

Residuals and Biosolids Conference 2016

Biosolids as a Resource

Milwaukee, Wisconsin, USA
3 – 6 April 2016

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TECHNICAL PROGRAM

Session 1: Regulatory

Monday, April 4, 2016
1:30PM - 3:00PM

Room: 202AB
PDHs:1.5

Co-Moderators: Hiroko Yoshida, Centrysis, Inc.
Trudy Johnson, Material Matters, Inc.

- 01A 1:30PM Navigating State Biosolids and Fertilizer Requirements: Milorganite® Distribution In The United States**
Jessica Nanes, Milwaukee Metropolitan Sewerage District
- 01B 2:00PM NEW Water's Challenge To Achieve Compliance With New Sewage Sludge Incinerator Rules For Existing and New Incinerators**
Julie Maas, Bruce Bartel, Green Bay Metropolitan Sewerage District ("NEW Water")
- 01C 2:30PM State Phosphorus Fertilizer Regulations Impact Biosolids Recycling**
Ned Beecher, North East Biosolids & Residuals Association; Herschel Elliott, Penn State University
- 3:00PM Session Adjourns**
- Alternate Biosolids Are Wicked Manage: Land Application Regulations In Sweden and B.C. Canada**
Gunilla Oberg, Margaret Morales, University of British Columbia
(See associated poster in exhibit hall)

TECHNICAL PROGRAM

Session 2: Digestion I - Design and Modelling

Monday, April 4, 2016
1:30PM - 4:45PM

Room: 202DE
PDHS: 2.5

Co-Moderators: **Jon Butt**, Symbiont
Dan Zitomer, Marquette University

- 02A 1:30PM The Application of Fractal-Like Kinetics To The Solid-state Anaerobic Digestion**
Zhiwu (Drew) Wang, Karthik Manchala, Yewei Sun, Virginia Tech
- 02B 2:00PM Development of A Mechanistic Model To Understand Volume Expansion Due To Gas Holdup In Anaerobic Digesters**
Nicholas Bartek, Matthew Higgins, Bucknell University; Sudhir Murthy, DC Water; Steven Beightol, Bucknell University; Ahmed Al-Omari, DC Water
- 02C 2:30PM Methane Production Rates Can Be Predicted From Anaerobic Digester Microbial Community Structure**
Kaushik Venkiteshwaran, Michael Johnson, Daniel Zitomer, Marquette University
- 3:00PM Networking Break**
- 02D 3:45PM Long-Term Biochemical Methane Potential (BMP) Test For Estimation of Non-Biodegradable Fraction In Biosolids**
Elsayed Elbeshbishy, Ryerson University; Bipro Dhar, University of Waterloo; George Nakhla, Western University
- 02E 4:15PM Optimizing Anaerobic Digestion Performance With Silo-Shaped Reactor Configurations**
Drury Whitlock, Todd Williams, Tom Johnson, Corey Klibert, Peter Burrowes, CH2M
- 4:45PM Session Adjourns**

TECHNICAL PROGRAM

Session 3: Bioenergy

Monday, April 4, 2016
1:30PM - 4:45PM

Room: 203AB
PDHs: 2.5

Co-Moderators: Jay Kemp, Black & Veatch
Todd Williams, CH2M

- 03A 1:30PM Selection of Gas Turbines For Energy Recovery At San Francisco's Southeast Treatment Plant**
Christine Polo, Black & Veatch; Humphrey Ho, George Engel, Rosanna Tse, San Francisco Public Utilities Commission; Bruce Chow, David Long, Greg Knight, Black & Veatch
- 03B 2:00PM Kenosha Waste Water Treatment Plant "Energy Optimized Resource Recovery Project"**
Curtis Czarnecki, Kenosha Water Utility
- 03C 2:30PM New Water's Resource Recovery and Electrical Energy Project - The Value of Biosolids**
Peter Burrowes, CH2M; Bill Angoli, Bruce Bartel, Mike Erschnig, Nathan Qualls, Pat Westcott, NEW Water; William Desing, David Oerke, CH2M
- 3:00PM Networking Break**
- 03D 3:45PM Demand-Driven Energy Supply On Municipal WWTP Using An Anaerobic Membrane Digester**
Robert Lutze, Peter Cornel, Christian Schaum, Technische Universität Darmstadt
- 03E 4:15PM Thermophilic Biomethane Production From Thin Stillage Using Anaerobic Fluidized Bed Bioreactors (AnFBRs)**
Hisham Hafez, GreenField Specialty Alcohols Inc.; Ahmed Eldyasti, York University; Elsayed Elbeshbishy, Ryerson University
- 4:45PM Session Adjourns**
- Alternate Exploring The Best and Highest Use of Biogas From Wastewater Utilities**
Greg Knight, Kent Lackey, Christine Polo, Scott Carr, Jay Kemp, Black & Veatch; Aaron Brower, T.J. Lynch, City of Raleigh

TECHNICAL PROGRAM

Session 4: Facilities Operation, Management, and Planning I

Monday, April 4, 2016
1:30PM - 4:45PM

Room: 203DE
PDHs:2.5

Co-Moderators: **Jeff Leblanc**, WeCare Organics LLC
Perry Shafer, Brown and Caldwell

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|------------|---------------|--|
| 04A | 1:30PM | Scum - A Liability Or An Asset?
<u>Chad Simmons</u> , Leonard Ripley, Freese & Nichols, Inc.; Farida Goyderya, City of Fort Worth |
| 04B | 2:00PM | Planning For An Uncertain Future: Sometimes Simple Is Best
<u>Matthew Van Horne</u> , Deborah Mahoney, Hazen and Sawyer; Hans Tuneblom, Veolia; Roger Brooks, City of Leominster |
| 04C | 2:30PM | Holistic Approach To Residuals Handling At F. Wayne Hill Water Resources Center: Did The Upgrades Work?
<u>Scott Hardy</u> , Ron Latimer, Vivi Nguyen, Edward McCallum, Michael Bullard, Hazen and Sawyer; Brandon Brown, Robert Harris, Eric Hancock, JC Lan, Gwinnett County Department of Water Resources |
| | 3:00PM | Networking Break |
| 04D | 3:45PM | A Cohesive Strategy For Wastewater Sludge (Biosolids) Management: A UK Case Study
<u>Sade Olapade-Olaopa</u> CEng MlChemE, Jorge Pacas, Hatch Mott MacDonald Inc. |
| 04E | 4:15PM | Anaerobically Digested Liquid to Cake - Managing Biosolids Without Long-Term Storage
<u>Jose Bicudo</u> , Dominika Celmer-Repin, Tammy Bellamy, Trevor Brown, Region of Waterloo |
| | 4:45PM | Session Adjourns |

TECHNICAL PROGRAM

Session 5: Sidestream Deammonification

Monday, April 4, 2016
3:45PM - 4:45PM

Room: 202AB
PDHS: 1.0

Co-Moderators: Todd Schwingle, Veolia
Richard Tsang, CDM Smith

**05A 3:45PM Sidestream Deammonification Startup –
Overcoming Challenges In Centrate Pretreatment
Process**

Hong Yin, Alexandria Renew Enterprises; Paula Sanjines, Houweling Dwight, Adrienne Willoughby, Ch2m; Kartik Chandran, Zheqin Li, Columbia University

**05B 4:15PM Thermal Hydrolysis Sidestreams: Treatment
By Post Aerobic Digestion Versus Anammox**
Heidi Bauer, Thomas Johnson, Bruce Johnson, David Oerke, CH2M

4:45PM Session Adjourns

**Alternate Mainstream Deammonification Using The
ANITA™ Mox Process**
Chris Thomson, Hong Zhao, Kruger Inc.; Romain Lemaire, Veolia; Magnus Christensson, AnoxKaldnes AB; Frederic Veuillet, Veolia

TECHNICAL PROGRAM

Session 6: Codigestion I

Tuesday, April 5, 2016
8:30AM - 11:45AM

Room: 202AB
PDHs: 2.5

Co-Moderators: Steve Graziano, CH2M
Angela Hintz, Arcadis

- 06A 8:30AM WERF: Evaluation of The Unintended Consequences of Co-digestion**
Rajagopalan Ganesh, Kennedy Jenks Consultants;
Sudhir Murthy, DC Water; Charles Bott, Hampton Road Sanitation District; Krishna Pagilla, University of Nevada; Steven Beightol, Mathew Higgins, Bucknell University
- 06B 9:00AM Effect of High Strength Food Wastes On Anaerobic Digestion of Sewage Sludge**
Ramola Vaidya, Gregory Boardman, John Novak, Virginia Tech; Robert Wimmer, Energy Systems Group; Mike Hanna, Black & Veatch Corporation
- 06C 9:30AM Co-Digestion of Solid Waste At WWTPs – The Next Frontier?**
Joerg Blischke, Black & Veatch
- 10:00AM Networking Break**
- 06D 10:45AM Biomethane Production From Anaerobically Digested Bioplastics**
Nicholas Benn, Marquette University; Anne Schauer-Gimenez, Margaret Morse, Mango Materials Inc.; Daniel Zitomer, Marquette University
- 06E 11:15AM Getting an Energy Boost From Co-Digestion Through ESCO Project Delivery**
Kurt Pfeffer, Hazen and Sawyer; Vin Morello, Broward County Water and Wastewater Services; Adam Bogusch, Opterra Energy Solutions; Alonso Griborio, Hazen and Sawyer
- 11:45AM Session Adjourns**
- Alternate Identifying Underutilized Digester Capacity And Maximizing Revenue Generation Via Codigestion: An Approach Towards Utility of The Future**
John Gage, Kam Law, Greeley and Hansen; Matt Streicher Wheaton Sanitary District
- Poster You Have Co-digestion, Now What? WERF Research Into The Operational Impacts of Co-digestion**
Matthew Vanhorne, Jared Hostetler, Hazen and Sawyer; Lauren Fillmore, WERF

TECHNICAL PROGRAM

Session 7: Residuals and Product Issues

Tuesday, April 5, 2016
8:30AM - 11:45AM

Room: 202DE
PDHs: 2.5

Co-Moderators: Jim Smith, Jr., EPA- Retired
Bob Rubin, NC State University

- 07A 8:30AM Biosolids As A Resource: Using Biochar Derived From Pyrolyzed Biosolids To Remove Trace Organic Compounds**
Yiran Tong, Brooke Mayer, Patrick McNamara, Marquette University
- 07B 9:00AM Planning For and Developing A Large-Scale Soil Blending Program Using CAMBI Biosolids**
Ronald Alexander, R Alexander Associates Inc; Christopher Peot, DC Water & Sewer Authority
- 07C 9:30AM Management Protocols For Development of Value-Added Products**
Kari Brisolara, LSUHSC; Robert Reimers, Texas A&M University; James Smith, EPA; Albert Rubin, North Carolina State University; Dave Parry, CH2M; John Donovan, CDM Smith; Adam Faschan, BCG LLC.; Chuck Wanstrom, Schwing Bioiset; Paul Zappi, City of Houston
- 10:00AM Networking Break**
- 07D 10:45AM Modern Composting In Oklahoma**
Arlene Over, Black & Veatch; William Janacek, City of Midwest City, Oklahoma
- 07E 11:15AM City of Bend Water Reclamation Facility Class A Biosolids Abstract Unlikely Path To Class A Biosolids**
Scott Thompson, Water Reclamation Facility
- 11:45AM Session Adjourns**

TECHNICAL PROGRAM

Session 8: Facilities Operation, Management, and Planning II

Tuesday, April 5, 2016
8:30AM - 11:45AM

Room: 203AB
PDHs: 2.5

Co-Moderators: **Lynne Moss**, Black & Veatch
Jeremy Holland, HDR Inc.

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|------------|----------------|---|
| 08A | 8:30AM | Replace or Rehabilitate? MMSD's 24 Belt Filter Press Upgrade Challenge
<u>Patrick Carnahan</u> , Symbiont; Lori Cipparone, Milwaukee Metropolitan Sewerage District; Pavel Hajda, Symbiont |
| 08B | 9:00AM | Maximizing The Life of Biosolids Drying Assets
<u>Micki Klappa-Sullivan</u> , Jennifer Wright, Milwaukee Metropolitan Sewerage District; Webster Hoener, Paul Boersma, Black & Veatch |
| 08C | 9:30AM | From Energy Intensive Incineration To Energy Neutral Anaerobic Digestion - The Dubuque Case Study
<u>Randall Wirtz</u> , Strand Associates, Inc.; Jonathan Brown, City of Dubuque |
| | 10:00AM | Networking Break |
| 08D | 10:45AM | The Ultimate Test of A Long Term Partnership How Charlotte Water and Synagro Partnered To Safely Manage Solids Contaminated With Polychlorinated Biphenyls
<u>Jean Creech</u> , Maggie Macomber, Charlotte Water; William Cotter, Synagro |
| 08E | 11:15AM | How To Survive In The Fertilizer Marketplace: Lessons From Milorganite®
<u>Tom Nowicki</u> , Milwaukee Metropolitan Sewerage District |
| | 11:45AM | Session Adjourns |

TECHNICAL PROGRAM

Session 9: Nutrient Recovery

Tuesday, April 5, 2016
8:30AM - 11:45AM

Room: 203DE
PDHs: 2.5

Co-Moderators: Jeff Spence, MMSD
Brooke Mayer, Marquette University

- 09A 8:30AM **Sustainable Ammonium Recovery From Wastewater By Using Bioelectrochemical Systems**
Mohan Qin; Zhen (Jason) He, Virginia Tech
- 09B 9:00AM **Nutrient Recovery At The F. Wayne Hill Water Resources Center: WASSTRIP Design and Full Scale Start Up**
Scott Hardy, Vivi Nguyen, Edward McCallum, Ron Latimer, Michael Bullard, Hazen and Sawyer; Brandon Brown, Robert Harris, JC Lan, Tyler Richards, Gwinnett County Department of Water Resources
- 09C 9:30AM **Applying Process Modeling With GPS-X™ For Understanding the Impact of the WASSTRIP™ Process on Nutrient Recovery Systems**
Malcolm Fabiyi, Hydromantis USA; Ahren Britton, Ostara Nutrient Recovery Technologies; Peter Schauer, Clean Water Services; Andrew Shaw, Black & Veatch; Rajeev Goel, Hydromantis, Inc.
- 10:00AM **Networking Break**
- 09D 10:45AM **Bringing It All Back to Nature: A New Process To Produce Renewable Natural Gas and High Fertilizer Value Products**
Meltem Urgun-Demirtas, Yanwen Shen, Jessica Linville, Seth Snyder, Argonne National Laboratory
- 09E 11:15AM **Commissioning Anuvia's First Green Fertilizer Manufacturing Facility Incorporating Municipal Organics**
John Donovan, Carl Hendrickson, CDM Smith; Jeffrey Burnham, Gary Dahms, Anuvia
- 11:45AM **Session Adjourns**
- Alternate **Solution To Phosphorus Overloading Through Nutrient Recovery System**
Mel Kurtz, Quasar Energy Group

TECHNICAL PROGRAM

Session 10: Digestion II - Operations

Tuesday, April 5, 2016
1:30PM - 4:45PM

Room: 202AB
PDHs: 2.5

Co-Moderators: Christopher Muller, Brown and Caldwell
Toshio Shimada, Carollo

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| 10A | 1:30PM | Clean The Digester? Maybe Next Year . . .
<u>Harry Mathos</u> , City of Beloit |
| 10B | 2:00PM | Capacity Increase Without Evasive Retrofits
– Maximize Digester Efficiency With Biological Hydrolysis
<u>Michael Theodoulou</u> , Dorian Harrison, Nicholas Bonkoski, GE Power & Water |
| 10C | 2:30PM | Turning Up The Heat - Advanced Digestion To Meet Disposal Constraints
<u>Kurt Pfeffer</u> , Hazen and Sawyer; Vivek Galav, City of West Palm Beach; Michael Bullard, John Koroshec, Caitlin Klug, Hazen and Sawyer |
| | 3:00PM | Networking Break |
| 10D | 3:45PM | Are Your Digesters Burping, Frothing, Or Otherwise Not Behaving? – Let’s Talk About Solutions and NOT REPEAT the “Digester Foam” Paper You’ve Already Heard Five Times
<u>John Willis</u> , Brown and Caldwell; Luis Carrio, NYC DEP; Tom Chapman, Brown and Caldwell; Jonathan Keaney, Gary Newman, Brown and Caldwell; Taft McNeal, Nashville Metro Water Service; Peter Pianelli, NYC DEP; Lance Salerno, Perry Schafer, Brown and Caldwell |
| 10E | 4:15PM | Effect of Sequential Improvements To Plant Operations On Biogas Generation and Solids Reduction In Bethlehem, Pennsylvania
<u>Angela Hintz</u> , Lauren Schifferle, ARCADIS; Jack Lawrence, City of Bethlehem |
| | 4:45PM | Session Adjourns |

TECHNICAL PROGRAM

Session 11: Chemical and Biological Microconstituents In Biosolids

Tuesday, April 5, 2016
1:30PM - 4:45PM

Room: 202DE
PDHs: 2.5

Co-Moderators: Patrick McNamara, Marquette University
Brooke Mayer, Marquette University

- 11A 1:30PM **Consumer Product Antimicrobials Select For Antibiotic Resistance In Anaerobic Digesters**
Daniel Carey, Daniel Zitomer, Patrick McNamara, Marquette University
- 11B 2:00PM **Effect of Influent Variation In Antibiotic Resistant Bacteria and Resistance Genes On Their Fate During Anaerobic Digestion**
Jennifer Miller, Amy Pruden, Charles Via, Virginia Tech
- 11C 2:30PM **Antibiotic Resistance From Digesters To Soil**
Timothy LaPara, University of Minnesota
- 3:00PM **Networking Break**
- 11D 3:45PM **Fate, Exposure, and Bioavailability of Microconstituents In Biosolids**
Kuldip Kumar, Lakhwinder Hundal, Albert Cox, Heng Zhang, Thomas Granato, Metropolitan Water Reclamation District of Greater Chicago
- 11E 4:15PM **Impact of Emerging Contaminants and Biosolids Aging On Ecotoxicity In Soils**
Ryan Holzem, University of Wisconsin-GB
- 4:45PM **Session Adjourns**
- Alternate 1 **Application of Ferrate And Ferric Iron On The Short-term Stabilization of The Raw Heat-Dried Municipal Sludge and Deactivation of EDCs Constituents (Estradiol, Ethinyl Estradiol And Bisphenol A)**
Yue Xu; Robert Reimers; Andrew Englande, Tulane University
(See associated poster in exhibit hall)
- Alternate 2 **Examining Methods For Estimating Risks From Compounds of Emerging Concern In Biosolids-amended Soil - p-Nonylphenol As A Test Case**
Charles Staples, Assessment Technologies, Inc.; Katie Coady, The Dow Chemical Company; Barbara Losey, RegNet Environmental Services

TECHNICAL PROGRAM

Session 12: Thermal Processes

Tuesday, April 5, 2016
1:30PM - 4:45PM

Room: 203AB
PDHs: 2.5

Co-Moderators: Ralph Eschborn, AECOM
Jay Kemp, Black & Veatch

- 12A 1:30PM **Energy Recovery From Thermal Oxidation Of Wastewater Solids: State of Science Review**
Webster Hoener, Gustavo Queiroz, Black & Veatch;
Robert Dominak, Friar Consulting
- 12B 2:00PM **Increasing The Fine Particulate Collection Efficiency of Existing Scrubbers Without Increasing Pressure Drop: All It Takes Is Water**
Michael Lewis, F. Michael Lewis Inc.; Lee Lundberg, Bedrock Enterprises, Inc.; David Hoecke, Enercon Systems, Inc.
- 12C 2:30PM **The Little Blue Experience New Fluid Bed Municipal Sludge Incinerator With Plume Suppression System and A Provision For Future MACT Retrofit**
Levent Takmaz, Ky Dangtran, IDI; Keith Navarro, LBVSD
- 3:00PM **Networking Break**
- 12D 3:45PM **Getting Greener and Cleaner**
Steve Janosko, Northeast Ohio Regional Sewer District; Ben Wester, Brown and Caldwell
- 12E 4:15PM **Cedar Rapids Water Pollution Control Facility -Successful Recovery of A Solids Management System From A Catastrophic Flood**
Lloyd Winchell, Brown and Caldwell; Roy Hesemann, John Ernst, City of Cedar Rapids; David Sapp, Brown and Caldwell
- 4:45PM **Session Adjourns**
- Alternate **An Innovative Chemical Thermal Hydrolysis Process With Multiple Beneficial Applications In Bio-resource Recovery**
Ajay Singh, Bill Mullin, Mike Dougherty, Rick Mosher, Lystek International Inc.; Owen Ward, University of Waterloo; George Nakhla, University of Western Ontario; Jeanette Brown, Manhattan College
(See associated poster in exhibit hall)

TECHNICAL PROGRAM

Session 13: Thickening and Dewatering / Drying

Tuesday, April 5, 2016
1:30PM - 4:45PM

Room: 203DE
PDHs: 2.5

Co-Moderators: David Oerke, CH2M
Scott Carr, Black & Veatch

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| 13A | 1:30PM | Mixed Hydrolysis Enzyme As An Environmentally Friendly Conditioner For Enhanced Dewatering of Waste Activated Sludge
<u>Boran Wu</u> , TXiaoli Chai, Tongji University |
| 13B | 2:00PM | Impact of Orthophosphate On Achievable Dry Cake Solids Content and Polymer Consumption In The Dewatering Process - A Summary From US-Phosphorus Recovery Tests and Two Full Scale Phosphorus Recovery Installations In Europe
<u>Gerhard Forstner</u> , CNP- Technology Water and Biosolids Corp. |
| 13C | 2:30PM | Medium Temperature Belt Dryer In Wisconsin To Produce Class A From Anaerobic Digested Sludge Containing High Strength Waste
<u>Dieter Weinert</u> , Huber Technology Inc. |
| | 3:00PM | Networking Break |
| 13D | 3:45PM | Got Cake? Implementing Dewatering and Cake Receiving and Truck Unloading Facilities Saves Approximately \$500,000 Annually
<u>David Oerke</u> , CH2M; William Suchodolski, Ocean County Utilities Authority |
| 13E | 4:15PM | Product Upgrading During Biosolids Pyrolysis By Using A Low-Cost Natural Catalyst
<u>Zhongzhe Liu</u> , Patrick McNamara, Daniel Zitomer, Marquette University |
| | 4:45PM | Session Adjourns |

TECHNICAL PROGRAM

Session 14: Digestion III

Wednesday, April 6, 2016
8:30AM - 11:15AM

Room: 202AB
PHS: 2.5

Co-Moderators: **Rusty Schroedel**, AECOM
Brandon Koltz, Brandon Koltz Water & Environmental
Consultants

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| 14A | 8:30AM | Thermophilic Startup From Mesophilic Digestate: Implementing Lab-scale Results At The Full-scale
<u>Karla Guevarra</u> , Tracy Chouinard, Alexandre Miot, Bonnie Jones, San Francisco Public Utilities Commission |
| 14B | 9:00AM | Alternative Configurations of Anaerobic Digestion and Thermal Hydrolysis To Enhance Performance
<u>William Barber</u> , Diran Adalian, Jim Marx, AECOM |
| 14C | 9:30AM | Biosolids Master Planning Uncovers Ample Resource Recovery Opportunities
<u>Jane Carlson</u> , Randall Wirtz, Strand Associates, Inc.; Beth Vogt, Jack Russell, Fox River Water Reclamation District |
| | 10:00AM | Networking Break |
| 14D | 10:15AM | Achieving Advanced Digestion Using Recuperative Digestion Options
<u>Alan Cooper</u> , Alan Cooper Consulting |
| 14E | 10:45AM | High Solids Anaerobic Digestion With Recuperative Thickening: An Effective Method To Increase Digester Capacity, Consolidate Existing Capacity, and Achieve Energy Positive Water Resource Recovery Facilities
<u>Juan Josse</u> , Sasha Rollings-Scattergood, Andrew Dale, Andrew Bendek, Anaergia, Inc.; Logan Olds, Victor Valley Wastewater Reclamation Authority (VWVRA); Yaniv Scherson, Gilbert Perez, Anaergia, Inc. |
| | 11:15AM | Conference Adjourns |

TECHNICAL PROGRAM

Session 15: Thermal Hydrolysis

Wednesday, April 6, 2016
8:30AM - 11:15AM

Room: 202DE
PDHs: 2.5

Co-Moderators: **Greg Woodward**, Stantec
Patrick McNamara, Marquette University

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| 15A | 8:30AM | So Now You Need To Cool The Sludge
<u>Yinan Qi</u> , Brown & Caldwell |
| 15B | 9:00AM | Optimizing Thp - The Intermediate Thermal Hydrolysis Process
<u>Ester Rus</u> , Nick Mills, Aurelien Perrault, Achame Shana, Thames Water; Paal Jahre Nilsen, CAMBI |
| 15C | 9:30AM | Continuous "Digestion-thp-Digestion At Lille (France) WWTP Results After One Year Operation
<u>Malik Djafer</u> , Veolia |
| | 10:00AM | Networking Break |
| 15D | 10:15AM | Anaerobic Digestion of Primary Solids and Thermally Hydrolyzed Waste Activated Solids
<u>Todd Williams</u> , Peter Burrowes, Drury Whitlock, Kim Fries, Colin Newbery, CH2M; Ryan Roberts, Stantec Consulting |
| 15E | 10:45AM | Thermal Hydrolysis - The Next Generation
<u>Peter Loomis</u> , CDM Smith; Tom Jacobs, Trinity River Authority; Paul Christy, Cambi Inc.; Engin Guven, Samir Mathur, CDM Smith |
| | 11:15AM | Conference Adjourns |

TECHNICAL PROGRAM

Session 16: Biosolids Science

Wednesday, April 6, 2016
8:30AM - 10:00AM

Room: 203AB
PDHs: 1.5

Co-Moderators: Sid Arora, MMSD
Jim Smith, Jr., EPA- Retired

- 16A 8:30AM Reducing Biosolids Production By Oxic-Settling-Anoxic (OSA) Process**
Galilee Semblante, Faisal Hai, University of Wollongong; Heriberto Bustamante, Nelly Guevara, Sydney Water; William Price, Long Nghiem, University of Wollongong
- 16B 9:00AM Biofermentation: A Novel Process For Reducing Biosolids Residuals In The Biological Treatment Plant**
Rob Whiteman, ABS Inc.
- 16C 9:30AM A New Wastewater Treatment Process For Achieving A Net Energy Production**
Christopher Waul, Argun Erdogan, Michael Doyle, George Smith, Evoqua Water Technologies
- 10:00AM Session Adjourns**
- Alternate Pilot Scale Testing of LCLT Wastewater Sludge Treatment Technologies**
Rebecca Green, Michigan Technological University
(See associated poster in exhibit hall)

TECHNICAL PROGRAM

Session 17: Codigestion II

Wednesday, April 6, 2016
10:15AM - 11:15AM

Room: 202AB
PDHs: 1.0

Moderator: **Christine Polo**, Black & Veatch

- 17A 10:15AM Lessons Learned From Co-digestion Projects From Concept Through Implementation**
Christopher Muller, Thomas Chapman, John Willis, Brown and Caldwell
- 17B 10:45AM Identifying High Strength Wastes Suitable For Co-Digestion at Blue Plains AWTP**
Lisa Boudeman, Material Matters; Bill Barber, AECOM; Christopher Peot, DC Water
- 11:15AM Conference Adjourns**
- Alternate Addressing Operational SideEffects of Co-Digestion of Organic Waste**
Ron Appleton, Carollo Engineers; Mark Greene, O'Brien & Gere; Rudy Kilian, Carollo Engineers