

INSTALLATION OF WASTEWATER TREATMENT SYSTEMS IN PA

COURSE OBJECTIVES/LEARNING OUTCOMES

At the completion of this course, attendees will be able to:

Chapters 1 and 2- Introduction and Industry Integrity

- Utilize standard terms and procedures dealing with installation of onsite systems in PA
- Explain the importance of ethics
- Identify characteristic that contribute credibility

Chapter 3- Installation Safety

- Describe the various safety issues including the following:
 - Federal and state OSHA Standards
 - First aid and emergency response
 - Personal protection
 - Transporting equipment and materials
 - General site issues
 - Electrical Hazards
 - Equipment specific issues
 - Excavation and trench safety
 - Confined space, hazardous atmospheres
 - Material hazards
 - Surface spill response
 - Additional hazards

Chapter 4- Soils and Site Evaluation

- Interpret key soil properties related to soil and site evaluation
- Correlate how soil and site properties relate to:
 - Treatment of wastewater
 - Water movement in soil
 - Water movement in and on the site
- Conclude how and why installation processes must not alter key soil properties
- Conclude how and why installation processes must not alter key site properties

Chapter 5- Materials and Techniques

- Assess equipment and site conditions to maintain natural soil conditions
- Judge material selection to assure long term system performance
- Assess and justify installation techniques for different site conditions
- Explain system abandonment protocols

Chapter 6- Installation Planning

- Review and explain a design plan
- Compare site plan with existing conditions
- Acquire and appraise owner information when forming a bid
- Generate components of a bid
- Develop a construction plan
- Plan construction staging

- Organize job scheduling
- Organize job staging

Chapter 7- Distribution- Pressure and Gravity

- Correlate how effluent moves within the system and why this is important for treatment
- Judge how to install system components to maximize uniformity
- Show how to provide access for O&M for continued uniform distribution

Chapter 8A- Tanks

- Describe purpose and types of tanks
- Determine capacity, gallons per inch
- Describe BMPs regarding
 - Sealants
 - Excavating, setting, backfilling
 - Piping and connections
 - Watertightness
 - Venting
 - Alarms

Chapter 8B- Installation Piping

- Describe various types of pipe and uses
- Describe procedures for connecting polyvinyl chloride (PVC) piping
- Document proper pipe selection and installation techniques to assure watertight piping installations
- Correlate watertight piping installation and its importance in preventing:
 - Untreated sewage out of system
 - Groundwater into system

Chapter 9- Pumps & Controls

- Types of pumps, how to select and describe their appropriate applications
- Identify discharge assembly components for a pumping system
- Siphons and their function
- Determine the dose volume for timed and demand dosed systems
- Calculate the gallons per inch (gpi) of a dosing tank and pump delivery rates (PDR)
- Select and assemble pumping systems
- Adjust and verify control settings