

**Course Title**

EPA Onsite Wastewater Treatment: Processes and Systems (RV-5659)

**Course Duration**

4 Hours

**Course Content**

Millions of households live in rural areas that do not have access to public water or sewer systems. They must get their fresh water from private wells and treat their household wastewater effluent using onsite wastewater treatment systems. Treating wastewater aids in the safe recycling of water to the environment; however, faulty systems can contaminate the surrounding environment, spreading contaminants and disease that may pollute groundwater reservoirs for generations. This 4-hour interactive online course is based on Chapter 4: Treatment Processes and Systems, from the Onsite Wastewater Treatment Systems Manual published by the United States Environmental Protection Agency. This chapter is intended as an informational guide to understanding the various types of onsite wastewater treatment systems and their treatment uses and capacities.

**Course Objectives**

After completing this course, you will:

- Recognize the difference between conventional (soil based or subsurface wastewater infiltration) systems or SWISs, and alternative wastewater treatment systems, such as sand or media filters
- Be familiar with SWIS designs, applications, and performance
- Have a better understanding of design and construction considerations according to the site and wastewater characteristics
- Be familiar with the operation, maintenance, and monitoring of SWISs
- Know the function, construction, operation, and maintenance of septic tanks
- Have a better understanding of sand media filter designs, applications, and performance

**Course Outline**

- Introduction
- Conventional Systems and Treatment Options – 10 minutes
- Subsurface Wastewater Infiltration – 15 minutes
- Design Considerations – 10 minutes
- Placement of the Infiltration Surface – 5 minutes
- Separation Distance from a Limiting Condition – 20 minutes
- Depth of the Infiltration Surface – 5 minutes
- Subsurface Drainage – 15 minutes
- Sizing of the Infiltration Surface – 15 minutes
- Construction Management and Contingency Options – 15 minutes
- Septic Tanks – 20 minutes



- Operation and Maintenance – 5 minutes
- Considerations for Large and Commercial Systems – 20 minutes
- Sand/Media Filters – 20 minutes
- Aerobic Treatment Units – 5 minutes
- Design Considerations – 20 minutes
- Operations and Maintenance – 20 minutes
- Applications – 20 minutes
- Conclusion

#### **Method of attendance monitoring and verification**

Courses are developed with interactivity as a key component in its development. Vector Solution's 'rule of thumb' is to insert an activity every 3 to 5 minutes or 500 to 800 words of text. We offer a variety of activities through the coursework to keep the user involved and requiring knowledge of the course materials being reviewed in order to move forward.

Users sign into an account with a unique User Name and Password. We request that a user agree to an affidavit stating that they are the owner of the account before proceeding to the exam. Course completion is measured by passing the exam with a minimum score of 75%.

Students are notified at the beginning of the course that they are required to spend 50 minutes per credit hour in the course in order to receive an accreditation certificate. The LMS will not allow a certificate to be issued or reflect course completion until the time requirement is met by the user.

We monitor required student participation in the course by logging and tracking the date and time a student enters a course, tracking activity during the course, and recording the date and time they complete the exam with a required passing score. If our learning management system detects 13-minutes of inactivity, a pop-up appears alerting the student that they must verify their presence or the session times out and the course closes.

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**CAPABILITIES:**

! CPM Scheduling	! Cost Analysis
! Claims Analysis	! DDD Schedule Analysis
! Project Management	! Schedule Delay
! Disruption and Impact	! Productivity Impact
! Changes and Extra work	! Engineering Planning
! Home Office Overhead	! Performance Management
! Expert Witness Testimony	! Procedure Development
! Constructability Reviews	! Estimating

**EDUCATION:** B.S. in Civil Engineering, University of Pittsburgh, 1974  
M.B.A., Northern Michigan University, 1978

**REGISTRATIONS:** Professional Engineer      Florida License Number: PE 0039933  
Michigan License Number: PE 6201025607

**DISTINCTIONS:** 2001 Small Business of the Year Award - Greater Tampa Chamber of Commerce  
Tampa Bay Business Journal List "Who's Who in Architecture and Engineering"  
Appointed to the American Arbitration Association's Panel of Arbitrators  
1995 University of Pittsburgh Alumni Volunteer of the Year

**AFFILIATIONS:** American Association of Cost Engineers;  
Former President, Tampa Bay Section, 1993/94 & 1994/95  
Associated General Contractors of America  
Associated Builders and Contractors  
American Bar Association  
American Public Works Association  
American Society of Civil Engineers  
American Society of Highway Engineers  
American Institute of Architects  
American Subcontractors Association  
Society of American Military Engineers

**EXPERIENCE:** Mr. Chitester is recognized nationally as an expert in Claims Analysis and Dispute Resolution, CPM Scheduling, Project Management, and Cost Engineering. He began his career with Bechtel Power and Blount Brothers where he gained field construction and scheduling experience on projects ranging from \$150 Million to \$500 Million. For more than 28 years, he has provided services essential to maintaining control of project costs and schedules to a balanced mix of public and private sector clients.

Mr. Chitester's expertise has been applied to industrial process plants, power generating facilities, buildings, wastewater treatment facilities, pipelines, and roadway design and construction. He has performed cost and schedule analyses on projects totaling more than \$10 billion in construction costs.

Mr. Chitester presents seminars and in-house training on topics as productivity analysis, delay analysis, CPM scheduling, and construction claims, and has served as a course instructor for the Associated General Contractors' Supervisor Training Program. More than five thousand licensed professionals from across the country have attended lectures and presentations by Mr. Chitester.