Advanced Wastewater Treatment and Design

6.0 hours to CEHPs & Master/ Registered Septic Tank Contractors

Course is approved at Master Contractor level SC0405

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Instructor: Dr. Sonia Cruz, Ph.D., C.E.H.P.

7:15 am Registration, Introduction, and pre-test.

7:30 am Wastewater Treatment: Wastewater Characterization; Components of Wastewater-Flow volume & Biological Load or Waste Strength; High Strength Wastewater and Calculation of Biological Load on a system.

8:30 am Primary Treatment: Septic Tank Operational model, grease interceptors; soil treatment. Pollutants of Concern: Pharmaceuticals and Personal Care Products; Treatment of PPCPs; updates on PPCPs in the environment.

9:30 am Break

9:45 am Advanced Treatment: Secondary Treatment and Classification of Biological Nitrogen Removal systems. Tertiary treatment and examples. Treatment system effectiveness.

10:45 am Nitrogen Basics: Nutrient Impact, Nitrogen in the environment; Forms of Nitrogen with regard to OSTDS and soil-groundwater interactions; Forms of Nitrogen, Nitrogen Fixation, Ammonification, Assimilation, Synthesis, Hydrolysis, Amination, Nitrification and Denitrification.

11:45 am Lunch

12:15 pm Health Effects of Nitrogen in the Environment; Water quality Impacts of Nitrogen Discharges; Treatment Process for Nitrogen Removal; Factors affecting efficiency of Treatment Process; Control of Nitrogen Discharges from Onsite Systems; Nitrogen Removal; Phosphorus issues: phosphorus pretreatment, source reduction and what impacts phosphorus capture in soil. Overview of Treatment Processes and system Effectiveness.

2:15 pm Post test

2:45 pm Distribution of course evaluations & attendance certificates

Note: The post test shall consist of 20 questions in closed book format for

Master Contractors, all others are allowed to use class notes. Half hour maximum is given to complete test. Passing score is 70%. A participant who does not score at least 70% on the post test will be allowed one test retake.

Detailed Course Description:

The purpose of this course is to help onsite wastewater professionals and others understand the processes that impact pollutant loading into wastewater systems and wastewater treatment.

Total number of classroom hours: 6

Speaker Qualifications: Sonia Cruz, Ph.D., CEHP 4(B), Bachelor of Science, Master in Biology and Doctorate in Marine Sciences, 17 years Department of Health Onsite Sewage Program experience, and 18 years academic experience as a University of Puerto Rico Associate Professor in Biology.