



*Designed for Operators, by Operators*

# PROGRAM

15-16 SEPTEMBER 2020

WATER

TRANSPORT

LEADERSHIP

WASTEWATER

CONFERENCE THEME  
**LEADING  
EDGE**



# WELCOME TO OUR FIRST EVER VIRTUAL CONFERENCE!



Chris Lawrence, Chair

Kalpna Solanki, CEO

## LEADING EDGE

Well, we made it happen in 2018, and we said we would be back in 2020... but how things have changed!

We thought the pandemic would be under control by the Summer, and started planning an in-person conference, that then pivoted to a hybrid (in-person and virtual) conference, and then pivoted to a fully virtual conference for Operators. We do not give up easily and have for you a jam-packed conference:

**1.2** CEUs

**4** LEARNING  
STREAMS

**900** MINUTES OF SKILLS  
DEVELOPMENT

**2** FULL  
DAYS

**41** INTERACTIVE  
SESSIONS

**400** DELEGATES

The EOCP's 'Leading Edge' conference has been Designed for Operators, by Operators, and will provide water and wastewater professionals with innovative solutions and new insights to protect public health and the environment.

We hope you enjoy the conference!

Please Be Kind, Be Calm, Be Safe.

Chris Lawrence, **Board Chair**

Kalpna Solanki, **Chief Executive Officer**



# CONFERENCE HIGHLIGHTS

## THE LEADING EDGE

Designed by Operators, for Operators.

#EOCP2020 provides learning opportunities for water and wastewater sector professionals on innovative solutions and new insights to foster the prudent management of water and wastewater in British Columbia and Yukon.

### KEYNOTE SPEAKER

15th September  
9 to 10 AM



## ADAM KREEK

### **The Responsibility Ethic**

Executive business coach Adam Kreek will share leadership insights on his journey from failure to Olympic Gold in men's eights rowing, and his self-supported trans-Atlantic rowing adventure.

When we focus on what we can control, we embrace what Adam calls the Responsibility Ethic. We have the ability to choose our response and make the future happen.

### PLENARY SESSION

16th September  
9 to 10 AM



## GREG SOLECKI

### **Incident Management**

A renowned disaster management executive, Greg will provide a review of the current response to COVID-19 in the water sector and how incident management systems can assist with dealing with a 'Disaster Within a Disaster'.

## TUESDAY SEPTEMBER 15TH

	STREAM 1 - WATER	STREAM 2 - WASTEWATER	STREAM 3 - TRANSPORT	STREAM 4 - LEADERSHIP
	<b>OPENING REMARKS AND KEYNOTE</b> The Responsibility Ethic - Adam Kreek (8:30-10:00 AM)			
	<b>BREAK #1</b> (10:00-10:15 AM)			
10:15 – 11:00	Remote Commissioning, Training, and Monitoring of Treatment Plants under COVID-19 <b>Jeff Spencer</b>	Wastewater Jeopardy	The Science of Pipe Cleaning	What to Do to Avoid, Prepare, and Deal with Disasters
11:15 – 12:00	The Basics of Corrosion and Protections for Ductile Iron Pipe <b>Brent Williamson</b>	<b>Pamela Murawski</b>	<b>Kenneth Billingham</b>	<b>Valerie Jenkinson, Greg Solecki, Ron Enns &amp; Ian Mcilwham</b>
	<b>LUNCH AND OPERATORS WITHOUT BORDERS UPDATE</b> (12:00-12:30 PM)			
	<b>THINK TANK SESSIONS</b> (12:30-1:00 PM)			
1:00 – 1:45	Understanding and Applying the Different Levels of Machinery Condition Monitoring <b>Carl Sheehan</b>	Two Things you Should Know about Grit Removal <b>Chris Howorth</b>	Air Release Valve Chambers: A Western Canada Case Study <b>Dave Brewer</b>	Equity, Diversity, and Inclusion: An Operator Initiative <b>Sarah Zibin &amp; Holly Atkinson</b>
2:00 – 2:45	The History of Valve Insertion and its Future <b>Brandon Pater</b>	Advanced Electro-Oxidation, Destroying a Wide Range of Contaminants in All Types of Wastewater <b>Nicole Bolea</b>	New BC Ground Disturbance 201 Standard: How Does it Apply to You? <b>Ronald Enns</b>	Toxic Process Gases: Managing Risk and Meeting Compliance <b>Andrew McSherry &amp; Susan de Leeuw</b>
	<b>BREAK #2</b> (2:45-3:00 PM)			
3:00 – 3:45	Things WE Can Do to Tackle Climate Change <b>Chris Howorth</b>	The Hidden Cost of Advanced Wastewater Treatment: Solids Residuals <b>Pat Miller</b>	Maintaining Critical Water Services with Minimal to No Disruption to Your Customer <b>Dave Brewer</b>	Leading Coaching Conversations: Coaching Skills, Mindsets and Behaviours for Supervisors and Managers
4:00 – 4:45	Industrial Cybersecurity: Debunking the Myths and Staying Out of the News <b>Rob Wilson &amp; Darren Gillis</b>	Saving Energy at Wastewater Facilities Through Low/No Cost Opportunities <b>Wendy Waudby</b>	The Impact of UDF on the Water Quality in the Distribution System <b>Dr. Saad Jasim P. Eng</b>	<b>Charles Lee</b>

## WEDNESDAY SEPTEMBER 16TH

	STREAM 1 - WATER	STREAM 2 - WASTEWATER	STREAM 3 - TRANSPORT	STREAM 4 - LEADERSHIP
	<b>OPENING REMARKS AND PLENARY SESSION</b> Incident Management - Greg Solecki (8:30-10:00 AM)			
	<b>BREAK #3</b> (10:00-10:15 AM)			
10:15 – 12:00	Water Jeopardy  <b>Pamela Murawski</b>	What Can Your SCADA System Do? <b>Zane Spencer</b>	Proper Installation of Large and Small Diameter MJ Joints <b>Jeff Phillips</b>	Leading in VUCA Times: Emotional Intelligence and Your Success <b>David Cory</b>
	<b>LUNCH</b> (12:00-12:30 PM)			
	<b>AWARDS</b> (12:30-1:00 PM)			
1:00 – 1:45	Online Resource and Support for Water and Wastewater Operators <b>Steve Wilson</b>	Why are Municipalities in BC Increasingly Choosing Disc Filters? <b>Chris Howorth</b>	A Complete Utility Locating System <b>Dave Brewer</b>	Succession Planning: The Long Game <b>Maggie Boak &amp; Carolyn Shears</b>
2:00 – 2:45	Why are Actuators Important and are they Making Your Life Easier? <b>Hua Aun Tan</b>	Intro to Cybersecurity and ISA/IEC 62443 for Operators <b>Sean Bouchard, P.Eng &amp; Bill McMillan, ASCT</b>	Don't Cry Over Spilled... Contaminants: Statutory Obligations, Risks, and Practical Tips <b>Heidi Rolfe</b>	Closing the Gap: Reactive to Preventative Maintenance <b>Devon Aaroe &amp; Joanne Wood</b>
	<b>BREAK #4</b> (2:45-3:00 PM)			
3:00 – 3:45	Introducing the New Building Water Systems Operator Certification <b>Daniel Roberge, Emily Peterson, &amp; Phillip White</b>	Let's Talk Wastewater: An Introduction to BC Provincial Regulation and Compliance <b>Jennifer Pape &amp; Darren Stewart</b>	Partner with McMaster University Researchers to Study the Use of Wastewater to Track Coronavirus in a System-Wide Approach <b>Dr. Zobia Jawed (Ph.D., M.Eng.)</b>	Conflict and Challenging Conversations <b>Jacinta Zaleski</b>
4:00 – 4:45	Financial Issues Facing Small Water Systems <b>Aaron Janzen</b>	What Can Your Data Tell You? <b>Mary Boulanger</b>	Utilizing Remote Monitoring and Machine Learning Technology to Assist Collection System Operations <b>Matt Stoltz</b>	



**Aaron Janzen** is a Drinking Water Operations Specialist with Alberta Environment and Parks in the Calgary office. His goal is to ensure that operators have the tools they need to properly run their drinking water systems. Aaron recently completed a Master of Science in Civil Engineering from the University of Calgary. His research answered the question "How much does drinking water cost in small towns?" When not working, he enjoys spending time with his family outdoors especially on or beside Alberta's rivers.



**Andrew McSherry** is an Occupational Hygiene Officer with WorkSafeBC. Since 2018, Andrew has been one of the officers assigned to WorkSafeBC's Process Safety Initiative. In addition, Andrew is currently assigned to WorkSafeBC's Risk Analysis Unit (RAU), as has been assigned to RAU for multiple projects including ammonia, chlorine, and explosions and paint manufacturing. Andrew graduated with a Masters Degree of Science from the University of British Columbia and is a Certified Industrial Hygiene (CIH) and a Canadian Registered Safety Professional (CRSP).



**Bill McMillan** is based out of Castlegar, Bill is a seasoned Water and Wastewater Operator (WD IV, WWC MU1, WWT II, WT II, Certified Backflow Inspector, Chlorine Handling Ticket) and a busy Circuit Rider servicing First Nations communities across British Columbia.



**Brandon Pater** graduated as a Civil Technologist from BCIT in 2008 and has 12 years of industry experience as a Field Engineer, Superintendent, Project Manager, and now as Co-Owner of Pacific Flow Control. He acts as liaison in the design and implementation of standard and specialty hot taps, line stops, valve inserts, freeze plugs, and engineered fittings. Brandon brings strong technical and practical knowledge to the world of engineering and construction within live water and sewer infrastructure.



**Brent Williamson** has been with Canada Pipe for 5 Years. He specializes in Education and Presentations.



**Carl Sheehan** has been providing automation solutions to various process industries for 24 years. Carl holds an Electrical Engineering Degree from Lakehead University and a Diploma of Technology in Process Control and Instrumentation from BCIT.





**Carolyn Shears** is an Organizational Development Advisor with Metro Vancouver Regional District's Human Resources Department.



**Chris Lawrence** has been involved with the public sector for 16 years in varying roles from education to local government. The past 6 years have been spent in local government senior management positions with the District of New Hazelton and recently with the District of Houston. As the Manager of Operations, he oversees utilities, public works, and parks departments, as well as capital projects. Chris enjoys spending time with his family and friends. He is an outdoor enthusiast and an avid mountain biker and downhill skier. He has received more injuries than he would care to admit but does have plans to be slowing down any time soon.



**Charles Lee** is an Organization Development and Change Consultant, and Leadership and Team Coach who loves to see people thrive and celebrated. He received his professional coach training from Co-Active Training Institute, and is a member of the International Coaching Federation. Charles holds a B.A.Sc. in Engineering Physics, a MASc in Mechanical Engineering from the University of British Columbia, and holds a Graduate Certificate in Organization Design and Development from Royal Roads University.



**Daniel Roberge** is the Director, Water and Sewers – Design, Construction and Operations at the City of Vancouver.



**Chris Howorth** is a registered Professional Engineer in BC with over 20 years' experience in water and wastewater treatment. He graduated from the University of Plymouth in England with a degree in civil engineering. He has worked for both private and public sector organizations, in Europe and in Canada. He is currently responsible for municipal business development in Western Canada.



**Darren Gillis** is a FSR-A Electrician and Systems Integrator ISA/IEC 62443 Industrial Cybersecurity Fundamentals Specialist. He started his career as an industrial electrician in the oil and gas sector specializing in wiring and commissioning control systems. More recently, he moved into a controls and integration role based in mills in BC, and joined ICI a year ago as a System Integrator with a focus on Industrial Cybersecurity.





**Darren Stewart** is a Senior Environmental Protection Officer with the Ministry of Environment and Climate Change Strategy (ENV), Compliance section with a focus on Municipal (Solid, Liquid) and Hazardous waste inspections, staff support, training and development. Prior to joining ENV, Darren had been working in Alaska for 15 years. His education includes a Graduate Certificate from UAA in Environmental Regulations and Permitting and a BSc in Biology from Acadia University.



**Dave Brewer** has been involved with the waterworks industry since 1991. During that time, he has worked with noted companies such as Robar Industries Ltd as well as others in the underground water and wastewater markets in Canada in capacities ranging from inside sales to General Manager. Currently, Dave is with Utility Supply (West) Corp. where he is the company's sales director. USC works with companies to serve the underground utility markets. These markets include Public Works, Consulting Engineers, and Contractors.



**David Cory** is a leadership development coach, trainer, and consultant known for his expertise in applying the concept of emotional intelligence to individual and organizational performance improvement. In the course of his work, David has been an invited guest of the Sultan of Brunei, worked under armed guard in Nigeria, been kicked out of a restricted area in Saudi Arabia, chased by an elephant in Zambia, and sang for royalty in Malaysia. David's company has also done work for the Republic of Botswana, and David was the closing keynote speaker at the Asia HRD Congress in Kuala Lumpur, Malaysia July 2016 for the third time.



**Devon Aaroe** started his career in engineering running projects for water, sewer, and roads. Currently, Devon manages many aspects of the City of Dawson Creek's infrastructure operations and maintenance including water and sewer treatment, roads, deep utilities, and fleet. Through this he has learned that responsible stewardship of infrastructure involves bringing the entire team in on the big picture so that everyone can collaborate, learn, and grow together to provide service excellence to the community. When managing the Water and Environmental Department, he led the implementation of a Preventative Maintenance Program which fundamentally changed the way the department operated.



**Emily Peterson** Emily is the Environmental Health Scientist at Vancouver Coastal Health, where she provides evidence review, analysis, and advice on environmental impacts to human health. She works on a wide range of topics including indoor and outdoor air quality, climate change, and healthy built environments. Previously, Emily has worked in environmental health at the BC Centre for Disease Control, the National Collaborating Centre for Environmental Health, and Public Health Ontario. Emily holds a Masters of Public Health in Epidemiology from the University of Toronto.



**Gregory W Solecki** is a respected emergency management executive with over a decade of notable experience instituting strategic emergency, continuity, and leadership programs with implementation at the municipal, provincial, and federal level.

He is responsible for training thousands of government and executive leaders in emergency and continuity management across Canada specializing in preparedness, response, and recovery. Greg was also instrumental in the development of Canada's National Critical Infrastructure Framework as the Water Sector representative where he revised Canada's Pandemic Plan.

Greg has also experienced managing three of the largest floods in Alberta's history, as well as maintaining the role of EOC Manager for hundreds of activations while providing leadership to municipalities during 6 States of Local Emergency (SOLE). Additionally, he has shared his expertise as an assessor for the Emergency Management Accreditation Program (EMAP) and is one of few Canadians to be asked to attend Harvard's National Preparedness Leadership Initiative (NPLI).

Greg has also successfully designed Emergency Operations Centres, Recovery Operations Centres, and Corporate Continuity Centers. This has included the development of emergency and business continuity processes specific to Infectious Disease Management Plans that were utilized during the SARS, H1N1, and COVID-19 pandemics. He is also a certified instructor to the highest level for both Incident Command System (ICS) Canada and the Federal Emergency Management Agency (FEMA)



**Heidi Rolfe** is an associate in the Environmental, Municipal, Expropriation and Regulatory group in BLG's Vancouver office. Heidi has a wide range of legal experience guiding individuals, companies and government agencies through regulatory processes, administrative and civil proceedings, and quasi-criminal environmental prosecutions relating to natural resource, construction, and other industrial projects. Heidi's services cover due diligence matters; permitting (including environmental assessments); land rights (including leases and other land access and tenure agreements); regulatory compliance; and emergency response. Over the course of her career, Heidi has also assisted developers and property owners dealing with redeveloping and remediating contaminated properties, including in disputes between neighbouring property owners, and navigating environmental clean-up orders.



**Holly Atkinson** is an EOCP Level III water treatment Operator, and is the Water Treatment Operations Technical Coordinator at Metro Vancouver's Coquitlam Water Treatment Plant. Holly spends her 'free time' chairing an advocacy committee at Metro Vancouver to empower women to achieve excellence and increase representation in Science, Technology, Trades, Engineering, and Math (STTEM).



**Hua Aun Tan** has a degree in Mechanical Engineering from the Imperial College in London. Hua started at Spartan Controls in 2011 as an application engineer and is currently Technical Specialist of Valve and Actuation focused on the Municipal industry. Hua specialized in valves and actuation and worked on several Metro Vancouver and local municipal projects.



**Ian McIlwham** is the current Chair for Canada's National Critical Infrastructure Working Group and the Canadian Mirror Committee Chair for ISO TC 224, which developed the International Standard on Crisis Management of Water Utilities (ISO 24518). He has been instrumental in developing Public Works emergency and continuity programs in his position as Manager, Compliance at the Regional Municipality of Durham. He is currently leading the response to COVID-19 for Durham Region water and wastewater since an Emergency declaration on March 17, 2020. He is also the current chair of the Security and Emergency Management Committee for the Caribbean Water and Wastewater Association (CWWA) which cooperates with Public Safety Canada and other federal departments concerned with emergency preparedness and national security to actively contribute to the knowledge base and federal programs related to critical infrastructure.



**Jacinta Zaleski** is the founder of Jacinta Zaleski Coaching and Consulting. She is an experienced business leader, coach, and trainer with extensive experience of having worked with small businesses, not-for-profit organizations, and global enterprises. Drawing on her broad business knowledge and experience, combined with the comprehensive business tools and resources developed by Systems Business Coach®, Jacinta offers one on one and group coaching and training programs to help organizations scale and grow. As a Knowledge Philanthropist with Vantage Point, Jacinta continues to share her knowledge and expertise with not-for-profits across BC in Leadership Development, Values and Culture Development, Team Building, Courageous Conversations, Performance Feedback, Succession Planning, and Emotional Intelligence.





**Jeff Phillips** is a registered professional engineer with over 20 years of experience in the water and wastewater industry. He has worked for municipalities, as a consultant, and for manufacturers.



**Jeff Spencer** is the technical sales lead at BI Pure Water (Canada) Inc. BI Pure Water is a leading designer and manufacturer of package water treatment plants in Canada with 25 years' experience. BIPW has more package plants in the north of Canada than any other company. Jeff has significant experience with water treatment technologies over the last dozen years.



**Jennifer Pape** is an Environmental Protection Officer with the Ministry of Environment and Climate Change Strategy (ENV), Authorizations – South, Municipal Liquid Waste section. Her role with ENV centres on working with wastewater authorization documents (Municipal Wastewater Regulation Registrations, Permits, Liquid Waste Management Plans, and Operational Certificates) and answering questions about regulatory requirements and the authorizations process. Jennifer is a registered Professional Chemist (Association of the Chemical Profession of British Columbia) with a Master of Science (University of Victoria) and a Bachelor of Science (University of Calgary).



**Joanne Wood** has 17 years of experience in training and education, including professional, management, and leadership development. Her industry experience includes education, manufacturing, professional services, social media analysis, and technology. Joanne facilitates long-lasting changes that impact effectiveness, productivity, and adoption through a thoughtful blend of accelerated learning techniques and change management. Through engaging, interactive approaches and creative learning experiences, she establishes excellent rapport with participants. There is no death by PowerPoint. In her spare time, Joanne is a cast-iron restoration expert and loves to talk about skillets.



**Kalpna Solanki** has been CEO of the EOCP for just over 4 years. She holds a Master of Business Administration and a Bachelor of Science from Simon Fraser University, as well as a Diploma in Environmental Health from the British Columbia Institute of Technology. With her role at the EOCP, Kalpna says she has come full-circle to her environmental roots. Kalpna has been involved in a number of projects at the EOCP over the past two years – a rebranding, development of new Constitution and Bylaws, a new CRM, launching new facility classification models, and an increased focus on stakeholder relations. Kalpna also enjoys volunteering – previously, she was chair of the Canadian Red Cross Lower Mainland Region, president of the Simon Fraser University Alumni Association, director with Big Brothers of the Lower Mainland, and director with the Investment Agriculture Foundation. She is a co-founder and a director of Operators Without Borders. Kalpna enjoys spending her spare time paddling, and hiking with her two Belgian Tervurens.



**Kenneth Billingham** is the international product specialist for KEG GMBH/KEG Technologies Inc, a German manufacturer of highly efficient pipe cleaning tools. His responsibilities include customer and reseller support for all of Canada, Australia, New Zealand, as well as the Western US. The many years of experience, as well as the diverse knowledge of the many different collections system throughout his area of responsibility are instrumental in helping him find solutions for the many challenges his customers regularly face. Born in Calgary, AB, raised in Quebec and currently lives in Abbotsford with his wife Judy.





**Maggie Boak** is a Lead Advisor, Organization Development with Metro Vancouver Regional District's Human Resources Department



**Mary Boulanger** has worked for 33 years as a wastewater treatment engineer, designing on-site systems and larger systems sized for up to a million people. Her project involvement has included preliminary, primary, secondary, and tertiary treatment; nutrient removal, sludge handling, and odour control. She particularly likes working with clients and Operators to assess existing systems.



**Matt Stoltz** has worked passionately for the past 20 years assisting municipalities across British Columbia implement solutions for water and wastewater monitoring. With two decades centred around metrology and remote monitoring technology, Matt has a wealth of knowledge and experience to help solve the challenges municipalities face with this. Matt began his career in waterworks as a project manager overseeing municipal installation projects across BC, and then worked as a regional manager for a distribution company. Seeing a lack of local expertise specifically focused on wastewater/stormwater monitoring solutions, Matt decided to take the plunge into business ownership and founded Flow Systems which works with municipalities across the province supplying and installing smart technology products to monitor water, wastewater, stormwater, surface water, and H<sub>2</sub>S.



**Nicole Bolea** is a professional engineer in Minnesota, she has a degree in chemical engineering and minor in environmental engineering from the University of Minnesota, Duluth. Her background previously was focused on nutrient removal with biological processes, but she has recently moved to lead the sales of a new innovative advanced electro-oxidation technology. Nicole is excited to use both her chemical and environmental background to better understand this technology and help bring it to market



**Pamela Murawski** is the Education Programs Developer in the Office of Water Programs at California State University, Sacramento. She brings more than 20 years of teaching experience to the industry.



**Pat Miller** is a certified Level III Wastewater Treatment Operator; Level III WT, and Level II in WD and WWC; Level I Compost Operator. Prior to entering semi-retired, Pat managed the Sun Peaks water and wastewater facilities for the past 26 years. She is still involved in promoting treatment and beneficial reuse of water and solids that treatment produces.

In addition to being a past board member of EOCP, Pat continues as a long-term member of the Compost Council of Canada - the national non-profit organization dedicated to the advancement of organics recycling and the return of organic matter to our soils.



**Phil White** is the Manager of Plumbing and Mechanical Inspections and Gas Safety, Development, Buildings and Licensing Department at the City of Vancouver.



**Dr. Saad Jasim** serves as Manager, Utilities for the City of White Rock. He led the investigation and research of the technologies which resulted in the construction of the new White Rock Water Treatment Plant. He is the first Canadian elected as President of the International Ozone Association; Director, Great Lakes Regional Office – International Joint Commission (IJC), dealing with the Great Lakes Water Quality; founding CEO for the Walkerton Clean Water Centre. He also served as Director, Water Quality and Production or the City of Windsor, ON., and served as Adjunct Professor, University of Windsor, ON. Over the years he has received many awards for his work in the water industry



**Rob Wilson** is an Industrial Network and Cybersecurity Specialist ISA/IEC 62443 Cybersecurity Expert. Rob's 35 year career has evolved from IT data network design and management to design and securing of industrial networks. With his early background in electronics technology, and passion for all kinds of technology, Rob found it an easy choice to join the ICI team in 2019 as an Industrial Network and Cybersecurity Specialist. As British Columbia's only ISA/IEC 62443 Cybersecurity Expert, he leads the company's ICS Team and works with municipalities across BC to secure water and wastewater systems.



**Sarah Zibin** is the Chair of BCWWA's Diversity and Inclusion Task Force and is also a member of WEF's Diversity and Inclusion Task Force. She works as a Project Engineer in Metro Vancouver's Water Services' O&M department.



**Ronald Enns** started in the water and wastewater industry in 2002 with the City of Vancouver, working in many positions from labourer to Superintendent leaving in 2015 to go to Kwantlen Polytechnic University as a Manager of Business Development with a focus of bringing quality education for Operators. He joined the BCCGA in 2017, ASTTBC Underground Utility Locator Board in 2018, and the Member Resource Committee for BC1Call in 2019.



**Sean Bouchard** has, over the past 20 years, worked with management, maintenance, and operational personnel to engineer control and power systems and deploy secure network solutions. He leads the team at ICI Electrical Engineering to develop comprehensive solutions in Industrial Cybersecurity and Electrical Engineering for municipal, mining and industrial sectors. In pursuit of an optimal work-life balance, he, his wife and their three children are located in Kamloops, BC, which abounds many opportunities to enjoy the great outdoors as a family.





**Steve Wilson** is a groundwater hydrologist who has been with the Illinois State Water Survey at the University of Illinois since 1983. He authored The Private Well Class, an online self-paced curriculum for private well owners, and manages WaterOperator.org, an online resource for water and wastewater operators geared toward supporting small systems. Steve has a MS in Civil Engineering from the University of Illinois at Urbana-Champaign.



**Wendy Waudby** is a water/wastewater engineer at Cascade Energy. She has 17 years of experience in energy efficiency, wastewater treatment plant design, reuse, and wastewater service charges. She has worked as a consultant and regulator and worked for a large wastewater agency. She graduated from California Polytechnic State University, San Luis Obispo with a BS and MS in Civil/Environmental Engineering. She is a registered professional engineer in Idaho and California.



**Susan de Leeuw** is an occupational hygiene officer at WorkSafeBC. She is a professional engineer with an oil and gas industry background. She has experience in failure analysis, risk management, occupational health and safety education, and enforcement. More recently in her position as an occupational hygiene officer at WorkSafeBC, she has been assigned to work with the Risk Analysis Unit conducting research and analysis on emerging risks that employers may be unaware of or that are difficult to detect. She enjoys working with employers in an educational way to aid in understanding how to keep workers healthy and safe.



**Zane Spencer** is the Vice President of Instrumentation and Controls with MPE Engineering Ltd. A graduate of the Industrial Instrumentation Technology program at the Southern Alberta Institute of Technology, Zane has more than 15 years of experience in designing, installing, and commissioning process control and SCADA systems. Zane utilizes his knowledge and experience to help municipalities across Western Canada as they address challenges related to modernizing and expanding their process control systems.



**Valerie Jenkinson** is one of the founders, and Chair of Operators Without Borders and has led teams on water utility recovery post disaster. She is part of the WASH group and holds certificates in Disaster coordination. Last year she was named the Focal Point of the Year for Global Water Partners-Caribbean in recognition of her contributions to the water industry in the Caribbean.

Valerie is the CEO of World Water and Wastewater Solutions LTD. and has worked with national and local governments, the EOCP, the Ministry of Health and the Waste Management Association of BC primarily undertaking stakeholder consultations and writing strategic and communication planning documents.

Valerie has also presented on Integrated Water Resource Management around the world including the UK the USA, Africa, Singapore, the Philippines, and Malaysia. She has also taught for 25 years at the British Columbia Institute of Technology in the School of Business and also taught at the University of British Columbia



**Zobia Jawed** is a subject matter expert in climate change, environmental sustainability, water and wastewater treatment and technologies, governance, and policies. Her latest research is around "Examining Wastewater to Track the Coronavirus to Detect Community Spread of COVID-19". Zobia holds an MSc, MBA, and PhD from some of Canada's top universities.