Residuals and Biosolids Conference
2020

Technical Program
(Updated January 22, 2019)

March 31 – April 3
Minneapolis Convention Center
Minneapolis, MN

This conference is organized by the Water Environment Federation in cooperation with the Central States Water Environment Association and the Water Research Foundation (WRF).
Pre-Conference Workshops
Additional fees apply

Workshop A: Dewatering Optimization Workshop - Practical Ways to Improve Performance
Tuesday, March 31, 2020
8:30 AM – 5:00 PM

The Dewatering Optimization – Practical Ways to Improve Performance workshop will focus on practical solutions to increase dewatering performance including drier cake solids, better solids capture, reduced polymer consumption, and reduced O&M costs for dewatering processes. The information from the workshop will provide municipal attendees the knowledge and resources to better perform their jobs with lower O&M costs, consultants to provide more informative and better dewatering equipment advice and manufacturers to provide better and more optimum machine performance at lower O&M costs.

David Oerke, Jacobs; Matthew Higgins, Bucknell University; Adam Parmenter, HDR; Yong Kim, USGI Chemical Feed; Mike Gates, Chris Maher, Clean Water Services; Ken Tagney, Eastern Municipal Water District; Rashi Gupta, Carollo; George Tichenor, SNF Holding Co.

Workshop B: Seeking the Skinny on Sludge: MOP-8 Stabilization Fundamentals
Tuesday, March 31, 2020
8:30 AM – 5:00 PM

This workshop features authors of the MOP-8 chapter on stabilization and will provide a base of knowledge around fundamentals of stabilization processes (such as design, operation, and construction) so that attendees can incorporate principals learned into their mission in the workplace.

Topics covered in the workshop:

• Comparison of stabilization methods
• Process objectives
• Process fundamentals such as microbiology
• Design fundamentals such as common design parameters and sizing criteria
• O&M considerations such as equipment and instrumentation and controls
• Construction considerations

Jeff Coyne, Hazen and Sawyer; Christopher Muller, Brown and Caldwell; Matthew Williams, Westech, Inc.; Stephanie Spalding, HDR; Paul Bizier, Barge Solutions; Todd Williams, Jacobs; Jay Surti, Hazen and Sawyer
Pre-Conference Workshops
Additional fees apply

Workshop C: Fundamentals of Digestion using Process Simulators
Tuesday, March 31, 2019
8:30 AM – 5:00 PM

As the current utility workforce ages, new training techniques are needed for the next generation of O&M professionals. This workshop will present hands-on operator training incorporating the fundamentals of anaerobic and aerobic digester process operation and troubleshooting augmented with participants using process simulators to demonstrate responses to system loading and operational changes. Each lecture module in the program will be accompanied by participants being led through a series of simulations that will provide examples of system performance including troubleshooting. The simulator platform used does not require any prior experience with modeling software.

Paul Dombrowski, Woodard & Curran; Jeanette Brown, Manhattan College

Workshop D: Communicating about Emerging Contaminants in Biosolids
Tuesday, March 31, 2020
8:30 AM – 12:00 PM

This workshop will provide the practical tactics needed to engage on the urgent communications needs around emerging contaminants, with a focus on PFAS. Participants will learn about the fundamentals and techniques of public health risk communications and crisis communications, and how to apply them in the water sector. The workshop will provide a window into the responses to recent biosolids concerns around the country, such as in Maine, and share valuable lessons learned. Participants will be presented with a toolkit of resources that can used to conduct communications on biosolids and emerging contaminants, including for the media, digital, advocacy, and public engagement. This workshop will be led by national experts in risk, crisis, and biosolids communications.

Travis Loop, Water Environment Federation

Workshop E: Greenhouse Gas Accounting for Wastewater Utilities
Tuesday, March 31, 2020
1:30 PM – 5:00 PM

Participants in the GHG Accounting workshop will learn how to calculate GHG emissions and offsets for water resource recovery facilities (WRRFs), and gain insight into the best ways to optimize their WRRFs to reduce their carbon footprint. The workshop will be split into two main sections: 1) participants will learn about the latest policies and research relevant to GHG accounting, and 2) participants will engage on hands-on GHG accounting exercises.

Christine Polo, Carollo; Bill Brower, WeCare Denali; Rebecca Ryals, University of California, Merced; Fabrizio Sabba; John Willis, Brown and Caldwell; Sarah Deslauriers, Carollo; Maile Lono-Batura, Northwest Biosolids
Facility Tours
Additional fees apply

Tour A: Ensuring Sustainable and Reliable Solids Management for the Future at MCES
April 2, 2020
1:00 PM – 4:30 PM

MCES’s Metropolitan Wastewater Treatment Plant in Saint Paul is the largest wastewater treatment facility in Minnesota, receiving ~170 mgd (26,800 m3/hr) of influent flow and processing ~240 dtpd (9,070 kg/hr) of biosolids in 2018. The plant has been incinerating wastewater solids for 80 years and has one of the most advanced and highest-performing air pollution control systems in the country. Now, MCES is planning for the future, with plans to spend $180 million to add a fourth incinerator and renew its existing solids treatment facilities to ensure operational reliability and continued minimal impact on the surrounding community and the environment. The presentation and tour will discuss our customized project communications tools (https://metrocouncil.org/metrosolids) and will highlight MCES’ objectives including: Maintaining Exceptional Air Quality, Recovering Energy, Ensuring Cost Effectiveness, Keeping Greenhouse Gas Emissions Low, and Ensuring Overall Low Impact.

Tour B: What’s Beer Got to Do With It - St. Cloud’s Nutrient, Energy & Water Recovery Facility
April 3, 2020
12:00 PM – 4:00 PM

Come see what St. Cloud Minnesota is doing to recover nutrients, energy and water. Stations will be set up around the facility sharing information related to solar impacts, energy management, phosphorus recovery, biosolids reuse, energy recovery, high strength waste program, energy efficiency, innovative financing and water quality improvements.
Session 01: The Science of PFAS  
Wednesday, April 1, 1:30 PM - 4:45 PM

1:30 PM  
**An Investigation of PFAS: Public Health and the Environment**  
Joshua Burns, Eamon Twohig, Vermont Department of Environmental Conservation

2:00 PM  
**A Statewide Per- and Polyfluoroalkyl (PFAS) Assessment of Wastewater Treatment Plants in Michigan**  
Dorin Bogdan, Beverley Stinson, AECOM

2:30 PM  
**PFAS Wastewater Residuals Fate and Transport Model Evaluation: Strengths and Weaknesses of Available Models to Characterize the Fate and Transport of PFAS from Land-Applied Wastewater Residuals**  
Chris Shepherd, Arcadis

3:00 PM  
**Networking Break**

3:45 PM  
**Thermal Treatment of PFAS Contaminated Sludge: Experimentation, Design Consideration and Challenges**  
Sudhakar Viswanathan, Veolia; Rich DiMassimo, Kruger Inc; Hong Zhao, Veolia Water/Kruger; Tom Perry, VEOLIA; Takahiro Yamada, Moshan Kahandawala, Alexander Morgan, University of Dayton Research Institute

4:15 PM  
**Smoldering Combustion: An Alternative for Management of Biosolids Containing PFAS**  
Laura Kinsman, Gavin Grant, Cody Murray, Savron; Tarek Rashwan, Taryn Fournie, Jason Gerhard, University of Western Ontario

4:45 PM  
**Session Adjourns for Networking Reception**

Alternate:  
**Communicating PFAS in Biosolids**  
Michael McGill, WaterPIO
Session 02: Biosolids Management Success Stories
Wednesday, April 1, 1:30 PM - 4:45 PM

1:30 PM  Planning for the Future While Managing a Successful Biosolids Program
Engin Guven, Black & Veatch; Mike Engelmann, Pinellas County Utilities; Greg Knight; Megan Ross, Pinellas County Utilities; Michael Tache, Black & Veatch

2:00 PM  A Year-Three Update on DC Water’s Bloom Sales Program Methods and Results
Saul Kinter, James Fotouhi, Chris Peot, DC Water

2:30 PM  How to do Land Application Right; A Case Study Illustrating the Elements of Omaha’s Outstanding Land Application Program
Trudy Johnston, Lisa Challenger, Material Matters, Inc.

3:00 PM  Networking Break

3:45 PM  Keeping it Simple (at least trying to) – Salt Lake City’s Biosolids Plan
Charles Goss, AECOM; Michelle Barry; Jamey West, City of Orem; Paul Barsalou, James Marx, AECOM

4:15 PM  Improving System-Wide Flexibility through Holistic Biosolids Planning for the Metropolitan District of Greater Cincinnati
Natalie Sierra, Brown and Caldwell; Matthew Spidare, Metropolitan Sewer District of Greater Cincinnati; Tracy Chouinard, John Ross, John Willis, Timothy Koch, Brown and Caldwell

4:45 PM  Session Adjourns for Networking Reception

Alternate: Why Should We Accept This? Are Their Feelings Hurt? The Cost to Dispose of Sludge Goes Up Dramatically for the City of Atlanta leading to the Implementation of a Sludge Management Plan
Quinton Fletcher, City of Atlanta
Session 03: Intensification and Advanced Topics in Anaerobic Digestion  
Wednesday, April 1, 1:30 PM - 4:45 PM

1:30 PM Evolution of TPAD Systems in the US  
Perry Schafer, Thomas Chapman, Steven Krugel, John Willis, Christopher Muller, Lloyd Slezak, Brown and Caldwell

2:00 PM Anaerobic Digestion Process Intensification Using Temperature-Phased Anaerobic Digestion and Thermal Hydrolysis  
Dian Zhang, Virginia Tech; Mary Strawn, Arlington County; Zhi-Wu Wang, Virginia Tech; Thomas Broderick, Loudoun Water; Hari Santha, Alexandria Renew Enterprise

2:30 PM Finding the “Right-Fit” Digestion Solution for WSSC’s THP Project Balancing Design Requirements  
Amy Hanna, Hazen and Sawyer; Kevin Selock, WSSC; Matthew Vanhorne, Hazen and Sawyer; Stanley Dabek, WSSC; C. Michael Bullard, Hazen & Sawyer; Joseph Uglevich, Stantec

3:00 PM Networking Break

3:45 PM Data Consolidation and Predictive Modeling Approaches for Multi-Feed Anaerobic Digestion  
Alex Rosenthal, Inctrl Solutions Inc.; Oliver Schraa, Hydromantis; Michael Ogurek; Mirzaman Zamanzadeh; Leiv Rieger, Ivan Miletic, Inctrl Solutions Inc.

4:15 PM State Estimation in Anaerobic Digesters - Identification of Patterns in Anaerobic Digestion  
Christian Hubert, Bettina Steiniger, Christian Schaum, Universität der Bundeswehr München

4:45 PM Session Adjourns for Networking Reception

Alternate: The History and Development of Thermal Hydrolysis and Advanced Anaerobic Digestion in the United Kingdom  
John Ord, John Maclaren, Stantec

Alternate: Shared US and UK Experiences on Optimizing Anaerobic Digestion Following Thermal Hydrolysis. An Additional Factor to be Considered  
Keith Panter, Cambi; Matthew Higgins, Bucknell University; William Barber, Cambi; Paul Fountain, Achame Shana, Thames Water
Session 04: Thermal Processes  
Wednesday, April 1, 1:30 PM - 3:00 PM

1:30 PM  
Pilot-Scale Demonstration of Intensified Anaerobic Digestion through Thermal Hydrolysis Pre-Treatment at the Moccasin Bend WWTP  
Nicole Stephens, Stantec; Sudhakar Viswanathan, Veolia; Rich DiMassimo, Kruger Inc; Harold Schmidt; Gabriel Perez, Jeffrey Rose, City of Chattanooga

2:00 PM  
Effect of Thermal Hydrolysis Pretreatment on Recalcitrant Dissolved Organic Nitrogen Contents Quantified after Anaerobic and Aerobic Treatment  
Dian Zhang, Zhaohui An, Virginia Tech; Mary Strawn, Arlington County; Zhi-Wu Wang, Virginia Tech

2:30 PM  
Pyrolysis of Biosolids: Contaminant Removal but Generation of Toxic Products?  
Patrick McNamara, Marquette University; Zhongzhe Liu, California State University - Bakersfield; Seyedehfatemeh Seyedi, Daniel Zitomer, Marquette University

3:00 PM  
Session Adjourns for Networking Break

Alternate:  
One year On: Thermal Hydrolysis with Phosphorus Recovery at Kenneth W Hotz Wastewater Treatment Plant  
Dawn Taylor, Medina County Sanitary Engineers; Bill Barber, Benn Astbury, CAMBI Inc; Paul Christy, RDP Technologies
Session 05: Recuperative Thickening
Wednesday, April 1, 3:45 PM - 4:45 PM

3:45 PM  Integrated Solids Management with Recuperative Thickening at Al Warsan STP in Dubai, UAE
          Ersin Kasirga, GHD; Ahamed Ifthikar, Parsons

4:15 PM  Recuperative Thickening Opportunities to Increase Capacity and Revenue; A Series of Case Studies
          Christopher Muller, Brown and Caldwell; Robert Wimmer, Energy Systems Group; Seppi Hennemann, Brown and Caldwell; Brian Bokkin, City of Santa Rosa

4:45 PM  Session Adjourns for Networking Reception

Alternate: Co-Thickening or Recuperative Thickening: Which Process is the Better Approach to Increase Digester Capacity for Sunnyvale, CA
          Steve Hogg, City of Sunnyvale; David Oerke, Kathy Rosinski, Ryan Campbell, Cory Lancaster, Jacobs Engineering
Session 06: Optimizing Biosolids Processes
Thursday, April 2, 8:30 AM - 11:45 AM

8:30 AM  Going Vertical: Simplifying Dewatering by Minimizing Cake Conveyance
          Adam Parmenter, HDR, Inc; Kent Brugler, City Of Westminster - Public Works;
          Teigan Gulliver, HDR, Inc

9:00 AM  Application of Sludge Rheology in Solids Systems Design, Planning, and
          Operation
          Tracy Chouinard, Brown and Caldwell; Shubhashini Oza; Donnie Stallman;
          Christopher Muller, Steven Krugel, Brown and Caldwell

9:30 AM  Apollo Root Cause Analysis for Extending Belt Filter Press Belt Life
          Scott Hardy, C. Michael Bullard, Hazen & Sawyer; Scott Taylor, David Brewster,
          Matthew Jalbert, Trinity River Authority

10:00 AM Networking Break

10:45 AM Online Instruments for Dewatering Centrifuge Optimization
          Adrienne Menniti, Michael Idehara, Mike Gates, Clean Water Services

11:15 AM NEORSD Southerly WWTC Biosolids Combustion Optimization
          Lloyd Winchell, Brown and Caldwell; Douglas Reichlin; Kathryn Crestani,

11:45 AM Session Adjourns for Networking Luncheon in Exhibit Hall

Alternate: Challenges of Starting Up a Biosolids to Energy Temperature-Phased
           Anaerobic Digestion System
           Anand Mody, Michael Beattie, Brown and Caldwell; Lisa Glover, City of St.
           Petersburg
Session 07: Energy Production - Making it Work - Economics, Regulations, Equipment, Gas Quality
Thursday, April 2, 8:30 AM - 11:45 AM

8:30 AM  Making Cogeneration Economics Work in the Today's US Electric Market
          Eric Auerbach, Arcadis; Todd Krenelka, City of Columbus Department of Public Utilities

9:00 AM   SCR We There, Yet? Making Engine Projects Work Within An Increasingly Strict Regulatory Environment
          William Pevec, Kenneth Klittich, Brown and Caldwell

9:30 AM   Next Generation Resource Recovery Update: Startup and Construction of the Co-Digestion to Renewable Natural Gas (RNG) Pipeline Injection Project at the Des Moines WRF
          Dustin Craig, Laurel Schaich, CDM Smith; Patrick Brown, Melissa Schlickbernd, Des Moines Wastewater Reclamation Authority; Larry Hare, City Of Des Moines

10:00 AM  Networking Break

10:45 AM  Road Trip II: Start (Selecting) Your Engines!
          Daniel Hull, John Willis, Brown And Caldwell; Robert Taylor, WSSC - Production Team; Jeremy Holland, HDR Engineering Inc

11:15 AM  Process Understanding of Full-scale Micro-aeration to Improve Biogas Quality and Anaerobic Digestion
          Adrian Romero, Jacobs; Josef Cesca, Jacobs; Derek Van Rys; Bruce Johnson, Jacobs; Bart Kraakman, CH2M

11:45 AM  Session Adjourns for Networking Luncheon in Exhibit Hall

Alternate: Experiences and Lessons Learnt from Co-Digestion with Thermal Hydrolysis
          William Barber, Paul Christy, Cambi Inc

Alternate: Coney Island Digester Gas System Hydraulics and Mass Flux Evaluation
          Joshua Registe, Kenneth Smith, CDM Smith
Session 08: Codigestion of Food Waste and Sludge
Thursday, April 2, 8:30 AM - 11:45 AM

8:30 AM  City of Sunnyvale Holistic Approach to Future Food Waste Handling and Codigestion
Irina Lukicheva, Jacobs Engineering; Stephen Hogg, City of Sunnyvale; Cory Lancaster, David Parry, Jacobs Engineering

9:00 AM  Co-Digestion of Sewage Sludge and Food Waste with Previous Waste Treatment
Agne Cunha, Magali Cammarota, Isaac Volschan, UFRJ

9:30 AM  Assessing the Impact of Food Waste Addition on the Liquids Treatment at the City of Los Angeles' Hyperion Water Reclamation Plant
Zakir Hirani, Kyleen Marcella, Connie Adera, Don Bassett, Sarah Munger, Stantec; Bryan Johnson, Timeyin Dafeta, City of Los Angeles

10:00 AM  Networking Break

Robert Sharp, Manhattan College; James Ecker, New England Organics; Jennifer McConnell, Jane Gajwani, NYC DEP; Jeffrey Liebowitz

11:15 AM  Coming Full Circle – Diverted MSW Organics to RNG Fuel for Refuse Trucks in Mesa, AZ
Shayla Allen, Arcadis; Niel Curley, Tom Sheber, City of Mesa, Arizona; Eric Auerbach, Arcadis

11:45 AM  Session Adjourns for Networking Luncheon in Exhibit Hall

Alternate:  Food Waste Co-Digestion at Water Resource Recovery Facilities: Results from the Goleta Sanitary District Pilot Project
Kim Domptail, GHD; James Dunbar, Alex West, Lystek International Inc

Alternate:  Co-Digestion Screening Using an In-line Sludge Screen
Ed Fritz, Chip Pless, Huber Technology, Inc
Session 09: Dewatering - Developing a Deeper Understanding
Thursday, April 2, 8:30 AM - 11:45 AM

8:30 AM  Effect of THP and Anaerobic Digestion on the Dewatering Behavior of WAS and Primary Biosolids
Jeffrey Nicholson, Virginia Tech/ Hampton Roads Sanitation District (HRSD); Steven Beightol, Matthew Higgins, Bucknell University; Christopher Wilson; Charles Bott, HRSD

9:00 AM  The Effect of Divalent Cation Complexation on Anaerobically Digested EBPR Sludge Dewatering Performance
Carl Mangrum, Mangrum Consulting & Design; David Jenkins, David Jenkins & Associates, Inc.

9:30 AM  Enzymatic Conditioning of Anaerobically Digested Municipal Wastewater Sludge for Improved Mechanical Dewatering
Christopher Flannery, Joanna Wawrzynczyk, Novozymes; Thomas Guildal, BIOFOS

10:00 AM  Networking Break

10:45 AM  Correlations Between Microbial Community and Dewaterability in Anaerobically Digested Primary and Bio-P Biosolids
Patrick McNamara, Eileen Kennedy, Marquette University; Lou LaMartina, Ryan Newton, University of Wisconsin-Milwaukee

11:15 AM  A Comprehensive Examination of the Dewaterability of Aerobic Granular Sludge Cultivated in Continuous Flow Bioreactors Fed with Real Domestic Wastewater
Dian Zhang, Yewei Sun, Virginia Tech; Robert Angelotti; Zhi-Wu Wang, Virginia Tech

11:45 AM  Session Adjourns for Networking Luncheon in Exhibit Hall

Alternate:  Thickening and Dewatering Strategies for Small Plants – Minimizing Capital Investment by Leveraging Installed Infrastructure
Ruth Borgmann, C. Michael Bullard, Hazen & Sawyer

Alternate:  Sludge Thickening and Dewatering Improvements for Nassau County, NY
Jay Surti, Hazen and Sawyer; Paul Saurer; Gregory Bazydola, Arcadis US, Inc.; Eric Mills, Hazen and Sawyer
Session 10: Nutrient Recovery  
Thursday, April 2, 1:30 PM - 4:45 PM

1:30 PM  Incineration of Biosolids Provides a Pathway for Maximum Phosphorous Recovery from Water Reclamation Facilities: A German Approach  
Webster Hoener, Black & Veatch; Christian Kabbe, EasyMining

2:00 PM  Sewage Sludge Incinerator Ash as a Potential Phosphorus Fertilizer for Corn and Soybean  
Persephone Ma, Carl Rosen, University of Minnesota

2:30 PM  The Case of the Missing Phosphorus: The Impacts of Influent Metal Loads on Nutrient Recovery and EBPR  
Steven Graziano, Jacobs; Nathan Qualls, Bruce Bartel, Jake Becken, Corbin Magnin, New Water, Green Bay Metropolitan Sewerage District; Colin Fitzgerald, Jacobs

3:00 PM  Networking Break

3:45 PM  Conversion of Recalcitrant Phosphorus Fractions to Orthophosphate Using UV/H2O2 Advanced Oxidation for Improved Nutrient Removal and Recovery  
Kaushik Venkiteshwaran, Eileen Kennedy, Caitlin Graeber, Patrick McNamara, Brooke Mayer, Marquette University

4:15 PM  Beer, Cheese and Applesauce...Utilizing High Strength Waste to Enhance Struvite Recovery: Results of Bench Scale and Pilot Studies  
Nicole Ringle, City of St Cloud; Derek Lycke, Ostara; Tracy Hodel, City of St Cloud

4:45 PM  Session Adjourns

Alternate:  Water Research Foundation CalPrex Phosphate Recovery Validation Study at The Madison Metropolitan Sewerage District: Performance, Modeling, Cost Benefit Analysis, and Fertilizer Use  
Menachem Tabanpour, CNP Technology Water and Biosolids Corp; Wendell Khunjar; Leon Downing, Black & Veatch; Phillip Barak, Nutrient Recovery & Upcycling

Alternate:  Vacuum Application During Fermentation for Volatile Fatty Acid Recovery  
Frances Okoye, Elsayed Elbeshbishy, Ryerson University; Domenico Santoro, Eunkyung Jang, Trojan Technologies
Session 11: Energy Recovery & Production - Innovation and Success
Thursday, April 2, 1:30 PM - 4:45 PM

1:30 PM The R2E2 Experience – Energy Performance One Year On at the Green Bay Facility
Peter Burrowes, Jacobs; William Angoli, Bruce Bartel, Nathan Qualls, New Water, Green Bay Metro Sewerage Dist; Steven Graziano, Jacobs

2:00 PM Looking Beyond Conventional Approaches Biosolids Planning at the Terminal Island Water Reclamation Plant
Zakir Hirani, Pooja Sinha, Don Bassett, Connie Adera, Stantec; Rashi Gupta, Carollo Engineers; Fernando Gonzalez, City of Los Angeles Sanitation Agency

2:30 PM Using Dried Biosolids as a Sustainable Fuel Source – A Decade of Experience
Charles Goss, AECOM; Sudhakar Viswanathan, Veolia; Rich DiMassimo, Jeff Mocock, Kruger Inc; Ray Wurm, City of Buffalo

3:00 PM Networking Break

3:45 PM Co-Digestion Project Success: Forecast Risks and Rewards for All Stakeholders
Guyton Durnin, HDR; Amanda Roa, Delta Diablo; Mary Martis, HDR Engineering Inc.

Zhongtian Li, Centrisys/CNP; Hiroko Yoshida; Joshua Gable; Gerhard Forstner, Centrisys/CNP

4:45 PM Session Adjourns

Alternate: How to Kill a Heat Exchanger
Kimberly Schlauch, James Geisler, Arvos Schmidtsche Schack LLC; John Glass, Region of Peel
Session 12: Innovations in Anaerobic Digestion
Thursday, April 2, 1:30 PM - 3:00 PM

1:30 PM  Digestion Optimization for Removal of Solids, Micropollutants, and Recalcitrant Nutrients from BNR Plant Sludge
Bryan Mazda, Regional District of the Central Okanagan; Tim Abbott, University of British Columbia; Cigdem Eskicioglu

2:00 PM  Bioaugmentation: The Probiotic of Anaerobic Digestion
Catherine Moskos, Arcadis; Ethan Elleser, Evansville Water and Sewer Utility; Eric Auerbach, Arcadis; Jonathan Lee; Harry Lawson

2:30 PM  The Ephyra® Sludge Digestion - Unravelling its Fundamentals and Obtaining Biosolids Class A sludge
Alexander Hendriks, Andre Visser, Danny Traksel, Eddie Koornneef, Royal HaskoningDHV; Hongxiao Guo, Merle de Kreuk, Delft University of Technology

3:00 PM  Session Adjoums for Networking Break

Alternate: Anaerobic Digester Upgrade Provides Insight into Preferred Startup Strategies
Mark Strahota, Hazen and Sawyer
Session 13: Biosolids Master Planning with the End in Mind  
Thursday, April 2, 1:30 PM - 3:00 PM

1:30 PM  
The City of Fresno's Biosolids Master Plan Results - Identifying the Best Biosolids Product for America's Agricultural Powerhouse  
Lisa Challenger, Material Matters, Inc.; Sarah Deslauriers

2:00 PM  
What's in Store for Fresno's Biosolids?  
Christine Polo, Carollo Engineers; Sarah Deslauriers; Cory Asher, City of Fresno; Lisa Challenger, Material Matters, Inc.; Rashi Gupta, Carollo Engineers; John Witter; Eric Casares, Carollo Engineers; Rick Staggs, City of Fresno

2:30 PM  
Developing an Outlet-driven Plan for Gwinnett County Biosolids  
Lynne Moss, Black & Veatch; Gayathri Ram Mohan, Robert Harris, Gwinnett County Dept. of Water Resources; Bernadette Drouhard; Greg Knight; J Carr

3:00 PM  
Session Adjourns for Networking Break

Alternate:  
A Trigger Based Approach to Regional Biosolids Capital Improvement Planning  
Paul Knowles, Jay Surti, Hazen and Sawyer; Vera Gouchev, Electric Pump Inc; Abigail Farrell, Hazen and Sawyer; Vincent Kopicki, Westchester County Utility; Emanuel Psaltakis, Hazen and Sawyer
Session 14: Identifying and Generating Advances Through Research
Thursday, April 2, 3:45 PM - 4:45 PM

3:45 PM  Analysis of Factors Linking to Soil Microbial Populations and Nitrogen Cycling Under Long-Term Biosolids Application
Benjamin Morgan, Guanglong Tian, MWRD Chicago; Olawale Oladeji; Albert Cox, Heng Zhang, MWRD of Greater Chicago At Cicero Stickney WTP; Edward Podczerwinski

4:15 PM  Enhancing Anaerobic Digestion of Pulp and Paper Mill Biosludge Via Thermal Hydrolysis
Ehssan Hosseini Koupaie, University of Toronto; Elsayed Elbeshbishy; Grant Allen, University of Toronto

4:45 PM  Session Adjourns

Alternate: A Laboratory-Scale Study of the Factors Controlling Pathogen and Indicator Organism Inactivation During Low-Cost, Low-Tech Biosolids Treatment
Jennifer Becker, John Harron, Eric Seagren, Michigan Technological University
Session 15: Regulatory Strategies
Thursday, April 2, 3:45 PM - 4:45 PM

3:45 PM  Biosolids Strategy for a Challenging Regulatory Environment: A Case Study
          Mike Prinz, City of Santa Rosa; Mary Martis, Guyton Durnin, HDR

4:15 PM  A Bigger-Picture Look at Florida’s Nutrient-Loading and the Relative Significance of Biosolids-Derived Products
          John Willis, Robert Gaylord, Brown And Caldwell; Maria Silveira, University of Florida

4:45 PM  Session Adjourns

Alternate:  Planning for Biosolids Management Without a Landfill as an Option in the Post SB 1383 Era
          Layne Baroldi, Synagro Technologies; James Colston, Irvine Ranch Water District

Alternate:  Are the Tides Turning Again on Digestate Quality? A UK Perspective
          Annelle Buchanan, Joerg Blischke, Black & Veatch
Session 16: Thermal Drying Of Biosolids – Alternatives, Technology, and Operations
Friday, April 3, 8:30 AM - 10:00 AM

8:30 AM  Which Class A Drying Process Has The Most Advantages for the Dry Creek Water Reclamation Facility, Cheyenne, Wyoming
Zwelani Ngwenya, David Oerke, Kile Snider, Steven Tamburini, Jacobs Engineering; Nate Kie, Matthew Buelow, Phillip Clark, Cheyenne Board of Public Utilities

9:00 AM  Evolving Standards and Operational Experience Combine to Enhance Safety for Biosolids Drying Systems
Webster Hoener, Black & Veatch; James Kearns, Encina Wastewater Authority

9:30 AM  Optimizing Biosolids Dewatering and Drying Process at the City of Sheboygan, WI
Chip Pless, Ed Fritz, Huber Technology, Inc; Steve Jossart, City of Sheboygan

10:00 AM  Session Adjourns for Networking Break

Alternate:  Case Study: Review of Karlovy Vary Low Temperature Belt Dryer Performance Over 3 Years
Lynne Bouchy, SUEZ Water Technologies and Solutions; Zdenek Frcek, Vodakva
Session 17: Biosolids Treatment and Use Innovations
Friday, April 3, 8:30 AM - 11:15 AM

8:30 AM  Ammonia and Phosphate Releases from Waste Activated Sludge in Short HRT Thermophilic Pre-treatment Reactor
Hong Zhao, Veolia Water/Kruger; Isaac Avila, Garrett Geer, Denver Metro Wastewater Reclamation District; Jim McQuarrie; Luke Wood, Kruger Inc; Sudhakar Viswanathan, Brad Mrdjenovich, Veolia; Rich DiMassimo, Kruger Inc

9:00 AM  Volute Thickening and Linear Motion Mixing: A Tale of Two Technologies
Clay Rahn, HDR, Inc.

9:30 AM  Compact and On-site Biosolids Elimination using Supercritical Water Oxidation: Performance and Economics
Marc Deshusses, Duke University & 374Water; Kobe Nagar

10:00 AM  Networking Break

10:15 AM  Single-stage vs. Two-stage Anaerobic Digestion of Organic Fraction of Municipal Solid Waste
Elsayed Elbeshbishy, Armineh Azizi, Amir Abbas Bazyar Lakeh, Ryerson University; Ehsan Hosseini Koupae, University of Toronto; H Hafez, Greenfield Ethanol Inc

Jean-François Mischler, Bucher Unipektin AG; Claire Courbet, Suez Treatment Infrastructure

11:15 AM  Conference Adjourns

Alternate: Application of Phagotrophic Algae in Waste Activated Sludge Conversion and Stabilization
Suo Xiao, Ovivo USA LLC

Alternate: Chemical Pretreatment of Thickened Waste Activated Sludge (TWAS) to Improve Biogas Production
Salomeh Chegini, Frances Okoye, Elsayed Elbeshbishy, Ryerson University
Session 18: Economic Drivers for Digestion
Friday, April 3, 8:30 AM - 11:15 AM

8:30 AM  Payback Challenge – Keep Class A, Replace the Technology, and Save Money
          Adam Parmenter, HDR Engineering Inc; Jon Coyle, Town of Erie; Kristen James

9:00 AM  Thermo-Chemical Hydrolysis with and without Digestion – Does it Make Economic Sense When Compared to Other Technologies?
          Mohammad Abu-Orf, Derya Dursun, C. Michael Bullard, Hazen and Sawyer

9:30 AM  Life Cycle Assessment and Cost Analysis of Municipal Wastewater Treatment Anaerobic Digestion Expansion Options
          Xin Ma, US EPA; Ben Morelli, Eastern Research Group; Sarah Cashman; Jason Turgeon, US EPA Region 1; Jay Garland

10:00 AM  Networking Break

10:15 AM  Comprehensive Assessment of Co-Digestion Capacity, Costs, Impacts, and Operational History in California
          Rashi Gupta, Carollo Engineers; Sarah Deslauriers; Elizabeth Charbonnet; Chelsea Ransom; Robert Williams, University of California, Davis

10:45 AM  Did Suspending a Co-Digestion System Really Save Money? – A Case Study
          Ralph Schroedel, Charles Goss, AECOM; Steve Jossart, City of Sheboygan

11:15 AM  Conference Adjourns

Alternate:  Biosolids Management Business Case Study Utilizing the Solids Water Energy Evaluation Tool
           Robert Gaylord, John Willis, Brown And Caldwell; Beth Schinella, Hillsborough County, FL; George Cassady

Alternate:  Enhanced High-Solids Anaerobic Digestion of Sewage Sludge by the Addition of Dried Powdered Sludge
           Raja Sonal Anand, Pramod Kumar, Dharmender Yadav, IIT Roorkee
Session 19: Dewatering - Obtaining the Pretreatment, Equipment and Polymer Needed to Make it Happen
Friday, April 3, 8:30 AM - 10:00 AM

8:30 AM  The Only Thing Permanent is Change: Managing Risk in Procuring Dewatering Equipment
Kenneth Packard, Mario Benisch, HDR Engineering Inc; Gary Duranceau, City of Mount Vernon

9:00 AM  Who Will Take the “Cake”? An Evaluation of Two Emerging Dewatering Preconditioning Technologies
Heidi Bauer, Zwelani Ngwenya, David Oerke, Samuel Jeyanayagam, Jacobs Engineering

9:30 AM  Polymer Trial with Bench Scale Dewatering Press
Mario Benisch, J Neethling, HDR

10:00 AM Session Adjourns for Networking Break

Alternate: Dewatering Technology Selection for the “2nd Most Difficult-to-Dewater Sludge in the World”
Rashi Gupta, Carollo Engineers; Brittany Park, Joshua Robertson, City of Bend, Oregon; Timothy Truax, Wade Trim; Christopher Miccolis, City of Redmond, WPCF; Matthew Sprick; Josh Miner, Jeffrey McCormick, Carollo Engineers
Session 20: Side Stream Management
Friday, April 3, 10:15 AM - 11:15 AM

10:15 AM  Managing Biosolids to Control Recycling of Nitrogen and Phosphorus in Sidestreams from Aerobic Digestion
Hélène Kassouf, University of South Florida; Andrés García Parra, University of South Florida; Luke Mulford, Gita Iranipour, Hillsborough County; Sarina Ergas, Jeffrey Cunningham, University of South Florida

10:45 AM  Impact of Digestion Intensification on Sidestream: Lessons Learned from Scandinavian Full-Scale Experiences
Margaret Hollowed, Sudhakar Viswanathan, Veolia; Anneli Anderssonchan, City of Växjö, Technical Department, Sweden; Mikkel Poulsen, Kruger A/S

11:15 AM  Conference Adjourns

Alternate: Selecting an Appropriate Sidestream Treatment Process through a Unique Scoring System
Micah Blate, Hazen and Sawyer; Samantha Burke, Adam Hendricks, Nicholas Hays, Philadelphia Water Department; Wendell Khunjar; Robert Sharp, Manhattan College
Session 21: Odors
Friday, April 3, 10:15 AM - 11:15 AM

Malcolm Taylor, WSSCWater; Hao Luo, Virginia Tech; Caroline Nguyen, Washington Sub San Commission; Zhi-Wu Wang, Virginia Tech

10:45 AM Durational Biosolids Odor Control Using Peroxide Regenerated Iron Technology (PRI-TECH®) at Metropolitan St. Louis Sewer District’s Lower Meramec Treatment Plant
Michael Nelson, USP Technologies; Lynne Moss, Black & Veatch

11:15 AM Conference Adjourns