

## **CEU Evaluation Request**

(14 hours – Wastewater, Water, Onsite Install, Onsite O&M)

**Class:** Wastewater Treatment/Wastewater Collections Certification Review

**Relevancy:** Wastewater, Water, Onsite Install, Onsite O&M

**Date:** Recurring, Various, Ongoing dates

**Location:** Salem, Bend, and various locations.

**Instructor:** Keith Bedell, OAWU Staff

**Description:** This two-day course will provide specific information needed to help prepare for the Wastewater Treatment and/or Wastewater Collections certification exams. A practice exam with answers will be provided to each attendee. Review will include pretreatment, basic math, trickling filters, RBC, basic activated sludge, lagoons, wastewater disinfection, sludge digestion, solids handling and lab procedures.

### Day 1

8:00-10:00 (0.2) Basic math review

- Everyday use of mathematics for wastewater collection and treatment problems.
- Applied math principles in utility operations, including fractions, percentages; basic algebra and proportions.

10:00-10:15 Break

10:15-12:00 (0.175) Basic math review continued

- Applied math with units, conversions and averages; calculation of areas and volumes.
- Applied math with velocity, flow rates, detention times; calculation of weight relationships and calculation of efficiencies.

12:00-1:00 Lunch Break

1:00-2:00 (0.1) Safety

- Discuss the atmospheric hazards that may exist anywhere in a wastewater treatment system where wastewater or wastewater residues (bio-solids) are processed.
- Discuss the chemical hazards present at wastewater treatment facilities (such as chlorine) and understand the MSDS for the chemical products you are working with.

2:00-3:00 (0.1) Pumps, valves and maintenance

- Discuss valve types, maintenance, etc.
- Discuss pump applications and troubleshooting.

3:00-3:15 Break

- 3:15-4:30 (0.125) Lab Procedures and Compliance
- Proper sampling procedures. DMR recording and reporting.
  - Discuss the requisition of supplies, materials and equipment.
  - Discuss pertinent federal, state and local laws, codes and regulations.

## Day 2

- 8:00-10:00 (0.2) Treatment
- Treatment technology: physical-chemical treatment systems and applications.
  - Discuss sludge treatment and applications.
  - Anaerobic/Aerobic treatment and applications.
  - Membrane filtration and applications.
- 10:00-10:15 Break
- 10:15-12:00 (0.175) Treatment Continued
- 12:00-1:00 Lunch Break
- 1:00-3:00 (0.2) Collections
- Discuss wastewater collection system and applications.
  - Pumps stations, lift stations, line viewing and cleaning.
  - Trenching, shoring, etc.
- 3:00-3:15 Break
- 3:15-4:30 (0.125) Disinfection
- Discuss disinfection types: chlorination/dichlorination.
  - Discuss the emerging technologies of ozonation and UV light.
  - Discuss pertinent disinfection guidelines.