



Developer and Owner – WWOTC

Online Course – Instructor Led

Nitrogen Removal Systems

March 7-8, 2022 (8:30 – 12:30 AST)

Course Objective / Description

This one day course is designed for operational staff to gain a good understanding of phosphorus and nitrogen removal systems. This course will assist operators in recognizing operational issues related to nutrients associated with wastewater, and the various ways to troubleshoot and correct these issues.

What will be covered:

- Nitrogen in the environment
- Sources and microbiological principles
- Nitrification and de-nitrification
- Physical/chemical processes
- Breakpoint chlorination and ion exchange
- Phosphorus removal methods-biological/chemical
- Process layouts, advantages and disadvantages
- Biological removal equipment
- Abnormal and emergency operating conditions

Lesson	Description	Contact Hours
Day 1		
Lesson 1	Introduction and Overview	0.5
Lesson 2	Nitrogen Sources and Effects	1.5
	Break	0.25
Lesson 3	BNR Configurations	1.5
Day 2		
Lesson 5	Biological Phosphorous Removal	1.25
Lesson 6	Suspended and Fixed Growth Systems	1.0
	Breaks	0.25
Lesson 7	Nutrient Problems	1.0
	Exam	0.5
	Total Instruction/Contact Time:	7.0

CEU: 0.7

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Name: _____

Company: _____

Company Mailing Address _____

City, Province: _____ Postal Code: _____

Phone: _____ Email: _____

ACWWA Membership #: _____ WEF Membership #: _____

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: $\$355.00 + \$53.25 \text{ HST (15\%)} = \408.25

Fee for Non – Members

Course: $\$380.00 + \$57.00 \text{ HST (15\%)} = \437.00

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 _____

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