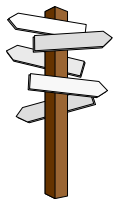


Certification Boulevard



Test Your Knowledge of Wastewater Disposal – answer key

1. What term is typically used to identify toxicity on wastewater effluent discharged to open bodies of water in Florida?
 - a. CBOD₅
 - b. TOC
 - c. TTHM
 - d. **WET**

WET stands for Whole Effluent Toxicity

Submitted by: Brian Benjamin, Certified Operator

2. Which rule provides criteria for re-use of reclaimed water and land application?
 - a. **62-610**
 - b. 62-601
 - c. 62-611
 - d. 62-60
3. What are the principle nutrients that must be removed from effluent before it is safe for discharge to Florida waters?
 - a. Sulfate and Carbon
 - b. Nitrogen and Carbon
 - c. Phosphorus and Sulfate
 - d. **Nitrogen and Phosphorus**

Submitted by: Brian Benjamin, Certified Operator

4. Which Florida Statute establishes the following: “No wastes are to be discharged to any waters of the state without first given the degree of treatment necessary to protect the beneficial use of such waters.”
 - a. **403.021**
 - b. 402.021
 - c. 401.021
 - d. 400.021
5. Given the following data, what is the pressure equivalent expressed in psi delivered by this effluent pump?
 - Pump discharges 3,500 gpm
 - Total dynamic head (TDH) of 125 feet
 - a. 28 psi
 - b. **54 psi**
 - c. 12 psi
 - d. 125 psi

*125 feet TDH x 0.433 psi per foot of head = 54.125 psi OR
125 feet TDH ÷ 2.31 feet of head per psi = 54.112 psi*

Submitted by: Brian Benjamin, Certified Operator

6. Which DEP rule governs the disposal of treated wastewater effluent for Wetlands application in Florida?
- a. 62-612
 - b. 62-601
 - c. 62-610
 - d. **62-611**
7. Given the following data, what is the annual budget for chlorination of reclaimed water at this plant?
- Plant Flow is 13.5 mgd
 - Chlorine Residual is 2.2 mg/L
 - Chlorine Demand is 6.75 mg/L
 - Cost of Chlorine is \$0.15 per Pound
- a. \$28,048 per year
 - b. **\$55,170 per year**
 - c. \$41,609 per year
 - d. \$63,561 per year

*Lbs/day of chlorine used = flow, mgd x (residual, mg/L + demand, mg/L) x 8.34 lbs/gal
= 13.5 mgd x (2.2 mg/L + 6.75 mg/L) x 8.34 lbs/gal
= 1,007.68 lbs/day*

*Cost per day = lbs/day chlorine x cost per pound
= 1,007.68 lbs/day x \$0.15 per lb
= \$151.15 per day*

*Cost per year = cost per day x 365 days/year
= \$151.15 per day x 365 days/year
= \$55,170.48 per year*

Submitted by: Brian Benjamin, Certified Operator

8. Which DEP rule governs wastewater disposal for Wetlands Applications in Florida?
- a. **62-611**
 - b. 62-610
 - c. 62-601
 - d. 62-612
9. Which chemical is typically used to adjust effluent pH (between 6.0 to 8.5) before being discharged to a surface water outfall?
- a. Lime
 - b. Polymer
 - c. **Sodium Hydroxide**
 - d. Alum

10. What typically happens to the ORP value of reclaimed water when the nitrate concentration drops from 6 mg/L to 3 mg/L?
- a. The ORP value increases
 - b. The ORP value decreases
 - c. **The ORP value is fairly unaffected by that level adjustment of nitrates**
 - d. Nitrates at any level will cause a typical ORP probe to fail

Please forward your comments and sample questions for publication to:

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Thanks to Brian Benjamin for his input. Roy