DISTRIBUTION SYSTEM CORROSION AND CONTROL

September 12, 2017 **Charlottetown, PE**

WORKSHOP DESCRIPTION:

Corrosion is a common issue in Atlantic Canada drinking water supplies. Its effects in distribution systems and potential health impacts are complex and varied. The primary health risk associated with corrosive water is through contact with metal plumbing materials. Corrosion may leach metals present in plumbing materials, such as lead, cadmium, zinc or copper, into drinking water. Lead in particular has acute health effects that may affect children and adults. Corrosion may also result in iron release. Corrosion is more likely if the water has low pH or if the alkalinity is low – two common concerns in Atlantic Canada.

You'll Learn About:

- Water quality factors influencing corrosion
- Release of metals and potential health effects
- Materials and mechanisms of corrosion and corrosion control
- Alternatives for corrosion control
- Effects of soft waters on the effectiveness of corrosion control
- How to develop a corrosion control program
- Case studies: sampling and monitoring corrosion, how to interpret results to develop a corrosion control program

COURSE OUTLINE

8:15 Registration opens

8:45 **1. Release of metals and potential health effects**
- Types of corrosion by-products
- Sources of corrosion by-products
- Potential health effects

9:15 **2. Materials and mechanisms of corrosion and corrosion control**
- Electrochemical cell and the four requirements for corrosion (what is corrosion and when will metal corrode)
- Redox chemistry and pH-EH diagrams
- Control by passivation versus neutralization

10:00 Break

10:30 **3. Factors influencing corrosion**
- Water quality (pH, alkalinity, DIC, buffer intensity)
- Physical factors (piping, temperature, velocity)

11:15 **4. Monitoring and interpretation of results**
- Sampling for lead
- Data analysis
- What do the data tell you?

12:00 Lunch

1:00 **5. How to develop a corrosion control program**
- What monitoring is needed

- Types of testing programs
- Example results

2:30 Break

3:00 **6. Lead service line replacement**
- Non-treatment solutions (lead service line replacement)
- Water quality results following lead service line replacement

4:00 **7. Review of Key Concepts**

4:30 Adjourn

This seminar will appeal to water treatment operators, operations engineers, plant managers and utility managers. Municipal and provincial authorities, environmental and health agencies and other industries with an interest in minimizing distribution system corrosion and optimizing corrosion control should also attend.

COURSE FORMAT:

Every attempt is made to keep the course informal and an enjoyable day-long training experience. Registration starts at 8:15 am, and the instructor will start shortly after 8:30. Wrap-up time is usually around 4:00 pm. Though all workshops are non-smoking, ample breaks are provided for coffee and discussion.

PRESENTER:

Graham Gagnon, Ph.D.,, P.Eng. is the NSERC/Halifax Water Industrial Research Chair and Professor in Civil Engineering at Dalhousie University. Graham has taught professional and operator training courses in Atlantic Canada for over 15 years. His research expertise focuses broadly in water treatment, but has focused on water quality issues in distribution systems. Throughout his career he has worked on applied water research projects for municipalities in Atlantic Canada, private companies, provincial departments, federal agencies and First Nation Communities. In 2014, Dr. Gagnon received the George Warren Fuller Award from the American Water Works Association (AWWA) in recognition of his exceptional contributions in water research throughout his career.

CONTACT INFORMATION:

Registration can be made by faxing or mailing the registration form on the reverse of this page, or on-line at www.acwwa.ca. For further information, please contact ACWWA Section office at 902-434-6002.

COURSE LOCATION:

Best Western
238 Grafton St
Charlottetown, PE

DISTRIBUTION SYSTEM CORROSION AND CONTROL

September 12, 2017 **Charlottetown, PE**

Name: _____

Organization:_____

Mailing Address:_____

City, Province: _____ Postal Code: _____

Phone:_____ Email: _____

ACWWA Membership No: _____ **WEF** Membership No: _____
If no membership number is listed, you will be invoiced as a non-member. See pricing below.

Fee for ACWWA or WEF Members & Employees of UTILITY Members
Course: $260.00 + $39.00 HST (15%) = $299.00

Fee for Non – Members
Course: $285.00 + $42.75 HST (15%) = $327.75

Fees include coffee breaks, lunch on your own.

Invoices will be sent to the address listed above.

PO number to be included on the invoice _____

Payment can be made by Visa, Master Card or cheque.

Card Holder's Name_____

Credit Card Number _____

Expiry_____ CVV _____

Signature_____

Email address for credit card receipt_____

Cheques should be made payable to:
ACWWA
PO Box 28141· Dartmouth, NS · B2W 6E2
Phone 902-434-6002 Fax 902-435-7796