

Lagoon System Operations With Discussion on Nitrogen and Phosphorous Removal

Dates & Locations (choose one):

- January 9, 9:00am-3:30pm, Hyde Park Town Office (Community Meeting Room), 344 VT 15 West, Hyde Park, VT
- January 23, 9:00am-3:30pm, Hartford Town Office (Conference Room 2), 171 Bridge Street, White River Jct, VT

Credit: 6 TCH



Non-member cost: \$60

Member cost: \$48

Instructor: Paul Olander

Proctor: Elizabeth Walker (VRWA)

This in-depth seminar will cover proper operation and troubleshooting of aerated lagoons. Learn the importance of good aeration, proper mixing, sludge removal and algae control in your lagoon process operation. Also hear about capacity increasing BOD treatment, “painless” sludge removal and algae control using barley straw. Discussion on nitrogen and phosphorous removal. A great review for certification exams. Bring lunch (coffee and snacks provided).

Optimize Your Water And Wastewater Pump Stations

Date: January 11, 2018

Time: 9:00am-12:30pm

Location: Newport Public Works, 900 Union Street, Newport, VT

Credit: 3 TCH



Non-member cost: \$30

Member cost: \$24



Instructor: John Benham (Pump Systems, Inc.)

Proctor: Wayne Graham (VRWA)

Water and wastewater operators and managers will learn how to effectively maintain and operate pump stations. Electrical components and failures will be covered in detail. We will cover basic hydraulic principles of centrifugal pumps, focusing on common problems, learning to detect, troubleshoot and make repairs. Proper planning will prepare you for breakdowns and the unexpected.

Chemical Feed Pumps

Date: January 18, 2018

Time: 9:00am-12:30pm

Location: Vermont Rural Water Association, 20 Susie Wilson Road, Essex Junction, VT

Credit: 3 TCH



Non-member cost: \$30

Member cost: \$24



Instructor: Dave Harris (Ti-Sales)

Proctor: Diana Butler (VRWA)

This seminar covers the proper operation and troubleshooting of chemical feed pumps used in water and wastewater systems. Also covered are types of pumps, sizing, chemical strength, chemical control, and types of chemicals used with given chemical pump systems.

Understanding Your Motor Control Panels

Date: January 25, 2018

Time: 9:00am-3:00pm

Location: Newport Public Works, 900 Union Street, Newport, VT

Credit: 5 TCH



Non-member cost: \$50



Member cost: \$40

Instructor: John Benham (Pump Systems, Inc.)

Proctor: Wayne Graham (VRWA)

Water and wastewater operators, while not electricians, need to understand these critical components and possess the skills to troubleshoot problems. Also a great review class for exams as electrical theory, formulas and safety will be covered in detail. This is a hands on class, work stations with actual control panels will be used. Please bring your voltage/amp meter if you have one.

Sampling Seminar

Date: January 25, 2018

Time: 9:00am-1:30pm

Location: Rutland Regional Planning Commission, 67 Merchants Row, Rutland, VT

Credit: 4 TCH



Non-member cost: \$40

Member cost: \$32



Instructors: Eileen Toomey and Rod Lamothe (Endyne), Eamon Twohig (VT DEC)

Proctor: Matt Guerino (VRWA)

Designed for water and wastewater operators or representatives of these systems, this seminar covers sampling protocol and recommended procedures will be covered in detail. Reviewing basic sampling on chemical, bacteriological samples. BOD, TSS, and other frequently sampled constituents. Updating your Field Form/Chain-of-Custody for labs. It will also cover monitoring requirements in residuals certifications and npdes permits and delve into some details on sampling methods for matrices such as sludges, soils, groundwaters, and/or ww influents/effluents.

Key
 = approved for water credit  = approved for wastewater credit

Nitrogen Reduction Optimization for Wastewater Treatment Facilities

Date: January 30, 2018

Time: 9:00am-3:30pm

Location: Hartford Town Office (Conference Room 2), 171 Bridge Street, White River Junction, VT

Credit: 6 TCH

Non-member cost: \$60



Member cost: \$48

Instructor: Paul Olander

Proctor: Elizabeth Walker (VRWA)

This course will help wastewater operators understand how their facilities can remove nitrogen and help set up a monitoring/analysis program that will point the way toward optimizing the removal of nitrogen with existing facilities via operational changes and/or low-capital improvements. The course will provide a brief look at the biology and chemistry of nitrogen removal and process control nitrogen monitoring. The main emphasis of the course will be on how different treatment processes can be modified to accomplish better nitrogen removal. RBC, Extended Aeration Activated Sludge and SBR processes will be discussed. Bring lunch (coffee and snacks provided).

Phosphorous Optimization Through Biological, Physical And Chemical Means

Date: February 6, 2018

Time: 9:00am-2:30pm

Location: Montpelier Public Works Garage, 783 Dog River Road, Montpelier, VT (please park across the street in the recreation field parking lot)

Credit: 5 TCH



Non-member cost: \$50

Member cost: \$40

Instructors: Paul Olander, Bryan Tanner (Holland Company), Wayne Elliot (Aldrich + Elliott)

Proctor: Elizabeth Walker (VRWA)

Learn about the science of biological nutrient removal, the different physical methods of filtration and chemicals means for removing phosphorous. Includes hands on demonstration of jar testing. Bring lunch (coffee and snacks provided).

How Technology Is Changing The Water Utility Industry

Date: February 8, 2018

Time: 9:00am-1:30pm

Location: Hartford Town Office, 171 Bridge Street, White River Junction, VT

Credit: 4 TCH



Non-member cost: \$40

Member cost: \$32

Instructor: Ian Kasowitz (Stiles Co.)

Proctor: Matt Guerino (VRWA)

Technology change is part of our everyday lives and cannot be avoided. However, water utilities, typically, have been slow to adapt to new technology. How will this affect your water utilities operation with the rapid changes in technology? The presentation will provide tips and provide information on: - Advancements in Meters - No Moving Parts - Enhanced Resolution - Improved Encoder Registers - Cloud Computing - SAS - Software as a Service - AMA—Advanced Metering Analytics - Enhanced Customer Engagement - Infrastructure Free AMI Technology - Questions and Answer Session - Round Table Discussions

Effective Asset Management For Critical System Components

Date: February 15, 2018

Time: 8:00am-12:30pm

Location: Montpelier Public Works Garage, 783 Dog River Road, Montpelier, VT (please park across the street in the recreation field parking lot)

Credit: 4 TCH



Non-member cost: \$40

Member cost: \$32



Instructors: Scott Kelley (Water System Consultant) and Joe Duncan, PE (Champlain Water District)

Proctor: Wayne Graham (VRWA)

Water and wastewater systems will learn how to use asset management to identify and prioritize their infrastructure components so they can plan for ongoing maintenance and future replacement in order to extend operational, maintenance and capital replacement dollars. Maintaining water and wastewater infrastructure is an ongoing task and proper asset management must be utilized to effectively protect your community's largest investments while delivering the desired service levels.

O&M Manuals—Hands On Workshop

Date: February 16, 2018

Time: 9:00am-12:30pm

Location: Vermont Rural Water Association, 20 Susie Wilson Road, Essex Junction, VT

Credit: 3 TCH

Non-member cost: \$30



Member cost: \$24

Instructor: Matthew Guerino/Diana Butler (VRWA)

Bring your current O&M Manual. In this training, we will review the state template, where to find the information needed, and how to organize your document. There will be limited time to work on your system O&M Manual and ask specific questions.

Jar Testing 101: Optimizing Chemical Usage for Phosphorous Removal, Dewatering Sludge and Water Filtration At Your Wastewater Or Water Facility

Dates & Locations (choose one):

- February 20, 9:00am-12:30pm, Burlington Wastewater Treatment Plant, 53 Lavalley Lane, Burlington, VT
- February 27, 9:00am-12:30pm, Rutland Wastewater Treatment Plant (Training Room), 110 Green Hill Lane, Rutland, VT

Credit: 3 TCH



Non-member cost: \$30

Member cost: \$24



Instructors: Mike Soukup, Loren Swears (Slack Chemical)

Proctor: Elizabeth Walker (VRWA)

This course will review the Science and Math behind chemicals used for both Wastewater and Water Treatment. Specifically chemicals used for phosphorous removal, dewatering sludge and drinking water filtration. There will also be hands-on demonstrations on how to do jar testing at your own facility.

Traffic Control Certification

Date: February 21, 2018

Time: 9:00am-12:30pm

Location: Montpelier Public Works Garage, 783 Dog River Road, Montpelier, VT (please park across the street at the recreation field)

Credit: 3 TCH

Non-member cost: \$30

Member cost: \$24

Instructor: Matthew Guerino (VRWA)

The Flagger Certification Course was developed to provide flaggers with the basic knowledge, information and awareness to perform their jobs safely. Once the Flagger course is successfully completed (passing written exam with 80% or better), the student will receive a certificate certifying their training to perform as a qualified Flagger.

Water Line Defrosting and Line Maintenance

Date: February 22, 2018

Time: 9:00am-12:30pm

Location: Hartford Town Office, 171 Bridge Street, White River Junction, VT

Credit: 3 TCH

Non-member cost: \$30

Member cost: \$24

Instructor: Walt Culver (Fergusson) and other presenters

Proctor: Matthew Guerino (VRWA)

With the challenges of the 2015 winter season over, this course will address some processes, procedures and equipment that could make future cold winters a little easier. This course will review line maintenance, repair along with valve and hydrant overview. The course will also discuss different equipment used for line thawing.

Residuals Management

Date: February 22, 2018

Time: 9:00am-12:15pm

Location: Montpelier Public Works Garage, 783 Dog River Road, Montpelier, VT (please park across the street at the recreation field)

Credit: 3 TCH

Non-member cost: \$30

Member cost: \$24

Instructor: Eamon Twohig (VT DEC)

Proctor: Wayne Graham (VRWA)

This very interesting class will provide an overview of Vermont's residuals program including regulations, management options and challenges of sludge and biosolids.

Advanced Water Operator Certification Class 3&4

Dates: March 1, 7, 14, 15, 21, 28, 29 and April 4 & 5, 2018

Time: 9:00am-2:30pm

Location: Montpelier Public Works Garage, 783 Dog River Road, Montpelier, VT (please park across the street at the recreation field)

Credit: 45 TCH

Non-member cost: \$225 (plus \$250 for books)

Member cost: \$180 (plus \$250 for books)

Instructor: Matt Guerino (VRWA) and other presenters

This training program is designed for new Class 3 & 4 public water system operators. The program will help prepare individuals to take the Vermont State Class 3 & 4 Water Operator Certification exams. All aspects of water operations are covered during this multi-week course. Attendees are expected to attend all given sessions.

Required Texts (Will Be Provided)

- AWWA Water Treatment
- AWWA Basic Science Concepts and Applications
- AWWA Operator Certification Study Guide
- Math Handbook for Water System Operators

Distribution Certification Course

Dates: March 1, 7, 8, 14, 21, 22, 2018

Time: 9:00am-2:30pm

Location: Montpelier Public Works Garage, 783 Dog River Road, Montpelier, VT (please park across the street at the recreation field)

Credit: 30 TCH

Non-member cost: \$150 (plus \$190 for books)

Member cost: \$120 (plus \$190 for books)

Instructor: Matt Guerino (VRWA) and other presenters

This course is designed for those involved with the distribution of potable water who are seeking a Class D certification. The following texts are required for this course and will be provided during the first session:

- AWWA Transmission and Distribution
- AWWA Operator Certification Study Guide
- Math Handbook for Water System Operators

Topics in this class will include: Distribution certification · Water Supply Rule · Water sampling procedures · Basic water chemistry · Water hydraulics · Distribution system design · Tank design · Blueprint reading · Pumps and pumping · Valve operation and maintenance · Cross connections · Hydrants and flushing program · Meters and backflow · Leak detection · VOSHA regulations · Instrumentation and controls · Water mathematics

Revised Total Coliform Rule

Date: March 6, 2018

Time: 9:00am-12:30pm

Location: Bennington Fire Department, 130 River Street, Bennington, VT

Credit: 3 TCH

Non-member cost: \$30

Member cost: \$24

Instructors: DWGWPD staff including: Meredith Simard, Jeff Girard, Ben Montross and/or David Love

Proctor: Matthew Guerino (VRWA)

This course will look at key portions of the Revised Total Coliform Rule, which went into effect in April 1, 2016. It will discuss the following topics: major differences between the current Total Coliform Rule and the Revised Total Coliform Rule; monitoring under the RTCR, including baseline compliance sampling frequency, repeat sampling, additional routine sampling, and triggers for increased monitoring; the various new "triggers" under the RTCR; Level 1 and Level 2 site assessments and corrective actions required under the RTCR; and the various violations under the RTCR.

Basic Math for Water and Wastewater Operators

Dates & Locations (choose one):

- March 9, 9:00am-12:30pm, Vermont Rural Water Association, 20 Susie Wilson Road, Essex Junction, VT
- April 20, 9:00am-12:30pm, Hartford Town Office, 171 Bridge Street, White River Junction, VT

Credit: 3 TCH

Non-member cost: \$30



Member cost: \$24



Instructor: Matthew Guerino/Diana Butler (VRWA)

This is a basic math course for operators. The formulas covered will be area, volume, psi, temperature and detention time.

Discharges From Breweries And Food Industries to Your WWTF

Date: March 9, 2018

Time: 9:00am-1:15pm

Location: Montpelier Public Works Garage, 783 Dog River Road, Montpelier, VT (please park across the street in the recreation field parking lot)

Credit: 4 TCH



Non-member cost: \$40

Member cost: \$32

Instructor: Randy Bean (RAB Consulting & Services)

Proctor: Wayne Graham (VRWA)

Discharges from breweries and specialty food industries have been rapidly growing in Vermont in the past decade. The process wastewater discharged by these industries is very different from domestic sewage. The discharges from these industries into your municipal WWTF can have significant impacts on its ability to properly treat wastewater, operational costs, and the ability to connect future projects to your system. This class will provide an understanding of the pollutants discharged from these industries, the impacts on your WWTF, and how to work with these industries to reduce their impacts on your facility. Plus guidance on steps a municipality can take to control and protect itself from their impacts and recoup operational costs. This is a great class from a former long time staff member of VT ANR's wastewater management program and will provide you the knowledge to assess and limit the impact of these industries before problems occur at your WWTF.

Metering In The 21st Century

Dates & Locations (choose one):

- March 16, 9:00am-12:30pm, Rutland Regional Planning Commission, 67 Merchants Row, Rutland, VT
- March 23, 9:00am-12:30pm, Vermont Rural Water Association, 20 Susie Wilson Road, Essex Junction, VT

Credit: 3 TCH



Non-member cost: \$30

Member cost: \$24

Instructor: Dave Harris (Ti-Sales)

Proctor: Matthew Guerino (VRWA)

This course will bring you through the first meters used at water systems through today. It will discuss direct reading units, mobile and fixed network metering. The course will also review billing and accurate reading of meters along with how to correctly read meters and how to install and proper sizing of meters. We will look at testing and changing out meters and a brief discussion on no-lead changes. Be prepared for an entertaining look at metering.

Industrial Discharges, Pretreatment Requirements and Your Wastewater Treatment Facility

Date: March 20, 2018

Time: 9:00am-12:15pm

Location: Montpelier Public Works Garage, 783 Dog River Road, Montpelier, VT (please park across the street in the recreation field parking lot)

Credit: 3 TCH

Non-member cost: \$30



Member cost: \$24

Instructor: Randy Bean (RAB Consulting & Services)

Proctor: Wayne Graham (VRWA)

Discharges from industries can be very different from typical domestic sewage. These discharges may have significant impacts on the proper operation of your wastewater treatment facility, your ability to manage sludge, operational costs, and your ability to comply with your discharge permit. This class will discuss the pollutants associated with various types of industrial discharges, pretreatment regulations, and provide you information on their impacts and guidance on how to oversee these discharges to minimize their effects on your facility and your collection system. This is a great class from a former long time staff member of VT ANR's wastewater management program.

Small Systems Class 2 Water Operator Certification Course

Dates & Locations (choose one):

- April 10, 11, 12 & 17, 9:00am-2:00pm, Putney Fire Department, 21 Carl Snyder Drive, Putney, VT
- April 18, 19, 25 & 26, 9:00am-2:00pm, Montpelier Public Works Garage, 783 Dog River Road, Montpelier, VT (please park across the street in the recreation field parking lot)
- Credit: 18 TCH

Non-member cost: \$180 (plus \$30 for textbook)



Member cost: \$144 (plus \$30 for textbook)

Instructors: Matt Guerino/Diana Butler (VRWA)

This course is designed for those who will be taking the VT Class 2 Water Operator Certification Exam. The eighteen hour class provides a survey of aspects of operating a small public water system using groundwater as a source. The Safe Drinking Water Act (SDWA) requirements, sampling water sources, well construction, source protection, storage, distribution, hydraulics, cross-connections, safety, disinfection, treatment, and water math will be covered. This class is not designed for the operators of Transient Systems (TNCs)

BRING A LUNCH

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9 Lagoon System Operations	10	11 Optimize Your Pump Stations	12	13
14	15	16	17	18 Chemical Feed Pumps	19	20
21	22	23 Lagoon System Operations	24	25 Understanding Your Motor Control Panels / Sampling	26	27
28	29	30 Nitrogen Reduction	31			

February 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6 Phosphorous Optimization	7	8 How Technology Is Changing the Water Industry	9	10
11	12	13	14	15 Effective Asset Management	16 O&M Manuals	17
18	19	20 Jar Testing 101	21 Traffic Control Certification	22 Water Line Defrosting / Residuals Management	23	24
25	26	27 Jar Testing 101	28			

March 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 Class 3/4/D	2	3
4	5	6 Revised Total Coliform Rule	7 Class 3/4/D	8 Class D	9 Basic Math / Discharges From Breweries and Food Industries	10
11	12	13	14 Class 3/4/D	15 Class 3/4	16 Metering In the 21st Century	17
18	19	20 Industrial Discharges	21 Class 3/4/D	22 Class D	23 Metering In the 21st Century	24
25	26	27	28 Class 3/4	29 Class 3/4	30	31

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7. Distribution & Safety

WASTEWATER TREATMENT - Course Modules:

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2. Wastewater Characteristics
3. Wastewater Pretreatment
4. Wastewater Collection Systems
5. Preliminary Treatment
6. Primary Sedimentation
7. Activated Sludge
8. Fixed Film Processes
9. Pond Systems
10. Processing Wastewater Sludge
11. Wastewater Disinfection
12. Wastewater Safety

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Save Time and Money





Wayne Graham assists Alburgh with smoke testing, October 2017



Leak detection in Bennington with Aaron Perez and Diana Butler, November 2017

Registration Information

Deadline: Two business days before course date. Registrations received less than two days before a session are subject to a \$20 late fee. **No walk-ins allowed. Sign-in begins 15 minutes before the start of the course.**

Register on the web:

www.vtruralwater.org

Register by mail: Complete the form below and send it with a check or money order for the full amount to:

**VRWA
20 Susie Wilson Road, Suite B
Essex Jct., VT 05452**

Register by fax: You may complete the form below and fax it to **866-378-7213**.

Seating is limited, so register early. Your cancelled check confirms your registration; you will only be notified if the course is cancelled.

Fees

Due to government support secured by VRWA, we are able to offer courses at a reduced rate. The actual training is free of charge, but all courses have a materials fee.

Cancellations / Refunds

If you will be unable to attend a class, you must contact our office at least 24 hours in advance to receive a refund.

Member rate

VRWA member systems receive a 20% discount. To join VRWA, call 802-660-4988 or visit www.vtruralwater.org.

Special needs

Please contact us at 802-660-4988 prior to your class if you have any special needs.

Credit

Training Contact Hours (TCHs) are awarded for all training courses. These are applicable for operator certification in Vermont. You must attend 100% of the course in order to receive TCHs. Course objectives determine whether credits are applicable to a water operator or a wastewater operator's certification; some courses apply to both types of certification. **All attendees will receive a record of TCHs earned after completing a course.** Reprints of lost TCH certificates are available for a fee.

Registration Form

Duplicate this form to sign up for more than one course.

Course Name _____

Date & Location _____

Attendee Name(s) _____

Facility/Business _____ **WSD# or WW#** _____

Address _____

City, State, Zip _____

Phone _____ Emergency Phone (for cancellations due to weather): _____

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Total Payment Enclosed _____

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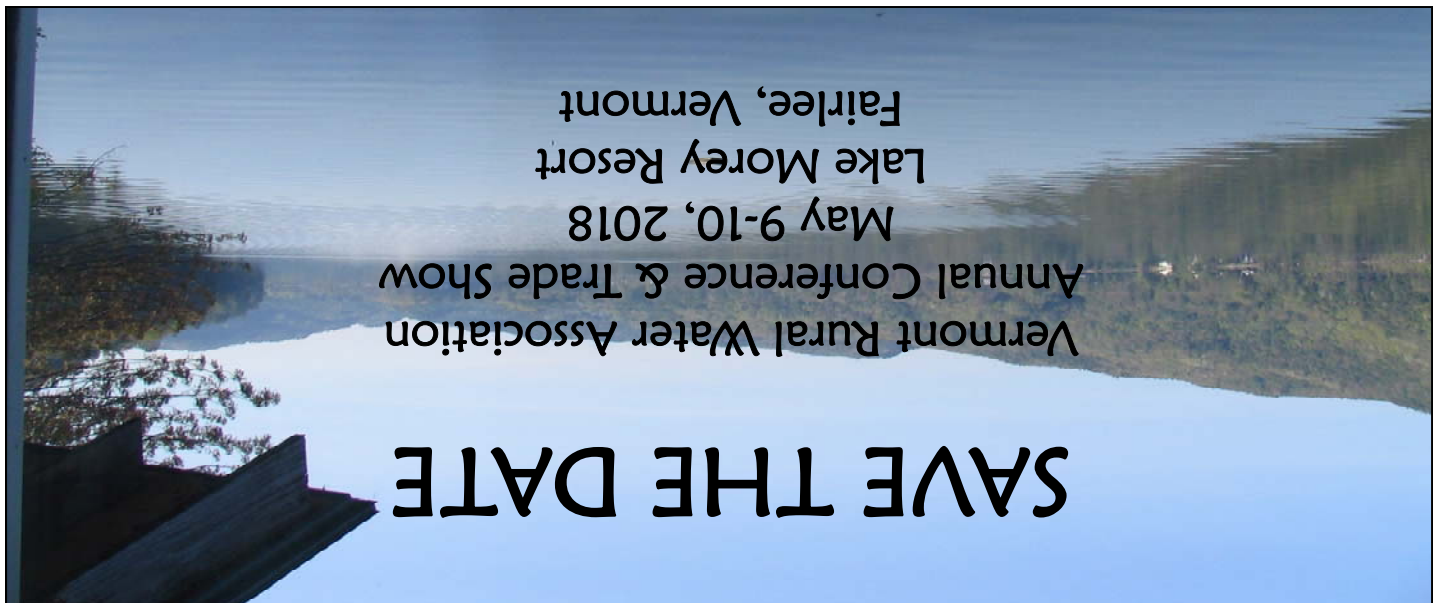
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**IMPORTANT WATER & WASTEWATER OPERATOR
TRAINING ANNOUNCEMENT ENCLOSED**



SAVE THE DATE

Vermont Rural Water Association
Annual Conference & Trade Show
May 9-10, 2018
Lake Morey Resort
Fairlee, Vermont