Residuals and Biosolids 2013 Conference

May 5 – 8, 2013
Nashville, Tennessee
Nashville Convention Center

This conference is held by the Water Environment Federation in cooperation with the Kentucky-Tennessee Water Environment Association.

OPENING GENERAL SESSION

Monday, May 6, 2013
8:30am – 12:00pm

The Residuals and Biosolids Conference 2013 Opening General Session will take place on the morning of Monday May 6 at 8:30am. Further details will be provided in the coming weeks!

TECHNICAL PROGRAM

Session 1: Advances in Stabilization Technologies

Monday, May 6, 2013
1:30pm – 4:45pm

RB1A 1:30pm **San Francisco Sequencing Batch Reactor Temperature Phased Anaerobic Digestion: Efficient Adaptation to Class A Biosolids**
Drury D. Whitlock, David W. Green, CH2M HILL; Bonnie M. Jones, San Francisco Public Utilities Commission; Alexandre Miot, San Francisco Public Utilities Commission; Tim L. Bauer, Douglas Barber, CH2M HILL

RB1B 2:00pm **Achieving Biogas Generation and Minimized Sludge Production Using a High-Rate Anaerobic Sidestream Reactor (ASSR) Process - Pilot Study**
Chul Park, Dong-Hyun Chon, Chris Watt, Aaron Brennan, UMass Amherst

RB1C 2:30pm **Assessment of Methane Production during Marine Transportation of Wastewater Solids**
Christopher A. Wilson, Greeley and Hansen

3:00pm **Networking Break**

RB1D 3:45pm **Upgraded Digester Mixing: Achieving Sludge Minimization while Renewing a Key Asset**
Rebecca Schaefer, Christopher A. Wilson, Joe M. Gorgan, Greeley and Hansen

RB1E 4:15pm **Fate of Nonylphenol Compounds during Aerobic and Anaerobic Digestion of Sludge**
Dilek F. Sanin, Middle East Technical University; Hande Bozkurt, L. Omeroglu, METU

Alternate 1 **"Second Generation" ATAD Success Stories - "Show Me The Data"- Several Years Of Performance Data From Two Case Studies Of Conversion From "First Generation" To "Second Generation" ATAD Systems**
David W. Oerke, CH2M HILL; Chad Olsen, McMahon Associates; Jim Kirk, Grand Chute Menasha West Sewerage Commission; Parker Newbanks, Eagle River Water and Sanitation District; Candi Burbridge, Eagle River Water and Sanitation District; Heidi Bauer, CH2M HILL

Alternate 2 **Accelerated Composting Methods and Equipment**
Fred Mussari, BCR Environmental.

TECHNICAL PROGRAM

Session 2: Facilities Operation, Management, and Planning

Monday, May 6, 2013
1:30pm – 4:45pm

RB2A 1:30pm **Economic Methods Matter - Appropriate Analysis Can Overcome the Biggest Barrier to Biogas Use**
John L. Willis, Brown & Caldwell

RB2B 2:00pm **Making The Case For Sustainable Biosolids Management Solutions: A Roadmap For Eleven Facilities**
Matthew Berg, CH2M HILL; Bruce Cole, North Texas Municipal Utility District; Tiffany Currie, North Texas Municipal Utility District; Jeff Ray, North Texas Municipal Utility District; Ken Wesson, North Texas Municipal Utility District; Brigit Buff, CH2M HILL; Jenna Covington, CH2M HILL; Dru Whitlock, CH2M HILL; Todd Williams, CH2M HILL

RB2C 2:30pm **To Haul or Not to Haul? Capacity and Class A Biosolids Processing at the Haifa, Israel Wastewater Treatment Plant**
Matthew P. Van Horne, Hazen and Sawyer; C M. Bullard, Hazen and Sawyer; Yoram Linder, Haifa Association of Towns

3:00pm **Networking Break**

RB2D 3:45pm **Biosolids Processing & Distribution: Challenges Continue**
Robert Bates, Louisville Metropolitan Sewer District

RB2E 4:15pm **Massachusetts Water Resources Authority Residuals Processing Facilities; Time for a Re-Examination**
John F. Donovan, CDM Smith Inc.; Daniel K. O'Brien, Massachusetts Water Resources Authority

Alternate 1 **Incineration For Solids Processing At Smaller POTWs**
James M. Rowan, Black & Veatch; Gustavo Queiroz, Black & Veatch; James Welp, Black & Veatch; Frank Dachille, Black & Veatch; Charles (Pat) Schlotzhauer, Black & Veatch

Alternate 2 **Squeezed and Burned - Development of a New Solids Processing System at the Fort Meade Wastewater Treatment Plant**
Adam Parmenter, HDR Engineering Inc; Dan Tobocman, , American Water Military Services Group; Bob Bruner, Bowen Engineering

TECHNICAL PROGRAM

Session 3: Beneficial Use

Monday, May 6, 2013
1:30pm – 3:00pm

RB3A 1:30pm **Sustainable Solution to the Disposal Epidemic: Beneficial Use of Water Treatment Residual in Manufactured Topsoil**
Jennifer Callahan, Material Matters, Inc.; Trudy Johnston, Material Matters, Inc.

RB3B 2:00pm **Why the Fertilizer Industry Could Use A Little Biosolids**
John F. Donovan, CDM Smith Inc.; Jeffrey C. Burnham, VitAg Corporation

RB3C 2:30pm **Over 20 Years of Successful Beneficial Use:Adapting the Management System Approach: Los Angeles Experience**
Diane Gilbert-Jones, City of Los Angeles

Alternate 1 **Sewerage Water Board of New Orleans (SWBNO) Incinerator Ash's Assessment for Usage as a Wetland's Soil Amender**
Robert S. Reimers, Tulane University; Yue Xu, Tulane School of Public Health and Tropical Medicine

TECHNICAL PROGRAM

Session 4: Conditioning and Dewatering Technologies

Monday, May 6, 2013
1:30pm – 3:00pm

RB4A 1:30pm **Evaluation of Electrodewatering for Enhanced Biosolids Dewatering**
Aaron Stephens, Material Matters, Inc; Kelly Brenner, Material Matters, Inc; Dean Minnich, Nazareth Borough Municipal Authority

RB4B 2:00pm **High Solids Loading for a DAFT Retrofit for Co-Thickening Operation**
Richard T. Kelly, Brown & Caldwell; Dave Newman, Brown and Caldwell; John Bratby, Brown and Caldwell; Mike Patrick, City of Tacoma; Chris Hatch, City of Tacoma

RB4C 2:30pm **Howard F. Curren AWTP Biosolids Dewatering Technology Evaluation**
Jacob L. Porter, Hazen & Sawyer; Daniel Schmidt, Hazen and Sawyer; Michael Bullard, Hazen and Sawyer; Charles Lynch, City of Tampa; Timothy Ware, City of Tampa; Dan VanderSchuur, City of Tampa

Alternate 1 **Decision Factors on Solids Dewatering Technologies for DC Water's Biosolids Program**
Perry L. Schafer, Brown and Caldwell; Salil Kharkar, DC Water and Sewer Authority; Sudhir Murthy, DC Water and Sewer Authority; Christopher Peot, DC Water and Sewer Authority; Sam Roberts, Brown and Caldwell; Diala Dandach, Parsons Corporation; Philip Braswell, Brown and Caldwell

TECHNICAL PROGRAM

Session 5: Public Support

Monday, May 6, 2013
3:45pm – 4:45pm

RB5A 3:45pm **Improving Public Communication and Outreach at the METROGRO Farm**
Alicia Gilley, Metro Wastewater Reclamation DistrictKelley Merritt, Metro Wastewater Reclamation District; Bryan Mitchell, Metro Wastewater Reclamation District

RB5B 4:15pm **New Biosolids Technologies And Processes For Developing Countries**
Richard D. Kuchenrither, University of Colorado Boulder; Lori Stone, Black & Veatch; Roger T. Haug, Loyola Marymount University

TECHNICAL PROGRAM

Session 6: Odor and Pathogen Control

Monday, May 6, 2013
3:45pm – 4:45pm

RB6A 3:45pm **Potential Sterilization of Biosolids by BioElectroTM Process**
Eham T. Safaei, Concordia University; Maria Elektorowicz, Concordia University; Robert S. Reimers, Tulane University; Jan A. Oleszkiewicz, University of Manitoba

RB6B 4:15pm **Treatment of Odor by a Seashell Biofilter**
Samantha M. Abraham, UCLA, School of Public Health; Mel Suffet, UCLA

Alternate 1 **Sanitary Assurance at Biosolids Composting Facilities: Development of a Temperature Contact Time Test Protocol**
Pulat Isobaev, University of Alberta; Kristine Wichuk, University of Alberta; Daryl McCartney, University of Alberta; Norman Neumann, University of Alberta

TECHNICAL PROGRAM

Session 7: Thermal Processes

Tuesday, May 7, 2013
8:30am – 10:00am

RB7A 8:30am **Thermal Drying to Achieve Class A Biosolids Can Be A Viable Option For Medium Sized Generators - A Case Study in Bowling Green, Kentucky**
Kristi Schnell, Gresham Smith and Partners

RB7B 9:00am **The Duffin Creek Biosolids to Energy Experience - Lessons in Energy Recovery**
Peter Burrowes, CH2M HILL Canada Ltd; Brad Dobson, Regional Municipality of Durham; Euan Ferguson, York Region; Robert Christopher, CH2M HILL Canada Ltd; Serge Larocque, CH2M HILL Canada Ltd

RB7C 9:30am **A Comparison of Conventional Heating and Microwave Irradiation for Enhanced Biogas Production from Municipal Biosolids**
Seyedeh Neda Mehdizadeh, University of British Columbia- Okanagan; Cigdem Eskicioglu, University of British Columbia-Okanagan; Hanna Hamid, University of British Columbia-Okanagan

Alternate 1 **Meeting the New SSI MACT Regulations - A Case Study**
Jay R. Surti, CH2M HILL

TECHNICAL PROGRAM

Session 8: Success Stories and Lessons Learned

Tuesday, May 7, 2013
8:30am – 11:45am

RB8A 8:30am **Rewa Mauldin Road WWTF Cogeneration System: Lessons Learned From A Fast-track Construction And First-year Operations**
Ted Hull, Brown and Caldwell; Calvin Howard, Renewable Water Resources (Greenville, South Carolina)

RB8B 9:00am **Composting Success at Spotsylvania County**
Todd O. Williams, CH2M HILL

RB8C 9:30am **Speedway, Indiana, WWTP Biosolids Upgrade: Storage Nitrification/Denitrification Reactor Results in Ammonia Loading Reduction**
Cynthia L. Fort, American Structurepoint Inc; Norman Berry, Town of Speedway

10:00am **Networking Break**

RB8D 10:45am **Sustainable Biosolids Management in South Florida: Lessons Learned from the Design, Construction, and Operation a Regional Biosolids Pelletization Facility Fueled by Landfill Gas**
Amber M. Barritt, CDM Smith; Raymond H. Schauer, Solid Waste Authority of Palm Beach County

RB8E 11:15am **How to Make Improvements When The Cupboard is Bare: Energy Service Contracting**
Patricia A. Scanlan, Black & Veatch; Bob Wimmer, Black & Veatch; Tom Appleman, UOSA; Jesse Moffat, FWSA; Pete Thomson, Black & Veatch; Dennis Clough, ESG; Justin Dickstein, Black & Veatch

Alternate 1 **The Shafdan Digestion and Cogeneration Project**
David L. Parry, CDM Smith; Scott Vandenburgh, CDM Smith

Alternate 2 **PCBs In Biosolids: Monitoring In A Large Urban WWTP Using A Newly Developed Practical Extraction Procedure**
Dilek F. Sanin, METU; Devrim Kaya, METU; Filiz Karakaya, METU; Ipek Imamoglu, METU

TECHNICAL PROGRAM

Session 9: Research and Development Activities

Tuesday, May 7, 2013
8:30am – 11:45am

RB9A 8:30am **Characterization of Thermal Pretreatment Impacts on Properties of Waste Activated Sludge and Development of a Pretreatment Model**
Gillian R. Burger, University of Waterloo; Wayne J. Parker, University of Waterloo

RB9B 9:00am **Distribution of Alkylphenols and Bisphenol A in Sludge and Biosolids Between Sludge Treatment Processes**
Wale Adewunmi, The State University of New Jersey, Peter F. Strom, The State University of New Jersey; Daniel Gimenez, The State University of New Jersey

RB9C 9:30am **Simultaneous Sludge Disintegration And Carbon Source Generation For Enhanced Biological Phosphorous Removal Using Ozonation**
Devendra P. Saroj, University of Surrey; Adriana Inchauste-Daza, UNESCO-IHE Institute for Water Education; Carlos Lopez-Vazquez, UNESCO-IHE Institute for Water Education

10:00am **Networking Break**

RB9D 10:45am **The Effect of Common Organic Household Disinfectants Found in Biosolids on the Potential Function of the Soil Denitrifying Bacteria Paracoccus DenitrificansPD1222 and Sinorhizobium Meliloti 1021**
Ryan M. Holzem, Duke University; Claudia Gunsch, Duke University

RB9E 11:15am **An Approach to Dewatering Optimization Using UV/Visible Spectrometry by Monitoring Residual Polymer in Centrate**
Banu Ormeci, Carleton University; Fares Almomani, Carleton University; Peter Gallant, ENDETEC/Veolia Water Solutions and Technologies; Richard DiMassimo, Kruger Inc.; Jeffery Privott, Kruger Inc.

Alternate 1 **The Role of Microbially Reducible Iron Flocs and Extracellular Proteases on the Sludge Reduction in the Cannibal Process**
John T. Novak, Virginia Tech; Passkorn Khanthongthip, King Mongkut's Institute of Technology Ladkrabang

TECHNICAL PROGRAM

Session 10: Bioenergy from Residuals I

Tuesday, May 7, 2013
8:30am – 11:45am

RB10A 8:30am **Pilot Study of Siloxanes Removal from Digester Biogas through Various Adsorbents**
Yuanming Tsai, INFILCO DEGREMONT INC; Sunil Mehta, Infilco Degremont, Inc; Jordi Raich-Montiu, CETaqua; Charles B. Bott, Hampton Roads Sanitation District; William J. Balzer, Hampton Roads Sanitation District; Peter A. Burrowes, CH2M HILL

RB10B 9:00am **Sometimes Average isn't Good Enough: Understanding the Impact of Variability on Energy Recovery from Digester Gas**
James H. Long, Hazen and Sawyer; Charles M. Bullard, Hazen and Sawyer; Frank Crump, City of Winston-Salem; Chris Shamel, City of Winston-Salem

RB10C 9:30am **Restaurant Trap Waste Characterization and Full Scale FOG Co-Digestion at the San Francisco Oceanside Plant**
Alexandre Miot, San Francisco Public Utilities Commission

10:00am **Networking Break**

RB10D 10:45am **Clean Combustion of Sludge Derived Fuel Part 1 of 2 - Concept to Pilot**
Roger T. Haug, Loyola Marymount University

RB10E 11:15am **Clean Combustion of Sludge Derived Fuels: Part 2 of 2**
F Michael Lewis, F Michael Lewis Inc

Alternate 1 **Second Law of Thermodynamics Analysis of Resource Recovery from Wastewater**
David L. Parry, CDM Smith

Alternate 2 **What Can Solids Do for You? - Shifting towards Solids as an Energy Resource**
Eric Auerbach, Malcolm Pirnie Inc; Thomas E. Kunetz, Metropolitan Water Reclamation District of Greater Chicago; Rob Van Evra, City of Columbus Division of Sewerage and Drainage; James Keller, Buffalo Sewer Authority

TECHNICAL PROGRAM

Session 11: Legislative, Regulatory, and Legal Issues

Tuesday, May 7, 2013
10:45am – 11:45am

RB11A 10:45am **Biosolids 2013: Odors, Nuisance and Current Legal Challenges to Beneficial Use**
James B. Slaughter, Beveridge & Diamond PC

RB11B 11:15am **Historical Review of United States (US) Guidance and Regulations for Sludge Disinfection and Stabilization including a Future Projection**
James E. Smith Jr., Independent Environmental Consultant

TECHNICAL PROGRAM

Session 12: Collaboration to Advance Energy Sustainability Initiatives

Tuesday, May 7, 2013
1:30pm – 3:00pm

RB12A 1:30pm **A National Survey of Biogas Use at Wastewater Treatment Plants in the United States: The Results**
Yinan Qi, Black & Veatch; Ned Beecher, North East Biosolids and Residuals Association (NEBRA); Lori Stone, Black & Veatch

RB12B 2:00pm **Road To Energy Neutrality - Werf Is Paving The Way With A Focus On Biosolids Energy**
Ralph Eschborn, AECOM; Paul Kohl, Philadelphia Water Department; Lori Stone, Black and Veatch; Lauren Fillmore, Water Environment Research Foundation

RB12C 2:30pm **Eighteen Agencies Team to Convert Biosolids to Energy for Regional Solution**
Robert A. Gillette, Carollo Engineers; Caroline Quinn, Delta Diablo Sanitation District; Todd C. Jordan, Carollo Engineers

Alternate 1 **North Davis Sewer District's Leadership Path to Net Zero Energy**
Phillip E. Heck, Brown & Caldwell; Jim Schettler, Brown and Caldwell; Myron Bachman, North Davis Sewer District; Kevin Cowan, North Davis Sewer District

TECHNICAL PROGRAM

Session 13: Biosolids Land Application, Land Reclamation, and Nutrient Management

Tuesday, May 7, 2013
1:30pm – 4:45pm

RB13A 1:30pm **Fate and Removal of Steroidal Hormones during Advanced Anaerobic Digestion of Municipal Biosolids**
Hanna Hamid, University of British Columbia; Cigdem Eskicioglu, University of British Columbia

RB13B 2:00pm **Long Term Monitoring Results for the METROGRO© Farm Near Deer Trail, Colorado**
James E. Johnson, Metro Wastewater Reclamation District

RB13C 2:30pm **Case Study: Nutrient Trading Options for Satisfying NPDES Cap Load in the Chesapeake Bay Watershed**
Aaron B. Stephens, Material Matters, Inc; Jennifer Callahan, Material Matters, Inc

3:00pm **Networking Break**

RB13D 3:45pm **Mine Land Reclamation and Biosolids: A Perfect Match**
Trudy Johnston, Material Matters, Inc.; Jennifer Callahan, Material Matters, Inc.; MIchael Deily, Harrisburg Advanced Wastewater Treatment Facility

RB13E 4:15pm **Too Much Nitrogen?**
Dale D. Gabel, CH2M HILL; Dave Meyer, City of Westminster; Tim Woodard, City of Westminster; Jim Jordahl, CH2M HILL; Thomas Borch, Colorado State University

Alternate 1 **Feasibility Of Combined VFA Production And Phosphorous Recovery For BNR and Non-BNR Sludge**
Francesco Zurzolo, University of Manitoba; Jan A. Oleszkiewicz, University of Manitoba

TECHNICAL PROGRAM

Session 14: EPA/NBP/WEF/WERF Future of Biosolids

Tuesday, May 7, 2013
1:30pm – 3:00pm

WEF and WERF have collaborated with CDM Smith, Black & Veatch, CH2M Hill Inc. and Hazen & Sawyer to examine the future of biosolids treatment with specific regard to resource recovery. This new publication, funded by the US EPA, addresses the policy and planning aspects of organics, nutrients, and energy recovery, and examines other resource candidates. The report includes information on the education and outreach challenges and opportunities available to realize a better future. These perspectives will be reviewed and discussed by a select panel of contributors, along with a moderator, concluding with questions and answers from the audience as a means to formally roll out and promote the study.

TECHNICAL PROGRAM

Session 15: Bioenergy from Residuals II

Tuesday, May 7, 2013
1:30pm – 4:45pm

RB15A 1:30pm **The Tale of Two Digesters: Hydraulic Versus Compressed Biogas Mixing**
Richard W. von Langen, RVL Associates, Inc.; Richard Althouse, Fairfield Suisun Sewer District; Glenn Dorsch, Vaughan Company; Brad Rockwell, Rockwell Equipment and Engineering, Co.

RB15B 2:00pm **Biosolids Mass Reduction to Produce Fuel**
William E. Toffey, Effluental Synergies LLC; Cornelius Shields, KORE Infrastructure LLC; Latif Mahjoob, KORE Infrastructure LLC

RB15C 2:30pm **Maximizing Opportunities for Beneficial Use of Biogas for Pima County, Arizona**
Jing Luo, Pima County; Gary Newman, Brown and Caldwell, Inc; Michael Gritzuk, Private Consultant; Eron Jacobson, Brown and Caldwell, Inc; Jerry Bish, Greeley and Hansen, LLC; Fernando Sarmiento, Greeley and Hansen, LLC; Jackson Jenkins, Pima County

3:00pm **Networking Break**

RB15D 3:45pm **Positive Business Case for Codigestion and Resource Recovery Facilities in Australia without Pre-Existing Anaerobic Digesters**
John Kabouris, CH2M HILL; Tim Shea, CH2M HILL; Kate Simmonds, CH2M HILL

RB15E 4:15pm **Co-thickening and Cogeneration in The Electric City**
Vincent Apa, CDM Smith

Alternate 1 **An Update to The Island Wide Biosolids Management Plan - A Focus on Energy and Solids Minimization at Oahu, HI**
Charles T. Goss, AECOM; Mohammad Abu-Orf, AECOM; Jeremy Koch, AECOM

Alternate 2 **Development, Implementation And Demonstration Of The Co-digestion Of Source Separated Food Waste By The City Of Tacoma**
Christopher Muller, Brown & Caldwell; David McBride, Brown and Caldwell; Donald Stallman, Brown and Caldwell; John Burk, Brown and Caldwell; James Parvey, City of Tacoma, Washington; Lewis Griffith, City of Tacoma, Washington

TECHNICAL PROGRAM

Session 16: Biosolids Management Approach: A Panel Discussion on Technology Selection Specific to End Use

Tuesday, May 7, 2013
3:45pm – 4:45pm

In this panel discussion, representatives from three utilities will discuss the approaches behind recent updates to their biosolids management programs. Inherently, every utility has a unique combination of evaluation criteria (economic, political, environmental, social, geographical, etc.) that are used to select the chosen technology and ultimate end use of its biosolids. Experience and lessons learned from these utilities and the ensuing discussion are intended to provide insight to those who are contemplating an update to their biosolids management approach. Specific details on panelists will become available in the coming weeks.

TECHNICAL PROGRAM

Session 17: Why Must We Manage Biosolids as a Nutrient Resource

Tuesday, May 7, 2013
3:45pm – 4:45pm

Supply and demand will dominate the discussion. For over 20 years biosolids have been regulated as a waste. Increasing concern for nutrient management and long term nutrient availability is emerging as the dominant paradigm for emerging programs at all levels. This session will address biosolids as a source essential nutrients to support plant growth and promote soil quality. Comprehensive nutrient management programs are emerging in all efforts promoting land based recycling of societal by-products.

TECHNICAL PROGRAM

Session 18: Featured Session: Local Metro Water Services Panel

Wednesday, May 8, 2013
8:30am – 11:45am

Additional information on this session's presentations will become available in the coming weeks.