

Operator Quiz Fall 2023 – Test Your Knowledge on Grit Removal

The following questions are designed for individuals/trainees pursuing certification as they prepare to take the ABC wastewater operator test. It is also designed for existing operators to test their knowledge. Each issue of *Clear Waters* will have more questions from a different process of wastewater treatment. Good luck!

- Grit washing is done in order to...?**
 - Remove inorganic matter
 - Remove odor
 - Improve settling
 - Remove organic matter
- How long must a grit channel be to allow for proper settling given the following: Flow velocity = 1.92 ft/sec, Water depth = 32 inches, Particle settling rate = 0.15 ft/sec**
 - 18 ft
 - 14 ft
 - 21 ft
 - 9 ft
- One of the major purposes of grit removal is ...?**
 - Odor control
 - Equipment protection
 - Solids thickening
 - Volatile reduction
- The ideal flow rate in a grit channel is usually...?**
 - 2 ft/sec
 - 5 ft/sec
 - 1 ft/sec
 - 5 ft/sec
- Flow proportional weirs are used in grit basins to...?**
 - Measure flow
 - Maintain a constant flow rate
 - Maintain a constant velocity
 - Prevent a buildup of grit behind the weir
- On average the WRRF collects and disposes 18,000 lbs. of grit per month to the local landfill. If the landfill charges \$56.00 per ton what is the average annual cost of disposal?**
 - \$12,096
 - \$504
 - \$6,048
 - \$8,064
- All of the following will influence the settling velocity of a particle EXCEPT...?**
 - Size
 - Shape
 - Color
 - Density
- In a vortex grit basin, paddles may be used to...?**
 - Create the vortex
 - Keep grit in suspension
 - Achieve proper separation
 - Increase detention time
- In a vortex type grit basin, grit is typically removed...?**
 - With a chain and flight system
 - Manually with shovels
 - With the use of a grit pump
 - With a screw conveyor
- When using a grit basin with a grit pump, _____ can be used to separate the grit and organics from wastewater.**
 - Belt conveyor
 - Screw conveyor
 - Grit cyclone
 - Clamshell bucket

Answers:

- Remove organic matter
- 18 ft
- Equipment protection
- 1 ft/sec
- Maintain a constant velocity
6. (C) \$6,048
- Color
- Achieve proper separation
- With the use of a grit pump
- Grit cyclone

For questions concerning operator certification requirements and scheduling, please contact Carolyn Steinhauer at 315-422-7811 ext. 4, carolyn@nywea.org or visit www.nywea.org.

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