

2009  
ANNUAL  
Conference  
& Trade Show  
Penticton • April 25-29, 2009



BCWWA 2009 Annual Conference & Trade Show  
**TECHNICAL PROGRAM**  
Penticton Lakeside Resort & Casino

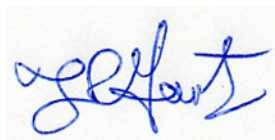
The technical side of the BCWWA Annual Conference for 2009 is shaping up nicely. We received almost 160 excellent abstracts, authored by people both from British Columbia and from around the world. After much agonizing review we selected the papers you see below! The sessions were carefully selected to ensure that there would be a wide variety of topics that should appeal to every taste. At the past few Conferences the biggest complaint that we received was that there were so many interesting papers occurring at the same time that delegates had a tough time choosing which session to attend. We were appropriately flattered and have attempted a repeat performance again this year!

We are trying something new! Due to space constraints at the Penticton Trade and Convention Centre (PTCC) and limitations with the new South Okanagan Event Centre (SOEC) coupled with a new series of operator training sessions, the Technical Program is being hosted at the Penticton Lakeside Resort and Casino. We welcome your feedback and comments for improvement.

A great deal of the success of this and any Conference is due to the wide variety of interesting papers that are presented each year and I would like to personally thank every author who submitted an abstract this year, for without your papers there would be no Conference. This “**Technical Program**” has been prepared for the Conference and I urge you to review it carefully. There may be changes if a presenter is unable to attend but the core of the Conference should be essentially as shown.

Operators! We have received notification from the EOCP that each half-day technical session will be worth 0.3 CEU's so if you attend all four sessions you can earn 1.2 CEUs! Yes, you can switch between concurrent sessions to take in the sessions that are most of interest to you!

The unsung heroes of this and every Conference are those who prepare backup papers for use if for any reason a presenter should be unable to give their paper. A void in a session is a major concern to all and our backup presenters deserve a vote of thanks as they are our insurance policy. A list of all the backup papers appears after the end of Tuesday's Technical Program.



**Tim Forty**  
Technical Chair  
BCWWA 2009 Annual Conference & Trade Show

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Log on to the BCWWA website, at [bcwwa.org/annual\\_conference/index.php](http://bcwwa.org/annual_conference/index.php) to obtain the most current information about the Conference and the latest drafts of the “**Technical Program**” and its companion document the “**Book of Abstracts**”.

Although not specified below you will note that **coffee breaks** will be 20 minutes long and are scheduled for 10:00 am to 10:20 for both morning sessions and 3:05 to 3:25 pm for both afternoon sessions!

After the Conference you will be able to download pdf versions of all the presentations directly from the BCWWA website!

# Monday, April 27, 2009 Morning Sessions

## **Session 1: Salon "D"**

**Drinking Water:** Good Water!

**Moderator:** Anthony Greville, Klearwater Equipment & Technologies

- 8:00 – 8:05 am Welcome & Announcements
- 8:05 – 8:40 am Producing Clean and Safe Drinking Water, but Let's Not Forget About the Elements – Anthony Galvan, Siemens Water Technologies
- 8:45 – 9:20 am Membrane Treatment for Potable Water – Is it all that is cracked up to be? – Don Burgess, DWG Process Supply
- 9:25 – 10:00 am Sustainability and Construction of the Eagle Lake Membrane Treatment Facility – Saleem Mahmood, District of West Vancouver, and Walt Bayless, Dayton & Knight
- 10:20 – 10:55 am Metro Vancouver's Seymour Capilano Filtration Project – Howard Dallimore, Metro Vancouver
- 11:00 – 11:35 am Resin Technology: A Better Method for Removing Organic Carbon from Drinking Water? – Dave Hanson, Kerr Wood Leidal Associates

## **Session 2: Salon "C"**

**Wastewater Treatment:** New Ideas!

**Moderator:** Will Wawrychuk, AECOM

- 8:00 – 8:05 am Welcome & Announcements
- 8:05 – 8:40 am Next Generation High Rate Dissolved Air Flotation (DAF): Design and Testing for WW Applications such as TSS & Phosphorus Removal – Ryan Hess, Degremont Technologies - Infilco
- 8:45 – 9:20 am An Integrated Approach to Managing Residuals - Using DAF to Co-thicken Primary Sludge/WAS and Water Treatment Plant Residuals in the Same Facility to Increase WWTP Capacity – Gerry Stevens, AECOM
- 9:25 – 10:00 am Septage Receiving Systems - Proposed Guidelines and Measures to Address – Jenny Burgess, DWG Process Supply
- 10:20 – 10:55 am Biogas Purification as an Alternative to Conventional Reciprocating Engine CHP Generation – Rick Bitcon, AECOM
- 11:00 – 11:35 am Wasting Energy - Evaluating Heat Recovery Opportunities in Wastewater Systems – Wayne Wong, Kerr Wood Leidal Associates and Mike Homenuke, Kerr Wood Leidal Associates

## **Session 3: Salon "A"**

**Small Water Systems:** Managing Challenges

**Moderator:** Freda Leong, Associated Engineering

- 8:00 – 8:05 am Welcome & Announcements
- 8:05 – 8:40 am Managing Small Water Systems – Dean Scovill, Fraser Health Authority
- 8:45 – 9:20 am Ten Major Challenges Facing Small Water Systems in British Columbia – Denny Ross-Smith, Small Water Users Association of BC
- 9:25 – 10:00 am From Private to Public Ownership - A Case Study of Two Small Water Systems – Tareq Islam, Fraser Valley Regional District, Steve Brubacher, Urban Systems and Jonathan Lowe, Urban Systems
- 10:20 – 10:55 am Operational Assistance – Vernon Rogers, Sustainable Infrastructure Society
- 11:00 – 11:35 am Field Testing of POU and POE Water Treatment for Arsenic Removal – Kory Ryde, Agriculture and Agri-food Canada – PFRA

## **Session 4: Salon "B"**

**Infrastructure Grant Programs:** What's Available and How to Get One!

**Moderator:** Glen Brown, Ministry of Community Services

- 8:00 – 8:05 am Welcome & Announcements
- 8:05 – 8:40 am Senior Government Infrastructure Grant Programs: An Overview – Liam Edwards, Ministry of Community Services
- 8:45 – 9:20 am Integrating Provincial Plans & Strategies into Infrastructure Projects/Applications – Brian Bedford, Ministry of Community Development and Karen Rothe, Ministry of Community Development
- 9:25 – 10:00 am Infrastructure Planning, Financing & Management - Building Sustainability and Success – Catriona Weidman, Ministry of Community Development
- 10:20 – 10:55 am What Successful Grant Applications and Projects Look Like! – Lisa Wright, Ministry of Community Development
- 11:00 – 11:35 am Local Government Asset Management Working Group (LGAMWG) – Brian Bedford, Ministry of Community Development and Wally Wells, Wells Infrastructure Group

## **Session 5: Merlot Room**

**Drinking Water:** Supply

**Moderator:** Matt Henney, Associated Engineering

- 8:00 – 8:05 am Welcome & Announcements
- 8:05 – 8:40 am New Regulations: Challenges when Treading in Uncharted Waters –

- Melissa Froese, AECOM, and Jeff Johnston, Aquatera Utilities
- 8:45 – 9:20 am [Sustaining Water Supplies in the Developing World](#) – Tony Petrucci, Water For People - Canada
- 9:25 – 10:00 am [Case Studies of Energy Savings at Two Metro Vancouver Water Pumping Stations](#) – Terry Hui, Metro Vancouver and Vince Hanada, BC Hydro
- 10:20 – 10:55 am [Groundwater Wells and CPCN - What You Need to Know](#) – Daniel Watterson, EBA Engineering Consultants
- 11:00 – 11:35 am [Canada Line Utility Relocations, Complicated Tie-ins of Relocated 1050 mm Cambie-Richmond Watermain](#) – Les Ptak, Metro Vancouver and Terry Hui, Metro Vancouver

#### **Session 6: Zinfandel Room**

##### **SCADA, Management and Security**

**Moderator:** Frank Tarbox, CTH Systems

- 8:00 – 8:05 am [Welcome & Announcements](#)
- 8:05 – 8:40 am [Integration of Advanced Control over Water System Operation](#) – Dan Ehrenreich, Motorola Israel
- 8:45 – 9:20 am [Totally Integrated Automation](#) – Andreas Pirsing, Siemens
- 9:25 – 10:00 am [J.A.M.E.S. Wastewater Treatment Plant Benefits Of An Electrical Power Audit](#) – Branislav Jutric, Dayton & Knight and Victor KL Wong, Dayton & Knight
- 10:20 – 10:55 am [Hacking the Water Supply: Why Cyber Security Risk Management Matters](#) – Perry Pederson, Wurdtech Security Technologies
- 11:00 – 11:35 am [Securing Municipal Water & Wastewater Systems - Getting the Message Out!](#) – Nicole Wright, Dayton & Knight and Thomas Dunn, Dayton & Knight

#### **Session 7: Chardonnay Room**

**Wastewater Collection:** Fun times in the Sewer!

**Moderator:** Angus English, AECOM

- 8:00 – 8:05 am [Welcome & Announcements](#)
- 8:05 – 8:40 am [Sewer Odour Assessment for the Westside Area](#) – Piero Galvagno, AECOM and Anne Girtz, AECOM
- 8:45 – 9:20 am [Dealing with Collection System Odours - Developing Solutions and Measuring Results](#) – Jude Pillai, City of Surrey and Michael Celli, AECOM
- 9:25 – 10:00 am [York-Peel Sanitary Diversion System Odour Control Facility](#) – Alex Carciumaru, AECOM
- 10:20 – 10:55 am [A new Sanitary Pump Station in a Historic District - Working with the municipal authority and stakeholders to meet the needs of the community](#) – Chris Squire, Metro Vancouver
- 11:00 – 11:35 am [Trent Street Peak Flow Wastewater Pumping Station](#) – Karl Mueller, Kerr

Wood Leidal Associates and Malcolm Cowley, Capital Regional District

#### **Session 8: Cabernet Room**

##### **Emerging Technologies and New Ideas!**

**Moderator:** Carolyn Stewart, City of Penticton

- 8:00 – 8:05 am [Welcome & Announcements](#)
- 8:05 – 8:40 am [40 Years of High-Yield Service and No Retirement in Sight: Well Rehabilitation Using Air Impulse Technology](#) – Matthew D. Munn, Golder Associates
- 8:45 – 9:20 am [Improvements in Onsite Generation of Sodium Hypochlorite: The Next Generation](#) – Gunnar Thordarson, Process Solutions
- 9:25 – 10:00 am [Developing an Operations Team - What we learned and what we changed](#) – Kevin Johnson, Chapman Creek WTP and Don Gare, Sunshine Coast Regional District
- 10:20 – 10:55 am [Success Stories using UV for Odor Control](#) – Eric Jackson, Maveric Consulting
- 11:00 – 11:35 am [Hedley Load Shifting Pilot Project](#) – Richard Tarnoff, Hedley and Perry Feser, FortisBC

## Monday, April 27, 2009 Afternoon Sessions

#### **Session 9: Salon "D"**

**Drinking Water Treatment:** A New Spin!

**Moderator:** Albert Li, AECOM

- 1:45 – 1:50 pm [Welcome & Announcements](#)
- 1:50 – 2:25 pm [In-lake Improvement of Drinking Water on Salt Spring Island: The St. Mary Lake Hypolimnetic Aeration Project](#) – Ken Ashley, Ashley and Associates
- 2:30 – 3:05 pm [DEFERUM - "Reagent Free" removal of High Iron from Groundwater](#) – William Danshin, Pure Water Corporation
- 3:25 – 4:00 pm [The impacts of UV/H2O2 advanced oxidation treatment on natural organic matter from Capilano Reservoir \(Vancouver\) and Trepanier Creek \(Peachland\)](#) – Siva Sarathy, UBC
- 4:05 – 4:40 pm [Can Wash Water From Anthracite Media Placement Be Discharged To The Environment? Yes It Can!](#) – Adeline Chin, Metro Vancouver and Tony Smerychynski, Metro Vancouver

#### **Session 10: Salon "C"**

**Decentralized Wastewater Systems**

**Moderator:** Mike Seymour, Focus Corporation

- 1:45 – 1:50 pm [Welcome & Announcements](#)

- 1:50 – 2:25 pm Decentralized Wastewater Systems - The Benefits of a Community Solution to a Community Problem – Archie Staats, Snaw-naw-as First Nation and Justin Hebner, Ecofluid
- 2:30 – 3:05 pm Membrane Bio-Reactors for Small Flows - Rick Johnson, Sanitherm
- 3:25 – 4:00 pm Wastewater Management and Reuse at Dockside Green, Canada's First LEED® Platinum Development - A Case Study –David A. Jackson, WorleyParsons Canada
- 4:05 – 4:40 pm The new Sewerage System Regulation: Four Years into the Outcome-Based Industry-Focused Approach, what's been learned and where to now? – Greg Baytalan, Interior Health

**Session 11: Salon “A”**

**Drinking Water:** Conservation

**Moderator:** Eric Jackson, Maveric Consulting

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm Australian Drought Experience - Lessons for Canadian Water Managers – Kirk Stinchcombe, Ministry of Environment
- 2:30 – 3:05 pm The Implementation of the Okanagan Irrigation Management (OKIM) Web-application at RDNO-GVW and the District of Summerland - Al Cotsworth, Regional District of North Okanagan and Joe Fitzpatrick, District of Summerland
- 3:25 – 4:00 pm Making Yellow the New Green: Lawn Sprinkling Pilot Study – Jennifer Bailey, City of Vancouver
- 4:05 – 4:40 pm Interactive Calculation of Household Water Use - development of a new tool for the home owner – Heinz Jacobs, Stellenbosch University, South Africa

**Session 12: Salon “B”**

**Asset Management:** You Want to do What?

**Moderator:** David Main, AECOM

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm Optically Active Coatings: Seeing the Difference – Yasir Idlibi, Sherwin Williams
- 2:30 – 3:05 pm The 3 Million Dollar Question: How Does One Plan an I&I Reduction Program? - Mike Homenuke, Kerr Wood Leidal Associates and Derk Wevers, City of Victoria
- 3:25 – 4:00 pm Capital Planning Made Easy!! - Leveraging Asset Management at the City of New Westminster – John McMahon, City of New Westminster and John Weninger, Urban-Systems
- 4:05 – 4:40 pm Preparation of Asset Inventory and Valuation for Sewer, Water, Storm Drains for the District of Central Saanich to Meet with PSAB's

Requirements – Yariv Ben-Shooshan, Dayton & Knight

**Session 13: Merlot Room**

**Flooding & Liquid Waste Management Plans:** Plan for It!

**Moderator:** Michael Florendo, Delcan

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm Prince George Ice Jam Flood of 2007-2008 – William Cheung, McElhanney Consulting Services and Dave Dyer, City of Prince George
- 2:30 – 3:05 pm Building Dual Drainage Networks - Using GIS as a Development Tool - Andrew Wiens, Associated Engineering
- 3:25 – 4:00 pm Keeping our heads above water - Chilliwack's approach to flood management – David Blain, City of Chilliwack and Tara Friesen, City of Chilliwack
- 4:05 – 4:40 pm LWMPs: Doing Them Right with Meaningful Public Consultation – Joanne de Vries: Alliance Communications and Gary Holte, Columbia Shuswap Regional District

**Session 14: Zinfandel Room**

**Organic Residuals:** Processing and Recycling

**Moderator:** Mark Teshima, Sylvis

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm Options to Create Energy from Wastewater Biosolids – David J.L. Forgie, Associated Engineering
- 2:30 – 3:05 pm Advanced Dewatering & Drying System - A Performance Mode - Robert West, DES, UK
- 3:25 – 4:00 pm Decision making in an uncertain regulatory and economic climate: The use of mass, energy, GHG and cost models in the Hamilton Biosolids EA process – Patrick Coleman, AECOM
- 4:05 – 4:40 pm Resource Recovery at a BNR plant – Bonita Dirk, Dayton & Knight

**Session 15: Chardonnay Room**

**Wastewater Collection:** Getting it There!

**Moderator:** Rick Bitcon, AECOM

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm Adding Polymer to Increase Trunk Sewer Flow Capacity at Resort Municipality of Whistler – Brian Barnett, Resort Municipality of Whistler and John Hart, Kerr Wood Leidal Associates
- 2:30 – 3:05 pm Managing Your Aging Sanitary Lift Station for a Retrofit - Randy Colombo, City of Coquitlam
- 3:25 – 4:00 pm Hydraulic Drop Structures in the Brightwater Conveyance Design: Challenges in Design and Construction – Jeffrey D. Zahller, HDR Engineering

4:05 – 4:40 pm Model Development, Calibration and Analysis of the City of Langley Sewer Collection System – Gary Vlieg, City of Langley and Werner de Schaezen, GeoAdvice

## Tuesday, April 28, 2009 Morning Sessions

### **Session 16: Salon "D"**

**Drinking Water Treatment:** A Different Side

**Moderator:** Kelly Bush, Associated Engineering

8:00 – 8:05 am Welcome & Announcements  
8:05 – 8:40 am How Metro Vancouver uses Innovative Decision Support Tools to Ensure Operational Reliability during Maintenance and Construction Work – Marilyn Towill, Metro Vancouver

8:45 – 9:20 am Iron and Manganese Removal Using Synthetic Greensand Filtration in French Creek – Greg Hogge, EPCOR and Lyndon Jaworski EPCOR

9:25 – 10:00 am Implementation of UV Disinfection - A Case of Unique Circumstances and Innovative Solutions – Irfan Gehlen, Kerr Wood Leidal Associates and Mark Forsyth, Kerr Wood Leidal Associates

10:20 – 10:55 am Getting the Chemistry Really Really Right - Interesting Residuals Handling Benefits Possible by Optimizing Coagulation Chemistry – Michael S. Firlotte, Kamloops Centre for Water Quality and Anthony S. Greville, Klearwater Equipment & Technologies

11:00 – 11:35 am Residual Management for Water Treatment Plants – Brett deWynter, AECOM

### **Session 17: Salon "C"**

**Wastewater Treatment:** From Plan to Plant

**Moderator:** Stella Chiu, City of Abbotsford

8:00 – 8:05 am Welcome & Announcements  
8:05 – 8:40 am Village of Valemount Sewage Treatment Plant Upgrade – Chris Town, Urban Systems

8:45 – 9:20 am Lulu Island WWTP Trickling Filter Start-up: 1998 Cross Flow Media, Hydraulic Drive; 2008 Vertical Flow Media, Motor Drive – Echo Lin, Metro Vancouver and Harvey Schneider, Lulu Island WWTP

9:25 – 10:00 am Odour Management Planning and Implementation at the Pine Creek WWTP, Calgary, AB – Trevor Jones, CH2M HILL

10:20 – 10:55 am Today's Membrane Bioreactor Designs - Enhanced, Efficient and Proven – Miles Sherman, GE Water & Process Technologies

11:00 – 11:35 am Application of Sand-Ballasted High Rate Settling Technology for Municipal Wastewater Applications – Rosemary Niechcial, Veolia Water Solutions & Technologies Canada

### **Session 18: Salon "A"**

**Drinking Water:** Sustainability & Conservation

**Moderator:** Jennifer Crosby, Metro Vancouver

8:00 – 8:05 am Welcome & Announcements  
8:05 – 8:40 am Action for Water The Regional District of Nanaimo's Approach to Drinking Water and Watershed Protection – Mike Donnelly, Regional District of Nanaimo

8:45 – 9:20 am Helping B.C. Live Water Smart – Lynn Kriwoken, Ministry of Environment

9:25 – 10:00 am Universal Metering: A Steady Upward Trend for BC Utilities – Angela Zapp, Neptune Technology Group

10:20 – 10:55 am A Unique Water Management Decision Support Tool: The Okanagan Sustainable Water Strategy – Nelson R. Jatel, Okanagan Basin Water Board

11:00 – 11:35 am Improved Water Conservation and Quality in the Okanagan - Showcasing the Water Conservation and Quality Improvement Grant Program by the OBWB – Genevieve Dunbar, Okanagan Basin Water Board

### **Session 19: Salon "B"**

**Stormwater:** Management

**Moderator:** Poul Rosen, Urban Systems

8:00 – 8:05 am Welcome & Announcements  
8:05 – 8:40 am What Should Stormwater Management Regulation Accomplish? – Shane Finlay, Contech Stormwater Solutions

8:45 – 9:20 am Development of an Integrated Stormwater Management Plan for the District of Central Saanich- A Case Study – David A. Jackson, WorleyParsons Canada and Michele Gee, WorleyParsons Canada

9:25 – 10:00 am Hyde Creek Storm Sewer Diversion - If you build it they will come – Scott Neuman, AECOM

10:20 – 10:55 am Assessment of Climate Change, Tides, Groundwater and Rainfall Impacts on Municipal Drainage Systems in Crescent Beach, Surrey, BC – Glen Shkurhan, Urban Systems and Carrie Baron, City of Surrey

11:00 – 11:35 am Regional Issues and Business Case for Implementing Green Roofs – Laurel Morgan, Kerr Wood Leidal Associates

**Session 20: Merlot Room**  
**Advanced Wastewater Treatment**  
**Moderator:** Gerry Stevens, AECOM

8:00 – 8:05 am Welcome & Announcements  
8:05 – 8:40 am Calgary's Pine Creek WWTP: The Culmination of 25 Years of BNR Experience in Western Canada – Barry Rabinowitz, CH2M HILL  
8:45 – 9:20 am LEEDtming Edge Wastewater Treatment for the City of Fort McMurray, Alberta – Will Wawrychuk, AECOM  
9:25 – 10:00 am Design of Advanced Biological Nutrient Removal (BNR) Membrane Bioreactor (MBR) Processes - Some Considerations – Venkatram Mahendraker, GE Water & Process Technologies  
10:20 – 10:55 am Penticton AWWTP - How can we reliably cut capital costs? – David Lycon, AECOM  
11:00 – 11:35 am Design Build Challenges and Solutions for the Brightwater Outfall – John Boyle, Dayton & Knight

**Session 21: Zinfandel Room**  
**Drinking Water: Distribution**  
**Moderator:** Tom Field, Delcan

8:00 – 8:05 am Welcome & Announcements  
8:05 – 8:40 am Highlights from the National Water and Wastewater Benchmarking Initiative: How do British Columbia's Leading Water Utilities Compare? – David Main; AECOM  
8:45 – 9:20 am Do you know the hydraulic and criticality conditions of your water distribution mains? A case study with the City of Saskatoon, SK. – Werner de Schaetzen, GeoAdvice and Greg Chartier City of Saskatoon  
9:25 – 10:00 am Harmful Cyanobacteria Blooms: An introduction to bloom forming cyanobacteria, associated risks and how we can control them – Martine Pawlowski, H2O Logics  
10:20 – 10:55 am Universal Metering - What Next? Implementing an Effective Water Pricing Strategy – Karyn Johnson, Financial Consulting Solutions Group  
11:00 – 11:35 am Corrosion Control of Ductile Iron Pipe with Polyethylene Encasement – Normand De Agostinis, Ductile Iron Pipe Research Association

**Session 22: Chardonnay Room**  
**CAWQ Western Symposium: Part 1**  
**Moderator:** Pierre Bérubé, UBC

8:00 – 8:05 am Welcome & Announcements  
8:05 – 8:40 am Charting Discharge Plumes with an Autonomous Underwater Vehicle – Alexander L. Forrest, UBC  
8:45 – 9:20 am Stormwater Pond Modeling to Improve Quality of the Receiving Water Body – Bertrand Vallet, Laval University  
9:25 – 10:00 am Stormwater Remediation Using Compost Biofilters – Karen Finney, University of Guelph  
10:20 – 10:55 am Feasibility Study for Phosphorus Recovery by Struvite Crystallization at Metro Vancouver's Wastewater Treatment Plants – Conrad Poon, Metro Vancouver  
11:00 – 11:35 am Inhibition of Nitrification by Landfill Leachate Blended with Domestic Wastewater – Michael I. Weigley, Conestoga Rovers and Associates

**Session 23: Cabernet Room**  
**The Wildcard Sessions: What are We Doing?**  
**Moderator:** Peter Coxon, Urban Systems

8:00 – 8:05 am Welcome & Announcements  
8:05 – 8:40 am Resolving the Water and Wastewater As-Built Backlog – Michael Schlosser, Autodesk  
8:45 – 9:20 am Geo-Exchange in Water Supply – Sean Bolongaro, Associated Engineering  
9:25 – 10:00 am Defining Levels of Service - Connecting Customers and Assets – Gareth Lifton, CH2M HILL  
10:20 – 10:55 am Reservoir Cleaning and Commercial Divers – Andrew Korek, Phoenix Marine Services  
11:00 – 11:35 am Reduce your Carbon Footprint Using Trenchless Technology – David O'Sullivan, NASTTBC

**Tuesday, April 28, 2009**  
**Afternoon Sessions**

**Session 24: Salon "D"**  
**Drinking Water Treatment: System Management**  
**Moderator:** Karen Tully, Associated Engineering

1:45 – 1:50 pm Welcome & Announcements  
1:50 – 2:25 pm Web-based Water Conservation Calculator – Liam Edwards, Ministry of Community Development, and Lisa Wright, Ministry of Community Development  
2:30 – 3:05 pm Energy Recovery in Water Systems – Sean Bolongaro, Associated Engineering

- 3:25 – 4:00 pm Water Use Management - What Works Best for Me? – David Keeling, Hetek Solutions
- 4:05 – 4:40 pm Managing Environmental Response - Proactive Compliance – Lucy Keating, Commexus

**Session 25: Salon "C"**

**Wastewater Treatment:** What's New in the World?

**Moderator:** Claire Bayless, Dayton & Knight

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm Wastewater Services For Historic Isolated Chinese Villages – Merv Palmer
- 2:30 – 3:05 pm Wastewater Services For Historic Isolated Chinese Villages Selection Of Treatment Process (Part 1) – Merv Palmer
- 3:25 – 4:00 pm Innovative Wastewater Treatment Technologies for the 21st Century – Irving M. Williams II, Mixing & Mass Transfer Technologies
- 4:05 – 4:40 pm Design & Performance Of Wastewater Disposal Methods In Cold Climates – Ryan Devlin, Jacques Whitford NAWA

**Session 26: Salon "A"**

**Cross Connection Control:** CCC and Disinfection Too!

**Moderator:** Shawn Sanders, Maintenance Tracking Systems

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm Provincial Evaluation of Cross-Connection Control Programs – Chair. BCWWA Cross Connection Control Committee
- 2:30 – 3:05 pm Back to Basics: A Toolkit for Identifying Actual or Potential Cross Connections – Carolyn Stewart, City of Penticton
- 3:25 – 4:00 pm Control of Transient Induced Water Loss, Contaminant Leakage, and Contaminant Intrusion, by Implementation of Air Valves – Naftali ZlocZower, ARI Flow Control Accessories
- 4:05 – 4:40 pm Design Innovation at the Sooke River Road Disinfection Facility – Quinn Crosina, Associated Engineering

**Session 27: Salon "B"**

**Stormwater:** Reduction, Remediation and Renovation

**Moderator:** Eric Pettit, AECOM

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm Erosion & Sediment Control - Manage the fines or pay the Fines! - James Kay, Aplin & Martin Consultants
- 2:30 – 3:05 pm A Simple Solution for a Common Problem – Kelly Kokesh, Advanced Drainage Systems
- 3:25 – 4:00 pm Phosphorous - Advanced Removal Mechanisms and Amended Design for

Stormwater BMPs – Scott Perry, Imbrium Systems

- 4:05 – 4:40 pm Examples in Stormwater Infiltration, Detention, and Retention using Rain Tank Systems – Stuart Whitling, EMCO Waterworks

**Session 28: Merlot Room**

**The Wildcard Sessions:** What's That?

**Moderator:** Andrew Reeder, Regional District of Okanagan-Similkameen

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm EOCP's Multi-Utility Operator Certification Program - Pat Miller, EOCP & Sun Peaks Utilities
- 2:30 – 3:05 pm The Ethics of Drinking Water: The confluence of different streams of thought – Elizabeth Sigalet, Interior Health Authority and Paul Hasselback, Interior Health Authority
- 3:25 – 4:00 pm GHGs and Wastewater Management: A Few Technicalities, Some Economics and Much Speculation – Dean M. Shiskowski, Associated Engineering
- 4:05 – 4:40 pm Get The Lead Out – Greg Bell, Cambridge Brass

**Session 29: Zinfandel Room**

**First Nations:** Water and Wastewater Infrastructure Management

**Moderator:** Arash Masbough, Associated Engineering

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm First Nations Potable Water: Environmental Health Policy and Practice Gaps - Sophie Verhille, National Collaborating Centre for Environmental Health
- 2:30 – 3:05 pm Safe Groundwater for BC First Nations – Ted Molyneux, Indian & Northern Affairs Canada
- 3:25 – 4:00 pm Membrane Treatment of Highly Mineralized Groundwater for a Small Community - Ashcroft Indian Band Case Study – Joyce Chang, P.Eng., CH2M HILL
- 4:05 – 4:40 pm Snaw-naw-as First Nation Wastewater Treatment Plant, Nanoose Bay, BC - The Success Story – Archie Staats, Snaw-naw-as First Nation and Justin Hebner, Ecofluid

**Session 30: Chardonnay Room**

**CAWQ Western Symposium**

**Moderator:** Deborah Roberts, UBC Okanagan

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm The Potential of Particle Monitoring Technologies for Indirect Integrity Testing of Membrane Systems - Wade Archambault, UBC

- 2:30 – 3:05 pm Investigation of Fouling Mechanism in Submerged Membrane Systems – Sepideh Jankhah, UBC
- 3:25 – 4:00 pm Observation and Quantification of Axial Filtration Properties of Hollow Fiber Membranes – Syed Zaki Abdullah, UBC
- 4:05 – 4:40 pm A Salt-Tolerant Perchlorate and Nitrate-Reducing Enrichment Culture: Microbial Ecology Study – Yeyuan Xiao, UBCO

**Session 31: Cabernet Room**

**Asset Management:** Drinking Water Systems

**Moderator:** Paul Dufault, Associated Engineering

- 1:45 – 1:50 pm Welcome & Announcements
- 1:50 – 2:25 pm Enabling knowledge retention at the Seymour Capilano Filtration Plant - Tameeza Jivraj, Metro Vancouver
- 2:30 – 3:05 pm Water Supply Well Monitoring for Reliability and Efficiency – Nick Sargent, Golder Associates
- 3:25 – 4:00 pm Hydrant Flow Testing and De-Chlorination – Jonathan Funk, Kerr Wood Leidal Associates
- 4:05 – 4:40 pm Securing Access to your Water Distribution System – Jay Morrison, Municipal Solutions

**Monday and Tuesday  
April 27 and April 28, 2009  
Backup Papers  
For All Sessions**

I would like to take this opportunity to personally thank the people, whose abstracts are listed below, who have gone to the trouble of preparing a paper for use as a backup just in case another presenter is unable to present their paper for any reason. Without their thankless and often unrecognized efforts our Conference would be in disarray in the event of such a cancellation. The backup abstracts appear in the **"Book of Abstracts"** after the Tuesday Technical Sessions.

**Thank you all!**

Tim Forty, Technical Chair

Unsewered Communities: Are Alternative Treatment Technologies the Solution? – Ryan Devlin, Jacques Whitford NAWÉ

WaterNomics H2O Life, Conflict & Survival – Peter Dodenhoff, TeraNomics

Lagoon Based Cold Climate Ammonia Removal: OPTAER SAGR Demonstration System, Steinbach Manitoba – Martin Hildebrand, Nelson Environmental

Nitrogen Removal with New Fixed Film and Hybrid Technologies – Amit Kaldate, Degremont Technologies, Infilco

How to make million dollar decisions based on accurate hydraulic modeling? A case study of the development of Abbotsford water distribution system model – Jeff Cowburn, City of Abbotsford, and Werner de Schaetzen, GeoAdvice

Cold Climate Treatment Wetlands: Design & Performance – Ryan Devlin, Jacques Whitford NAWÉ

Wastewater Services For Historic Isolated Chinese Villages Selection Of Treatment Process (Part 2) – Merv Palmer, Osoyoos

First Nations Small Water System Computer Based Training Program – Russ Baker, MacDonald Dettwiler and Associates

EOCP Training Registry a Win-Win-Win For All – Bill Hyslop, EOCP or Joe McGowan, EOCP or, Mike Gosselin, EOCP