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Water Management – Recycle/Reuse

IWC Representative: Steve Gagnon, AVANTech, Columbia, SC
Session Chair: Mike Preston, Black & Veatch, Overland Park, KS
Discussion Leader: Rafique Janjua, Fluor Enterprises, Inc., Sugar Land, TX

†

IWC 11- 01 *Principles of a Liquid Desiccant Dehumidification System (LDDS) for Water Extraction from Combustion Gases.*

Bruce Folkedahl, Ph.D., Energy & Environmental Research Center, Grand Forks, ND

Prepared Discussion by: William Moore Aquatech International Corp., Canonsburg, PA

IWC 11- 02 *Recovery and Recycling of Industrial Side-Stream Wastewater*

Michael Chan, Duraflow, LLC, Tewksbury, MA

Prepared Discussion by: Arun Mittal Aquatech International Corp., Canonsburg, PA

IWC 11- 03 *Municipal Wastewater as an Alternative Feed Source for Industrial Water Needs*

Katariina Majamaa, Dow Chemical Ibérica, S.L., Tarragona, Spain

Gregg Poppe, The Dow Chemical Company Edina, MN

Prepared Discussion by: Robert Bradley Veolia Water Solutions & Technologies, Houston, TX
Not Available

Ion Exchange, Advances to Existing Technologies

IWC Representative: Jim Sabzali, Aldex Chemical, Granby, QC
Session Chair: Peter Meyers, ResinTech, West Berlin, NJ
Discussion Leader: Ed F. Sylvester, Jr., ChemTreat, Springfield, IL

IWC 11- 04 ***Amine Chemistry – Update on Impact to Resin***
Gregory Bachman, Doug Kellogg, Marty Wilkes, Siemens Industry Inc. Rockford, IL

Prepared Discussion by: Jim Wiegand ChemTreat, Inc., Davenport, IA

IWC 11- 05 ***Molybdate Removal by Ion Exchange***
Andrew Bishop, Peter Meyers, ResinTech West Berlin, NJ

Prepared Discussion by: Claude Gauthier The Purolite Company, Toronto, ON, Canada

IWC 11- 06 ***Seawater Regeneration of PUROLITE® SST80™ shallow shell SAC resin***
Donald Downey, Purolite Company, Paris, ON

Prepared Discussion by: Dave Dally Lanxess, Birmingham, NJ *Not Available*

Hydraulic Frac Flowback Waste Water Treatment Methods

IWC Representative: Joe Loftis, Consultant, Pittsburgh, PA
Session Chair: Devesh Mittal, Aquatech International Corp, Canonsburg, PA
Discussion Leader: John Schubert, HDR, Sarasota, FL

IWC 11- 07 *NORM Removal from Hydrofracturing Water*

James Silva, Ph.D., Hope Matis, William Kostedt IV, Vicki Watkins,
GE Global Research Center Niskayuna, NY

Prepared Discussion by: Jerry Penland Chester Engineers, Moon Township, PA

IWC 11- 08 *Evaluation of Brackish Groundwater Treatment for Use in Hydraulic Fracturing of the Bakken Formation, North Dakota*

Bethany Kurz, Daniel Stepan, John Harju, Brad Stevens, Robert Cowan, Energy & Environmental
Research Center Grand Forks, ND

Prepared Discussion by: John Schubert HDR Engineering, Inc., Sarasota, FL

IWC 11- 09 *The Real Cost of ZLD for Shale Gas Frac Water in the Marcellus Shale Play*

William Shaw, P.E., HPD, LLC, a Veolia Water Solutions & Technologies company, Plainfield, IL

Prepared Discussion by: Dan Dudek Siemens Industry, Inc., Warrendale, PA

Mine Water Management

IWC Representative: Mike Ryder, Chester Engineers, Moon Twp., PA
Session Chair: Paul Pigeon, Golder Associates Inc., Lakewood, CO
Discussion Leader: Mike Ryder, Chester Engineers, Moon Twp. PA

IWC 11- 10 *Mine Waste Clean-Up with Novel Hybrid Organic-Inorganic Materials*

Edward Rosenberg, Ph.D., Carolyn Hart, University of Montana (UM)/Purity Systems Inc.
(PSI) Missoula, MT

Prepared Discussion by: Tom Rutkowski Golder Associates Inc., Lakewood, CO *Not Available*

IWC 11- 11 *Sulfate Removal from Acid Mine Drainage for Potential Water Re-use*

David Kratochvil, Ph.D., P.Eng, Alex West, BioteQ Environmental Technologies Inc Vancouver, BC,
Canada, Phil Fatula, Lanxess Sybron Chemicals Inc. Pittsburgh, PA

Prepared Discussion by: Joseph Swearman Consol Energy, Canonsburg, PA *Not Available*

IWC 11- 12 *AMD Reuse and Other Sustainable Technologies*

Scott Quinlan, P.E., C.B.C., Allison McCurdy, GAI Consultants Pittsburgh, PA, Gary Van Balen, P.E., Sci-Tek
Consultants, Inc. Penn Hills, PA, Joseph Fedor, P.E., ALCOSAN Pittsburgh, PA

Prepared Discussion by: Louiza Bell Teck Metals Ltd, Trail, BC, Canada *Not Available*

Traditional and Innovative Pretreatment Techniques

IWC Representative: Jim Dromgoole, Fort Bend Services, Strafford, TX
Session Chair: Michael Sheedy, Eco Tec, Pickering, Ontario
Discussion Leader: Bob Applegate, Graver Water Systems, New Providence, NJ

IWC 11- 13 *Forward Osmosis Applied to Desalination and Evaporative Cooling Make-up Water*
Peter Nicoll, Modern Water plc, Guildford, Surrey, UK

Prepared Discussion by: Donald Kirk University of Toronto, Toronto, Canada *Not Available*

IWC 11- 14 *Monochloramine Removal by Activated Carbon – Design, Operating and Maintenance*
William Collentro, Worcester Polytechnic Institute, Plymouth, MA

Prepared Discussion by: Stephanie Carr Calgon Carbon Corporation, Pittsburgh, PA

IWC 11- 15 *Achieving Complete Lime Softening in a Deep Well Saline Water Source via Solids Contact Process Treatment in the Presence of Natural Organic Matter under Cold Weather Conditions*
John Williamson, Infilco Degremont, Inc, Richmond, VA, P. Temple Ballard, Infilco Degremont Inc
Richmond, VA, Ramesh Sharma, ConocoPhillips Houston, TX, Sudhir Parab, ConocoPhillips Alberta,
Canada

Prepared Discussion by: Diane Martini Sargent & Lundy, Chicago, IL

IWC 11- 16 *Study of the Scaling Process by the Fast Controlled Precipitation Method: Application to Raw River Water*

Olivier Horner, Guillaume Gautier, Olga Alos-Ramos, EDF R&D Chatou, France

Prepared Discussion by: Barbara Moriarty Nalco Company, Naperville, IL

**Innovative Technology Applications For Power Plant Steam Cycle,
Condensate and Radioactive Waste Treatments**

IWC Representative: Dan Rice, DBR Consulting, Sault Ste. Marie, MI
Session Chair: David Franciamone, Pall Corporation, Timonium, MD
Discussion Leader: Dave Malkmus, ResinTech, West Berlin, NJ

IWC 11- 17 ***Monitoring of Trace Levels of Ions In The Steam Cycle By Microchip Capillary Electrophoresis***

Kenneth Ogan, Jonathan Vickers, Matthew Heim, Advanced MicroLabs, LLC Fort Collins, CO

Prepared Discussion by: Dave Silverman Advanced Water Engineering, Inc., Indian Harbour Beach, FL

IWC 11- 18 ***Operating Experience with Amine Form Condensate Polishing***

Lewis Crone, Dominion Nuclear Connecticut, Inc., Waterford, CT

IWC 11- 19 ***Upgrade of Condensate Water Filtration System with High Efficiency Disposable Filters***

Khalid Farooq, Pall Corp., Port Washington, NY

IWC 11- 20 ***Use of Mobile Technologies in the Design of Liquid and Solid Radwaste Treatment Systems For Nuclear Power Plants***

Jeanette Shoemaker, Shapiro, Kumar Sinha, Bechtel Power Corporation Fredrick, MD

Prepared Discussion by: James Braun AVANTech, Columbia, SC

Refinery and Oil Sands Wastewater Applications

IWC Representative: George Abraham, Veolia Water Solutions & Technologies, Moon Twp, PA
Session Chair: Ramesh Kalluri, Kalluri Group, Inc., Houston, TX
Discussion Leader: Jay Farmerie, Cyrus Rice, Pittsburgh, PA

IWC 11- 21 *Piloting Conventional and Emerging Industrial Wastewater Treatment Technologies for the Treatment of Oil Sands Process-Affected Water*

Richard Mah, Rodney Guest, Ph.D., Pritesh Kotecha, Suncor Energy Inc. Calgary, AB, Canada

Prepared Discussion by: Jeff Easton WesTech Engineering, Inc., Salt Lake, UT *Not Available*

IWC 11- 22 *Challenges and Promises for Refinery Wastewater: Case Studies in Upgrading the WWTP Under Many Constraints*V °

John Christiansen, William Xu, Ph.D, CDM Houston, TX *Not Available*

IWC 11- 23 *Ceramic Membranes, Commercially Available Alternatives, Operating Performance, Successes and Failures*

R. Gay-de-Montella, Worley Parsons Canada, Calgary, AB, Canada

T. Harding, The University of Calgary Calgary, AB, Canada

V. Martez, Applied Research and Innovation, SAIT Calgary, AB, Canada

Prepared Discussion by: Rick Szilagyi WesTech Engineering, Rockford, IL *Not Available*

IWC 11- 24 *Enzymatic Removal of Selenocyanate from Sour Water Stripper Bottoms*

Greg DeLozier, Novozymes A/S, Bagsvaerd, Denmark, Yakup Nurdogan, Ph.D., P.E., Bechtel Pueblo, CO

Prepared Discussion by: John Christiansen CDM, Inc., Houston, TX *Not Available*

Nutrient Control and Contaminant Removal

IWC Representative: John Lucey, Heckmann Corp., Pittsburgh, PA
Session Chair: Ray Post, ChemTreat, Inc., Langhorne, PA
Discussion Leader: Charles Guzelli, Severn Trent Services, Pittsburgh, PA

IWC 11- 25 *Nutrient Control - The Key to a Low Environmental Impact Cooling Water Program*
John Richardson, Helen Cerra, Richard Tribble, ChemTreat Ashland, VA

Prepared Discussion by: Bob Goltz The DOW Chemical Company, Midland, MI *Not Available*

IWC 11- 26 *Filtration of Soluble Metals and Organic Contaminants by Nanoalumina Fiber Filters*
F. Tepper, L. Kaledin, Argonide Corporation Sanford, FL
H. Mowers, Ahlstrom Filtration LLC Mt. Holly Springs, PA

IWC 11- 27 *Thirty Years of Successful Nitrogen Removal Using Deep Bed Denitrification Filters in Florida*
David Pickard, Premier Magnesia LLC, Tampa, FL

Prepared Discussion by: John Schubert HDR Engineering, Sarasota, FL

IWC 11- 28 *Design of the Biotreatment Process for Chemical Agent Hydrolysate by Immobilized Cell Bioreactor*

Yakup Nurdogan, Bechtel National, Inc., Pueblo, CO, Craig Myler, Ph.D., Bechtel National, Inc. Frederick, MD, George Lecakes, Battelle Pueblo, CO, Paul Usinowicz, Ph.D., P.E., BCEE, Battelle Columbus, OH, Eric Blumenstein, P.E., Golder Associates, Inc. Lakewood, CO

Prepared Discussion by: Jill Sonstegard GE Water, Salt Lake, UT *Not Available*

Cooling Tower Water-Biological Growth, Scale and Corrosion Inhibition Strategies

IWC Representative: Paul Puckorius, Puckorius & Associates, Inc, Arvada, CO
Session Chair: Scott Quinlan, GAI Consultants, Homestead, PA
Discussion Leader: Mary Wolter Glass, Mexel USA, LLC, Arlington, VA

IWC 11- 29 ***Important Considerations for Pre-startup of Cooling Tower Water Systems to Minimize Water Contacted Equipment Deterioration***
Paul Puckorius, Puckorius & Associates, Inc, Arvada, CO

Prepared Discussion by: Rick Kreuser RTK Technologies Inc., Baton Rouge, LA *Not Available*

IWC 11- 31 ***Novel Biocide Delivery for Improved Control of Biofilm Organisms***
Dorothy Reynolds, Charles Ascolese, Gloria Tafel, Linna Wang, Juan Jiang,
Bob Semet, GE Power & Water, Water & Process Technologies Trevose, PA

Prepared Discussion by: Tom Armon H-O-H Water Technology, Palmetto, FL *Not Available*

IWC 11- 32 ***Innovative Monitoring and Control System Optimizes Cooling Water Treatment Effectiveness***
Bruce Chamberlain, Darcy Dauterive, Bruce Tibbott, Ashland Water Technology Wilmington, DE

Prepared Discussion by: Ray Post ChemTreat Inc., Langhorne, PA

Dealing with Today's FGD Wastewater Treatment Problems
While Looking for Tomorrow's Solution

IWC Representative: Colleen Layman, Bechtel Power, Frederick, MD
Session Chair: Mike Marlett, Aquatech International Corp., Milwaukee, WI
Discussion Leader: Patricia Scroggin, Burns & McDonnell, Kansas City, MO

IWC 11- 33 *Evaluation of Carbon Sources for the Anaerobic Treatment of Flue Gas Desulfurization (FGD) Wastewaters for Heavy Metals Removal* ****

Antonio Lau, Infilco Degremont, Inc., Richmond, VA, Rudy Labban, & Sunil Mehta, Degremont North America R&D Laboratory Richmond, VA, A. Paul Togna, Ph.D., Environmental Operating Solutions Richmond, VA

Prepared Discussion by: William Kennedy Orion Engineering, PLLC, Charlotte, NC

IWC 11- 34 *Demonstration Test of Iron Addition to an FGD Absorber to Enhance Flue Gas Selenium Removal* *****

Thomas Higgins, CH2M HILL, Chantilly, VA, Karen Meade, CH2M HILL Santa Ana, CA, Dennis Fink, CH2M HILL Oakland, CA

Prepared Discussion by: Kristin Collier Burns & McDonnell, Kansas City, MO

IWC 11- 35 *Case Study on Selenium Removal from a Combined FGD Wastewater and Landfill Leachate For a Power Plant on the Ohio River* ****

Michael Soller, Bowen Engineering Corporation, Indianapolis, IN, James Harwood, GE Water & Process Technologies Oakville, ON, Canada, Tim Pickett, GE Water & Process Technologies Salt Lake City, UT

Prepared Discussion by: Vince Como Black & Veatch, Overland Park, KS

IWC 11- 36 *Evaluation of Thermal ZLD Treatment of FGD Purge Water Options Rev 3* *****

Herman Nebrig, Xinjun (Jason) Teng, David Downs, Southern Company Services Birmingham, AL

Prepared Discussion by: Bill Shaw Veolia Water Solutions & Technologies, Pewaukee, WI

Innovative Advancements in Water & Wastewater Management in Oil Sands Industry

IWC Representative: Brad Wolf, Berkeley Research Group, LLC, Pittsburgh, PA
Session Chair: Arun Mittal, Aquatech International Corp., Canonsburg, PA
Discussion Leader: Don Downey, The Purolite Company, Paris, ON

IWC 11- 37 *Produced Water Softener Regeneration Using Boiler Blowdown*
Stephen Moylan, Francis Boodoo, The Purolite Company Bala Cynwyd, PA

Prepared Discussion by: George Crits Aqua-Zeolite Sciences, Ardmore, PA

IWC 11- 38 *Filtration Process Review in SAGD Produced Water*
Ramesh Sharma, Kris Bansal, ConocoPhillips Company Houston, TX
Travis Dinsdale, ConocoPhillips Canada Limited Calgary, AB, Canada

Prepared Discussion by: Rudy Tamayo Husky Energy, Calgary, AB, Canada

IWC 11- 39 *An Innovative Solution to SAGD Blowdown Water---Blowdown Boiler Technology*
Susan Sun, New Technology Oil Sands Cenovus Corp., Calgary, AB, Canada
Mike Wasylyk, Cenovus Calgary, AB, Canada

Prepared Discussion by: Steve Portelance WorleyParsons Canada, Calgary, AB, Canada

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IWC 11- 40 *Solidification: A New Approach to Zero Liquid Discharge (ZLD) in the SAGD Industry*
Scott Tavaglione, Robert.Solomon, Butch Britton, Lanny Weimer,
GE Water and Process Technologies Bellevue, WA

Prepared Discussion by: Peter Midgley Degeremont Technologies, Dundas, ON, Canada

Trace Contaminant Removal

IWC Representative: Dan Rice, DBR Consulting, Sault Ste. Marie, MI
Session Chair: Jim Braun, AVANTech, Columbia, SC
Discussion Leader: Bob Goltz, Dow Water & Process Solutions, Midland, MI

IWC 11- 41 *Chromate Removal at the Hanford Site*

Dean Neshem, CH2M HILL Plateau Remediation Company, Richland, WA
Peter Meyers, ResinTech West Berlin, NJ

Prepared Discussion by: Gregory A. Osen AVANTech, Inc. Columbia, SC

IWC 11- 42 *Advanced Oxidation Process with a New Nanstructured Material*

Ivano Aglietto, Ph.D., Michele Marcotti, Beatrice Sardi, SA Envitech Caenago di Brianza, Italy

Prepared Discussion by: Barbara Schilling Ozonia N.A., Leonia, NJ *Not Available*

IWC 11- 43 *Absorbent Technology for Removal of Soluble Mercury at the Trace Contaminant Level (Low Part Per Trillion)*

Gina Sacco, MAR Systems Inc., Solon, OH
Cheryl Soltis-Muth, Northeast Ohio Regional Sewer District Cleveland, OH

Prepared Discussion by: Bob Goltz The Dow Chemical Company, Midland, MI *Not Available*

IWC 11- 44 *Iron Oxide Emplacement On Sand Media For Groundwater Arsenic Removal*

T.S. Abia II, C.Wang,Y.H.Huang,Texas A&M University, College Station, TX

Prepared Discussion by: Jim Knoll Graver Technologies, New Providence, NJ *Not Available*

New Developments in Cooling Water Treatment

IWC Representative: Paul Puckorius, Puckorius and Associates, Inc., Arvada, CO
Session Chair: Ken Dunn, Ashland Water Technology, Wilmington, DE
Discussion Leader: Don Holt, Ashland Water Technology, Ajax, ON, Canada

IWC 11- 45 *Challenges with the Use of Sea Water for Cooling and Development of a Novel Treatment And Monitoring Control*

Jasbir Gill, Ph.D., Nalco Company, Naperville, IL
Geoff Townsend, Ph.D., & Paloma Lopez Serrano, Nalco Netherlands BV Leiden, Netherland

Prepared Discussion by: Vickie Olson Honeywell, Sandy Springs, GA

IWC 11- 46 *A Novel Anti-Scaling Method And Its Use In Zero Liquid Discharge Mode In Cooling Tower Operation*

Jie Lu, Ph.D., World Minerals, Inc., Lompoc, CA
Mujun Pan, Wylton, Bosheng Fu, Wylton (China) Chemical.Co. Ltd. Fuquan, Guizhou, China

Prepared Discussion by: Emmanuel Quagraine, Ph.D . Saskatchewan Power Corp., Estevan, SK, Canada

IWC 11- 47 *A Review of the Cooling Water Methods for Sodium Hypochlorite Activation of Sodium Bromide into Hypobromous Acid Biocide*

Elizabeth Harrelson, Jonathan Howarth, Courtney Mesrobian, Todd Shaver,
Enviro Tech Chemical Services, Inc. Modesto, CA

Prepared Discussion by: Bruce Chamberlain Ashland Water Technologies, Baton Rouge, LA

IWC 11- 48 *Fill Selection and Chemical Treatment Methods to Minimize Scaling/Fouling in Cooling Towers*

Brad Buecker, Kiewit Power Engineers, Lenexa, KS
Ray Post, P.E., ChemTreat Langhorne, PA
Rich Aull, P.E., Brentwood Industries Reading, PA

Prepared Discussion by: Tony Selby Water Technology Consultants, Inc., Evergreen, CO

One Can Never Get Enough Solutions for FGD Wastewater Treatment

IWC Representative: John Lucey, Heckmann Corp., Pittsburgh, PA
Session Chair: Brian Heimbigner, KalKris LLC, Cumming, GA
Discussion Leader: Terry Laprise, Aquatech International Corp., Canonsburg, PA

IWC 11- 49 *Concepts in Zero-Liquid Discharge*

Matthias Loewenberg, Ph.D., GEA Process Engineering Inc., Columbia, MD
Dipl.-Ing. Christian Melches, & Dipl. Ing. Günter Hofmann, GEA.Messo PT Duisburg, Germany

Prepared Discussion by: Brad Buecker Kiewit Power Engineers, Lenexa, KS

IWC 11- 50 *The Use of Constructed Wetlands in the Treatment of Flue Gas Desulfurization Wastewater*

Jared Morrison, Westar Energy, Inc., Topeka, KS
Christopher Snider, P.E., P.G., & Dennis Haag, CWB, CPESC, Burns & McDonnell Kansas City, MO

Prepared Discussion by: Dan Sampson Worley Parsons, Folsom, CA *Not Available*

IWC 11- 51 *Solidification of FGD Wastewater with Fly Ash: Feasibility and Fate Analysis*

Mark Owens, Degremont Technologies, Richmond, VA
Rudy Labban, P.E., & Denise Horner, Degremont North American Research & Development Richmond, VA

Prepared Discussion by: Patricia Scroggin Burns & McDonnell, Kansas City, MO

IWC 11- 52 *Selenium Control in Wet FGD Systems*

Katherine Searcy, Trimeric Corporation, Buda, TX, Mandi Richardson & Gary Blythe, URS Corporation
Austin, TX, Paul Chu & Chuck Dene, EPRI Palo Alto, CA, Dirk Wallschlager, Trent University
Peterborough, ON, Canada

Prepared Discussion by: Tom Higgins Aquatech International Corp., Canonsburg, PA

The Challenge of On-Site Testing for Produced Water Steam Generation Systems:
A Panel Discussion Sponsored by the ASME Research and
Technology Committee on Water and Steam in Thermal Systems

IWC Representative: Colleen Layman, Bechtel Power, Frederick, MD
Session Chair: Debbie Bloom, Nalco Company, Naperville, IL

- IWC 11- 53 ***Experiences and Challenges for Measuring Total Iron in Produced Water***
Ivan Morales,
Christopher Graham, MEG Energy Calgary, AB, Canada
- IWC 11- 54 ***On-site Laboratory Methods for Determination of Silica and Alkalinity for Steam Generators
for In-Situ Bitumen Recovery***
Sudhir Parab, ConocoPhillips Canada, Calgary, AB, Canada
Ramesh Sharma, ConocoPhillips Company Houston, TX
- IWC 11- 55 ***Analytical Methods for Steam Generators Used in Enhanced Oil Recovery (EOR)***
E. J. Van Doorn, Baker Hughes Inc., Houston, TX
- IWC 11- 56 ***New No Solvent Method for fast, field Oil in Water Sample Measurement***
Duane Germenis, Gary Bartman, Dale Brost, Ph.D., Amy Foster, Michael Holmes,
Turner Designs Hydrocarbon Instruments, Inc. Houston, TX
- IWC 11- 57 ***Optical Based Software Techniques for Real-Time Analysis and Classification of Produced
Water***
Kent Peterson, Fluid Imaging Technologies, Inc., Yarmouth, ME
- IWC ASME-D ***ASME Panel Discussion Transcription***

Advanced Membrane Solutions

IWC Representative: Dennis McBride, Fluor Enterprises, Inc., Greenville, SC
Session Chair: Jane Kucera, Nalco Company, Naperville, IL
Discussion Leader: Jeff Tate, Agape Water Solutions, Inc., Harleysville, PA

IWC 11- 58 ***Membrane Pretreatment Considerations with Seawater Reverse Osmosis***
Jonathan Dietrich, Dietrich Consulting Group, LLC, Charlotte, NC

Prepared Discussion by: Kelly Lange-Haider Dow Water and Process Solutions, St. Paul, MN

IWC 11- 59 ***Anti-fouling Membrane System For Industrial Wastewater Treatment and Recovery***
Joon Min, Daeik Kim, & Young Eum, BKT United Anaheim, CA
Gi Park, & Sang Kim, FMC Daejon, Korea
Jang Kim, BKT Korea Seoul, Korea

Prepared Discussion by: Doug Frick Porex Filtration, Fairburn, GA

IWC 11- 60 ***Using Permeate Suction to Reduce Concentration Polarization In Spiral Wound Nanofiltration Module***
Awad El-Shamy, Crane Environmental, Inc., Venice, FL
Robert Carnahan, Mahmoud Nachabe, Mark.Ross, Ayden Sunol, Ahmed Said,
University of South Florida Tampa, FL

Prepared Discussion by: Peter Waldron Toray Membrane USA, Yarmouth, MA

IWC 11- 61 ***Factors Impacting Silica/Silicate Control Agent Performance in Industrial Water Systems***
Zahid Amjad, Robert Zuhl, P.E., Lubrizol Advanced Materials, Inc. Cleveland, OH

Prepared Discussion by: Jasbir Gill The Nalco Company, Chicago, IL

Deionization – New Approaches and Monitoring Methods

IWC Representative: Wayne Bernahl, W. Bernahl Enterprises, Inc., Elmhurst, IL
Session Chair: Gregg Poppe, The Dow Chemical Company, Edina, MN
Discussion Leader: Peter Meyers, ResinTech, West Berlin, NJ

IWC 11- 62 *Advanced On-line Sodium Measurement*

David Gray, Mettler-Toledo Thornton, Inc., Bedford, MA

Prepared Discussion by: Jim Cairns ThermoFisher Scientific, Beverly, MA *Not Available*

IWC 11- 63 *Double Pass Electro-Deionization*

Steven Gagnon, Troy Gill, AVANTech, Inc. Columbia, SC

Prepared Discussion by: Michael Snow, Ph.D. SnowPure Water Technologies, San Diego, CA
Not Available

IWC 11- 64 *In Search of the Highest Purity Resin Available Stretching the Limit of Ion Exchange in Microelectronics*

Alan Knapp, Siemens Industry, Inc. Water Technologies, Portland, OR
Slava Libman, Air Liquide, Balazs NanoAnalysis Freemont, CA

Prepared Discussion by: Peter Yarnell Graver Technologies, Glasgow, DE *Not Available*

IWC 11- 65 *Carbon Electrode-based Demineralization at a Wastewater Facility*

John Barber, GE Power and Water, Guelph, ON, Canada
Hai Yang, GE Global Research Shanghai, China

Prepared Discussion by: Frank DeSilva ResinTech, Los Angeles, CA

Water Treatment Techniques for Re-Use and Zero Liquid Discharge

IWC Representative: Manoj Sharma, Aquatech International Corp., Canonsburg, PA
Session Chair: Chip Westaby, Turner Designs Hydrocarbon Instruments, St. Louis, MO
Discussion Leader: Diane Martini, Sargent & Lundy, Chicago, IL

IWC 11- 66 ***Hydrodynamic Cavitation for Cooling Water Treatment: A Technology Update*** *****
Philip Vella, Ph.D., VRTX Tech, Schertz, TX

Prepared Discussion by: Jeri Penrose Sargent & Lundy, LLC, Chicago, IL

IWC 11- 67 ***On-site Sodium Hypochlorite Generation System Improves Safety, Reliability, and Reduces Cost*** *****
Luis Diaz, NextEra Energy, Juno Beach, FL

Prepared Discussion by: Michele FunkBechtel Power Corporation, Frederick, MD

IWC 11- 68 ***SAGD ZLD approaches*** *****
Mark Nicholson, P.E., HPD, a Veolia Water Solutions & Technologies company, Plainfield, IL

Prepared Discussion by: Prit Kotecha, P.E., M.E. Suncor Energy, Calgary, AB, Canada *Not Available*

IWC 11- 69 ***Organic Removal with Granular Activated Carbon (GAC) from Distillate Water with Bio-Fouling Tendency and associated issues: A Follow-up Report on a Power Plant Case-Study.*** *****

Emmanuel Quagraine, Ph.D. Saskatchewan Power Corp., Shand Power Station, Estevan, SK, Canada

Prepared Discussion by: Rafique Janjua Fluor Enterprises, Inc., Sugar Land, TX

Guarding and Expanding Profitability in Today's Complex Market Environment

IWC Representative: Colleen Layman, Bechtel Power, Frederick, MD
Session Chair: Jeff Cadman, GAI Consultants, Cranberry Township, PA
Discussion Leader: John Coyne, GAI Consultants, Homestead, PA

IWC 11- 71 *Using Patents to Monetize Innovative Ideas*

Clifton McCann, Lars Genieser, Venable LLP Washington, DC
Jennifer Vanderhart, Exponent, Inc. Washington, DC

Prepared Discussion by: Thomas C. McThenia, Jr. GrayRobinson, P.A., Orlando, FL *Not Available*

IWC 11- 72 *Public- Private Partnership Projects Influence on Cost and Performance For Seawater Desalination Projects*

Javier Gaztelu, Alfredo Andres, INIMA OHL Group Miami, FL

Prepared Discussion by: Jonathan Shimko GAI Consultants, Homestead, PA

IWC 11- 73 *A Holistic Water Management Approach to Changing Power Plant Regulations*

Michael Preston, Black & Veatch, Overland Park, KS

Prepared Discussion by: Stephen Frank GenOn Energy, Canonsburg, PA

Trends in Modeling for Improved Plant Performance

IWC Representative: Mike Gottlieb, ResinTech, West Berlin, NJ
Session Chair: Tom Vanden Heuvel, Crane Environmental, Venice, FL
Discussion Leader: Virginia Durham, Ashland Water Technologies, Media, PA

IWC 11- 75 *Boiler Deposit Control - Informed Selection Improves Boiler Protection*
James Robinson, & Dennis Dyer, GE Power and Water Trevose, PA

Prepared Discussion by: Robert Bartholomew Sheppard T. Powell Associates LLC, Baltimore, MD

IWC 11- 76 *Development of an Interactive Water Management Program for Orlando Utility Commission's Curtis H. Stanton Energy Center*
Dustin Mobley, & Kenneth Weiss, Black & Veatch Corporation Jacksonville, FL
Eric Costello, & Alan Planeta, Orlando Utilities Commission Orlando, FL

Prepared Discussion by: Loraine Huchler MarTech Systems, Lawrenceville, NJ

IWC 11- 77 *Mineral Scale Prediction and Control at Extreme TDS*
Robert Ferguson, French Creek Software, Inc., Kimberton, PA

Prepared Discussion by: Michael Bluemle Ashland Water Technologies, Wilmington, DE

IWC 11- 78 *Field Trial Experience Using Chlorine Dioxide As a Cleaner For Biofilm Control In An RO Application*
George Dimotsis, Dripping Wet Water, San Antonio, TX