

WASTEWATER TREATMENT PLANT OPERATOR EXAMINATION
GRADE 2 STUDY GUIDE OUTLINE

The following is a general outline to serve as a study guide in preparing for the Grade 2 examination. All areas may not be covered on any one exam, nor does the outline necessarily include all topics, which may appear on an exam. The percentage value shown after each major heading gives the approximate relative value of that area on the exam.

- | | |
|---|---|
| I. General Knowledge approx. 10%
A. Wastewater Characteristics
B. Mathematics
C. Overall Treatment
D. Biology
E. Chemistry | II. Preliminary Treatment approx. 10%
A. Design Parameter
B. Operating Parameters |
| III. Primary Treatment approx. 10%
A. Design and Purpose
B. Operating Parameter
C. Troubleshooting | IV. Secondary Treatment approx. 25%
A. Process, Characteristics and Concepts
B. Operating Parameters
C. Calculations |
| V. Disinfection approx. 10%
A. Purpose and Application
B. Factors which Control Disinfection
C. Calculations | VI. Solids Handling approx. 10%
A. Operating Parameters
B. Troubleshooting
C. Chemical Usage |
| VII. Laboratory approx. 7%
A. Sampling
B. Basic Concepts
C. Calculations | VIII. Safety 5%
A. Breathing
B. Laboratory
C. Electrical |
| IX. Maintenance approx. 12%
A. Lubrication
B. Electrical
C. Instrumentation | |

There are several publications available which are useful in preparing for the exam although you will not find it necessary to be familiar with all of them in order to do well on the test.

The Sacramento Course

Standard Methods Latest Edition

Water Pollution Control Federation manuals Nos. 1, 4, 11, 16, 18, 20

The New York Manual

ABC Guide to the ABC Testing Services for Wastewater Collection Systems and treatment Plant Operators -
Volumes 1 and 2

These publications can be reviewed in the Office of Water Resources, RIDEM, 235 Promenade Street, Providence, RI (401) 222-6820.

GRADE 2

Sample Questions

1. Determine the geometric mean on the following fecal coliform sample counts:
12, 640, 2300
 - A. 1040
 - B. 260
 - C. 984
 - D. 14.3
 - E. 5888

2. A properly operating Reactor Thickener will increase the solids concentration of sludge by:
 - A. 2-5%
 - B. 6-10%
 - C. 20-30%
 - D. 35-50%

3. Bubbles are noted in the secondary clarifier. The cause would be:
 - A. MLSS greater than 3000 mg/l
 - B. Improperly operating grit chamber
 - C. Low chlorine demand
 - D. Dentrification

4. Mixed Liquor Suspended Solids are 2500 mg/l, the 30 minute settable solids is 200ml/l. What is the SVI?
 - A. 80 ml/g
 - B. 2400 ml/g
 - C. 12.5 ml/g
 - D. 200 ml/g

5. What is the purpose of secondary clarifier?
 - A. They add air to the primary influent
 - B. They provide air to the final contact tank
 - C. They allow solids to settle
 - D. They disinfect the incoming waste water

Answers: 1) B 2) A 3)D 4) A 5) C