



Water Systems Operations Specialist



Vermont Rural Water Association

Appendix A-1

WORK PROCESS SCHEDULE

AND

RELATED INSTRUCTION OUTLINE



Water Systems Operations Specialist

Appendix A-1

WORK PROCESS SCHEDULE

OCCUPATION TITLE: Water Systems Operation Specialist

(Public Water System Operator, Water Treatment Operator)

O*NET-SOC CODE: 51-8031.00

RAPIDS CODE: 0507

This schedule is attached to and a part of these Standards for the above identified occupation.

1. TYPE OF OCCUPATION

Time-based Competency-based Hybrid

2. TERM OF APPRENTICESHIP

The term of the occupation is two (2) years with an OJL attainment of approximately 4,000 hours, supplemented by a recommended 288 hours of related instruction.

3. RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: one (1) Apprentice to one (1) Journeyworker on the jobsite.

4. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages as identified by each participating employer outlined in Appendix E. At no period of the apprenticeship should the wage fall below the current Vermont Minimum Wage.

5. WORK PROCESS SCHEDULE (See attached Work Process Schedule)

6. RELATED INSTRUCTION OUTLINE (See attached Related Instruction Outline)



Water Systems Operations Specialist

WORK PROCESS SCHEDULE

OCCUPATION TITLE: Water Systems Operation Specialist
 (Public Water System Operator, Water Treatment Operator)
O*NET-SOC CODE: 51-8031.00 **RAPIDS CODE: 0507**

Apprentices shall receive on-the-job instruction and experience as is necessary to become a qualified Water Systems Operations Specialist versed in the theory and practice of the occupation. The following is a condensed schedule of work experience, which every apprentice shall follow as closely as conditions will permit.

WORK PROCESSES	Approximate Hours
A. Tools, Equipment and Work Place Safety <ol style="list-style-type: none"> 1. Become familiar with tools, pipe and other materials used out on the job 2. Understand and use personal protective equipment and safety procedures 3. Demonstrate general plant safety and security operations 4. Plan and set up work areas for safety of crew and public 5. Confined spaces and traffic control zones 6. Perform all work in conformance with OSHA regulations 	240
B. Vehicles and Heavy Equipment <ol style="list-style-type: none"> 1. Ensure that vehicles and equipment are adequately stocked & serviced 2. Become familiar working with excavation and other heavy equipment 	400
C. System Operations & Maintenance <ol style="list-style-type: none"> 1. Develop a working knowledge of the operation, methods and procedures of a water treatment & distribution system 2. Perform installation and inspection of new water lines and services 3. Understand and implement customer metering and billing procedures 4. Perform leak detection and understand water loss control 5. Reading water meters, perform testing & proper sizing 6. Demonstrate ability to read and interpret maps and drawings of the water system, to locate valves and water mains 7. Assist with the installation, maintenance and repair of the treatment plant, storage tanks, and the distribution system 8. Develop a working knowledge of preventive maintenance, troubleshooting & repair of mechanical equipment 	1920
D. Quality Control <ol style="list-style-type: none"> 1. Learn to perform all aspects of sampling, monitoring and testing required to maintain compliance with Federal State and Local regulations 2. Identify normal/out-of-range values 3. Maintain open communication & report results to supervisors 4. Learn emergency response procedures 	960
E. Logistics, Reports and Supervision <ol style="list-style-type: none"> 1. Complete work order forms & document routine maintenance 2. Order equipment and supplies as needed 3. Visit other facilities to learn about new technology 	480
TOTAL HOURS	4000



Water Systems Operations Specialist

Related Technical Instruction

OCCUPATION TITLE: Water Systems Operation Specialist

(Public Water System Operator, Water Treatment Operator)

O*NET-SOC CODE: 51-8031.00

RAPIDS CODE: 0507

A minimum of 288 hours of related instruction are required for each apprentice. Courses may be assigned from any of the following offerings.

Drinking Water Year 1 Curriculum – 144 HOURS		
Course Title	Hours	Instructor
REQUIRED COURSES (total of 128 training hours)		
Apprenticeship Program Orientation	6	VRWA
Advanced Operator Certification	45	VRWA
Distribution Course	15	VRWA
Basic Math	3	VRWA
Basic Excel	3	VRWA
First Aid, CPR & AED	6	Red Cross
OSHA 10 Hour Industry	10	Earth Water or AGC
OSHA Trenching and Excavation	20	OSHA EDNE
Permit-Required Confined Space Entry	20	OSHA EDNE
	128	
ELECTIVE COURSES (to total at least 16 hours)		
Operator Sampling Training	3	VRWA
Line Location and Leak Detection	6	VRWA
Introduction to GPS and GIS	16	VRWA or VCGI
Lockout Tagout	7	OSHA EDNE
Flagger Training	4	VRWA or AGC
<i>Total Elective Hours Available - Classroom</i>	<i>36</i>	
Total Formal Training Hours - Year 1	144	



Water Systems Operations Specialist

Drinking Water Year 2 Curriculum – 144 HOURS		
Course Title	Hours	Instructor
REQUIRED COURSES (total of 55 training hours)		
Water and Wastewater Ethics	4	VRWA
Utility Management Certification	12	VRWA
Incident Command System Level 100	8	VRWA, FEMA or VEM
Incident Command System Level 200	12	FEMA or VEM
Basic Environmental Chemistry	10	Suncoast
Asset Management and Sustainability	6	VRWA
Regulatory Updates	3	VRWA and DEC
	55	
CLASSROOM ELECTIVE COURSES (to total at least 89 hours)		
Introduction to Utility Management	72	GMWEA and/or VRWA
Incident Command System Level 300	14	FEMA or VEM
Affordable Control and Telemetry	4	VRWA
Corrosion Control	4	VRWA
Blueprint Reading	6	VRWA
Preparing for a Sanitary Survey	4	VRWA
Operations and Maintenance Manuals	3	VRWA
Source Water Protection	6	VRWA
Backflow Prevention	6	VRWA
Budgets and Rates	4	VRWA
Metering	3	VRWA
<i>Total Elective Hours Available - Classroom</i>	<i>126</i>	
Total Formal Training Hours - Year 2	144	



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Suncoast Water Classes - can be taken as Electives at any point		
Chemical Feed Systems & Pump Calibrations	5	Suncoast
Chlorinator Systems and Chemical Handling	10	Suncoast
Pump and Motor Maintenance	10	Suncoast
Valve and Hydrant Maintenance	5	Suncoast
Water Utility Calculations	10	Suncoast
Water Utility Safety	10	Suncoast
Advanced Operator Mathematics	10	Suncoast
Corrosion Control Treatment Optimization	10	Suncoast
Customer Inspection & Cross-Connection Control	5	Suncoast
Disinfection By-products	12	Suncoast
Drinking Water Filtration, A-Z	10	Suncoast
<i>Total Online Elective Hours Available</i>	<i>97</i>	
<i>not to exceed 50% of total training hours for any given year</i>		