

Quiz 8—Wastewater Treatment: Grit Removal and Primary Treatment

CENG 340—Introduction to Environmental Engineering

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KEY

Name:

1. Grit Removal

(a) What is grit?

Particulate matter: inorganic sand or gravel; eggshells, bone fragments, coffee grounds, fruit & vegetable seeds.

(b) Why is it important to remove grit.

to prevent abrasion of pipes & mechanical equipment.

(c) What is the main mechanism by which grit is removed from wastewater in a grit chamber?

gravity settling

2. Primary Settling

(a) What are the two main treatment objectives of primary settling?

Removal of TSS, BOD, phosphorus too.

(b) Why did primary treatment alone *not* result in swimmable and fishable waterways before secondary treatment became the norm?

Primary settling only removes ~30% of BOD.

BOD \rightarrow O₂ depletion \rightarrow polluted waterways.