Illinois in the 21st Century</i>	2:00	30	
<i>Study of Effluent Disinfection for Urban Rivers in Chicago</i>	2:30	30	
<i>Computer Simulation Development of the Stickney Water Reclamation Plant Imhoff Tank Process</i>	3:30	30	
<i>Design of a 10 MGD Biological Aerated Filter for Wastewater Treatment and Wet Weather Flows at Evansville, Indiana</i>	4:00	30	
<i>Forward-Thinking Wastewater Facility Planning—Combining Collection System and Treatment Facilities Assessments</i>	4:30	30	
<b>Session 7: Tuesday, March 6th 2:00-3:30</b>			
<i>The Effect of River Bank Conditions on the Aquatic Ecosystem</i>	2:00	30	
<i>Implementing a Continuity of Operations Plan—Essential (COP-E) for Pandemic Influenza: A Pandemic-specific Business Planning Guide to Ensure Wastewater Operations Cope to Sustain Essential Operations</i>	2:30	30	
<i>Wastewater Sample Collection, Working with Contract Labs</i>	3:00	30	
<b>Session 8: Wednesday, March 7th 9:00-12:00</b>			
<i>Taking the Mystery Out of Troubleshooting an Enhanced Biological Phosphorus Removal System</i>	9:00	30	
<i>Preparing To Meet Future Phosphorus Limits</i>	9:30	30	
<i>Ammonia Nitrogen Limits and Small System Compliance</i>	10:00	30	
<i>BNR at the Broomfield WRF using AnoxKaldnes' IFAS Process</i>	11:00	30	
<i>Full-Scale Study on Biological N Removal and Chemical P Removal at the John Egan Water Reclamation Plant</i>	11:30	30	
<b>Session 9: Wednesday, March 7th 9:00-12:00</b>			
<i>Cost Management Through Electric Bill Awareness</i>	9:00	30	
<i>Consideration Involved in a Digester Cleaning Contract</i>	9:30	30	
<i>Streamlining Decision Support with Business Intelligence Systems</i>	10:00	30	
<i>A Better Understanding of Grit</i>	11:00	30	
<i>Innovations in Vortex Grit Technology for the Modern Headworks</i>	11:30	30	

Total

# Professional Development Hours (PDH) Tracking Form

March 5–7, 2007

Name: \_\_\_\_\_ SSN: \_\_\_\_\_

Session 1: Monday, March 5th 2:00-5:00	Time	Minutes	Actual Minutes
<i>Treatment and Disposal of High Strength Fruit and Vegetable Processing Wastewater</i>	2:00	30	
<i>Stormwater Management at a Cement Manufacturing Site</i>	2:30	30	
<i>Emergency Management</i>	3:30	30	
<i>Electrical Safety in the Workplace</i>	4:00	30	
<i>Utilities Helping Utilities-Illinois Public Works Mutual Aid System</i>	4:30	30	

Session 2: Monday, March 5th 2:00-5:00	Time	Minutes	Actual Minutes
<i>Dissecting the Wastewater Flows: A Primer</i>	2:00	30	
<i>Addressing Combined Sewer Overflows and Basement Flooding at the Same Time</i>	2:30	30	
<i>Evaluation of the Technologies and Costs of End-of-Pipe Combined Sewer Overflow Treatment for Chicago Area Waterways</i>	3:30	30	
<i>A Tale of More Than Two Agencies: Flagg Creek Water Reclamation District's Sewer Capacity Assessment Program (SCAP)</i>	4:00	30	
<i>Determining First Flush Volume for Combined Sewer Overflow Control for the City of Rock Island, Illinois</i>	4:30	30	

Session 3: Tuesday, March 6th 8:30-12:00	Time	Minutes	Actual Minutes
<i>Pending Changes in State Regulations Governing the Land Application of Sewage Sludge</i>	8:30	30	
<i>Nutrient Management—An USDA/NRCS Perspective</i>	9:00	30	
<i>Sustaining Biosolids Recycling Under Phosphorus-Based Nutrient Management</i>	9:30	30	
<i>The Agonomic and Environmental Availability of Biosolids-P</i>	10:30	30	
<i>Plant Availability of Phosphorus in Biosolids-amended Soil</i>	11:00	30	
<i>Potential for Phosphorus Runoff and its Control in Biosolids-amended Soil</i>	11:30	30	

Session 4: Tuesday, March 6th 8:30-11:30	Time	Minutes	Actual Minutes
<i>New Initiatives in Illinois Water Quality Standard Regulations</i>	8:30	30	
<i>Water Methods Update Rule and Other Developments</i>	9:00	30	
<i>Changes to Sampling, Holding Time and Preservation Requirements in 40 CFR Part 136</i>	9:30	30	
<i>Out on a LIMS with Trinity River Authority</i>	10:30	30	
<i>Sewage Treatment by Metropolitan Water Reclamation District of Chicago WRP's Reduces the Numbers of Antibiotic Resistant Fecal Coliform Bacteria in Wastewater</i>	11:00	30	

Session 5: Tuesday, March 6th 2:00-5:00	Time	Minutes	Actual Minutes
<i>The Cost Effective Use of Airlifts on Primary Sludge at Metropolitan Water Reclamation District of Greater Chicago</i>	2:00	30	
<i>Out of Control? Activated Sludge Process Control and Troubleshooting Review</i>	2:30	30	
<i>Fox Metro Water Reclamation District Solves Filtration Problems with Innovative AquaDiamond® Cloth Media Filter</i>	3:30	30	
<i>Is Your SCADA System Experiencing a Mid-Life Crisis?</i>	4:00	30	
<i>Evaluation of Odor Control Systems at the North Side Water Reclamation Plant</i>	4:30	30	

## THE EFFECT OF RIVER BANK CONDITIONS ON THE AQUATIC ECOSYSTEM

**Presented by Ms. Eva Feldman, Lincoln Park High School**  
**Session 7: Tuesday, March 6th at 2:00 pm**

This project was designed to test if river bank conditions have an effect on the water quality or macroinvertebrate populations in the river. Three test sites on the North Branch of the Chicago River were used: natural bank conditions at La Bagh Woods, an aged lining of deteriorating concrete at Pulaski and Foster, and a recent lining of concrete at the Bohemian National Cemetery. The hypothesis was that natural conditions would yield the best water quality and the most pollution-sensitive macroinvertebrate population.

At each site, a bank survey was done and water quality was tested. Nine different water quality tests (pH, temperature change, dissolved oxygen, biochemical oxygen demand, nitrates, phosphates, turbidity, total solids, and fecal coliform) were performed to calculate Water Quality Index values. Two Multi-Plate Samplers were placed in the river at each site to collect macroinvertebrates. They were retrieved after one month and the macroinvertebrates living on them were identified.

The results show that there was not a statistically significant difference between the three sites in either water quality or macroinvertebrate populations.

## IMPLEMENTING A CONTINUITY OF OPERATIONS PLAN- ESSENTIAL (COP-E) FOR PANDEMIC INFLUENZA: A PANDEMIC-SPECIFIC BUSINESS PLANNING GUIDE TO ENSURE WASTEWATER OPERATIONS COPE TO SUSTAIN ESSENTIAL OPERATIONS

**Presented by Kathie McCracken, R.N., M.H.A., FACHE, Pandemic Influenza Program Manager and Healthcare Sector Infrastructure Analyst and John Laws, Water Sector Infrastructure Analyst, Infrastructure Partnerships Division, Department of Homeland Security**  
**Session 7: Tuesday, March 6th at 2:30 pm**

Public health experts warn pandemic influenza poses a significant risk to the United States and the world—only its timing, severity, and exact strain remain uncertain. International, Federal, State, local, and tribal government agencies and critical infrastructure businesses are diligently planning for a massive public health and business continuity response to this looming threat. The disease impacts could be severe and could affect our nation's economic and social security. It is important that every wastewater management facility and critical infrastructure business take action now to prepare.

This presentation will review the international and national pandemic planning context, will introduce a federal guide fielded specifically for critical businesses titled the Pandemic Influenza Preparedness, Response, and Recovery Guide for Critical Infrastructure and Key Resources, and will illustrate the practical steps described in the Guide to implement an enhanced Continuity of Operations-Essential (COP-E) planning process for pandemic preparedness.

## WASTEWATER SAMPLE COLLECTION, WORKING WITH CONTRACT LABS

**Presented by Kurt Stepping, Director of Client Services, PDC Laboratories, Inc.**  
**Session 7: Tuesday, March 6th at 3:00 pm**

When wastewater plant operators are faced with collection of samples for compliance purposes there are many factors that must be considered. It is not enough to simply grab a sample in any bottle. Regulatory requirements have very specific requirements that must be followed. This presentation will go over various wastewater sample collection issues. Particular emphasis will be given to those dealing with a subcontract laboratory. Specific topics to be presented will include, sample points, sample types, chain of custody, sample bottles, preservations, holding times, and shipping/delivery requirements.

## TAKING THE MYSTERY OUT OF TROUBLESHOOTING AN ENHANCED BIOLOGICAL PHOSPHORUS REMOVAL SYSTEM

**Presented by Troy W. Stinson, P.E., Project Manager/Engineer, Strand Associates, Inc.**  
**Session 8: Wednesday, March 7th at 9:00 am**

A limited amount of research and literature is available on the operation of EBPR plants. Most publications have focused on the basics and principals of the biological mechanisms involved in the EBPR process and others have only presented design criteria. This presentation is an extension of the WEF/ASCE/EWRI Manual of Practice No. 30 Biological Nutrient Removal Operation in Wastewater Treatment Plants chapter on optimization and troubleshooting techniques.

It appears that only a limited number of plants have control strategies to troubleshoot and optimize EBPR. This presentation provides techniques on how to troubleshoot the EBPR process and anticipate potential problems, with the goal to avoid EBPR upsets. Common causes for EBPR process upsets are presented with descriptions of diagnostic tests to be performed. The troubleshooting methods build on operational tactics, data collection and process monitoring that is likely already in place.

## PREPARING TO MEET FUTURE PHOSPHORUS LIMITS

**Presented by Mark Steichen, Senior Process Engineer, Black & Veatch**  
**Session 8: Wednesday, March 7th at 9:30 am**

In the summer of 2004, IEPA took the first step to impose phosphorus limits on point source dischargers in the state of Illinois by proposing an "interim standard" of 1.0 mg/L for all new or expanding wastewater treatment facilities that have an average capacity greater than 1.0 mgd. It is anticipated that the interim phosphorus standard, or a more stringent TMDL based standard, will be imposed on point source discharges within one to two permit cycles (3 to 6 years). Consequently, utilities must begin preparation for upgrading their facilities to meet a future phosphorus discharge limit. The understanding of biological phosphorus removal has advanced to the point where performance and reliability can be accurately predicted based on site specific issues. Wastewater characteristics greatly influence the economic viability as well as the process reliability of biological phosphorus removal. This paper will discuss the design and operational issues that must be addressed for optimizing biological phosphorus removal, and to properly evaluate it against chemical phosphorus removal. A number of case studies will be discussed to compare the economics and pros and cons of chemical and biological phosphorus removal given site specific issues. The paper will also outline a recommended sampling schedule to collect the necessary data to evaluate and design both chemical and biological phosphorus removal improvements.

## AMMONIA NITROGEN LIMITS AND SMALL SYSTEM COMPLIANCE

**Presented by Gary Davis, Principal, Farnsworth Group, Inc.**  
**Session 8: Wednesday, March 7th at 10:00 am**

The Village of Plymouth constructed a new lagoon system that complies with the ammonia nitrogen limits (Plymouth monthly average requirement ranges from 1.0 to 2.8 mg.l) being required for new lagoon construction in Illinois. The paper discusses alternatives evaluated during the design phase and a description of the selected alternative. Component sizing is presented in relation to current IEPA design criteria for lagoons. Construction costs and operational costs are presented as well as the operational data regarding removal efficiencies.

## BNR AT THE BROOMFIELD WRF USING ANOXKALDNES' IFAS PROCESS

**Presented by Laura Marcolini, Eastern Regional Manager, AnoxKaldnes, Inc.**

**Session 8: Wednesday, March 7th at 11:00 am**

The City & County of Broomfield wastewater treatment plant secondary treatment processes were upgraded to a new biological nutrient removal process described as Integrated Fixed Film Activated Sludge (IFAS) in 2003 using AnoxKaldnes' moving bed biofilm reactor in conjunction with activated sludge. This allows the existing aerobic reactors to maintain nitrification during year round operation while still operating near conventional activated sludge solids retention times (SRT) one would find in just carbonaceous treatment plants. The upgraded IFAS system includes anaerobic and anoxic reactors to help meet new effluent Total Nitrogen and Total Phosphorus limits. The performance of the entire system since July 2003 averaged effluent concentrations of 2.4 mg/L for BOD, 4.2 mg/L for TSS, 0.3 mg/L for NH<sub>3</sub>-N, 8.3 mg/L for NO<sub>x</sub>-N and 1.25 mg/L for TP while the aerobic suspended MLSS SRT averaged 4 days, the MLSS concentration averaged 1,718 mg/L and the SVI averaged 120 mL/L. The plant has operated with one set point for both the RAS and WAS rates for months at a time while meeting these very consistent effluent results.

## FULL-SCALE STUDY ON BIOLOGICAL N REMOVAL AND CHEMICAL P REMOVAL AT THE JOHN EGAN WATER RECLAMATION PLANT

**Presenter: Heng Zhang, Research Scientist, MWRDGC**

**Session 8: Wednesday, March 7th at 11:30 am**

A full-scale study on step-feed BNR process for N removal and chemical precipitation with FeCl<sub>3</sub> for P removal was conducted at the Egan WRP, a 30-MGD advanced wastewater treatment plant, in 2005 to examine the applicability of both N and P removal in a conventional nitrifying activated sludge process without major capital modifications. A three-pass aeration tank, which accounts for one quart of the total treatment capacity at the plant, was employed in the full-scale test. The strategy for routine plant operation was adopted for both test and control tanks during the full-scale study. The test was conducted once in winter/spring and once in summer/fall to examine the effects of temperature and differences in wastewater characteristics, and in each period, the test was carried out in four phases with the number of anoxic zones varying from one to three and with or without FeCl<sub>3</sub> addition to the effluent end of the aeration tank for chemical P removal in the secondary clarifiers.

The test results showed that operating the tank in a step feed mode increased TN removal from about 33% to up to 69%. TN removal efficiency increased as number of step-feed locations and respective anoxic zones increased. TP removal to less than 0.5 mg/L in the final effluent was achieved by adding 35 to 44 mg/L of FeCl<sub>3</sub> to the mixed liquor at the effluent end of the aeration tank. Temperature in the range of 53 - 74 °F had no apparent effect on the denitrification and chemical P removal using FeCl<sub>3</sub>.

## COST MANAGEMENT THROUGH ELECTRIC BILL AWARENESS

**Presented by Patrick E. Clifford, Associate, CTE Engineers**

**Session 9: Wednesday, March 7th at 9:00 am**

Electricity is typically the most costly item, outside of labor, in the operating budget for a wastewater treatment plant. However, many wastewater plant managers have found they can lower their electric bills without compromising service. It is very possible to lower plant electricity costs by revising operating schedules or methods, replacing inefficient equipment, or selecting a different rate schedule. The ability to select a different rate schedule typically is dependant upon either an electric utility educating the customer on their options (which can be a rare occurrence) or a customer educating themselves on how the electric utility computes the bill and the rate structure. Because a competitive electric utility rate agreement can mean significant savings annually in energy costs it is important for treatment plants to learn more about the terms and conditions of their bill, initiate rate discussions with the electric utility, and actively look for more productive rate agreements. This paper will focus on some of the basic billing concepts and common rate schedules as well as industry abbreviations and coding terms, such as energy, demand, kWh, kW, power factor, reactive power, real power, apparent power, kVAR, etc., that are used by electric utilities.

## CONSIDERATION INVOLVED IN A DIGESTER CLEANING CONTRACT

**Presented by Manickam Annamalai,**

**Principal Civil Engineer, MWRDGC**

**Session 9: Wednesday, March 7th at 9:30 am**

The MWRDGC awarded a contract to clean anaerobic digesters at the Stickney Water Reclamation Plant and Calumet Water Reclamation Plant (WRP). This Paper discusses the factors to be considered for the preparation of contract documents for cleaning of anaerobic digesters. Periodic cleaning of anaerobic digesters is necessary after they have been in operation for some years to remove the deposit of inorganic matter and sludge contents from the digesters. The purpose of the cleaning of anaerobic digesters is to increase the actual volume of the digesters by the removal of the sediments, for proper mixing, and efficient operation. In order to achieve this goal, several important factors were considered such as safety precaution, purging of digester tank with inert gases, disposal of sludge contents, etc. The results of the cleaning contract indicate that factors considered during the design were appropriate. All of the factors considered worked very well during the execution of the contract.

## STREAMLINING DECISION SUPPORT WITH BUSINESS INTELLIGENCE SYSTEMS

**Presented by Steve Arnett, Senior Consultant, Westin Engineering, Inc.**

**Session 9: Wednesday, March 7th at 10:00 am**

The ability for public utility managers to make decisions that support the citizens they serve more effectively helps support cost-effective management of utility operations and resources. Since its inception, business intelligence (BI) has promised to empower today's knowledge workers by giving them direct access to information they can use to craft better decisions, make the most of scarce resources, create more effective plans and respond more quickly to problems and opportunities. This paper addresses how the opportunity to bring together public utility's resources, i.e., management, engineering and planning staff in the process of refining the alternatives and making the "right" decisions for business intelligence plays a significant role in streamlining ("providing direct access to information") this process.

## A BETTER UNDERSTANDING OF GRIT

**Presented by George E. Wilson, PhD, PE, EUTEK® Systems, Inc.**

**Session 9: Wednesday, March 7th at 11:00 am**

Wastewater treatment plants are significantly impacted by grit, even with grit removal systems in place to remove it. The majority of installed grit systems fail to capture the sizes and amounts of grit they were designed to capture. In addition to the abrasive effects, grit accumulates in processes throughout a plant, reducing processing capacity over time. Since it happens gradually and continuously, it often goes unnoticed until a process is completely overwhelmed and needs to be shut down to manually remove the deposited grit. Grit system failure happens primarily due to a faulty assumption that municipal grit behaves like clean sand particles in clean water. The failure of many traditional grit removal systems has led to the misconception that grit removal systems cannot work, and that the only option is to deal with grit. Grit systems can work as intended when designed with an accurate understanding of how grit behaves, and sizing them based on the way grit actually behaves in wastewater.

## INNOVATIONS IN VORTEX GRIT TECHNOLOGY FOR THE MODERN HEADWORKS

**Presented by Simon Randle, Regional Sales Manager, EIMCO Water Technologies**

**Session 9: Wednesday, March 7th at 11:30 am**

Induced vortex grit systems have been installed world wide for 50 years. This paper will cover the basic principles of the design but will focus on innovations instigated by the requirements of modern preliminary treatment and new process technologies. The relationship between fine screens and the vortex grit removal system shall be discussed in reference to selecting the right position in the flow sheet to enhance performance, reliability and longevity of parts. Grit removal is being recognized as an essential element to protect all MBR systems that are becoming evermore popular. The paper will cover this and illustrate that high performing grit chambers will continue to be essential as new treatment processes are developed. The vortex grit chamber is one element of a three stage process that includes grit pumping and grit dewatering. A grit system is only successful if these separate elements are fully integrated. The presentation will stress that it is crucial to think "Grit System" and encourage and illustrate good process design.