

TECHNICAL PROGRAM

TUESDAY, AUGUST 8, 2023

MAINTENANCE	Dave Badgley, Chair	Jason Badgley, Co-Chair	SHOWROOM	SESSION
7:30 AM – 8:20 AM	Maintenance Headaches Caused by Commissioning Failures – <i>Ralph Stevens, Facilitation Unlimited</i>			1106
8:30 AM – 9:20 AM	Integrating Valve Inspections With Pipeline Inspections 2023 – <i>Britt Klein, Xylem Inc.</i>			1206
9:40 AM – 10:30 AM	Overview of Classic and the New State of the Art Pipeline Rehabilitation Technology <i>Dave Badgley, Performance Pipeline Technologys</i>			1306
10:40 AM – 11:30 AM	Trenchless Rehabilitation for Pressure Water, Sewer Force Mains and Treatment Plants <i>Jeff Cauffman, Primus Line</i>			1406
11:40 AM – 12:30 PM	Demands for High Performance Specialty Coatings <i>Greg Wallace, Imerys Sewpercoat; Kim Almeida, Imerys</i>			1506
2:00 PM – 2:50 PM	Composite Manhole Covers Help Solve A Leading Cause of Water Pollution <i>Chad Nunnery, Composite Access Products (CAP)</i>			1606
3:00 PM – 3:50 PM	Hydraulic Odor and Corrosion Control in Sewer Drops and Water Tank Aeration <i>Kerry Koressel, IPEX USA Vortex</i>			1706
WASTEWATER COLLECTION	Brandon Martinez, Chair	Andy Keller, Co-Chair	GRAND BALLROOM B	SESSION
7:30 AM – 8:20 AM	12 Years & Counting: City of Las Vegas Small Diameter Sewer Assessment Program Achievement <i>Marco Velarde, Brown and Caldwell; Jon Osborne, Brown and Caldwell</i>			1102
8:30 AM – 9:20 AM	Pilot Tube Guided Boring for New Gravity Sewer Installation in San Diego <i>Jeff Boschert, National Clay Pipe Institute</i>			1202
9:40 AM – 10:30 AM	Nozzle Capacity Cleaning – <i>Malvin Nezat, Nezat Training and Consulting Inc.</i>			1302
10:40 AM – 11:30 AM	Wastewater Inspection Technologies - Complete Understanding of Your System – <i>Matt Olson, CUES Inc.</i>			1402
11:40 AM – 12:30 PM	Bakersfield's Odor Control Breakthrough: SulFeLox Saves Money, Improves Performance <i>Michael Collins, USP Technologies; Kevin Peoples, City of Bakersfield</i>			1502
2:00 PM – 2:50 PM	Know Your Sewer Cleaning Hose - Practices, Identification, Repair, and Safety <i>Kevin Witt, UEMSI/HTV; Bob Glick, Piranha Hose Products Inc.</i>			1602
3:00 PM – 3:50 PM	Advancements in Underground Infrastructure Data Collection and Analysis <i>Mike Russin, WinCan; Andrew Wicker, Envirosight, LLC</i>			1702
WASTEWATER TREATMENT	LeAnna Rizzo, Chair	Sidney Innerebner, Co-Chair	SONOMA C & D	SESSION
7:30 AM – 8:20 AM	Keys to Practical Equipment and Process Troubleshooting - Part 1 – <i>Ken Schnaars, Brown and Caldwell</i>			1110
8:30 AM – 9:20 AM	Keys to Practical Equipment and Process Troubleshooting - Part 2 – <i>Ken Schnaars, Brown and Caldwell</i>			1210
9:40 AM – 10:30 AM	BNR Optimization to Achieve Very Low Effluent Nitrogen – <i>John Richardson, Garver USA</i>			1310
10:40 AM – 11:30 AM	The Role of Instrumentation in Process Control – <i>Benjamin Barker, Xylem</i>			1410
11:40 AM – 12:30 PM	Troubleshooting with Microbiology – <i>Steve Leach, Leach Microbial</i>			1510
2:00 PM – 2:50 PM	Troubleshooting an MBR Process Upset in a Landfill Leachate Treatment Facility <i>Ronald Overholt, U.S. Water Industrial Group</i>			1610
3:00 PM – 3:50 PM	Case Studies for Aerobic Granular Sludge in North America – <i>Brett Quimby, Aqua-Aerobic Systems</i>			1710
WATER DISTRIBUTION	Ken Snow, Chair	Steve Davis, Co-Chair	GRAND BALLROOM A	SESSION
7:30 AM – 8:20 AM	Cathodic Protection Monitoring in Water and Wastewater Systems – <i>Jamey Hilleary, Elecsys Corporation</i>			1111
8:30 AM – 9:20 AM	Leak Detection and Pressure Modulation to Reduce Non-Revenue Water Loss <i>Kevin Barnes, Fluid Conservation Systems</i>			1211
9:40 AM – 10:30 AM	Pipeline Contingency Planning and Selection of Mechanical Repair Fittings <i>Mike Scholz, JCM Industries</i>			1311
10:40 AM – 11:30 AM	Why Reline Instead of Dig and Replace? An Eco-Friendly, Cost-Effective Approach for Waterlines <i>Steve Burks, CPM Pipelines; Levi Hawkins, CPM Pipelines</i>			1411
1:00 PM – 1:50 PM	Waterline Joint Restraints: Why, Where, and Which One? – <i>Jeff Phillips, Star Pipe Products</i>			1511
2:00 PM – 2:50 PM	Peristaltic & Diaphragm Chemical Metering Pump, Accessories and Systems for Water Systems <i>Richard Hopkins, Blue-White</i>			1611
3:00 PM – 3:50 PM	Chlorine Measurement - The Pros and Cons of Different Methods in Water Systems <i>Amirali Jiwani, HF Scientific</i>			1711

7:00 AM - 7:30 AM - JAVA JOLT

9:20 AM - 9:40 AM - JAVA JOLT

LUNCH A - 11:30 AM - 1:00 PM / LUNCH B - 12:30 PM - 2:00 PM

TECHNICAL PROGRAM

TUESDAY, AUGUST 8, 2023

ELECTRICAL / INSTRUMENTATION & CONTROLS		Heath Szymanski, Chair	Shane Hershey, Co-Chair	SONOMA B	SESSION
7:30 AM – 8:20 AM	Protecting Wastewater System Motors from Damage on PWM Systems – Mark Gaskill, Nidec Motor Corporation				1114
8:30 AM – 9:20 AM	Out of Paper – Transitioning To Digital Field Forms For Daily Production and Treatment Mark French, NJBSoft; Joshi Pranam, NJB Soft				1214
9:40 AM – 10:30 AM	How Cloud-Based SCADA Provides True System Redundancy – Mauritz Botha, XiO, Inc.				1314
10:40 AM – 11:30 AM	Benefits of Online Amperometric Chlorine Measurement and Control – Chris LaCour, ProMinent Fluid Controls				1414
1:00 PM – 1:50 PM	Cover Your Ass(ets) by Developing a Dynamic Asset Management Program – Alec Hanson, Hazen and Sawyer				1514
2:00 PM – 2:50 PM	Convergence: Operational Technology Networks and the Evolving Cyber Threatscape Tony Bryson, Town of Gilbert				1614
3:00 PM – 3:50 PM	The Modern Water/Wastewater Control System Demystified: SCADA Foundations for Users Luke Stephenson, Enterprise Automation, A Tetra Tech Company; Nicholas Blischak, Enterprise Automation, A Tetra Tech Company				1714
GROUNDWATER/RECHARGE		Geno Mammini, Chair	Don Hanson, Co-Chair	NAPA C & D	SESSION
7:30 AM – 8:20 AM	Understanding Well Fouling and Developing Accurate Strategies - Part 1 Michael Schnieders, Water Systems Engineering; Edd Schofield, Johnson Screens				1104
8:30 AM – 9:20 AM	Understanding Well Fouling and Developing Accurate Strategies - Part 2 Michael Schnieders, Water Systems Engineering; Edd Schofield, Johnson Screens				1204
9:40 AM – 10:30 AM	Well Life and Renewal Program - Part 1 – Geoffrey Bates, California Water Service				1304
10:40 AM – 11:30 AM	Well Life and Renewal Program - Part 2 – Geoffrey Bates, California Water Service				1404
11:40 AM – 12:30 PM	Water Well Rehabilitation: Benefits, Risks, & Costs Associated with the Newest Technology Michael Bodart, General Pump Company, Inc.				1504
2:00 PM – 2:50 PM	Griggs-Walnut Groundwater Plume Superfund Site: From Dry Cleaner to Clean Drinking Chase Stearnes, Daniel B. Stephens & Associates, Inc.				1604
3:00 PM – 3:50 PM	Recharge Wells Revisited – Roxanne Holland, City of Sedona; Mike Atwater, City of Sedona				1704
LABORATORY		John Shephard, Chair	Dana LaRance, Co-Chair	SONOMA A	SESSION
7:30 AM – 8:20 AM	Advanced Dose Control: iCT-based Optimization of Disinfection Chemistries – Ian Watson, USP Technologies				1103
8:30 AM – 9:20 AM	Ins and Outs of BOD – Rita Rasmussen, City of Henderson				1203
9:40 AM – 10:30 AM	Proper Record Keeping for Sample Collection and Analysis at Water and Wastewater Plants Peter Strimple, CTI & Associates				1303
10:40 AM – 11:30 AM	QC Procedures for pH, Chlorine, and Turbidity Analyses at In-House Laboratories – Peter Strimple, CTI & Associates				1403
1:00 PM – 1:50 PM	Micro ELN[®], an Innovative Data Management System for Automated Microbiological Analysis Victoria Littlepage, BT Soft; Devon Morgan, Clark County Water Reclamation District				1503
2:00 PM – 2:50 PM	Wastewater Testing: Enzymatic Methods Used to Detect Indicator Bacteria – Shawn Dubois, IDEXX				1603
3:00 PM – 3:50 PM	The Environmental Laboratory: Sample Collection Procedures Marci Payne, Legend Technical Services of Arizona, Inc.				1703
RECLAIM / REUSE		Frederick Tack, Chair	Coenraad Pretorius, Co-Chair	NAPA A & B	SESSION
7:30 AM – 8:20 AM	Virus Log Reduction Values (LRV) for Secondary Biological Treatment Phillip Wang, Southern Nevada Water Authority; Tyler Hill, Southern Nevada Water Authority				1109
8:30 AM – 9:20 AM	Reverse Osmosis in Potable Reuse: Increasing LRV Credit Through Different Virus Surrogates Hannah Ray, Southern Nevada Water Authority				1209
9:40 AM – 10:30 AM	WRF Expansion and Optimization: Squeezing Every Drop Out of Resources and Footprint Gary Whitten, GHD; Todd Hansen, MGC Contractors				1309
10:40 AM – 11:30 AM	Utilizing MBR+RO to Reduce Water Consumption by 70% at a Tractor Manufacturing Facility Larry Morris, Kubota Membrane USA Corporation				1409
1:00 PM – 1:50 PM	Urban Run-Off & Storm Water Purification for Reuse – Brian Butters, Purifics Water Inc.; Tony Powell, Purifics Water Inc.				1509
2:00 PM – 2:50 PM	Source Water Optimization Solutions for Nutrient Control and Reduced Carbon Emissions Steven Myers, Hach				1609
3:00 PM – 3:50 PM	Advanced Controls for UV Disinfection and Advanced Oxidation – Andrew Daley, Trojan Technologies				1709

7:00 AM - 7:30 AM - JAVA JOLT

9:20 AM - 9:40 AM - JAVA JOLT

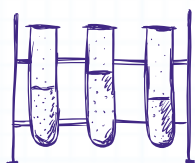
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TECHNICAL PROGRAM

TUESDAY, AUGUST 8, 2023

STORMWATER	Jennifer Davis, Chair	Jessica Gaffney, Co-Chair	GRANDVIEW LOUNGE	SESSION
7:30 AM – 8:20 AM	Cigarette Waste and the Waters of America – <i>Kenneth Beckstead, Cigarette Pollution Solutions</i>			1113
8:30 AM – 9:20 AM	Lower Las Vegas Wash – Seeking Stability in a Dynamic Stream System <i>Matt Wilkinson, Atkins; Anita Marquez, Southern Nevada Water Authority</i>			1213
9:40 AM – 10:30 AM	Retrofit and Rehabilitation of Bioretention LID BMPs – <i>Adrian Montoya, Riverside County Flood Control & Water Conservation District; Matt Yeager, Riverside County Flood Control & Water Conservation District</i>			1313
10:40 AM – 11:30 AM	Stormwater Capture and Recycling in an Urban Park <i>Ron Rovanssek, PACE Advanced Water Engineering; James Matthews, PACE Advanced Water Engineering</i>			1413
1:00 PM – 1:50 PM	Nevada Division of Environmental Protection (NDEP): What's New in Stormwater? <i>Kathryn Foxworthy, Nevada Division of Environmental Protection (NDEP)</i>			1513
2:00 PM – 2:50 PM	No More Rock, Paper, Scissors: The Shift to Dynamic, Interactive, and Digital Reporting <i>Elizabeth Ruedas, Michael Baker International; Leigh Patterson, California State Parks</i>			1613
3:00 PM – 3:50 PM	Resilient Stormwater Infrastructure – Wildfires, Emergency Evacuation, and Recovery <i>Gean Na, American Concrete Pipe Association of California</i>			1713

7:00 AM - 7:30 AM - JAVA JOLT



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- Cured lining will prevent inflow & infiltration
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Joe Keating

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TECHNICAL PROGRAM

WEDNESDAY, AUGUST 9, 2023

MAINTENANCE	Dave Badgley, Chair	Jason Badgley, Co-Chair	SHOWROOM	SESSION
7:30 AM – 8:20 AM	Will Your Tank Survive a Major Earthquake – Mark Moore, Blue Locker Commercial Diving			2106
8:30 AM – 9:20 AM	Maintenance Hole, Pump & Lift Station, Utility Vault Structure Rehabilitation Technologies Dave Badgley, Performance Pipeline Technologies			2206
9:40 AM – 10:30 AM	Structural Assessments and Asset Preservation Strategies for Steel Water Tanks Leslie Scott, Tank Industry Consultants			2306
10:40 AM – 11:30 AM	Optimizing Water Main Rehabilitation Using the “Assess-and-Fix” Approach Randall Cooper, Envirolgics Engineering			2406
11:40 AM – 12:30 PM	Jeopardy: An Interactive Lesson on the Functions of Water & Wastewater Air Valves Crystal Flitton, GSM Arizona			2506
2:00 PM – 2:50 PM	The Answer to Sustainable Wastewater Treatment, Conveyance & Surface Water Protection Suzan Chin-Taylor, Creative Ravin; Rodney Dickerson, PE, EnBiorganic Technologies			2606
3:00 PM – 3:50 PM	Predictive Maintenance for Electric Motors – Don Taft, Valley Power Systems			2706
WASTEWATER COLLECTION	Brandon Martinez, Chair	Andy Keller, Co-Chair	GRAND BALLROOM B	SESSION
7:30 AM – 8:20 AM	Hotspot and Periodic Line Cleaning Best Practices – Sean Dingman, Websoft Developers			2102
8:30 AM – 9:20 AM	Principles of Root Foaming - Implementing a Chemical Sewer Root Control Program Tom Edwards, Duke's; Brian Conroy, Duke's			2202
9:40 AM – 10:30 AM	Systematically Analyzing Wastewater Collections Data to Drive Decisions Joseph Siva, Pima County; Jessica McGullam, Pima County			2302
10:40 AM – 11:30 AM	How Will the New ASTM Cleaning Standards Affect Your Sewer Collections Organization? Kent Carlson, National Clay Pipe Institute			2402
11:40 AM – 12:30 PM	Hydraulic Odor & Corrosion Control in Sewer Drops – Kerry Koressel, IPEX USA Vortex			2502
2:00 PM – 2:50 PM	Applications of Wastewater-Based Epidemiology in Public Health: SARS CoV-2 and Beyond Kathrine Crank, Southern Nevada Water Authority; Casey Barber, University of Nevada Las Vegas			2602
3:00 PM – 3:50 PM	Small City, Big Dreams - Implementing an In-House CCTV Program Roxanne Holland, City of Sedona; Greg Payne, City of Sedona			2702
WASTEWATER TREATMENT	LeAnna Rizzo, Chair	Sidney Innerebner, Co-Chair	SONOMA C & D	SESSION
7:30 AM – 8:20 AM	Densification: Combining Biological, Chemical, and Physical Selection Approaches Daniel Dair, World Water Works			2110
8:30 AM – 9:20 AM	Smart Water: Primer and Case Study Grab Bag – Chris Maher, Clean Water Services			2210
9:40 AM – 10:30 AM	Optimizing Polymer Activation for Improved Dewatering: Following the Science Kevin Sanner, UGSI Solutions; Robin Giguere, UGSI Solutions			2310
10:40 AM – 11:30 AM	The Mechanics of Centrifuge Biosolids Dewatering and Thickening Optimization – Sean Tierney, Frazenburg			2410
11:40 AM – 12:30 PM	Clarifiers: A Discussion of Critical Design Details – John Esler, Clarifiers.com			2510
2:00 PM – 2:50 PM	Put in a Pipe! Closed Vessel UV for Wastewater Disinfection – Patrick Bollman, Evoqua			2610
3:00 PM – 3:50 PM	Applying Ozone and AOP for Multiple Processes at Industrial WWTPs Cameron Beichner, De Nora Water Technologies			2710
WATER DISTRIBUTION	Ken Snow, Chair	Steve Davis, Co-Chair	GRAND BALLROOM A	SESSION
7:30 AM – 8:20 AM	Why Mix? The Key Benefits and Technology Behind Reservoir Mixing David Hartwig, D&H Water Systems, Inc.			2111
8:30 AM – 9:20 AM	Solutions for Control Tapping, Line-Stops, Valve Insertions – Michael Urwin, Hydra-Stop			2211
9:40 AM – 10:30 AM	Intro to Line Stops, Valve Insertions, Hot Taps, & Pipe Freezing Steven Helm, Tap Master, Inc.			2311
10:40 AM – 11:30 AM	Hydrant Flushing Distribution Water Mains During the Drought, Without Wasting Water! Chris Wilkinson, NO-DES			2411
1:00 PM – 1:50 PM	Fundamentals of Ductile Iron Fittings in Waterlines – Jack Lewis, Tyler Union			2511
2:00 PM – 2:50 PM	New Technologies for Joining & Restraining Pipe in Water Distribution Systems Kenneth Alessi, Hymax a Mueller Brand			2611
3:00 PM – 3:50 PM	Cured-In-Place Pipes - Pipe In Pipe Solution for Ageing Waterlines Lutz Kaiser, IBG HydroTech GmbH			2711

7:00 AM - 7:30 AM - JAVA JOLT

9:20 AM - 9:40 AM - JAVA JOLT

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TECHNICAL PROGRAM

WEDNESDAY, AUGUST 9, 2023

ELECTRICAL / INSTRUMENTATION & CONTROLS		Heath Szymanski, Chair	Shane Hershey, Co-Chair	SONOMA B	SESSION
7:30 AM – 8:20 AM	Chandler Pecos SWTP SCADA Upgrades - Discovery Through Design <i>Teresa Smith-DeHesus, Jacobs; Jay Hardison, Jacobs</i>				2114
8:30 AM – 9:20 AM	Consequences of Water and Wastewater Cyber Breaches and Potential Mitigation Strategies <i>Constantine Antoniou, Schneider Electric</i>				2214
9:40 AM – 10:30 AM	SCADA Network Connectivity Hurdles with Geographically Challenged Sites <i>Mark Reski, Quantum Engineering</i>				2314
10:40 AM – 11:30 AM	Instrumentation Diagnostics Deserve Their Own PLC – Nick Hanson, Endress+Hauser				2414
1:00 PM – 1:50 PM	eRIS - Log Your Data From Anywhere at the Plant & Manage Multiple Data Sources <i>Mike Espejo, Suez; Tim Kruse, Suez</i>				2514
2:00 PM – 2:50 PM	The Electrical Trilogy – Ralph Stevens, Facilitation Unlimited				2614
3:00 PM – 3:50 PM	Masaqua: A New Control System to Streamline MBR Operations and Decrease OPEX and CAPEX <i>Larry Morris, Kubota Membrane USA Corporation</i>				2714
ENVIRONMENTAL COMPLIANCE/PRETREATMENT		Nicole deMoet, Chair	Stephanie Pezzelle, Co-Chair	NAPA C & D	SESSION
7:30 AM – 8:20 AM	Regulating Commercial Customers – Randy De La Garza, City of Surprise, AZ				2107
8:30 AM – 9:20 AM	Managing Ordinances for FOG and Industrial Users – Rick Allen, BioLynceus, LLC				2207
9:40 AM – 10:30 AM	Managing Your Septic and Grease Haulers – Rick Allen, BioLynceus, LLC				2307
10:40 AM – 11:30 AM	Smart POTW Approaches to PFAS – John Shaffer, EEC Environmental				2407
11:40 AM – 12:30 PM	THC in Water and Wastewater – Zachary Golden, Golden Environmental LLC				2507
2:00 PM – 2:50 PM	A Semiconductor in the Desert: An Industrial Pretreatment Case Study <i>Chelsey McCluskey, City of Phoenix</i>				2607
3:00 PM – 3:50 PM	Hazardous Building Materials - More Than Just a Requirement <i>Chris Cisneros, Phoenix Sky Harbor Int'l Airport</i>				2707
ENVIRONMENTAL HEALTH/SAFETY & SECURITY		Tim Page-Bottorff, Chair	Jon Cordoba, Co-Chair	NAPA A & B	SESSION
7:30 AM – 8:20 AM	Elevating Safety Culture: A Journey Towards World-Class Leadership <i>Jon Cordoba, P3 Safety Solutions</i>				2108
8:30 AM – 9:20 AM	The Humor in Safety – Tim Page-Bottorff, SafeStart				2208
9:40 AM – 10:30 AM	Cell Phones Don't Cause Accidents; People Do: A Look at Human Factors <i>Dave Silva, Silva Performance Solutions</i>				2308
10:40 AM – 11:30 AM	Influencing Your Organization's Culture to Build Resilience – Maribeth Anderson, Xylem				2408
1:00 PM – 1:50 PM	Your Ace in the Hole - Supervisors Are the Key to Safety Leadership <i>Mary Silva, Crum and Forster</i>				2508
2:00 PM – 2:50 PM	STCKY Chemicals: Real-World Hazard Communications <i>Russell Duren, PGM Safety Services</i>				2608
3:00 PM – 3:50 PM	Active Shooter and Workplace Violence – Shayne Anderson, Eye On Safety				2708
STORMWATER		Jennifer Davis, Chair	Jessica Gaffney, Co-Chair	GRANDVIEW LOUNGE	SESSION
7:30 AM – 8:20 AM	Construction Site Stormwater Inspections Made Simple <i>T. Luke Owen, NPDES Stormwater Training Institute</i>				2113
8:30 AM – 9:20 AM	Between a Rock Bag and a Hard Place: Enforcement and the Non-Compliant Construction Site <i>Shawnetta Grandberry, City of Carlsbad</i>				2213
9:40 AM – 10:30 AM	The Runway to Success is Always Under Construction: CGP Stormwater Compliance at an Airport <i>Rick Rogowski, City of Phoenix Aviation Department; Lisa Farinas, City of phoenix</i>				2313
10:40 AM – 11:30 AM	Breachable Moments: Responding to Stormwater Discharges at Large-Scale Construction Sites <i>Shawnetta Grandberry, City of Carlsbad</i>				2413
1:00 PM – 1:50 PM	Stormwater Collection & Removal of Suspended Debris, Hazardous Metals, and Organics <i>Jared Holindrake, Ovivo USA, LLC; Abner Aviles, OVIVO, USA, LLC</i>				2513
2:00 PM – 2:50 PM	Evaluating TMDL Pollutants from ADOTs Storm System Discharges <i>David Mack, ADOT Environmental Planning; Rebecca Sydnor, Hazen and Sawyer</i>				2613
3:00 PM – 3:50 PM	Stormwater Treatment: Metals Removal with Ion Exchange <i>Cathy Swanson, Puro-lite LLC, an Ecolab Company</i>				2713

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9:20 AM - 9:40 AM - JAVA JOLT

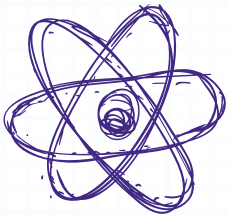
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WEDNESDAY, AUGUST 9, 2023

SURFACE WATER/WATER TREATMENT	Raj Chavan, Chair	Blake Gonska, Co-Chair	SONOMA A	SESSION
7:30 AM – 8:20 AM	Chemical and Microbial Fingerprints of Unsheltered Homelessness in an Urban Watershed <i>Katerina Papp, Southern Nevada Water Authority</i>			2112
8:30 AM – 9:20 AM	Water Treatment in Small Communities and Developing Countries – <i>Sujit Pawar, Atkins</i>			2212
9:40 AM – 10:30 AM	City of Alamosa Evaluates In-Situ Electrogenerated Ferrous Reagent for Arsenic Removal <i>Vladimir Dozortsev, Banning and AMS; Roy Sanchez CWP, City of Alamosa</i>			2312
10:40 AM – 11:30 AM	Cleaning Optimization: Selecting the Best Conditions for RO Effective Cleaning <i>Joshua Utter, American Water Chemicals</i>			2412
1:00 PM – 1:50 PM	Combating Water Scarcity – Achieving ZLD For Drinking Water Using SiC Ceramic Membranes <i>Brian Butters, Purifics Water Inc.; Tony Powell, Purifics Water Inc.</i>			2512
2:00 PM – 2:50 PM	Reverse Osmosis Fundamentals: Basics to Form a Solid Understanding of Operating Principles <i>Silvana Ghiu, Hazen and Sawyer</i>			2612
3:00 PM – 3:50 PM	Maximizing Both Pathogen and Chemical Contaminant Treatment Commitments with UV AOP <i>Scott Bindner, Trojan Technologies; Kamrun Ahmadi, City of Reno</i>			2712

7:00 AM - 7:30 AM - JAVA JOLT



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The more they can see, the more they can save.



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TECHNICAL PROGRAM

THURSDAY, AUGUST 10, 2023

MAINTENANCE	Dave Badgley, Chair	Jason Badgley, Co-Chair	SHOWROOM	SESSION
7:30 AM – 8:20 AM	Leak Detection 101 - Basic Methodology and Troubleshooting – James Maushart, SebaKMT			3106
8:30 AM – 9:20 AM	Ice Pigging - Advanced Pipe-Cleaning Technology – Paul Treloar, American Pipeline Solutions			3206
9:40 AM – 10:30 AM	Maintaining Your Automatic Control Valve – Jim Lugo, Watts Water Technologies; Scott Allison, Delco Sales			3306
10:40 AM – 11:30 AM	Smart Phone, Smart Cars, Smart Cathodic Protection systems? – Charlie Poore, MESA Products, Inc.			3406
11:40 AM – 12:30 PM	Well System Management and Rehabilitation Program – Jason Mace, Southern Nevada Water Authority			3506
2:00 PM – 2:50 PM	Water Flush, Oil Lube, Water Lube, or Submersible Well Pumps? Mike Bodart, General Pump Company, Inc.			3606
3:00 PM – 3:50 PM	Training For Compliance and Competency James Mcpherson, CTS International, Inc.; Ralph Stevens, Competency Training Systems			3706
WASTEWATER COLLECTION	Brandon Martinez, Chair	Andy Keller, Co-Chair	GRAND BALLROOM B	SESSION
7:30 AM – 8:20 AM	Overview of Classic and State of the Art Gravity Pipeline Rehabilitation Technologies David Badgley, Badgley & Associates			3102
8:30 AM – 9:20 AM	Transitioning from a Reactive to a Proactive CCTV Program Stephanie Prescott, Jack Doheny Company; Kyle Secrist, Rapidview IBAK			3202
9:40 AM – 10:30 AM	Gas Detectors Calibration & Bump Test Requirements: What Do Negative Display Readings Mean? Michael Calvo, GFG Instrumentation			3302
10:40 AM – 11:30 AM	Combo Machine Maintenance Jake Haaker, Haaker Equipment Company; Jake Boyle, Haaker Equipment Company			3402
11:40 AM – 12:30 PM	Lower Costs, Lower Risks - New Relief from Optimized Cleaning – Jay Boyd, ADS Environmental Services			3502
2:00 PM – 2:50 PM	Collection System Life Cycle Cost Consideration Comparing Options Derek Lachut, Environment One Corporation			3602
3:00 PM – 3:50 PM	How the Inland Empire Utilities Agency Turbocharged Their Collection System Eric Van Cleave, Smart Cover Systems; Lucia Diaz, Inland Empire Utilities Agency			3702
WASTEWATER TREATMENT	LeAnna Risso, Chair	Sidney Innerebner, Co-Chair	SONOMA C & D	SESSION
7:30 AM – 8:20 AM	Wastewater Treatment Aeration Applications and Blower Technologies Richard Barile, Sulzer; Steven Seymour, Saddleback Environmental			3110
8:30 AM – 9:20 AM	Mitigating Energy Demand Charges: Putting Energy Optimization in the Hands of Operators George Schuitt, AESC-Inc.			3210
9:40 AM – 10:30 AM	Do I Need Grit Removal? – Eric Tobin, Hydro International			3310
10:40 AM – 11:30 AM	How Design Impacts Headworks Screening Systems – Dave Barkey, JWC Environmental			3410
11:40 AM – 12:30 PM	New Screen Capture Efficiency Sampling and Testing Protocol for WWTP Screens Abner Aviles, OVIVO, USA, LLC			3510
2:00 PM – 2:50 PM	Enhanced Domestic Primary Wastewater Treatment Utilizing Pile Cloth Media Filtration John Dyson, Aqua-Aerobic Systems, Inc.			3610
3:00 PM – 3:50 PM	Master Planning for Risk-Based Prioritization of Asset Replacement - Case Study Coral Taylor, Carollo Engineers			3710
WATER DISTRIBUTION	Ken Snow, Chair	Steve Davis, Co-Chair	GRAND BALLROOM A	SESSION
7:30 AM – 8:20 AM	Pumps and Motors for Water Operators Chase Stearnes, Daniel B. Stephens & Associates, Inc.; Michael Alvidrez, Alvidrez Water Operations			3111
8:30 AM – 9:20 AM	AWWA D102 Tank Coatings: Which Systems Offer Longest Service Life Lowest Life Cycle Costs in Water Systems – Randy Moore, Tnemec; Travis Gold, Atlantic Coating Consultants/Tnemec			3211
9:40 AM – 10:30 AM	How to Develop a Valve Maintenance Program, No Matter the Size of Your Budget Sharon Lydon, Wachs Utility Products			3311
10:40 AM – 11:30 AM	History of Water Service Line Materials – Whit Hall, REHAU - MUNICIPEX / Golden Sun Marketing			3411
1:00 PM – 1:50 PM	Increasing Data Collection Accuracy to Solve the Hydraulic Model Mystery in Water Systems Will Bowman, Kimley-Horn; Taylor Townes, Kimley-Horn			3511
2:00 PM – 2:50 PM	Strategic Customer Meter Replacement Planning – Steve Davis, Metering Technology Consultants			3611
3:00 PM – 3:50 PM	Out of Sight But Not Out of Mind - Managing Buried Water Distribution Assets Wei Liao, Purdue University; Tom Iseley, Purdue University			3711

TECHNICAL PROGRAM

THURSDAY, AUGUST 10, 2023

BACKFLOW PREVENTION		Nathan Ellis, Chair	TBD, Co-Chair	SONOMA B	SESSION
7:30 AM – 8:20 AM	Backflow Troubleshooting 101 – <i>Chris Castaing, San Diego County Water Authority</i>				3101
8:30 AM – 9:20 AM	Developing a Backflow Program Start to Implementation – <i>Ken Ashlock, Cross Connection Environmental</i>				3201
9:40 AM – 10:30 AM	Basics of Pressure Reducing Valves – <i>Sean Perry, Zurn</i>				3301
10:40 AM – 11:30 AM	Running a Backflow Cross-Connection Program – <i>Randy De La Garza, City of Surprise</i>				3401
1:00 PM – 1:50 PM					3501
2:00 PM – 2:50 PM					3601
3:00 PM – 3:50 PM					3701
ENVIRONMENTAL COMPLIANCE/PRETREATMENT		Nicole deMoet, Chair	Stephanie Pezzelle, Co-Chair	NAPA C & D	SESSION
7:30 AM – 8:20 AM	Digital Transformation - Automating Industrial Pretreatment Permits <i>Pranam Joshi, NJB Soft; Alex Chakmak, NJB Soft</i>				3107
8:30 AM – 9:20 AM	Creating a Municipal Fats, Oils, & Grease Program – <i>Sam Mcleod, FOG BMP</i>				3207
9:40 AM – 10:30 AM	Sustainable W & WW Collection System Cleaning, Odor, FOG & HAB Reduction Is Under Our Feet <i>Jim Aanderud, Permidian Technologies LLC; Suzan Chin-Taylor, The TUIT Group and Creative Raven</i>				3307
10:40 AM – 11:30 AM	The Building Blocks of FOG - How to develop a FOG Control Program <i>Joseph Jenkins, EEC Environmental</i>				3407
11:40 AM – 12:30 PM	Co-Contaminants in Water - Achieving Compliance with a Mix of Influent Chemicals <i>Cathy Swanson, Purolite LLC, an Ecolab Company</i>				3507
2:00 PM – 2:50 PM	Pretreatment Compliance Audits and Inspections – <i>James Polek, US EPA Region 9</i>				3607
3:00 PM – 3:50 PM	EPA Pretreatment Update – <i>James Polek, USEPA Region 9</i>				3707
ENVIRONMENTAL HEALTH/SAFETY & SECURITY		Tim Page-Bottorff, Chair	Jon Cordoba, Co-Chair	NAPA A & B	SESSION
7:30 AM – 8:20 AM	Arc Flash and Electrical Safety: A Review of NFPA 70E – <i>Alex VandenBroeck, ATM Electric</i>				3108
8:30 AM – 9:20 AM	Safety Issues Facing Collection System Workers – <i>Malvin Nezat, Nezat Training and Consulting</i>				3208
9:40 AM – 10:30 AM	Ensuring Safety Compliance in Your Training Program <i>James Mcpherson, CTS International; Ralph Stevens, Competency Training Systems</i>				3308
10:40 AM – 11:30 AM	The Big Hole in Confined Space - Gas Meter Competence Training – <i>Jason Call, Tinosi</i>				3408
1:00 PM – 1:50 PM	What is Process Safety Management (PSM) of Highly Hazardous Chemicals? <i>Shayne Anderson, Eye On Safety</i>				3508
2:00 PM – 2:50 PM	Safety Is No Accident - Pump Station Safety – <i>Joe Schmidt, Smith and Loveless</i>				3608
3:00 PM – 3:50 PM	2023 Trench Safety Awareness: What You Need to Know About Excavations <i>Kris Graham, United Rentals</i>				3708
LEADERSHIP DEVELOPMENT		Brett Offerman, Chair	Lisa Farinas, Co-Chair	GRANDVIEW LOUNGE	SESSION
7:30 AM – 8:20 AM	Bridging the Generational Gap in Operations <i>Chris Carey, City of Sedona; Greg Payne, City of Sedona</i>				3105
8:30 AM – 9:20 AM	Operator Core Competency Learning Objectives <i>Manny Moreno, Inland Empire Utilities</i>				3205
9:40 AM – 10:30 AM	Building Your Water Career - Part 1 – <i>Michele Rodriguez-Flores, Ridgecresta</i>				3305
10:40 AM – 11:30 AM	Building Your Water Career - Part 2 – <i>Michele Rodriguez-Flores, Ridgecresta</i>				3405
1:00 PM – 1:50 PM	Managing the Training Function <i>James Mcpherson, CTS International, Inc.; Ralph Stevens, Competency Training Systems</i>				3505
2:00 PM – 2:50 PM	The Best Way to Attract and Retain OITs/Interns – Holistic Early Career Programming <i>Jordan Rodriguez, Stantec</i>				3605
3:00 PM – 3:50 PM	Passing the Torch: Mentoring Future Generations to Leadership <i>Greg Potter, Sunrise Engineering, Inc.</i>				3705

7:00 AM - 7:30 AM - JAVA JOLT

9:20 AM - 9:40 AM - JAVA JOLT

LUNCH A - 11:30 AM - 1:00 PM / LUNCH B - 12:30 PM - 2:00 PM

TECHNICAL PROGRAM

THURSDAY, AUGUST 10, 2023

SURFACE WATER/WATER TREATMENT	Raj Chavan, Chair	Blake Gonska, Co-Chair	SONOMA A	SESSION
7:30 AM – 8:20 AM	PFAS - Chasing the Regulations with Treatment – Cathy Swanson, Purolite LLC, an Ecolab Company			3112
8:30 AM – 9:20 AM	Water Challenges Facing Native American Tribes and Potential Solutions Jeremiah Brosowski, Colorado River Regional Water System			3212
9:40 AM – 10:30 AM	PFAS - The Latest and Greatest – Heather Jennings, Probiotic Solutions			3312
10:40 AM – 11:30 AM	Treatment for PFAS: Are There Advantages to Incorporating Dual Adsorbents? Scott Grieco, Jacobs			3412
1:00 PM – 1:50 PM	Policy to Planning: Non-Functional Turf Removal and Its Effect on the Flood Control Plan Emily Thornley, Atkins North America; Brian Rowley, Clark County Regional Flood Control District			3612
2:00 PM – 2:50 PM	Regenerable Ion Exchange Systems for the Treatment of Nitrate Contaminated Groundwater Todd Webster, Envirogen Technologies, Inc.; Tim Berschauer, Charles P. Crowley Company			3712
3:00 PM – 3:50 PM	Plant and Vertical Asset Inspection Best Practices – Sean Dingman, Websoft Developers			3712

7:00 AM - 7:30 AM - JAVA JOLT

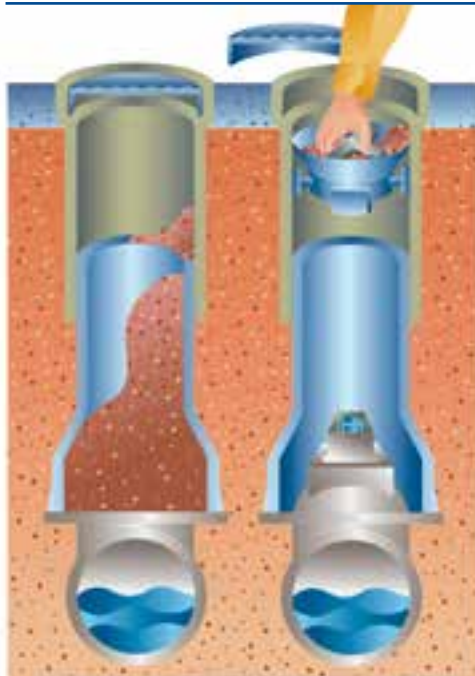


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CEU SESSION APPROVAL TABLE

The following table identifies certifying agencies that have provided pre-approval for a variety of technical Sessions being presented at the Tri-State Seminar.

AZ Water has this statement on their website regarding approval:

- Professional development hours (PDHs) involve participation in an organized educational activity related to engineering, biological or chemical sciences, a closely related technical or scientific discipline, or operations management.
- A PDH is equal to one hour of contact time. A total of 30 professional development hours are required for each 3-year renewal period of your operator certification regardless of the number of certificates that are held by an operator.
- Continuing education units (CEUs) can also be converted to PDHs. One CEU is equal to 10 PDHs.

While every effort is made to obtain accurate pre-approval from a variety of certifying agencies, ultimately it is the responsibility of the attendee to ensure that any technical sessions attended will be accepted by their certifying agency for certification renewal.

SESSION	SESSION NAME	CA SWRCB		CWEA	NWEA		NDEP
		DWOCF	WWOCF		ALL	SAFETY	
3101	Backflow Troubleshooting 101	1		1			1
3201	Developing a Backflow Program Start to Implementation	1		1	1		1
3301	Basics of Backflow and Troubleshooting - Part 1	1		1	1		1
3401	Basics of Backflow and Troubleshooting - Part 2	1		1	1		1
3501	Running Backflow Cross-Connection Program	1		1			1
1114	Protecting Wastewater System Motors from Damage on PWM Systems		1	1	1		1
1214	Out of Paper – Transitioning To Digital Field Forms For Daily Production and Treatment	1		1	1		1
1314	How Cloud-Based SCADA Provides True System Redundancy			1	1		1
1414	Benefits of Online Amperometric Chlorine Measurement and Control	1	1	1	1		1
1514	Cover your Ass(ets) by Developing a Dynamic Asset Management Program		0.5	1	1		1
1614	Convergence: Operational Technology Networks and the Evolving Cyber Threatscape			1	1		1
1714	The Modern Water/Wastewater Control System Demystified: SCADA Foundations for Users		1	1	1		1
2114	Chandler Pecos SWTP SCADA Upgrades - Discovery through Design	1	1	1	1		1
2214	Consequences of Water and Wastewater Cyber Breaches and Potential Mitigation Strategies			1	1		1
2314	SCADA Network Connectivity Hurdles with Geographically Challenged Sites		1	1	1		1
2414	Instrumentation Diagnostics Deserve their own PLC		1	1	1		1
2514	eRIS - Log Your Data From Anywhere at the Plant & Manage Multiple Data Sources.	1	1	1	1		1
2614	The Electrical Trilogy	1	1	1	1		1
2714	Masaqua: A New Control System to Streamline MBR Operations and Decrease OPEX and CAPEX			1	1		1
2107	Regulating Commercial Customers		1	1			1
2207	Managing Ordinances for FOG and Industrial Users		1	1	1		1
2307	Managing Your Septic and Grease Haulers		1	1	1		1
2407	Smart POTW Approaches to PFAS		1	1	1		1
2507	THC in Water & Wastewater	1	1	1	1		1
2607	A Semiconductor in the Desert: An Industrial Pretreatment Case Study		1	1	1		1
2707	Hazardous Building Materials – More Than Just a Requirement			1	1		1
3107	Digital Transformation - Automating Industrial Pretreatment Permits			1	1		1
3207	Creating a Municipal Fats, Oils, & Grease Program		1	1	1		1
3307	Sustainable W & WW Collection System Cleaning, Odor, FOG & HAB Reduction is Under Our Feet		1	1	1		1
3407	The Building Blocks of FOG - How to Develop a FOG Control Program		1	1	1		1
3507	Co-Contaminants in Water – Achieving Compliance with a Mix of Influent Chemicals	1		1	1		1
3607	Pretreatment Compliance Audits and Inspections	1	1	1	1		1
3707	EPA Pretreatment Update		1	1	1		1
2108	Elevating Safety Culture: A Journey towards World-Class Leadership	1		1		1	1
2208	The Humor in Safety			1		1	1
2308	Cell Phones Don't Cause Accidents, People Do – A Look at Human Factors			1		1	1
2408	Influencing Your Organizations Culture to Build Resilience			1	1		1
2508	Your Ace in the Hole - Supervisors are the Key to Safety Leadership			1		1	1
2608	STCKY Chemicals: Real-World Hazard Communication			1		1	1
2708	Active Shooter and Workplace Violence	1		1		1	1
3108	Arc Flash & Electrical Safety, Review of NFPA 70E			1		1	1
3208	Safety Issues Facing Collection System Workers			1		1	1
3308	Ensuring Safety Compliance in Your Training Program			1		1	1

SESSION	SESSION NAME	CA SWRCB		CWEA	NWEA		NDEP
		DWOCB	WWOCB		ALL	SAFETY	
3408	The Big Hole in Confined Space Entry Training - Gas Monitor Competence Training			1		1	1
3508	What Is Process Safety Management (PSM) of Highly Hazardous Chemicals?			1		1	1
3608	Safety Is No Accident - Pump Station Safety	1		1		1	1
3708	2023 Trench Safety Awareness:What you need to know about Excavations	1		1		1	1
1140	Understanding Well Fouling and Developing Accurate Strategies - Part 1			1			1
1240	Understanding Well Fouling and Developing Accurate Strategies - Part 2			1			1
1340	Well Life and Renewal Program - Part 1			1			1
1440	Well Life and Renewal Program - Part 2			1			1
1540	Water Well Rehabilitation: Benefits, Risks, & Costs Associated with the Newest Technology			1			1
1640	Griggs-Walnut Groundwater Plume Superfund Site: From Dry Cleaner to Clean Drinking			1			1
1740	Recharge Wells Revisited			1	1		1
1103	Advanced Dose Control: iCT-based Optimization of Disinfection Chemistries	1	1	1	1		1
1203	Ins and Outs of BOD		1	1	1		1
1303	Proper Recordkeeping for Sample Collection and Analysis at Water and Wastewater Plants	1		1	1		1
1403	QC Procedures for pH, DO, Chlorine, and Turbidity Analyses at In-house Laboratories	1		1	1		1
1503	Micro ELN®, an Innovative Data Management System for Automated Microbiological Analysis	1	1	1	1		1
1603	Wastewater Testing: Enzymatic Methods Used to Detect Indicator Bacteria		1	1	1		1
1703	The Environmental Laboratory: Sample Collection Procedures	1		1	1		1
3105	Bridging the Generational Gap in Operations		0.5	1			1
3205	Operator Core Competency Learning Objectives	1	0.5	1			1
3305	Building Your Water Career - Part 1			1			1
3405	Building Your Water Career - Part 2			1			1
3505	Managing the Training Function	1	0.5	1			1
3605	The Best Way to Attract and Retain OITs/Interns – Holistic Early Career Programming		0.5	1			1
3705	Passing the Torch: Mentoring Future Generations to Leadership		0.5	1			1
1106	Maintenance Headaches Caused by Commissioning Failures		1	1	1		1
1206	Integrating Valve Inspections With Pipeline Inspections 2023	1		1	1		1
1306	Overview of Classic and the new State of the art pipeline rehabilitation technology	1		1	1		1
1406	Trenchless Rehabilitation for Pressure Water, Sewer Force Mains and Treatment Plants			1	1		1
1506	Demands for High Performance Specialty Coatings	1		1	1		1
1606	Composite Manhole Covers Help Solve A Leading Cause of Water Pollution			1	1		1
1706	Hydraulic Odor and Corrosion Control in Sewer Drops and Water Tank Aeration		1	1	1		1
2106	Will Your Tank Survive a Major Earthquake	1		1	1		1
2206	Maintenance Hole, Pump & Lift Station, utility vault Structure Rehabilitation Technologies	1		1	1		1
2306	Structural Assessments and Asset Preservation Strategies for Steel Water Tanks	1		1	1		1
2406	Optimizing Water Main Rehabilitation Using the "Assess-and-Fix" Approach	1		1	1		1
2506	Jeopardy: An Interactive Lesson on the Functions of Water & Wastewater Air Valves	1	1	1	1		1
2606	The Answer to Sustainable Wastewater Treatment, Conveyance & Surface Water Protection			1	1		1
2706	Predictive Maintenance for Electric Motors	1	1	1	1		1
3106	Leak Detection 101 - Basic Methodology and Troubleshooting	1	1	1	1		1
3206	Ice Pigging - Advanced Pipe-Cleaning Technology	1		1	1		1
3306	Maintaining your Automatic Control Valve	1	1	1	1		1
3406	Smart Phone, Smart Cars, Smart Cathodic Protection systems?	1		1	1		1
3506	Well System Management and Rehabilitation Program	1		1	1		1
3606	Water Flush, Oil Lube, Water Lube, or Submersible Well Pumps?	1		1	1		1
3706	Training For Compliance and Competency	1		1	1		1
1109	Virus Log Reduction Values (LRV) for Secondary Biological Treatment		1	1	1		1
1209	Reverse Osmosis in Potable Reuse: Increasing LRV Credit Through Different Virus Surrogates		1	1	1		1
1309	WRF Expansion and Optimization: Squeezing Every Drop Out of Resources and Footprint		1	1	1		1
1409	Utilizing MBR+RO to Reduce Water Consumption by 70% at a Tractor Manufacturing Facility		1	1	1		1
1509	Urban Run-Off & Storm Water Purification for Reuse			1	1		1
1609	Source Water Optimization Solutions for Nutrient Control and Reduced Carbon Emissions		1	1	1		1
1709	Advanced Controls for UV Disinfection and Advanced Oxidation		1	1	1		1
1113	Cigarette Waste and the Waters of America			1			1
1213	Lower Las Vegas Wash – Seeking Stability in a Dynamic Stream System			1			1
1313	Retrofit and Rehabilitation of Bioretention LID BMPs			1			1
1413	Stormwater Capture and Recycling in an Urban Park			1			1
1513	Nevada Division of Environmental Protection (NDEP): What's New in Stormwater?			1	1		1

CEU SESSION APPROVAL TABLE

SESSION	SESSION NAME	CA SWRCB		CWEA	NWEA		NDEP
		DWOCF	WWOCF		ALL	SAFETY	
1613	No More Rock, Paper, Scissors: The Shift to Dynamic, Interactive, and Digital Reporting			1			1
1713	Resilient Stormwater Infrastructure – Wildfires, Emergency Evacuation, and Recovery			1			1
2113	Construction Site Stormwater Inspections, Made Simple			1			1
2213	Between a Rock Bag and a Hard Place: Enforcement and the Non-Compliant Construction Site			1			1
2313	The Runway to Success is Always Under Construction–CGP Stormwater Compliance at an Airport			1			1
2413	Breachable Moments: Responding to Stormwater Discharges at Large-Scale Construction Sites			1			1
2513	Stormwater Collection & Removal of Suspended Debris, Hazardous Metals & Organics			1			1
2613	Evaluating TMDL Pollutants from ADOTs Storm System Discharges			1			1
2713	Stormwater Treatment: Metals Removal with Ion Exchange			1			1
2112	Chemical and Microbial Fingerprints of Unsheltered Homelessness in an Urban Watershed	1		1	1		1
2212	Water Treatment in Small Communities and Developing Countries	1		1			1
2312	City of Alamosa Evaluates In-Situ Electrogenerated Ferrous Reagent for Arsenic Removal			1			1
2412	Cleaning Optimization: Selecting the Best Conditions for RO Effective Cleaning.	1		1			1
2512	Combatting Water Scarcity – Achieving ZLD For Drinking Water Using SIC Ceramic Membranes	1		1			1
2612	Reverse Osmosis Fundamentals: Basics to Form a Solid Understanding of Operating Principles	1		1			1
2712	Maximizing Both Pathogen and Chemical Contaminant Treatment Commitments With UV AOP	1		1	1		1
3112	PFAS - Chasing the Regulations with Treatment	1		1	1		1
3212	Water Challenges Facing Native American Tribes and Potential Solutions	1		1			1
3312	PFAS the Latest and Greatest	1		1	1		1
3412	Treatment for PFAS: Are There Advantages to Incorporating Dual Adsorbents?	1		1	1		1
3512	Policy to Planning: Non-Functional Turf Removal and its Effect on the Flood Control Plan			1			1
3612	Regenerable Ion Exchange Systems for the Treatment of Nitrate Contaminated Groundwater	1		1			1
3712	Water Treatment Plant and Vertical Asset Inspection Best Practices			1	1		1
1102	12 Years & Counting:City of Las Vegas Small Diameter Sewer Assessment Program Achievements			1	1		1
1202	Pilot Tube Guided Boring for New Gravity Sewer Installation in San Diego			1	1		1
1302	Nozzle Capacity Cleaning			1	1		1
1402	Wastewater Inspection Technologies – Complete Understanding of Your System			1	1		1
1502	Bakersfield’s Odor Control Breakthrough: SulFeLox Saves Money, Improves Performance	1		1	1		1
1602	Know your Sewer Cleaning Hose - Practices, Identification, Repair, and Safety.			1	1		1
1702	Advancements in Underground Infrastructure Data Collection and Analysis			1	1		1
2102	Hotspot and Periodic Line Cleaning Best Practices		1	1	1		1
2202	Principles of Root Foaming - Implementing a Chemical Sewer Root Control Program			1	1		1
2302	Systematically Analyzing Wastewater Collections Data to Drive Decisions			1	1		1
2402	How Will the New ASTM Cleaning Standards Affect Your Sewer Collections Organization?			1	1		1
2502	Hydraulic Odor & Corrosion Control in Sewer Drops		1	1	1		1
2602	Applications of Wastewater-Based Epidemiology in Public Health: SARS-CoV-2 and Beyond		1	1	1		1
2702	Small City, Big Dreams - Implementing an In-House CCTV Program			1	1		1
3102	Overview of Classic and State of the Art Gravity Pipeline Rehabilitation Technologies			1	1		1
3202	Transitioning from a Reactive to a Proactive CCTV Program			1	1		1
3302	Gas Detector Calibration & Bump Test Requirements: What Do Negative Display Readings Mean?			1	1		1
3402	Combo Machine Maintenance		1	1	1		1
3502	Lower Costs, Lower Risks - New Relief from Optimized Cleaning			1	1		1
3602	Collection System Life Cycle Cost Consideration Comparing Options			1	1		1
3702	How Inland Empire Utilities Agency Turbocharged Their Collection System		1	1	1		1
1110	Keys to Practical Equipment and Process Troubleshooting - Part 1		1	1	1		1
1210	Keys to Practical Equipment and Process Troubleshooting - Part 2		1	1	1		1
1310	BNR Optimization to Achieve Very Low Effluent Nitrogen		1	1	1		1
1410	Evaluating Facility Process Control Modifications for Consistent NH3 Removal Pilot Study		1	1	1		1
1510	Troubleshooting with Microbiology		1	1	1		1

SESSION	SESSION NAME	CA SWRCB		CWEA	NWEA		NDEP
		DWOCF	WWOCF		ALL	SAFETY	
1610	Troubleshooting an MBR Process Upset in a Landfill Leachate Treatment Facility		1	1	1		1
1710	Case Studies for Aerobic Granular Sludge in North America		1	1	1		1
2110	Densification: Combining Biological, Chemical and Physical Selection Approaches		1	1	1		1
2210	Smart Water: Primer and Case Study Grab Bag		1	1	1		1
2310	Optimizing Polymer Mixing and Activation: Following the Science		1	1	1		1
2410	The Mechanics of Centrifuge Biosolids Dewatering and Thickening Optimization		1	1	1		1
2510	Clarifiers: A Discussion of Critical Design Details		1	1	1		1
2610	Put in a Pipe! Closed Vessel UV for Wastewater Disinfection		1	1	1		1
2710	Applying Ozone and AOP for multiple processes at Industrial WWTPs		1	1	1		1
3110	Wastewater Treatment Aeration Applications and Blower Technologies		1	1	1		1
3210	Mitigating Energy Demand Charges: Putting Energy Optimization in the Hands of Operators		1	1	1		1
3310	Do I Need Grit Removal?		1	1	1		1
3410	How Design Impacts Headworks Screening Systems		1	1	1		1
3510	New Screen Capture Efficiency Sampling & Testing Protocol for WWTP Screens		1	1	1		1
3610	Enhanced Domestic Primary Wastewater Treatment Utilizing Pile Cloth Media Filtration		1	1	1		1
3710	Master Planning for Risk-Based Prioritization of Asset Replacement – Case Study		1	1	1		1
1111	Cathodic Protection Monitoring in Water and Wastewater Systems	1		1	1		1
1211	Leak Detection and Pressure Modulation to Reduce Non-Revenue Water Loss	1		1	1		1
1311	Pipeline Contingency Planning and Selection of Mechanical Repair Fittings	1		1	1		1
1411	Why Reline Instead of Dig and Replace? An Eco-Friendly, Cost-Effective Approach for Waterlines	1		1	1		1
1511	Waterline Joint Restraints: Why, Where, and Which One?	1		1	1		1
1611	Peristaltic & Diaphragm Chemical Metering Pumps, Accessories and Systems for Water Systems	1		1	1		1
1711	Chlorine Measurement - The Pros and Cons of Different Methods in Water Systems	1		1	1		1
2111	Why Mix? The Key Benefits and Technology Behind Reservoir Mixing	1		1			1
2211	Solutions for Control Tapping, Line-Stops, Valve Insertions	1		1	1		1
2311	Intro to Line Stops, Valve Insertions, Hot Taps, & Pipe Freezing	1		1	1		1
2411	Hydrant Flushing Distribution Water Mains During the Drought, Without Wasting Water!	1		1			1
2511	Fundamentals of Ductile Iron Fittings in Waterlines	1		1	1		1
2611	New Technologies for Joining & Restraining Pipe in Water Distribution Systems	1		1	1		1
2711	Cured-In-Place Pipes - Pipe In Pipe Solution for Ageing Waterlines	1		1	1		1
3111	Pumps and Motors for Water Operators	1		1	1		1
3211	AWWA D102 Tank Coatings: Which Systems Offer Longest Service Life Lowest Life Cycle Costs in Water	1		1	1		1
3311	How to Develop a Valve Maintenance Program, No Matter the Size of your Budget	1		1	1		1
3411	History of Water Service Line Materials	1		1			1
3511	Increasing Data Collection Accuracy to Solve the Hydraulic Model Mystery in Water Systems	1		1			1
3611	Strategic Customer Meter Replacement Planning	1		1	1		1
3711	Out of Sight But Not Out of Mind - Managing Buried Water Distribution Assets	1		1	1		1
8801	Wastewater Treatment Plant Tour City of Las Vegas Water Pollution Control Facility		4	4	4		3
8802	Hoover Dam Hard Hat Tour		4	4	4		3
8803	Hoover Dam Hard Hat Tour		4	4	4		3
8804	Venetian Hotel & Casino Tour Robust Recycling Program		2	2	2		1
8805	Venetian Hotel & Casino Tour Robust Recycling Program		2	2	2		1
9901	PACP / LACP / MACP Initial Certification			18			18
9902	Inspector Training Certification for Manhole Rehabilitation (2 Days)			12			12
9903	MS4 Compliance and Code Enforcement (MS4CCEI) Certification			7			7
9904	Sewer Cleaning 102 One-Day Workshop			7	7		7
9905	Activated Sludge Process Control and Nutrient Removal	7	7	7	7		7
9906	Confined Space Competent Person Training & Certification	6		6		6	6
9907	MS4 Compliance & Code Enforcement (MS4CCEI) Recertification			4			4
9908	Valve Selection and Assessment for the Water and Wastewater Industry		4	4	4		4
9909	NASSCO Inspector Training Certification for Cured-In-Place Pipe (CIPP) (2 Days)	12		12			12
9910	PACP / LACP / MACP Recertification	11		11			11
9911	Overview of Advanced Water Treatment Technologies and Regulations	14	14	14	14		14
9912	Trenching & Shoring	6		6		6	6
9913	PFAS 101: Emerging Trends and Technologies to Solve the PFAS Crisis	7	7	7	7		7
9914	Distribution Operator Exam Prep Workshop	7		7			7