

# Agenda

*Presented by Dr. Karen Mancl*

## Septic Systems

Sewage disposal historical background  
· Environmental Protection Agency and Ohio perspectives  
What a basic septic system is composed of and how it works  
Septic tank design and how they work

## Onsite Wastewater Treatment Systems

System design  
Siting  
Construction

## Alternative Treatment Technologies

Mound systems  
Sand bioreactor systems (aka sand filter systems)  
Media filters – peat, textile

## System Management

System inspections  
Regular maintenance  
Troubleshooting

### Can't Attend? Order the CD/Manual Package:

A full recording of this seminar is available for \$289, which includes shipping and handling. This learning method does not qualify for the continuing education credit for Ohio architects or engineers. Please allow five weeks from the seminar date for delivery. See continuing education information on the inside of the brochure.

## Ohio Septic System Short Course

Middleburg Heights, OH - Thursday, May 24, 2018



Halfmoon Education Inc.  
PO BOX 278  
Altoona, WI 54720-0278

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## Learning Objectives

### You'll be able to:

**Define** what a basic septic system is and understand how it works.

**Discuss** design, siting and construction considerations related to onsite wastewater treatment systems.

**Identify** alternative treatment technologies such as mound systems and media filters.

**Utilize** key tips related to septic system inspections and maintenance.

**Troubleshoot** septic system problems.



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**Examine** the historical background and regulation of sewage disposal

**Explore** septic tank function and design

**Discuss** onsite wastewater treatment system siting and construction considerations

**Learn** about alternative treatment technologies including sand bioreactor systems and media filters

**Discuss** key issues in septic system management

### Continuing Education Credits

#### Professional Engineers

6.0 PDHs

#### Architects

6.0 HSW Continuing Ed. Hours

6.0 AIA HSW Learning Units

#### Contractors

Non-Credit Continuing Ed.



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# Faculty

## Karen Mancl

Professor of Food, Agricultural and Biological Engineering and Water Quality Specialist at The Ohio State University

Dr. Mancl has published 35 journal articles and about 70 Extension publications on rural infrastructure and outreach initiatives. She is a nationally-known expert in onsite wastewater treatment, having conducted research, written and taught the subject for 30 years. Dr. Mancl is the president of the Ohio Onsite Wastewater Association. In 2013, Dr. Mancl constructed a teaching facility at a slaughterhouse in southwestern Ohio to teach low-cost, low-energy treatment of food processing wastewater. At this outdoor teaching and research facility, Dr. Mancl teaches designers, installers and regulators the science and technology of sand bioreactor wastewater treatment systems. She is originally from Wisconsin where she received her bachelor's degree in Environmental Science from the University of Wisconsin. Dr. Mancl has a master's degree in Environmental Science from the University of Texas, and received her PhD degree in Water Resources from Iowa State University in. In 2010 she received a second Master's degree in East Asian Studies, and she conducts research and teaches wastewater treatment in rural China. She was an assistant professor and water specialist at The Pennsylvania State University for four years before joining the Ohio State faculty in 1986.

### Here's what past attendees had to say about the program and presenter Karen Mancl:

"Very informative overview of on-site wastewater treatment options in the state of Ohio."  
— *Civil engineer*

"A great presentation—clear, well organized." — *Architect*

"High-energy, passionate about subject." — *Mechanical engineer*

"One of the best I have attended." — *Civil engineer*

# Seminar Information

## Crowne Plaza Cleveland Aiport

7230 Engle Road  
Middleburg Heights, OH 44130  
(440) 243-4040

Registration 8:00 - 8:30 am	Lunch (On your own) 11:45 am - 1:00 pm
Morning Session 8:30 - 11:45 am	Afternoon Session 1:00 - 4:15 pm

## Tuition

**\$279** for individual registration

**\$259** for three or more simultaneous registrations.

Each registration includes a complimentary continental breakfast and printed seminar manual.

## How to Register

- Visit us online at [www.halfmoonseminars.org](http://www.halfmoonseminars.org)
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

**Cancellations:** Cancel at least 48 hours before the start of the seminar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the CD/manual package. You may also send another person to take your place.

# Additional Learning

## Webinar Series

### The Distributed Battery Webinar Series

- **The Distributed Battery Webinar, Part I**  
Wed., April 4, 2018, 11:00 AM - 2:15 PM CDT
- **The Distributed Battery Webinar, Part II**  
Thurs., April 5, 2018, 11:00 AM - 2:15 PM CDT

### AutoCAD 2018 Beginners 2-D Course

- **Create a Drawing**  
Thurs., April 5, 2018, 11:00 AM - 12:30 PM CDT
- **Edit a Drawing**  
Thurs., April 5, 2018, 1:00 - 2:30 PM CDT
- **View and Display a Drawing**  
Fri., April 6, 2018, 11:00 AM - 12:30 PM CDT
- **Print, Plot or Print File**  
Fri., April 6, 2018, 1:00 PM - 2:30 PM CDT

### Special Inspections

- **Overview of Special Inspections**  
Wed., April 11, 2018, 11:00 AM - 12:30 PM CDT
- **Steel, Wood and Cold-Formed Steel**  
Wed., April 11, 2018, 1:00 - 2:30 PM CDT
- **Concrete, Masonry and Soils**  
Thurs., April 12, 2018, 11:00 AM - 1:00 PM CDT
- **Fire-Resistant Materials and Material Standards**  
Thurs., April 12, 2018, 1:30 PM - 2:30 PM CDT

For more information visit:  
[www.halfmoonseminars.org/webinars/](http://www.halfmoonseminars.org/webinars/)

### Shallow Foundations

- **Evaluating Building Sites**  
Thurs., April 19, 2018, 11:00 AM - 12:30 PM CDT
- **Shallow Foundation Design**  
Thurs., April 19, 2018, 1:00 - 2:30 PM CDT
- **Special Considerations in Foundation Design and Construction**  
Fri., April 20, 2018, 11:00 AM - 1:00 PM CDT
- **Soil Improvement and Foundation Diagnosis and Repair**  
Friday, April 20, 2018, 1:00 - 2:30 PM CDT

### Erosion and Sediment Control

- **Basics of Site Stormwater Regulations and Requirements**  
Wed., April 25, 2018, 11:00 AM - 12:00 PM CDT
- **Structural and Non-Structural Erosion and Sediment Control Best Practices**  
Wed., April 25, 2018, 12:30 PM - 2:30 CDT
- **Site Planning**  
Thurs., April 26, 2018, 11:00 AM - 1:00 PM CDT
- **Long-term Post Construction Management Practices**  
Friday, April 20, 2018, 12:30 PM - 2:30 CDT

## Continuing Education Credit Information

This seminar is open to the public and offers 6.0 PDHs to professional engineers and 6.0 HSW continuing education hours to architects in all states, excluding Florida architects. Educators and courses are not subject to preapproval in Ohio.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana, Louisiana, Maryland, New Jersey (Approval No. 24GP00000700), New York (NYSSED Sponsor No. 35), North Carolina, and North Dakota. HalfMoon Education is deemed an approved continuing education sponsor for New York architects.

This seminar is approved by the American Institute of Architects for 6.0 HSW Learning Units (Sponsor No. J885). Only full attendance can be reported to the AIA/CES.

This course offers a non-credit continuing education opportunity to contractors. It has not been approved by any state contractor licensing entity for licensing maintenance.

Attendance will be monitored and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

**CD/Manual Package:** A full recording of this seminar is available for \$289, which includes shipping and handling. This learning method does not qualify for the continuing education requirements of Ohio engineers, AIA, BPI, ICC or BPI members. No contractor credit available. Please allow five weeks from the seminar date for delivery.

# Registration

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How to Register	
<b>Online:</b> <a href="http://www.halfmoonseminars.org">www.halfmoonseminars.org</a>	<b>Registrant Information</b> Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip _____ Occupation: _____ Email: _____ Phone: _____
<b>Phone:</b> 715-835-5900	<b>Additional Registrants:</b> Name: _____ Occupation: _____ Email: _____ Phone: _____
<b>Fax:</b> 715-835-6066	
<b>Mail:</b> HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278	
<b>Complete the entire form.</b> Attach duplicates if necessary.	
Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.	
( )  I need special accommodations. Please contact me.	

## Tuition

( ) **I will be attending the live seminar.** Single Registrant - **\$279.00**. Three or more registrants from the same company registering at the same time - **\$259.00** each.

( ) **I am not attending.** Please send me the CD manual package for **\$289.00**. (S&H included. Please allow five weeks from seminar date for delivery)

**Checks:** Make payable to HalfMoon Education Inc.

**Credit Card:** *Mastercard, Visa, American Express, or Discover*

Credit Card Number: \_\_\_\_\_

Expiration Date: \_\_\_\_\_ CVV2 Code: \_\_\_\_\_

Cardholder Name: \_\_\_\_\_

Billing Address: \_\_\_\_\_

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Signature: \_\_\_\_\_

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