



Certification Boulevard

Test Your Knowledge of Conservation & Reuse- answer key

1. What is the typical permit limitation for nitrates in Florida reuse water applications?
 - A. 25 to 30 mg/l
 - B. 1.5 to 3.5 mg/l
 - C. 1.0 to 1.5 mg/l
 - D. 10 to 12 mg/l
2. Other than sand, what is a typical media used in rapid gravity filters?
 - A. D.E. powder
 - B. Anthracite coal
 - C. Clay
 - D. Talcum powder
3. Calculate the annual savings for chlorine utilization, given the following data:
 - Plant Flow is 7.25 mgd
 - Chlorine Dose Rate is Reduced From 8.3 mg/l to 5.2 mg/l
 - Chlorine Cost is \$0.15 per lb
 - A. \$17,808
 - B. \$10,262
 - C. \$2,248
 - D. \$24,477

$7.25 \text{ mgd} \times (8.3 \text{ mg/l} - 5.2 \text{ mg/l}) \times 8.34 \text{ lbs/gal} \times \$0.15 \text{ per lb chlorine} \times 365 \text{ days/year} = \$10,262.42$
4. Which are typically considered acceptable applications for reuse water in Florida? (select all that apply)
 - A. Surface Water Disposal
 - B. Golf Courses
 - C. Citrus Groves
 - D. Residential Irrigation
5. What is the main difference between a percolation pond (Pond) and a rapid infiltration basin (RIB)?
 - A. A Pond generally has an overflow discharge, and a RIB infiltrates all of its water into the ground through the bottom
 - B. A RIB generally has an overflow discharge, and a Pond infiltrates all of its water through the bottom
 - C. Water infiltrates into a RIB and exfiltrates out of a Pond
 - D. No difference, they are both the same
6. What is the basic purpose for filtration of secondary effluent?
 - A. To make up for poor secondary treatment
 - B. To remove ammonia
 - C. To remove NO₂
 - D. To remove TSS and viruses
7. What is the typical permit requirement for chlorine residual maintenance of reuse water as it leaves the Reclamation Facility in Florida?
 - A. No greater than 1.0 mg/l Total Chlorine Residual
 - B. No less than 0.5 mg/l Total Chlorine Residual
 - C. No greater than 1.0 mg/l Free Chlorine Residual
 - D. No less than 1.0 mg/l Total Chlorine Residual

8. What will a pressure gauge read on the suction of a reuse water pump, if the pump is located at floor elevation of a storage tank, and the tank has a static water level of 12 feet?
- A. About 9.4 psi
 - B. About 27.7 psi
 - C. About 12.0 psi
 - D. About 5.2 psi

$$12 \text{ feet} \times 0.433 \text{ psi per foot of head} = 5.196 \text{ psi}$$

9. What is the total delivered cost for eight (8) valves if one (1) valve costs \$537.99. The valves are shipped according to weight, with each valve weighing 104 lbs, at the rate of \$1.50 per lb?
- A. \$4,303.92
 - B. \$5,551.92
 - C. \$1,249.00
 - D. \$6,551.92

$$8 \text{ valves} \times \$537.99 \text{ per valve} = \$4,303.92 \quad + \quad 8 \text{ valves} \times 104 \text{ lbs/valve} \times \$1.50 \text{ per lb} = \$1,248.00$$
$$\text{Total} = (\$4,303.92 + \$1,248.00) = \$5,551.92$$

10. What is the typical permit requirement for Total Suspended Solids (TSS) of reuse water as it leaves the Reclamation Facility in Florida?
- A. No greater than 1.0 mg/l
 - B. No greater than 10.0 mg/l
 - C. No greater than 5.0 mg/l
 - D. No less than 12.0 mg/l

On behalf of the Operations Research Committee, Florida Water Environment Association, the questions were prepared and presented by:

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