



National Onsite Wastewater  
Recycling Association

## *Onsite A to Z Training*

NOWRA's Onsite A to Z Course provides participants with invaluable instruction regarding onsite wastewater technologies and system application. The overall program is structured to provide professionals with comprehensive information for use in day to day work. Professionals will gain essential knowledge about the different systems and their applications in various conditions.

The objectives of this program are for participants to understand the differences between onsite technology and decentralized systems; recognize important siting considerations; and comprehend key factors in the treatment, collection and management of wastewater for decentralized systems.

The NOWRA Onsite A to Z course session topics:

### **Septic System Treatment Overview – Sara Heger**

Tuesday, April 2, 2019 | 10:30 AM - 11:30 AM

This session will provide an overview of NOWRA and the training. There will be a general discussion about wastewater treatment from individual onsite wastewater treatment systems to large scale wastewater treatment plants. It will focus on how and where various wastewater contaminants are treated throughout the onsite systems.

### **Key Wastewater Characteristics – John Buchanan**

Tuesday, April 2, 2019 | 11:30 AM - 12:30 PM

This session provides the basic science behind the technology of wastewater treatment and discusses the variable characteristics that influence methods used to treat wastewater. Many challenging additions such as antibacterial soaps, pharmaceuticals and water treatment devices will be discussed along problems associated with hydraulic and organic overloads.

### **Soil and Site Evaluation – Randy Miles**

Tuesday, April 2, 2019 | 1:30 PM - 2:30 PM

This session gives the "non-soils professional" a baseline understanding of not only the soil parameters that control the efficacy of treatment, but also the importance of overall site issues that must be considered. It addresses the use of soil morphology, landscape description, interpretation of data, and non-soil data for onsite wastewater applications.

### **Pretreatment in Septic Tanks – Tom Fritts**

Tuesday, April 2, 2019 | 2:30 PM - 3:30 PM

The purpose of the septic tank is to provide an environment for the first stage of treatment in onsite systems by promoting physical settling and flotation, anaerobic digestion. Additionally,



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the tank allows storage of both digested and undigested solids until they are removed. This session will provide information to help practitioners make informed decisions and discuss the wastewater treatment processes; design features that improve tank function and facilitate O&M, and the importance of tank capacity and structural integrity.

**Pretreatment in Aerobic Treatment Units – Sara Heger**

Tuesday, April 2, 2019 | 3:30 PM - 4:30 PM

This session provides specific information about aerobic treatment units as a means of treating domestic wastewater. It will include an overview of the aerobic treatment process of the biochemical oxidation of organic compounds. Descriptions of various engineered systems including their design, configurations and performance will be highlighted. Appropriate application and management issues will also be discussed.

**Pretreatment in Media Filters – Sara Heger**

Wednesday, April 3, 2019 | 8:30 AM - 9:30 AM

This session highlights the principles of onsite wastewater treatment using media filters and focuses on the effluent quality parameters that may affect design and use. Attendees will learn what a media filter is, its physical characteristics and will become familiar with several different medias and configurations and understand why design criteria vary. Wastewater dosing, distribution and single pass versus recirculating systems will also be discussed along with management.

**Water Movement in Soils – Randy Miles**

Wednesday, April 3, 2019 | 9:30 AM - 10:30 AM

The discussion and illustration of water movement in soil profiles will be presented as a fundamental understanding of water movement in and around the soil treatment unit. Movement of water in and from trenches is critical for the proper functioning of the soil to disperse and treat effluent in the soil profile. Discussion will illustrate time-lapse water movement in soil profiles under saturated and unsaturated flow. This illustration will be used to portray water management practices that can be employed for the soil treatment unit. Illustrations will show that water movement can be either enhanced or impeded (believe it or not) by layers of coarser textured soil materials.

**Distribution of Effluent – John Buchanan**

Wednesday, April 3, 2019 | 10:30 AM - 11:30 AM

This presentation discusses how gravity and pressure systems are designed and used for distribution and dispersal with the soil treatment component. For gravity distribution topics include valves, manifolds, distribution and drop boxes as well as parallel, serial and sequential



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distribution while for pressure distribution pipe and orifice diameter and spacing will be key discussion items.

**Pumps and Controls – John Buchanan**

Wednesday, April 3, 2019 | 12:30 PM - 1:30 PM

The use of pumps in onsite wastewater treatment systems is growing rapidly. This session provides details on the design, component selection and configuration of systems to deliver effluent under pressure. The different types of pumps and their associated purposes will be discussed. Proper pump selection and sizing criteria will be identified. The options for controlling pumps including floats and panels will also be discussed.

**Soil Treatment Systems – Randy Miles**

Wednesday, April 3, 2019 | 1:30 PM - 2:30 PM

This session illustrates the various types of soil treatment system used to treat and disperse wastewater in onsite systems including trenches, beds, lower pressure pipe, at-grades, and mounds systems. Applications and differences in systems will be discussed along with management.

**Installation and Inspection – Tom Fritts**

Wednesday, April 3, 2019 | 3:00 PM – 4:00 PM

This session includes practical information on component installation, system water tightness, final grading/landscaping and quality assurance while emphasizing the importance of safety. The presentation begins with an overview of installation issues including planning and layout. The next section focuses on proper installation of piping, followed by septic tank installation procedures including depth of bury, bedding materials, seams, backfilling, high water table conditions, water tightness and testing. Selection and installation of pumps is then discussed. The principles of keeping the soil treatment system shallow, dry, level and natural are highlighted along with material selection.

**Operation and Maintenance – Tom Fritts**

Wednesday, April 3, 2019 | 4:00 PM – 5:00 PM

This session details basic information for ensuring long-term system reliability via regularly scheduled, thorough and intensive system inspections. O&M of septic tanks, pretreatment units and soil treatment systems will all be covered. It will also highlight comprehensive management programs to increase system performance and sustainability.