



A Non-Profit Educational Corporation

OCT ACADEMY
A U.S. Government Education Contractor
Class Description submittal to OESAC

Title: **Collection System Certification Review**

- New Class or Class Renewal
 Classroom or Distance Education

CEU Award requested: **0.7 CEUs**

OVERVIEW:

The one (1) – day Grade 1 - 4 Collections Certification Review summaries typical operations unit components in a collections system. This class reviews collection system basics and prepares operators for Grade 1 – 4 State examinations.

CLASS DESCRIPTION:

Text chapters as outlined:

- 10 Collection System Chapter Reviews.
- Multiple Choice questions, and Collections math problem Review
- Discussions to Support Correct Answers

OUTLINE:

Operations text information and Exam Level Collection System Questions with end of Chapter Multiple Choice Answers and problem solutions.

1. Step-By-Step Method / Scientific Calculator
2. Summary of Key Formulas
3. Glossary of Collections Terms & Definitions
4. Collections System Components
5. Utility Mapping, Blueprints and Slope & Grade.
6. Design & Construction of a Gravity collection System
7. Inflow
8. Infiltration
9. Exfiltration
10. Lift Pump Stations
11. Operation & Maintenance of Collection System Components
12. Safety
13. Traffic Safety



**Ed Norton – Sewer
Maintenance worker,
circa 1956.**

TIME PRESENTATION OUTLINE:

Start Time	End Time	Instructional Time	Allotted Break Time	Chapter/Discussion/Quiz
8:00am	8:50am	50 minutes	8:50am–9:00am	Introduction and Overview
9:00am	9:50am	50 minutes	9:50am–10:00am	Summary of Key Formulas
10:00am	10:50am	50 minutes	10:50am-11:00am	Wastewater Glossary of Terms
11:00am	12:00pm	60 minutes	12:00pm-12:30pm	Collections System Components
12:30pm	1:20pm	50 minutes	1:20pm-1:30pm	Utility Mapping, Blueprints and Slope & Grade
1:30pm	2:20pm	50 minutes	2:20pm-2:30pm	Design & Construction of a Gravity collection System, Inflow
2:30pm	3:20pm	50 minutes	3:20pm-3:30pm	Infiltration, Exfiltration, Operation & Maintenance of Collection System Components
3:30pm	4:30pm	60 minutes		Safety / Traffic Safety
		420 minutes		

6 sessions of 50 minutes of instruction and 2 sessions of 60 minutes of instruction equals 420 minutes. 420 minutes equates to 7 hours of instruction divided by 10 which is 0.7 CEUs.

DETAILED SUPPORTING DESCRIPTION:

Excerpt Chapter 6 – Design Elements

Slope, Flow and Velocity

Design and construction of a gravity flow collection system is the desired and most cost-effective collection system to operate and maintain. Thus, every possible attempt to follow the natural downhill contour of the earth along the sewer’s route is the most practical approach whenever possible. There should be enough slope to produce gravity flow and maintain the minimum desired scouring velocity. The optimum speed of wastewater flow to reach a “souring velocity” will be at the speed of two (2) feet per second, or greater. Scouring velocity can still be achieved if the design is calculated to produce the proper velocity during the average daily flow, or at very least, the minimum flow.

Continuing with the design features of a collection system, let’s focus on the pipeline size in diameter. Whatever the size of the pipe to be installed, the cleaning and maintenance picture should be carefully crafted and reviewed prior to construction. The proper size of the pipeline will be related to the cleaning method to be used in the maintenance of the line after construction. The pipeline will be approximately half-full (1/2) when the peak daily dry weather flow s being carried and almost completely full when the wet weather daily flow is present.

END