



Yukon Water & Wastewater Operator Program

Water Distribution Systems Operations

Course Outline

Course Description

This 4.5 day course is designed to provide the operator with knowledge and practical (hands-on) experience on a live 6 inch water distribution system including components such as fire hydrants, valves, meter, gauges, and backflow prevention. The time distributed for this course is roughly 2/3 theory and 1/3 practical. The main objective of the course is for the operator to understand the components that make up a water distribution systems as well as proper operation and maintenance of the system. This course is NOT designed to prepare the operator to write a certification exam.

Course Pre-requisites

There are no specific pre-requisites for this course. However, Grade 12 (or equivalent) math skills are an asset. Math upgrades are available –contact us.

CEU Credit

This course is currently under review with EOCP.

Course Duration

- 4.5 days
- 8:30 am to 4:00 pm each day (except 5th day from 8:30 am to 12:00 am)
- 1 hour lunch break
- morning and afternoon break (15 minutes each)

Course Agenda and Objectives

Introduction

- Housekeeping
- Instructor Introduction
- Operator Introduction

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- EOCP Certification and Renewal

Water Facts

- Percent Fresh Water on Earth
- The Hydrologic Cycle
- Oceans
- The Plastic Island
- Prescription Drugs

The Basic Water Distribution System

- Development
- Materials
- Watering Points and Hauling
- Advantages/Disadvantages
- Leaks & Breaks
- Couplings
- Fittings
- Pipe Data

Piping Systems in Detail

- History of piping Systems
- Types of Piping Material
- Advantages and Disadvantages of the Types of Materials
- Types of Joints and Fittings
- Common Pipe Repairs
- Thawing Methods
- Fitting Description Sequence

Safety Considerations

- Responsibilities
- Personal Protective Equipment
- Tools
- Working Around Heavy Equipment
- Trench Excavation/Shoring
- Construction Site Safety
- Traffic Control & Safety

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Fire Hydrant Operation & Inspection

- Uses of Hydrants
- Types of Hydrants
- Advantages/Disadvantages
- Structure/Operation/ Maintenance

Distribution System Valves

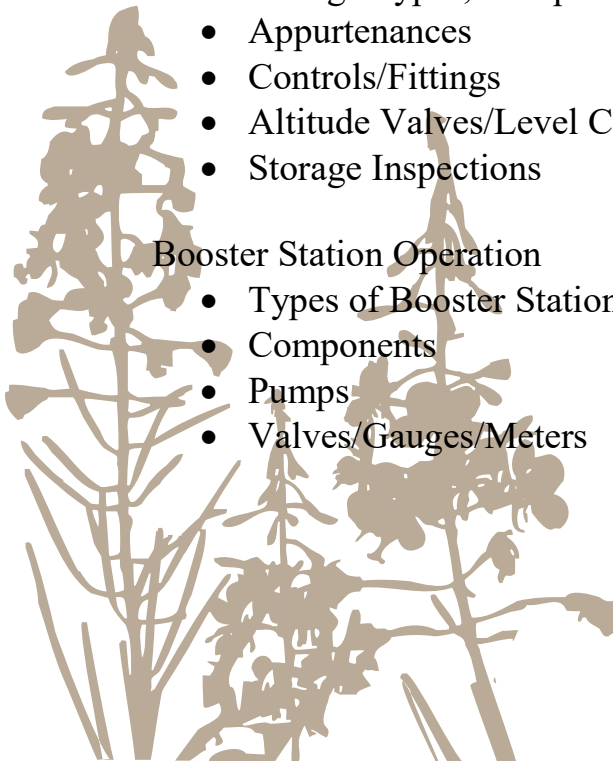
- Basic Valve Nomenclature
- Functions
- Types/Applications
- General Operation of Valves
- Valve Boxes & Lids
- Flow, Pressure, & Surge Control
- Cross Connection
- Line Valve Exercising Program
- Air Valve Inspection
- Routine Maintenance

Distribution Storage

- Normal Operation
- Emergency Storage
- Uses of Distribution Storage
- Storage Types, Components, Construction Materials
- Appurtenances
- Controls/Fittings
- Altitude Valves/Level Controls
- Storage Inspections

Booster Station Operation

- Types of Booster Stations
- Components
- Pumps
- Valves/Gauges/Meters



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Customer Services

- Saddles
- Corporate, Curb, and Pitorifice Stops
- Meter Types, Construction, and Installation
- Tapping

Distribution System Inspection & Monitoring

- Mapping and Dig Packages
- Water Quality Monitoring
- Corrosion Control
- Flushing Program

Meters & Gauges

- Small Flow Types
- Large Flow Types
- Combination (Compound Meters)
- Gauges & Registers

Four Day Outline

Day One:

8:30 am to 9:00 am: Introduction

9:00 am to 10:00 am: Water Facts

10:00 am to 10:15 am: *Health Break*

10:15 am to 12:00 pm: The Basic Water Distribution System

10:30 am to 12:00 pm: *Lunch Break*

1:00 pm to 2:15 pm: The Basic Water Distribution System (cont.....)

2:15 pm to 2:30 pm: *Health Break*

2:30 pm to 4:00 pm: Hand-on Training: Live Distribution System:

Day Two:

8:30 am to 10:00 am: Piping Systems in Detail

10:00 am to 10:15 am: *Health Break*

10:15 am to 12:00 pm: Piping Systems in Detail (cont.....)

12:00 pm to 1:00 pm: *Lunch Break*

1:00 pm to 1:45 pm: Piping Systems in Detail (cont.....)

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1:45 pm to 2:15 pm: Hand-on Training: Live Distribution System
2:15 pm to 2:30 pm: *Health Break*
2:30 pm to 4:00 pm: Hand-on Training: Live Distribution System (cont.....)

Day Three:

8:30 am to 10:00 am: Safety Considerations
10:00 am to 10:15 am: *Health Break*
10:15 am to 12:00 pm: Fire Hydrant Operation & Maintenance
12:00 pm to 1:00 pm: *Lunch Break*
1:00 pm to 2:15 pm: Hand-on Training: Live Distribution System
2:15 pm to 2:30 pm: *Health Break*
2:30 pm to 4:00 pm: Hand-on Training: Live Distribution System (cont.....)

Day Four:

8:30 am to 10:00 am: Distribution System Valves (1.5)
10:00 am to 10:15 am: *Health Break*
10:15 am to 11:15 am: Distribution Storage (1.0)
11:15 am to 12:00 pm: Booster Station Operation (0.75)
12:00 pm to 1:00 pm: *Lunch*
1:00 pm to 2:00 pm: Customer Services (1.0)
2:00 pm to 2:15 pm: *Health Break*
2:15 pm to 4:00 pm: Hand-on Training: Live Distribution System (1.75)

Day Five (1/2 day)

8:30 am to 9:30 am: Distribution System Inspection & Monitoring
9:30 am to 10:15 am: Meters & Gauges
10:15 am to 10:30 am: *Health Break*
10:30 am to 12:00 pm: Hand-on Training: Live Distribution System

Course Requirements

Attendance and participation in class are required. CEUs will be allocated based on attendance and course completion; Yukon College records will show a pass or fail result. If the participant doesn't attend the class, Yukon College records will show a "no show" result and no CEUs will be allocated.

Evaluation

There will be a quantifiable evaluation at the end of this course with a passing mark of 70%. If anyone fails this evaluation, arrangements can be made for a re-assessment. Please note that this evaluation is for self-assessment purpose only.

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