



A Non-Profit Educational Corporation

OCT ACADEMY
Class Description submittal to OESAC

Title: **Water Distribution Certification Review**
Grades 1-2

New Class, or **Class Renewal**

CEU Award requested: **0.7 CEUs**

OVERVIEW:

The Water Distribution Certification Review Grades 1-2 is a one (1) day review that prepares operators to sit and pass lower level state distribution operations examinations by putting operators through a review of multiple operations subject matter topics prior to actually taking the state exam.

CLASS DESCRIPTION:

Typical examination questions in each subject area are offered in multiple choice formats. Operators are asked to work the questions found within each Chapter. Then, score their answers using the letter answer key provided at the end of each chapter. Participants are also given an opportunity to review individual questions to learn missing, unlearned or unknown subject matter with the instructor.



OUTLINE:

1. **Disinfection.**
2. **Distribution Glossary terms.**
Water Storage
3. **Distribution System Design / Hydraulics**
4. **Drinking Water Regulations / Management / Safety**
5. **Equipment Operation / Maintenance / Inspections.**
6. **Water Mains and Piping**
7. **Water Quality / Water Sources.**


Water Distribution supporting **Math** is instructed in a separate full two (2) - day workbook – lecture session.

DETAILED SUPPORTING DESCRIPTION:

1. **Disinfection:**
Water Main Disinfection, Well Disinfection, Disinfectant By-Products, Chloramination, Chlorine Curve Chemistry, Storage Reservoir Disinfection, and Types of Disinfectants.
2. **Distribution Glossary of Words and Terms:**
Understanding of words and terms used within the water utility industry.

A photograph of a chlorine test strip. The strip is white with a grid pattern. The word 'Chlorine' is printed at the top. The number '17' is printed in the center. Below '17' is the chemical symbol 'Cl'. The number '35.45' is printed below 'Cl'. The number '3.0' is printed to the right of '35.45'. The number '18' is printed at the top right. The number '39.' is printed at the bottom right. The number '2.5' is printed at the bottom left. The number '0.07' is printed at the bottom left. The number '6' is printed at the top left. The number '3.0' is printed at the top left. The number 'Kr' is printed at the bottom right.

Chlorine

3. **Distribution System Design / Hydraulics:**
System Layout, Storage Facilities, Cross-Connection and Backflow Devices, Service Connections, Systems Map, Assess System Demand, Flow Rates and Velocity, Head Loss, Cavitation, Water Hammer, Water Pressure and Volume, Static and Dynamic Pressure Drinking
4. **Water Regulations/Management / Safety:**
Disinfection-By-Product Rule, Lead and Copper Rule, MCLs, Monitoring and Sampling Requirements, Public Notification, Safe Drinking Water Act, Total Coliform Rule, Operator Certification Regulations, Administer Compliance, Budgets, Emergency Response Planning, Future Planning, Maintenance Plan, Safety Plan, Water Conservation Planning, Water Rates.
5. **Equipment Operation / Maintenance / Inspections:**
Valves, Water Meters, Hydrants, Chemical Feeders, Corrosion, In-Line Sensors, Power Generators, SCADA, Pump Types, Uses, and Sizes, Troubleshoot and Repair Pumps and Motors, Water Horsepower, Inspection of Water Mains, Piping, Storage Tanks, and Equipment Installation and Repair, and Wells (new and abandoned).
6. **Water Mains and Piping:**

 Cleaning and Maintenance, Excavation, Installation, and Repair, Joints and Fittings, Leak Detection and Repair, Pipe Selection, and Service Line Installation
Gate Valve.
7. **Water Quality / Water Sources:**
Coliform Group, Corrosivity, Heterotrophic Bacteria, Organic and Inorganic Contaminants, pH, Conductivity, Hardness, and Turbidity, Unidirectional Flushing, Waterborne Diseases, Groundwater, Wells, and Sanitary Survey.



Water Distribution Certification Review Grades 1-2

Day 1

Start Time	End Time	Instructional Time	Break Time	Chapter/Discussion/Quiz
8:00am	8:50am	50 minutes		Introduction, Chapter 1: Disinfection
8:50am	9:00am		10 minutes	Break
9:00am	9:50am	50 minutes		Chapter 2: Glossary of Words and Terms
9:50am	10:00am		10 minutes	Break
10:00am	10:50am	50 minutes		Chapter 3: Distribution system Design/Hydraulics
10:50am	11:00am		10 minutes	Break
11:00am	12:00pm	60 minutes		Chapter 3 Continued: Distribution system Design/Hydraulics
12:00pm	12:30pm		30 minutes	Lunch
12:30pm	1:20pm	50 minutes		Chapter 4: Water Regulations/Management/Safety
1:20pm	1:30pm		10 minutes	Break
1:30pm	2:20pm	50 minutes		Chapter 5: Equipment Operation/Maintenance/Inspection
2:20pm	2:30pm		10 minutes	Break
2:30pm	3:20pm	50 minutes		Chapter 6: Water Mains and Piping
3:20pm	3:30pm		10 minutes	Break
3:30pm	4:30pm	60 minutes		Chapter 7: Water Quality/Water Sources
		420 minutes		

8 Chapters with 50 minutes of instruction equals 420 minutes. 420 minutes equates to 7 hours of instruction which is 0.7 CEUs