

DACUM Research Chart for Class II Water Distribution Operator

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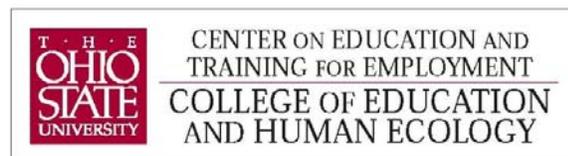
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DACUM Research Chart for Class II Water Distribution Operator

| Duties | | Tasks | | | | |
|----------|-------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------|
| A | Maintain Water Mains & Valves | A-1 Repair water main breaks | A-2 Install water mains | A-3 Flush water mains | A-4 Refurbish water mains (e.g., pigging, relining) | A-5 Perform leak detection |
| | | A-13 Install main line valves | A-14 Adjust valve boxes (e.g., main line, service) | A-15 Maintain valve pits & vaults | A-16 Abandon old/unused service lines | A-17 Perform site restoration (e.g., lawn, concrete, asphalt) |
| B | Maintain Water Quality | B-1 Develop sample siting plan | B-2 Perform chlorine residual test | B-3 Collect water samples for total coliform test | B-4 Collect water samples for phosphate test | B-5 Collect water samples for lead & copper test |
| C | Maintain Fire Hydrants | C-1 Exercise hydrants | C-2 Exercise watch valves | C-3 Repair hydrants | C-4 Repair watch valves | C-5 Perform preventive maintenance on hydrants (e.g., paint, grease, remove chains) |
| D | Maintain Water Meters | D-1 Read water meters | D-2 Test water meters | D-3 Repair water meters | D-4 Replace water meters | D-5 Install remote reading devices |
| E | Maintain Pumps & Storage Tanks | E-1 Inspect pumps (e.g., water, chemical feed) | E-2 Perform preventative booster pump maintenance | E-3 Perform preventative chemical feed pump maintenance | E-4 Repair booster pumps | E-5 Repair chemical feed pumps |
| F | Maintain Distribution Records | F-1 Update backflow records | F-2 Maintain water sample reports | F-3 Prepare water main repair report | F-4 Track unaccounted-for water | F-5 Prepare daily, monthly, & quarterly reports (e.g., pumpage, demand, tank levels) |
| | | F-12 Prepare service orders | F-13 Update inventory records | F-14 Maintain customer service records | | |
| G | Perform Administrative Tasks | G-1 Prepare EPA reports (e.g., lab, MOR, depressurization) | G-2 Prepare employee work schedules | G-3 Assign employee tasks | G-4 Provide employee training (e.g., SOPs, safety, equipment) | |
| | | G-11 Coordinate EPA surveys | G-12 Prepare public notifications (e.g., boil alerts, service interruptions) | | G-13 Administer backflow prevention program | G-14 Prepare operations policies & procedures |
| H | Provide Customer Service | H-1 Provide emergency services (e.g., shut offs, no water) | H-2 Respond to customer concerns (e.g., aesthetics, high usage) | H-3 Distribute public notifications (e.g., boil alert, service interruptions) | | H-4 Locate water utilities |
| I | Maintain Professional Development | I-1 Inspect equipment & tools | I-2 Perform preventative maintenance | I-3 Perform minor equipment repairs | I-4 Report unsafe equipment & tools | I-5 Clean equipment & tools |

| | | | | | | |
|-----------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------|------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------|
| A-6 Repair service lines | A-7 Install service lines & taps | A-8 Locate appurtenances (e.g., valves, curb boxes, service lines) | A-9 Inspect water line installations | A-10 Inspect service line installations | A-11 Exercise main line valves | A-12 Repair main line valves |
| | | | | | | |
| B-6 Collect water samples for TTHM | B-7 Collect water samples for HAA5 | B-8 Calculate chemical dosages | B-9 Monitor residence times | B-10 Minimize detention times | B-11 Flush dead ends | |
| C-6 Conduct hydrant flow tests | C-7 Conduct hydrant pressure test | C-8 Replace hydrants | C-9 Install watch valves | C-10 Relocate hydrants | C-11 Locate watch valves & hydrants | C-12 Adjust hydrants (e.g., raise, lower) |
| D-6 Install water meters | D-7 Maintain water meter vaults/pits | D-8 Install deduct meters | | | | |
| E-6 Replace booster pumps | E-7 Replace chemical feed pumps | E-8 Maintain pump facility (e.g., chemical, booster) | E-9 Inspect storage tanks | E-10 Perform minor storage tank repairs (e.g., spot paint, change lights) | E-11 Maintain grounds (e.g., mow, weed control, trimming) | |
| F-6 Update distribution system map (e.g., main line breaks, new installations, appurtenances) | | F-7 Update hydrant flushing records | F-8 Prepare hydrant status report | F-9 Update valve operating records | F-10 File construction records & drawings | F-11 File inspection records & reports |
| | | | | | | |
| G-5 Assist with Human Resource functions (e.g., hiring, grievances, evaluation) | | G-6 Participate in meetings (e.g., staff, council) | G-7 Develop budgets (e.g., operating, capital) | G-8 Review plans & contracts | G-9 Develop Consumer Confidence Report (CCR) | G-10 Perform safety inspections (e.g., OSHA, PERRP) |
| G-15 Write specifications for materials & equipment | G-16 Maintain materials inventory | G-17 Track operational efficiencies | G-18 Administer disinfection by-products rule | G-19 Process correspondence (e.g., e-mails, snail mail) | G-20 Maintain databases | G-21 Update contingency plan |
| H-5 Distribute Consumer Confidence Report (CCR) | H-6 Provide inspection services | H-7 Turn on/off water service | H-8 Investigate unusual water usage rates | H-9 Perform service line leak detection | H-10 Coordinate with other government departments (e.g., police, fire, parks) | |
| I-6 Store equipment & tools | I-7 Update equipment maintenance logs | I-8 Perform software updates | | | | |

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| Duties | | Tasks | | | |
|------------------------------------------------------|------------------------------------------------------------------------|-----------------------------|-----------------------------------|----------------------------------------------|----------------------------------------------|
| J Continue Professional Development | J-1 Obtain contact hours | J-2 Pursue higher education | J-3 Network with peers | J-4 Participate in conferences & trade shows | J-5 Participate in safety education training |
| | J-6 Participate in professional organizations (e.g., AWWA, ORWA, APWA) | | J-7 Participate in cross training | J-8 Research professional literature | J-9 Pursue career advancement |

General Knowledge and Skills

| | |
|---------------------------|---------------------------------------------------|
| Business conduct/ethics | Documentation skills |
| Basic computer skills | Organizational skills |
| First aid | Read schematics and blueprints |
| Multitasking skills | Basic electrical knowledge |
| Basic plumbing | Troubleshooting skills |
| Heavy equipment operation | EPA regulations |
| Basic budgeting | Hazardous materials handling |
| Leadership skills | Equipment maintenance |
| Project management skills | Basic water chemistry |
| Meter reading skills | Best management practices |
| Hydraulics and pneumatics | Communication skills (written, verbal, listening) |
| Public relations skills | Cardiopulmonary Resuscitation (CPR) |
| Hydrant operations | Fluid dynamics |
| Time management skills | Safety regulations |
| Basic math | |
| Hydrology | |

Worker Behaviors

| | |
|-----------------|-----------------------|
| Detail oriented | Motivated |
| Creative | Dependable |
| Resourceful | Team oriented |
| Assertive | Change oriented |
| Observant | Thick skinned |
| Flexible | Calm under pressure |
| Versatile | Adaptable |
| Dedicated | Self-disciplined |
| Safety oriented | Supportive |
| Self Starter | Determined |
| Problem solver | Decisive |
| Responsive | Confident |
| Responsible | Common sense |
| Trustworthy | Mechanically inclined |

Future Trends and Concerns

- Shrinking labor pools
- Increased complexity of equipment
- Increasing regulatory environment
- Increased automation (SCADA, GIS, GPS)
- Increasing environmental concerns
- Increasing operating costs
- Increasing energy demands
- New material technology
- Growing Homeland Security requirements
- Increasing paperwork and documentation concerns
- Shrinking budgets
- Inferior materials
- Availability of adequate supplies of potable water
- Meeting increased demand

Acronyms

| | |
|-------|-------------------------------------------|
| APWA | American Public Works Association |
| AWWA | American Water Works Association |
| CCR | Consumer Confidence Report |
| GIS | Geographic Information System |
| GPS | Global Positioning Satellite |
| HAA5 | Haloacetic Acid |
| MOR | Monthly Operating Report |
| ORWA | Ohio Rural Water Association |
| PERRP | Public Employees Rule Reduction Program |
| OSHA | Occupational Safety Health Administration |
| SCADA | Supervisory Control and Data Acquisition |
| TTHM | Total trihalomethanes |

Class II Water Distribution Operator

Tools, Equipment, Supplies and Materials

| | | |
|-------------------------|-------------------------------|-----------------------|
| Basic hand tools | Gas detector | Meter reading devices |
| Skid loader | Spoon | Hoses |
| Basic garden tools | Tripod & harness | Digital camera |
| Power tools | Fall protection equipment | Cell phone |
| Hydrant wrench | Pressure washer | Asphalt roller |
| Valve key | Portable trash pump | Compactors |
| Backhoe | Testing equipment | SCADA equipment |
| Metal detector | Strobe lights | Line locators |
| Pipe cutter | 2-way radio | Leak detectors |
| Air compressor | Generator | Dump truck |
| Boring machine | Personal protective equipment | Vacuum truck |
| Arrow board | Computer/related peripherals | Jackhammer |
| Pressure gauge | Tap machine | Transit |
| Trench Box | Partner saw | Pneumatic tools |
| Water line fittings | Cutting torch | Calculator |
| Laser level | Portable lights | Pilot tube |
| Emergency lights | Water sampling equipment | Water pressure gauge |
| Traffic control devices | | Traffic cones |
| Ladders | | |