

## WEF Approved Wastewater CEUs [www.wef.org](http://www.wef.org)

| Course . | Name of Course                         | CEU's | WW | S/S |
|----------|--|-------|----|-----|
| NV18-100 | Session 08: Research & Optimization II | 1     | X  |     |
| NV18-101 | Session 09: Vapor Phase Odor Control   | 2.5   | X  |     |
| NV18-102 | Session 10: Odor Measurement II        | 1.5   | X  |     |
| NV18-103 | Session 11: Corrosion                  | 1     | X  |     |
| NV18-104 | Session 12: Collection Systems         | 2.5   | X  |     |
| NV18-105 | Session 13: Emissions & Modeling       | 2.5   | X  |     |
| NV18-20  | Workshops                              | 6     | X  |     |
| NV18-200 | General Session                        | 1     | X  |     |
| NV18-201 | Mobile Session                         | 1     | X  |     |
| NV18-202 | Session 1 A                            | 0.5   | X  |     |
| NV18-203 | Session 1 B                            | 0.5   | X  |     |
| NV18-204 | Session 1 C                            | 0.5   | X  |     |
| NV18-205 | Session 2 A                            | 0.5   | X  |     |
| NV18-206 | Session 2 B                            | 0.5   | X  |     |
| NV18-207 | Session 2 C                            | 0.5   | X  |     |
| NV18-208 | Session 2 D                            | 0.5   | X  |     |
| NV18-209 | Session 2 E                            | 0.5   | X  |     |
| NV18-21  | Opening General Session                | 1.5   | X  |     |
| NV18-210 | Session 2 F                            | 0.5   | X  |     |
| NV18-211 | Session 3 A                            | 0.5   | X  |     |
| NV18-212 | Session 3 B                            | 0.5   | X  |     |
| NV18-213 | Session 3 C                            | 0.5   | X  |     |
| NV18-214 | Session 3 D                            | 0.5   | X  |     |
| NV18-215 | Session 3 E                            | 0.5   | X  |     |
| NV18-216 | Session 3 F                            | 0.5   | X  |     |
| NV18-217 | Session 3 G                            | 0.5   | X  |     |
| NV18-218 | Session 4 A                            | 0.5   | X  |     |
| NV18-219 | Session 4 B                            | 0.5   | X  |     |
| NV18-22  | Technical Sessions 4-9-18              | 3.5   | X  |     |
| NV18-220 | Session 4 C                            | 0.5   | X  |     |
| NV18-221 | Session 5 A                            | 0.5   | X  |     |
| NV18-222 | Session 5 B                            | 0.5   | X  |     |
| NV18-223 | Session 5 C                            | 0.5   | X  |     |
| NV18-224 | Session 5 D                            | 0.5   | X  |     |
| NV18-225 | Session 6 A                            | 0.5   | X  |     |

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| NV18-226 | Session 6 B                | 0.5 | X |
| NV18-227 | Session 6 C                | 0.5 | X |
| NV18-228 | Session 7 A                | 0.5 | X |
| NV18-229 | Session 7 B                | 0.5 | X |
| NV18-23  | Technical Sessions 4-10-18 | 4   | X |
| NV18-230 | Session 7 C                | 0.5 | X |
| NV18-231 | Session 8 A                | 0.5 | X |
| NV18-232 | Session 8 B                | 0.5 | X |
| NV18-233 | Session 8 C                | 0.5 | X |
| NV18-234 | Session 8 D                | 0.5 | X |
| NV18-235 | Session 8 E                | 0.5 | X |
| NV18-236 | Session 8 F                | 0.5 | X |
| NV18-237 | Session 8 G                | 0.5 | X |
| NV18-238 | Session 9 A                | 0.5 | X |
| NV18-239 | Session 9 B                | 0.5 | X |
| NV18-24  | Technical Sessions 4-11-18 | 3   | X |
| NV18-240 | Session 9 C                | 0.5 | X |
| NV18-241 | Session 9 D                | 0.5 | X |
| NV18-242 | Session 10 A               | 0.5 | X |
| NV18-243 | Session 10 B               | 0.5 | X |
| NV18-244 | Session 10 C               | 0.5 | X |
| NV18-245 | Session 11                 | 1.5 | X |
| NV18-246 | Session 12 A               | 0.5 | X |
| NV18-247 | Session 12 B               | 0.5 | X |
| NV18-248 | Session 12 C               | 0.5 | X |
| NV18-249 | Session 13 A               | 0.5 | X |
| NV18-25  | Facility Tours 4-10-18     | 4   | X |
| NV18-250 | Session 13 B               | 0.5 | X |
| NV18-251 | Session 13 C               | 0.5 | X |
| NV18-252 | Session 14 A               | 0.5 | X |
| NV18-253 | Session 14 B               | 0.5 | X |
| NV18-254 | Session 14 C               | 0.5 | X |
| NV18-255 | Session 15 A               | 0.5 | X |
| NV18-256 | Session 15 B               | 0.5 | X |
| NV18-257 | Session 15 C               | 0.5 | X |
| NV18-258 | Session 15 D               | 0.5 | X |
| NV18-259 | Session 15 D               | 0.5 | X |
| NV18-260 | Session 15 E               | 0.5 | X |

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| NV18-261 | Session 15 F | 0.5 | X |
| NV18-262 | Session 16 A | 0.5 | X |
| NV18-263 | Session 16 B | 0.5 | X |
| NV18-264 | Session 16 C | 0.5 | X |
| NV18-265 | Session 16 E | 0.5 | X |
| NV18-266 | Session 16 F | 0.5 | X |
| NV18-267 | Session 17 B | 0.5 | X |
| NV18-268 | Session 17 C | 0.5 | X |
| NV18-269 | Session 17 D | 0.5 | X |
| NV18-270 | Session 17 E | 0.5 | X |
| NV18-271 | Session 17 F | 0.5 | X |
| NV18-272 | Session 17 G | 0.5 | X |
| NV18-273 | Session 18 A | 0.5 | X |
| NV18-274 | Session 18 B | 0.5 | X |
| NV18-275 | Session 18 C | 0.5 | X |
| NV18-276 | Session 18 D | 0.5 | X |
| NV18-277 | Session 19 A | 0.5 | X |
| NV18-278 | Session 19 B | 0.5 | X |
| NV18-279 | Session 19 C | 0.5 | X |
| NV18-280 | Session 19 D | 0.5 | X |
| NV18-281 | Session 19 E | 0.5 | X |
| NV18-282 | Session 20 A | 0.5 | X |
| NV18-283 | Session 20 B | 0.5 | X |
| NV18-284 | Session 21 A | 0.5 | X |
| NV18-285 | Session 21 B | 0.5 | X |
| NV18-286 | Session 21 C | 0.5 | X |
| NV18-287 | Session 21 D | 0.5 | X |
| NV18-288 | Session 21 E | 0.5 | X |
| NV18-289 | Session 21 F | 0.5 | X |
| NV18-290 | Session 22 A | 0.5 | X |
| NV18-291 | Session 22 B | 0.5 | X |
| NV18-292 | Session 22 C | 0.5 | X |
| NV18-293 | Session 22 D | 0.5 | X |
| NV18-294 | Session 22 F | 0.5 | X |
| NV18-295 | Session 22 G | 0.5 | X |
| NV18-296 | Session 23 A | 0.5 | X |
| NV18-297 | Session 23 B | 0.5 | X |
| NV18-298 | Session 23 C | 0.5 | X |

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| NV18-299 | Session 24 A   | 0.5 | X |
| NV18-300 | Session 24 B   | 0.5 | X |
| NV18-301 | Session 24 C   | 0.5 | X |
| NV18-302 | Session 24 D   | 0.5 | X |
| NV18-303 | Session 25 A   | 0.5 | X |
| NV18-304 | Session 25B  | 0.5 | X |
| NV18-305 | Session 25 C   | 0.5 | X |
| NV18-306 | Session 25 D   | 0.5 | X |
| NV18-307 | Session 25 E   | 0.5 | X |
| NV18-308 | TOUR   | 4   | X |
| NV18-309 | Workshop A   | 6   | X |
| NV18-310 | Workshop B   | 6   | X |
| NV18-311 | Workshop C   | 3   | X |
| NV18-44  | Workshop A: Demystifying the “SMART” Utility   | 6   | X |
| NV18-45  | Workshop B: Leading Water Utility Innovation   | 6   | X |
| NV18-46  | Workshop C: Effective Staff Training: Bringing the Resources Needed to Do It Right   | 3.5 |   |
| NV18-47  | Workshop D: Water Utility Management (AWWA Manual M5)  | 3.5 | X |
| NV18-48  | Workshop E: Keeping it Real: Building an Innovative Culture that Gets Results!   | 3.5 |   |
| NV18-49  | Workshop F: Workforce of the Future  | 3.5 |   |
| NV18-50  | Workshop G: Driving Performance through Strategy— Leading, Advancing, and Enhancing Blue   | 3.5 | X |
| NV18-51  | Workshop H: Sustaining Asset Management – The Leadership View  | 3.5 | X |
| NV18-52  | Opening General Session  | 1.5 | X |
| NV18-53  | Session 1: Operationalizing Asset Management   | 0.5 |   |
| NV18-54  | Session 2: Energy and Technology   | 0.5 |   |
| NV18-55  | Session 3: Finance/Rate Planning and Collaboration   | 0.5 |   |
| NV18-56  | Session 4: Being Strategic with Your Human Capital   | 0.5 |   |
| NV18-57  | Session 5: Asset Management and Change   | 0.5 | X |
| NV18-58  | Session 6: Managing Utilities in a Changing World  | 0.5 | X |
| NV18-59  | Session 7: Who Pays? Reclaimed and Recycled Water Finance  | 0.5 |   |
| NV18-60  | Session 8: Engaging Value with Your Customers and Stakeholders   | 0.5 |   |
| NV18-61  | Session 9: Asset Management  | 0.5 | X |
| NV18-62  | Session 10: Utility Management and Planning for the Future   | 0.5 | X |
| NV18-63  | Session 11: Improving System Operations  | 0.5 | X |
| NV18-64  | Session 12: Customer Communication and Improvements  | 0.5 |   |
| NV18-65  | Session 13: Utility Leader Forum: HELP WANTED - Providing Workforce Support and Development in Low Income-High Risk and Capacity Limited Communities | 0.5 |   |
| NV18-66  | Session 14: Asset Management Tools   | 0.5 | X |
| NV18-67  | Session 15: Looking into the Future Through Intentional Public Involvement   | 0.5 |   |

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| NV18-68  | Session 16: Integrated Strategic Planning - A Road Map to the Future  | 0.5  | X |
| NV18-681 | Aeration Blowers  | 3.0  | X |
| NV18-682 | Improving the Performance of Odor & Corrosion Control Systems   | 1.5  | X |
| NV18-683 | Membranes   | 0    |   |
| NV18-684 | None Shall Pass - Protecting Stormwater Inlets and Preventing Pollution   | 0.75 | X |
| NV18-685 | Oil Refining Wastewater Treatment   | 1.5  | X |
| NV18-686 | Ozone's Multiple Benefits in Water Reuse  | 1.5  | X |
| NV18-687 | SCADA HMIs- What's New? What Am I Missing Out On?   | 1.5  | X |
| NV18-688 | Small/Decentralized System Technologies and Management Approaches   | 0.3  | X |
| NV18-689 | Spotlight on Treatment for Potable Reuse Part II  | 1.5  | X |
| NV18-69  | Session 17: Utility Leader Forum: Sustainable Rates: Balancing Revenue and Resource Efficiency  | 0.5  |   |
| NV18-690 | Steam Electric Power Plant Wastewater Treatment Technology  | 0.75 | X |
| NV18-691 | Urban Stormwater Trees - Installation Options and Performance   | 0.5  | X |
| NV18-692 | Wastewater 101  | 3.0  | X |
| NV18-693 | 502 Fundamentals: Coagulation and Flocculation for Industrial Wastewater  | 3.0  | X |
| NV18-694 | 621 Knowledge Development Forum Part 2: Sidestream EBPR for Improved and Sustainable Phosphorus Removal and Recovery                          | 1.5  | X |
| NV18-695 | Activated Sludge and BNR Process Control: Hands-On in the Real World  | 6.0  | X |
| NV18-696 | Advanced Workshop in Design, Startup and Optimization of Vapor Phase Odor Control Technologies  | 3.0  | X |
| NV18-697 | Advancements in Membrane Aerated Biofilm Reactors (MABR): From Pilot to Full Scale Operation  | 3.0  | X |
| NV18-698 | Advances in Aerobic Granular Sludge   | 3.0  | X |
| NV18-699 | Advances in Produced Water Treatment: Upstream Oil and Gas  | 1.5  | X |
| NV18-70  | Session 18: Asset Management and Planning   | 0.5  | X |
| NV18-700 | Advances in Solids Clarification  | 2.0  | X |
| NV18-701 | Aeration Diffusers  | 0    |   |
| NV18-702 | Aerobic Granular Sludge: Modelling to Full-Scale Application  | 6.0  | X |
| NV18-703 | Alternative Means for Shortcut Nitrogen Removal: Partial Denitrification/Anammox Processes  | 1.5  | X |
| NV18-704 | An Overview of the Department of Energy's Integrated Efforts To Advance Resource Recovery and Energy Efficiency in the Nation's Water Systems | 1.0  | X |
| NV18-705 | Aquifer Recharge: Creating Resiliency in Groundwater  | 1.5  | X |
| NV18-706 | Are You Getting the Most Value From Your Sensors: Sensor Performance Evaluation Strategies  | 1.5  | X |
| NV18-707 | Automation and SCADA: Where Have We Been and Where Are We Going?  | 1.5  | X |
| NV18-708 | Back to Basics Laboratory Analysis, Chemistry, and Troubleshooting  | 3.0  | X |
| NV18-709 | Battle of the Indicators: Implications and Risk   | 1.5  | X |
| NV18-71  | Session 19: Workforce Improvement - The Importance of Effective Human Capital   | 0.5  |   |
| NV18-710 | Beneficial Use of Biosolids Products  | 1.5  | X |
| NV18-711 | Best of ISA   | 0    |   |
| NV18-712 | Biogas to CNG Vehicle Fuel and Pipeline   | 3.0  | X |

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| NV18-713 | Biological Treatment of Industrial Wastewater  | 3.0  | X |
| NV18-714 | Carbon for Energy or Carbon for BNR: You be the Judge (...Well ok, the Jury)                                   | 1.5  | X |
| NV18-715 | Chemical, Petrochemical, and Pharmaceutical Wastewater Treatment Challenges                                    | 1.5  | X |
| NV18-716 | Clarifier Modeling   | 1.0  | X |
| NV18-717 | Collection Systems Emerging Topics and Technologies: Let's Talk About It!                                      | 3.0  | X |
| NV18-718 | Collection Systems Hydraulics and Models: Using Our Tool Box to Solve Complex Problems                         | 3.0  | X |
| NV18-719 | Collection Systems Real Time Control: Operations and Optimization  | 1.5  | X |
| NV18-72  | Session 20: Proactively Managing Risk  | 0.5  |   |
| NV18-720 | Collection Systems Sewer Condition Assessment, Rehabilitation, and Construction                                | 3.0  | X |
| NV18-721 | Collection Systems: Back to Basics!  | 3.0  | X |
| NV18-722 | Collections Systems Tour: Sewerage and Water Board of New Orleans and New Orleans Levee Board Drainage Systems | 2.0  | X |
| NV18-723 | Come Hell and High Water: Building Resilient, Multi-Purpose Stormwater Infrastructure                          | 0.75 | X |
| NV18-724 | Commercial Status of Microbial Electro-Chemical Wastewater Treatment   | 1.5  | X |
| NV18-725 | Demonstrating Success and Addressing Challenges in Small Systems   | 1.5  | X |
| NV18-726 | Develop, Engage, and Empower: A Workforce Perspective  | 1.5  | X |
| NV18-727 | Digestion: Let Me Upgrade You  | 1.5  | X |
| NV18-728 | Digital Watersheds: Big Data Analytics for Watershed Management  | 3.0  | X |
| NV18-729 | Disaster Recovery and Response: Hurricane Harvey and Other Disastrous Events                                   | 3.0  | X |
| NV18-73  | Session 21: Utility Leader Forum: Texas Topic  | 0.5  |   |
| NV18-730 | Disinfecton: New and Novel   | 1.5  | X |
| NV18-731 | Does This Green Look Good on Me? Tools for Green Infrastructure Selection                                      | 0.75 | X |
| NV18-732 | Down to the Nitty Gritty: New Frontiers in Grit Characterization for Design                                    | 1.5  | X |
| NV18-733 | Enhanced Resource Recovery: High Value Processes and Products of Agricultural and Municipal Residues           | 3.0  | X |
| NV18-734 | EUM Strategies: Integrated Master Planning and Planning for Change   | 0.75 | X |
| NV18-735 | Evaluating Energy Use and Management Alternatives for Operational Efficiency at WRRFs                          | 1.0  | X |
| NV18-736 | Expectations Exceeded? Promises Met?   | 1.5  | X |
| NV18-737 | Experiencias en la Implementaci3n de Remoci3n de Nutrientes y la Neutralidad Energ3tica                        | 3.0  | X |
| NV18-738 | Exploring the Tensions Within the Water-Energy-Food Nexus  | 0    |   |
| NV18-739 | Fairly Large and Fairly Complex: Biosolids Master Planning Case Studies  | 1.5  | X |
| NV18-74  | Session 22: Business Process Optimization  | 0.5  |   |
| NV18-740 | Financing Hard With a Vengeance: Financing and Funding for Water and Wastewater Projects                       | 0.75 | X |
| NV18-741 | Financing Hard: Leveraging Financing and Funding for Stormwater Projects                                       | 0    |   |
| NV18-742 | Finding the Coins in Everyone's Couch: Affordability From Several Perspectives                                 | 0.75 | X |
| NV18-743 | Finding Your Path to Resource Recovery   | 6.0  | X |
| NV18-744 | Food and Beverage  | 0    |   |
| NV18-745 | Food Production Industry's Unique Wastewater Challenges: Solved!   | 3    | X |
| NV18-746 | FUNDamentals of Digester Gas-to-Energy Systems   | 3.0  | X |

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| NV18-747 | Fundamentals of Produced Water Treatment in the Oil & Gas Industry   | 3.0  | X |
| NV18-748 | Fundamentals of Wastewater Disinfection: Disinfect to Protect  | 6.0  | X |
| NV18-749 | Fundamentals: De-Mystifying Urban Stormwater Programs  | 0.75 | X |
| NV18-75  | Session 23: The Importance of Collaboration in Utility Partnerships  | 0.5  |   |
| NV18-750 | FUNDamentals: Secondary School on Nutrient Removal   | 3.0  | X |
| NV18-751 | Get Smart: IOT and AI in the Water Utility Sector  | 0.75 | X |
| NV18-752 | Green Giants: Case Studies of Successful Green Infrastructure Projects   | 1.0  | X |
| NV18-753 | Hands-On Design Challenge: Solids Processing Unit Process Skills   | 1.5  | X |
| NV18-754 | Here Comes the Rain Again: Advances in Management and Treatment of Wet Weather Flows   | 3.0  | X |
| NV18-755 | I Have That Sinking Feeling: Addressing Stormwater Challenges at WRRFs, Airports, and Highways                                 | 0.75 | X |
| NV18-756 | Improved Digester Operations and Performance by Sludge Pretreatment  | 1.0  | X |
| NV18-757 | Improved Sourcing, Handling, and Processing of FOG for Codigestion and Energy Recovery   | 1.5  | X |
| NV18-758 | In Pursuit of Energy Neutrality: Development and Implementation of Energy Optimization Programs and Strategies at WRRFs        | 3.0  | X |
| NV18-759 | Increasing Resource Recovery Through Concentrate Treatment   | 3.0  | X |
| NV18-76  | Session 24: Information Technology (IT) Management   | 0.5  |   |
| NV18-760 | Infiltration and Inflow in the Collection System: How To Fight the Good Fight  | 3.0  | X |
| NV18-761 | Infiltration and Inflow Modeling for Collection System Utilities   | 6.0  | X |
| NV18-762 | Innovative Biological Treatment of Brewery and Beverage Wastewaters for Water and Energy Resource Recovery                     | 3.0  | X |
| NV18-763 | Innovative Process Control Studies and Strategies  | 3.0  | X |
| NV18-764 | Intelligent Water Systems Data Challenge   | 0.5  | X |
| NV18-765 | Intelligent Water Technology Control Strategies for Potable Reuse  | 1.5  | X |
| NV18-766 | Interactive Knowledge Exchange: How to Challenge and Utility Management  | 0    |   |
| NV18-767 | Interactive Knowledge Exchange: Public Outreach  | 0    |   |
| NV18-768 | Interactive Knowledge Exchange: Technical and Innovation   | 0    |   |
| NV18-769 | Introduction to Water, Sanitation, and Hygiene Around the Globe  | 0.75 | X |
| NV18-77  | Session 25: Speed Strategies in Communications: How to Win Community Support and Influence the Conversation About Your Utility | 0.5  |   |
| NV18-770 | Jefferson Parish East Bank Wastewater Treatment Plant  | 2.0  | X |
| NV18-771 | Knowledge Development Forum Part 1: Sidestream EBPR for Improved and Sustainable Phosphorus Removal and Recovery               | 3.0  | X |
| NV18-772 | Knowledge Development Forum: Establishing Successful University-Utility Collaborative Partnerships                             | 1.5  | X |
| NV18-773 | Knowledge Development Forum: Mainstream Shortcut Nitrogen Removal  | 3.0  | X |
| NV18-774 | Knowledge Development Forum: Optimizing Your Aeration Control Strategy   | 3.0  | X |
| NV18-775 | Knowledge Development Forum: Watershed-Based Approaches - Ideas to Implementation  | 3.0  | X |
| NV18-776 | Lake Pontchartrain Basin Foundation  | 1.0  | X |

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| NV18-777 | Landfill Leachate and Gas Condensate Management Using Biological, Physical, and Chemical Treatment Options   | 3.0  | X |
| NV18-778 | Late-Breaking Research: Bridging Microbial Ecology and Practice  | 1.5  | X |
| NV18-779 | Late-Breaking Research: Engineering Microbial Communities for Improved Performance   | 1.5  | X |
| NV18-78  | Session 26: Operations/Maintenance - Improving Efficiency  | 0.5  | X |
| NV18-780 | Late-Breaking Research: Innovation in Integrated Water Management Treatment Technologies   | 0.75 | X |
| NV18-781 | Late-Breaking Research: Innovative Approaches for Resource Recovery  | 1.5  | X |
| NV18-782 | Leading Water Utility Innovation   | 1.5  | X |
| NV18-783 | Lessons Learned From Treatment Plant Floods  | 1.5  | X |
| NV18-784 | Linear Asset Inspection Programs and Risk-Based Asset Management: Practical Strategies   | 1.5  | X |
| NV18-785 | Louisiana State University Center for River Studies  | 1.5  | X |
| NV18-786 | Mainstream Deammonification: From Fundamentals to Control Solutions  | 3.0  | X |
| NV18-787 | Mainstream Nitrogen Removal: Case Studies  | 1.5  | X |
| NV18-788 | Management and Control of Recalcitrant Organic Nitrogen  | 1.5  | X |
| NV18-789 | Managing Private Property Issues in the Collection System  | 3.0  | X |
| NV18-79  | Session 27: Are You Ready? Emergency Preparedness Approaches   | 0.5  | X |
| NV18-790 | Managing Uncertainty: Program Management Concepts for Inflow/Infiltration Management   | 6.0  | X |
| NV18-791 | Manufacturers' Innovation Forum  | 0    |   |
| NV18-792 | Master Lecturer: The Emerging Circular Economy Can We Make a Relevant Contribution?  | 0.5  | X |
| NV18-793 | Membranes for Water Reuse: Past, Present, Future   | 6.0  | X |
| NV18-794 | Microplastics in the Environment   | 1.5  | X |
| NV18-795 | Mitigating Fouling and Other Challenges in Secondary and Tertiary Membrane Systems   | 1.5  | X |
| NV18-796 | Moving SWIFT-ly to the Future  | 3.0  | X |
| NV18-797 | Nutrient Analyzers and Sensors   | 0.75 | X |
| NV18-798 | Nutrient Issues in Coastal Waters  | 0.75 | X |
| NV18-799 | Nutrient Nuisance Nonsense: The Latest in Phosphorous Regulation and Design for Stormwater   | 0.75 | X |
| NV18-80  | Session 28: US Department of Agriculture Federal Funding for Green Infrastructure: Source Water and Storm Water  | 0.5  |   |
| NV18-800 | One Water for Manufacturing: A Business Case for Water Reuse   | 6.0  | X |
| NV18-801 | Outreach: Connecting With Your Community   | 0    |   |
| NV18-802 | Overcoming Collection Systems Maintenance Challenges   | 3.0  | X |
| NV18-803 | Overcoming Regulatory Reuse Water Issues   | 1.5  | X |
| NV18-804 | Peracetic Acid Gets Real   | 1.5  | X |
| NV18-805 | Petroleum Refining Wastewater Treatment  | 3    | X |
| NV18-806 | Physical/Chemical Treatment and Metals Removal From Industrial Wastewaters   | 3.0  | X |
| NV18-807 | Pipe Lining Technologies Material Characteristics, Design Basis, Corrosion Resistance, Bonding Requirements, Pressure Capabilities, Installation Constraints, Costs, and Longevity | 1.5  | X |
| NV18-808 | Planning and Modeling of Odor Control Strategies for WRRFs   | 1.5  | X |



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| NV18-809 | Planning for Climate Change: Resilience in Action  | 1.5  | X |
| NV18-81  | Session 29: Proactive Connection with Customers and Stakeholders   | 0.5  |   |
| NV18-810 | Powerless? Black Sky Resilience  | 1.5  | X |
| NV18-811 | Practical Operation and Maintenance for Pumps: Chopper Pumps   | 6.0  | X |
| NV18-812 | Practical Tools for Improving Stormwater System Maintenance Outcomes                                       | 0.75 | X |
| NV18-813 | Pressure Pipe Condition Assessment and Enterprise Asset Management: Practical Applications and Strategies  | 3.0  | X |
| NV18-814 | Process Modeling for Industrial Wastewater System Design and Optimization                                  | 3.0  | X |
| NV18-815 | Project Delivery: Herding Cats   | 0    |   |
| NV18-816 | Project Delivery: Soup to Nuts   | 0    |   |
| NV18-817 | Protect Your Collection Systems Tunnel Assets  | 1.5  | X |
| NV18-818 | Put Your Watershed on a Diet: Nutrient Reduction   | 3.0  | X |
| NV18-819 | Putting 'Fun' Into Disinfection Fundamentals   | 1.0  | X |
| NV18-82  | Session 30: Benchmarking and Performance Management  | 0.5  |   |
| NV18-820 | Quantifying and Managing Greenhouse Gas Emissions  | 1.5  | X |
| NV18-821 | Refinery Wastewater Treatment 101  | 3.0  | X |
| NV18-822 | Resiliency: Crystallizing the Uncertain Future   | 1.5  | X |
| NV18-823 | Resource Recovery at Industrial Wastewater Treatment Plants  | 3.0  | X |
| NV18-824 | Restoration: Case Studies  | 0    |   |
| NV18-825 | Restoration: Louisiana Wetlands  | 0.75 | X |
| NV18-826 | Roadmap to Sustainable Wastewater Management for Small Communities   | 3.0  | X |
| NV18-827 | Secondary Operations and Testing Techniques  | 3.0  | X |
| NV18-828 | See the Light - A Walking Tour of UV and UV- AO  | 0    |   |
| NV18-829 | Setting the Course To Become a Smart Utility Through Effective Information Management                      | 1.5  | X |
| NV18-83  | Session 31: Finance, Accounting and Rate Policy  | 0.5  |   |
| NV18-830 | Sewerage & Water Board of New Orleans Sustainable Design Tour  | 1.0  | X |
| NV18-831 | Sewerage and Water Board of New Orleans East Bank Wastewater Treatment Plant                               | 1.5  | X |
| NV18-832 | Sidestream Impacts From Startup to Implementation  | 3.0  | X |
| NV18-833 | Solving Your Brine Concentrate Disposal Problems   | 0.75 | X |
| NV18-834 | Special Seminar: Advancing Green Infrastructure Through Life Cycle Cost and Co-Benefits Analysis           | 1.5  | X |
| NV18-835 | Spotlight on Treatment for Potable Reuse: Part I   | 3.0  | X |
| NV18-836 | Staying in the Black and Out of the Red: Applying Asset Management Methods to Stormwater Systems           | 0.75 | X |
| NV18-837 | Stink, Crumble, and Burp: Modeling and Mitigating Sewer Odors and Corrosion                                | 3.0  | X |
| NV18-838 | Stormwater Supermodels: The WEF Water Quality Modeling Manual Update and Advances in Modeling Applications | 1.5  | X |
| NV18-839 | StormwaterX: Leading-Edge Innovations in Applied Stormwater Management                                     | 0.75 | X |
| NV18-84  | Session 32: Infrastructure Management  | 0.5  | X |
| NV18-840 | Take it to the Limit: Modeling and Design Approaches to TMDL Compliance                                    | 1.5  | X |

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| NV18-841 | Take it to the Max(imum Extent Practicable): Permit Compliance Challenges and Strategies for MS4 Communities             | 0.75 | X |
| NV18-842 | Tell It Like It Is: Real Life Studies of Reuse   | 1.5  | X |
| NV18-843 | The Best of WRRmod 2018  | 0    |   |
| NV18-844 | The Big Picture: Integrated Watershed Planning   | 1.5  | X |
| NV18-845 | The Diverse Applications of Wastewater Sludge Thermal Hydrolysis   | 1.5  | X |
| NV18-846 | The Goldilocks Approach to Dose Control and Limits: How to Get Them Just Right   | 1.5  | X |
| NV18-847 | The Great Delta Tour: Experience the Wonders and Challenges of the Great Mississippi                                     | 2.0  | X |
| NV18-848 | The Resource Recovery Playing Field: Product and Energy Recovery From Wastewater Solids                                  | 1.5  | X |
| NV18-849 | There Is Light at the End of the Pipe! Causes and Control of Struvite and Vivianite Scaling at WRRFs                     | 6.0  | X |
| NV18-85  | Session 33: Strengthening Your Organization - Culture and Improvement  | 0.5  |   |
| NV18-850 | This is the Struvite That You Are Looking For  | 1.5  | X |
| NV18-851 | To Sieve or Not To Sieve: That Is the Primary (Treatment) Question   | 3.0  | X |
| NV18-852 | Tools and Case Studies for Optimizing Phosphorus Removal   | 3.0  | X |
| NV18-853 | Tracking Down the Roots of Our Sanitary Sewers   | 1.5  | X |
| NV18-854 | U.S. EPA's Water Infrastructure Finance and Innovation Act   | 1.5  | X |
| NV18-855 | Under Pressure: Reducing the Stress of Working With Collection System Forcemains   | 3.0  | X |
| NV18-856 | Unlocking the Mysteries of Microbial Ecology of Enhanced Biological Phosphorus Removal (EBPR)                            | 3.0  | X |
| NV18-857 | Upgrading of Digester Gas to Maximize Resource Recovery Potential  | 1.5  | X |
| NV18-858 | Using Online Analyzers to Meet Stringent Nutrient Limits   | 6.0  | X |
| NV18-859 | Utility Leadership in Action Roundtable: Driving Innovation  | 0    |   |
| NV18-86  | Session 34: Expanding Benchmarking: Going Beyond the Metrics   | 0.5  |   |
| NV18-860 | UV Disinfection: Dealing With the Old, Looking Forward to the New  | 1.5  | X |
| NV18-861 | Vertical Asset Management Implementation   | 3.0  | X |
| NV18-862 | Vertical Asset Management Tools and Techniques   | 1.5  | X |
| NV18-863 | Wastewater Carbon Management Strategies for Energy Optimization  | 1.5  | X |
| NV18-864 | Wastewater Challenges in the Steam Electric Power Industry   | 0.75 | X |
| NV18-865 | Wastewater Microbiology  | 6.0  | X |
| NV18-866 | Wastewater Microbiology  | 6.0  | X |
| NV18-867 | Water and Sanitation: Developmental and Humanitarian Programs  | 0.75 | X |
| NV18-868 | Water Policy Update  | 0.5  | X |
| NV18-869 | Water Quality Modeling 101 With HEC-RAS  | 3.0  | X |
| NV18-87  | Session 35: Funding and Affordability  | 0.5  |   |
| NV18-870 | Water Quality Modeling: To TMDL and Beyond!  | 1.5  | X |
| NV18-871 | Water's Worth It, But What's Water Worth? Setting Stormwater Fees and Calculating Program Benefits                       | 0.75 | X |
| NV18-872 | WEF/WRF Building Resiliency and Reliability in Water Supplies: Why and How Should We Consider Some Planned Potable Reuse | 6.0  | X |
| NV18-873 | WEF/WRF Can You Digest (Conquer) Food Waste Codigestion?   | 6.0  | X |

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| NV18-874 | WEF/WRF Knowledge Development Forum: Sewer Methane GHG - Methodology Standardization   | 6.0 | X |
| NV18-875 | WEF/WRF Technological Advancement and Science of Carbon Redirection and Management in Water Resource and Recovery Facilities | 6.0 | X |
| NV18-876 | What Are Those BNR Folks Doing to My Solids System Now? Understanding the Solids-Side of Granular Activated Sludge Processes | 1.5 | X |
| NV18-877 | What's Bugging You: Pathogen Detection and Reduction   | 1.5 | X |
| NV18-878 | What's Next? Let's Go Big With Water Reuse Planning  | 3.0 | X |
| NV18-88  | Session 36: Environmental Issue Management   | 0.5 |   |
| NV18-89  | Workshop A: Procedures for Field Inspection of Odors in Ambient Air  | 3   | X |
| NV18-90  | Mobile Session I: Odor Control   | 1   | X |
| NV18-91  | Mobile Session II: Odor Measurement  | 1   | X |
| NV18-92  | Opening General Session  | 1.5 | X |
| NV18-93  | Session 01: Odor Measurement I   | 1   | X |
| NV18-94  | Session 02: Community  | 1   | X |
| NV18-95  | Session 03: Innovative Solutions   | 1.5 | X |
| NV18-96  | Session 04: Problems & Solutions I   | 1.5 | X |
| NV18-97  | Session 05: Research & Optimization I  | 1   | X |
| NV18-98  | Session 06: Utility Management   | 1.5 | X |
| NV18-99  | Session 07: Problems & Solutions II  | 1.5 | X |
| NV19-023 | WEF Wastewater Treatment Fundamentals I: Liquid Treatment  | 60  | X |
| NV19-313 | WEF/AEESP Master Lecturer: Bruce Logan   | 1.5 | X |
| NV19-314 | Exploring Solutions Within the Water-Energy-Food Nexus   | 1.5 | X |
| NV19-315 | Intelligent Water Systems Challenge: The Finals  | 1.5 | X |
| NV19-316 | From Research to Full-Scale Systems in a Decade: The Rapid Rise of Peracetic Acid for Wastewater Disinfection                | 1.5 | X |
| NV19-317 | Peak Flow Management: Where Do We Stand?   | 1.5 | X |
| NV19-318 | State and Future of Stormwater   | 1.5 |   |
| NV19-319 | Reuse on the Storm: Opening the Doors for Stormwater Reclamation Across America  | 1.5 | X |
| NV19-320 | The Value of Water: Water's Priceless!   | 1.5 | X |
| NV19-321 | Water Policy Update  | 3   | X |
| NV19-322 | Novel Intelligent Equipment in Wastewater: Manufacturers' Innovative Technology Forum  | 3   | X |
| NV19-323 | Mainstream Deammonification  | 1.5 | X |
| NV19-324 | Innovative Wastewater Treatment Process Control Methods and Approaches   | 1.5 | X |
| NV19-325 | Join the Control Nerds Club: Process Control Fundamentals  | 3   | X |
| NV19-326 | Strategies to Prevent Bulking in Activated Sludge Systems  | 3   | X |
| NV19-327 | True Grit: Stories of Testing, Design, and Implementation in the Wild West   | 1.5 | X |
| NV19-328 | Planning, Evaluation, Design, and Sustainability: Odor Control Has It All!   | 3   | X |

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| NV19-329 | Emerging Trends in Phosphorus Removal and Recovery: Outcomes From the James Barnard Phosphorus Forum               | 1.5 | X |
| NV19-330 | Department of Energy (DOE) Solutions for Water Sector Energy Recovery  | 3   | X |
| NV19-331 | More Applications and Studies in THP Yield New Insights  | 3   | X |
| NV19-332 | Competitive Design of Dewatering Facilities  | 1.5 | X |
| NV19-333 | Knowledge Development Forum: What are PFAS and What Do We Need to Know?  | 3   | X |
| NV19-334 | Inflow and Infiltration Assessment: Finding and Removing Sources of Leakage  | 3   | X |
| NV19-335 | Pump Stations and Force Mains  | 3   | X |
| NV19-336 | Working Out: Building Frameworks for Successful Stormwater O&M   | 1.5 |   |
| NV19-337 | Make No Little Plans: CSO Planning With Stormwater Management Focus  | 1.5 |   |
| NV19-338 | Making Models Matter: Understanding and Resolving Complex Water Quality Problems                                   | 3   | X |
| NV19-339 | Data and Information Management: The Nucleus of Asset Management   | 3   | X |
| NV19-340 | Small Communities: Processes for Nutrient Removal  | 1.5 | X |
| NV19-341 | IPR/DPR: Resistance is Futile!   | 3   | X |
| NV19-342 | Future of Reuse: Economics, Decentralized Systems, and IPR   | 1.5 | X |
| NV19-343 | Food Water Nexus: What's on the Menu?  | 1.5 | X |
| NV19-344 | Solutions and Ideas From Award Winning Industrial Experts  | 1.5 |   |
| NV19-345 | From Microbial Community to Full Scale Optimization of BioP  | 1.5 | X |
| NV19-346 | Advances in Primary and Primary Effluent Filtration  | 1.5 | X |
| NV19-347 | It's (Not) Settled! Updates in Secondary Clarification Understanding   | 1.5 | X |
| NV19-348 | Maximizing Energy Savings Through Advanced Aeration Control Strategies   | 1.5 | X |
| NV19-349 | Stormwater Alternative Project Delivery  | 1.5 |   |
| NV19-350 | Case in Point: Current CSO Case Studies  | 1.5 |   |
| NV19-351 | Workforce Issues: Have You Prepared for the 'Silver' Tsunami?  | 1.5 | X |
| NV19-352 | Evaluating Microbes: Working Out the Bugs in a Reuse System  | 1.5 | X |
| NV19-353 | ReNEW: Measuring Our Impact on Nutrient, Energy, and Water Recovery  | 1.5 | X |
| NV19-354 | Interactive Knowledge Exchange: Utility Management and Thought Leadership - Technical and Research and Development | 3   | X |
| NV19-355 | Late Breaking Research: Advances in Resource Recovery  | 3   | X |
| NV19-356 | Solving Food and Beverage Wastewater Challenges Using Innovative Process Technologies                              | 3   | X |
| NV19-357 | Optimization of Petroleum Refinery Wastewater Treatment  | 3   | X |
| NV19-358 | Knowledge Development Forum: Application of Selectors for Continuous Flow Granulation                              | 3   | X |
| NV19-359 | A Flexible Solution: Membranes for a Variety of Advanced Wastewater Treatment Applications                         | 3   | X |
| NV19-360 | More Than Hot Air: Optimizing Aeration Systems   | 3   | X |
| NV19-361 | Mainstream P Removal: Modeling to Operation  | 3   | X |
| NV19-362 | Comparing Sensors and Analyzers: In-Situ vs. Soft Sensors  | 1.5 | X |
| NV19-363 | Get Down: Process Control Strategies To Meet Low Effluent TN Limits  | 3   | X |
| NV19-364 | Advancements in Staged, Thermophilic, and Aerobic Digestion Processes  | 3   | X |

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| NV19-365 | Setting the Stage for Dewatering Success  | 3   | X |
| NV19-366 | Disinfection Flyover: Fundamentals  | 1.5 | X |
| NV19-367 | Basics Collections Systems 101  | 3   | X |
| NV19-368 | Flow Analysis Methods to Solve Collection System Flow Problems: Rainfall, RDII, Climate Change, and Hydraulics                          | 3   | X |
| NV19-369 | MS4, 3, 2, 1 &  Go! Regulations, Coalitions, and Strategies for Success   | 3   |   |
| NV19-370 | What's New in Stormwater: Emerging Trends and Applications  | 1.5 |   |
| NV19-371 | What Is Beyond Integrated Planning?   | 1.5 | X |
| NV19-372 | Have You Checked Your Planning Compass?   | 3   | X |
| NV19-373 | Utility Management: Seeing (and Using) the Right Information Through the Forest of Systems and Data                                     | 3   | X |
| NV19-374 | Small Communities: Compliance and Innovative Treatment  | 1.5 | X |
| NV19-375 | Treatment for Groundwater Recharge: So the Well Won't Run Dry   | 3   | X |
| NV19-376 | Shared Experiences: 7 Years Post Super Storm Sandy  | 1.5 | X |
| NV19-377 | Worker Safety and Public Health   | 1.5 | X |
| NV19-378 | Get Smart: Data and Technology Applications in Stormwater   | 1.5 |   |
| NV19-379 | Solving Re(Dis)solved Problems  | 1.5 | X |
| NV19-380 | Small Communities: Planning for Upgrades and Replacements Ensures Compliance  | 1.5 | X |
| NV19-381 | Utility Leadership Forum: Capturing the Value of Diversity in Your Workforce  | 1.5 | X |
| NV19-382 | Stakeholder Inclusive Planning for Sustainable Water Solutions  | 1.5 | X |
| NV19-383 | Interactive Knowledge Exchange - Public Outreach and Say Anything Challenge   | 1.5 | X |
| NV19-384 | Knowledge Development Forum: Interaction of the Carbon, Nitrogen, and Phosphorus Cycles for Intensified Treatment and Resource Recovery | 3   | X |
| NV19-385 | Alternate Nitrogen Removal and Pathways   | 3   | X |
| NV19-386 | Industrial Wastewater Reuse? Really, Really, Really!  | 3   | X |
| NV19-387 | Produced Water Treatment in the Upstream Oil & Gas Industry   | 1.5 | X |
| NV19-388 | Aerobic Granular Sludge: From Pilot to Full Scale   | 1.5 | X |
| NV19-389 | The Old Dog and Its New Tricks: Approaches to Carbon Redirection and Primary Treatment Improvements                                     | 3   | X |
| NV19-390 | Knowledge Development Forum: From Research to Practice - Energy Sustainability  | 3   | X |
| NV19-391 | Big Data, Machine Learning, and Predictive Control  | 3   | X |
| NV19-392 | Exciting Asset Management Case Studies! Installation and Maintenance Practices for Ensuring Equipment Reliability                       | 3   | X |
| NV19-393 | Sidestream Success! N and P Removal Case Studies  | 3   | X |
| NV19-394 | Co-Digestion: Impacts of Adding Food Waste and FOG  | 3   | X |
| NV19-395 | Resource Recovery From Biosolids: Phosphorus/Energy   | 3   | X |
| NV19-396 | Wet Weather Management and Flow Equalization: Addressing Wet Weather Flow Issues Around the World                                       | 3   | X |
| NV19-397 | Sewer Rehabilitation and Construction   | 3   | X |
| NV19-398 | Cases in Point: Current MS4 Case Studies  | 1.5 |   |
| NV19-399 | We Know What's Bugging You: Stormwater Bacteria Research  | 1.5 |   |

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| NV19-400 | TMDL Whack-A-Mole: Hitting a Moving Target  | 3   | X |
| NV19-401 | Linear Asset Management: What Your Collection System is Trying to Tell You  | 3   | X |
| NV19-402 | Integrated Planning Round Table   | 1.5 | X |
| NV19-403 | People as an Asset: Where is YOUR Workforce?  | 1.5 | X |
| NV19-404 | To Infinity and Beyond: Technologies for Combating the Water Reuse Challenges of Tomorrow   | 3   | X |
| NV19-405 | Solutions for Coastal City Resiliency   | 3   | X |
| NV19-406 | Modeling of Aerobic Granular Sludge   | 1.5 | X |
| NV19-407 | Novel Approaches for Mainstream Phosphorus: Removal and Recovery  | 1.5 | X |
| NV19-408 | Novel Investigations in Treatment of Chemical/Pharmaceutical Wastewater   | 1.5 | X |
| NV19-409 | Industrial Dis-Ease: The Multi-Sector General Permit and Industrial Stormwater  | 1.5 |   |
| NV19-410 | Everyone Needs a Filter: Stormwater Filtration and Media Research   | 1.5 |   |
| NV19-411 | DATA: Key to Optimizing Planning and Decision Making  | 1.5 | X |
| NV19-412 | Shortcut Nitrogen With BioP   | 1.5 | X |
| NV19-413 | The 3 Ps: Plastic, Pharmaceuticals, and Pesticides  | 3   | X |
| NV19-414 | Metals Removal From Leachate, Uranium Contaminated Water, and Gold Mine Wastewater  | 1.5 | X |
| NV19-415 | Fundamentals of Chemical Coagulation and Flocculation   | 3   | X |
| NV19-416 | Knowledge Development Forum: Operational Considerations for Low Dissolved Oxygen Operation in Water Resource Recovery Facilities  | 3   | X |
| NV19-417 | We Don't Need No Stinking Bubbles! Advancements in MABR Technologies  | 3   | X |
| NV19-418 | Fundamentals: ABC's of BNR - From Conventional to the Next Frontier   | 1.5 | X |
| NV19-419 | Blame it on the Rain: Treatment of Wet Weather Flows  | 3   | X |
| NV19-420 | Fundamentals of Nitrogen and Phosphorus Recovery and Tools for Assessment   | 1.5 | X |
| NV19-421 | What's in Your Wastewater? Wastewater Characterization: Learning to Measure Metals, Microplastics, and Antibiotic Resistant Genes | 3   | X |
| NV19-422 | Not Treatment Technology: The Other Critical Components of an Odor Control System   | 3   | X |
| NV19-423 | Biogas Quality and Finance  | 1.5 | X |
| NV19-424 | Next Generation Disinfection: What's on the Horizon   | 1.5 | X |
| NV19-425 | Advanced Hydraulics: How To Solve the Really Tough Problems in Your Collection System   | 1.5 | X |
| NV19-426 | Staying High and Dry: Approaches for Flood Resiliency   | 1.5 |   |
| NV19-427 | Function Follows Form: Excellence in Stormwater Design  | 3   |   |
| NV19-428 | We're Lookin' at YOU, Watershed: Technology Enhancements for Monitoring and Stakeholder Engagement                                | 3   | X |
| NV19-429 | The End of the Rainbow: Where To Look for Your Pot of Gold  | 1.5 | X |
| NV19-430 | Outside the Box Rate Making: When Traditional Rates Don't Fit   | 1.5 | X |
| NV19-431 | Not Pipe Dreams: Reality of Long Linear Projects  | 1.5 | X |
| NV19-432 | Engineered Equipment Procurement Process: Buying the Right Equipment To Meet Your Facility's Needs                                | 3   | X |
| NV19-433 | Ozone/BAF: Proving the Technology for Direct and Indirect Potable Reuse Systems   | 3   | X |
| NV19-434 | Water Scarcity and Treatment Challenges in the Automotive Industry  | 1.5 | X |
| NV19-435 | Mainstream Nitrite-Shunt Processes  | 1.5 | X |

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| NV19-436 | Nutrient Removal and Recovery: Municipal Planning and Implementation  | 1.5 | X |
| NV19-437 | Keeping It In-House: Utility SCADA Development Advantages   | 1.5 | X |
| NV19-438 | Biosolids Drying the Right Way  | 1.5 | X |
| NV19-439 | Disinfection Disentangled   | 1.5 | X |
| NV19-440 | Keeping Our Heads Above the Water: Dealing With Urban Storm Events  | 1.5 |   |
| NV19-441 | Why Become a Utility of the Future?   | 1.5 | X |
| NV19-442 | How To Slice Your CIP Pie: 3 Ways to Develop a Prioritized CIP  | 1.5 | X |
| NV19-443 | Project Delivery: Bigger Really is Better   | 1.5 | X |
| NV19-444 | Knowledge Development Forum: Dewatering Principles  | 1.5 | X |
| NV19-445 | Late Breaking Research: Advances in Monitoring and Modeling of Environmental Systems                            | 2   | X |
| NV19-446 | Application of MBRs for Industrial Wastewater Treatment and Reuse   | 2   | X |
| NV19-447 | Water Challenges in the Electric Power Industry   | 2   | X |
| NV19-448 | We Don't Need No Stinking Bubbles, Too! Modeling MABR Technologies  | 1.5 | X |
| NV19-449 | Overcoming Challenges To Meet Effluent Phosphorus Targets   | 1.5 | X |
| NV19-450 | Nutrient Removal and Recovery in Practice: Full Scale Case Studies  | 1.5 | X |
| NV19-451 | Highlights From the Smart Water Networks Forum (SWAN) 2019 Conference   | 2   | X |
| NV19-452 | International Society of Automation (ISA): Best of Cybersecurity  | 2   | X |
| NV19-453 | Data Driven Solutions for Biosolids Processing  | 1.5 | X |
| NV19-454 | Tunnels: What Lies Deep Beneath Your Feet   | 2   | X |
| NV19-455 | CYA: Change Your Attitude, Inspect Your Collection System Assets  | 2   | X |
| NV19-456 | WEFTEC's Next Hot Model in Stormwater   | 1.5 |   |
| NV19-457 | Becoming an Asset (Management) to the Organization: Tools and Applications for Stormwater                       | 1.5 | X |
| NV19-458 | From Source to Plant: Progressing Through Improvements Using Progressive Design Build                           | 1.5 | X |
| NV19-459 | Communicate, Communicate, Communicate: Why Public Outreach and Communications Matter!                           | 1.5 | X |
| NV19-460 | Research, Reuse, Repeat: Pushing the Envelope in Water Reuse Technology   | 1.5 | X |
| NV19-461 | A Tale of One Water   | 1.5 | X |
| NV19-462 | Closing Session   | 1   |   |
| NV19-463 | Opening General Session   | 1.5 |   |
| NV19-464 | Special Seminar: Stormwater Infrastructure Lifecycle Costs and Planning Using CLASIC                            | 3   |   |
| NV19-465 | Collection Systems Tour: Calumet Water Reclamation Plant, TARP Pumping Station and Thornton Composite Reservoir |     | X |
| NV19-466 | Terrence J. O'Brien Water Reclamation Plant   |     | X |
| NV19-467 | Fermi Lab: From Big Bang to Clean Water   |     | X |
| NV19-468 | Goose Island Beer Company Fulton Street Brewery   |     | X |
| NV19-469 | Space to Grow – Greening Chicago Infrastructure   |     |   |
| NV19-470 | Plant Chicago - A Circular Economy  |     | X |
| NV19-471 | Revolution Brewing Kedzie Production Facility   |     | X |
| NV19-472 | Train the Trainer: Wastewater Treatment Fundamentals I - Liquid Treatment Publication and Resources             | 3   | X |

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| NV19-473 | Refinery Wastewater Treatment 201: Advanced Curriculum   | 6 | X |
| NV19-474 | Nutrient Removal Fundamentals: Relating the Science of Nutrient Removal to the Design and Operation of WWTPs                 | 6 | X |
| NV19-475 | Game Based Modeling  | 6 | X |
| NV19-476 | Wastewater Microbiology  | 6 | X |
| NV19-477 | Using Online Analyzers To Meet Stringent Nutrient Limits   | 6 | X |
| NV19-478 | Assessment and Regulation of Microbial Pathogen Indicators in Water and Biosolids  | 6 | X |
| NV19-479 | Greenhouse Gas Accounting for Wastewater Utilities   | 6 | X |
| NV19-480 | WEF/WRF Co-Digestion: What Can We Handle?  | 6 | X |
| NV19-481 | Sewer Rehabilitation Practices for Mitigating I/I: Integrated Approaches, Innovative Technologies, and Interactive Solutions | 6 | X |
| NV19-482 | Membranes for Water Reuse: Past, Present, Future   | 6 | X |
| NV19-483 | Public-Private Partnerships: What They Are and What They Aren't  | 6 | X |
| NV19-484 | WEF/WRF LIFTING Your Utility with Business Process Modeling and Improvement  | 6 | X |
| NV19-485 | Upping Your Utility's Game in Achieving Continuous Improvement   | 6 | X |
| NV19-486 | River Water Quality Modeling With HEC-RAS Version 5.1  | 6 | X |
| NV19-487 | Industrial Wastewater Reuse in Manufacturing Facilities: One Water Goes Private  | 6 | X |
| NV19-488 | Design and Modeling of Advanced Biofilm Reactor Technologies for Nutrient Removal and Recovery                               | 6 | X |
| NV19-489 | Solids Stabilization Fundamentals: Seeking the Skinny on Sludge  | 6 | X |
| NV19-490 | Wastewater Microbiology  | 6 | X |
| NV19-491 | Advanced Workshop in Design, Startup, and Optimization of Liquid Phase Odor Control Technologies                             | 6 | X |
| NV19-492 | Activated Sludge and BNR Process Control: Hands-On in the Real World   | 6 | X |
| NV19-493 | Be a Hero, Get to Zero: The Journey to Energy Neutrality   | 6 | X |
| NV19-494 | Turning RINS Into Money: Capitalizing on Biogas Recovery Projects and Generating Revenue at WTPs                             | 6 | X |
| NV19-495 | Pathogens and Constituents of Emerging Concern in Wastewater Effluent and Water Reuse  | 6 | X |
| NV19-496 | Your Water Reuse: Potable or Non-Potable?  | 6 | X |
| NV19-497 | Communications Camp: Tools to Engage, Motivate, and Reassure Your Community  | 6 | X |
| NV19-498 | What If Clean Water is Just the Byproduct? Rethinking Resource Recovery at WRRFs   | 6 | X |
| NV19-499 | Resilient Groundwater: Managing Aquifers for One Water   | 6 | X |
| NV19-500 | Water Leadership Institute   | 6 | X |