DACUM Research Chart for
Class 1 Wastewater Collection System Operator

DACUM Panel

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Sponsored by
OhioEPA

Produced by

1900 Kenny Road
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August 14-15, 2008
<table>
<thead>
<tr>
<th>Duties</th>
<th>Tasks</th>
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<tbody>
<tr>
<td><strong>Inspect Collection System</strong></td>
<td>A-1 Monitor SCADA status</td>
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<tr>
<td><strong>Maintain Force Main System</strong></td>
<td>A-13 Perform pressure tests on sanitary sewers</td>
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<tr>
<td><strong>Maintain Gravity Sewer System</strong></td>
<td>B-1 Respond to alarm conditions</td>
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<tr>
<td><strong>Repair Collection System</strong></td>
<td>B-11 “Pig” the force main</td>
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<td></td>
<td>B-12 Perform preventive maintenance on security screening around lift stations</td>
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<tr>
<td><strong>Provide Customer Service</strong></td>
<td>C-1 Jet-Vac sanitary sewers</td>
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<tr>
<td><strong>Investigate Inflow &amp; Infiltration</strong></td>
<td>D-1 Repair/replace lift station pumps &amp; motors</td>
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<tr>
<td><strong>Correct Inflow &amp; Infiltration</strong></td>
<td>D-13 Adjust manhole grade rings</td>
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<tr>
<td><strong>Perform Equipment Maintenance</strong></td>
<td>E-1 Process customer complaints</td>
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<tr>
<td><strong>Maintain Collection System Records</strong></td>
<td>F-1 Conduct visual inspection of manhole condition &amp; flow</td>
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<td>G-1 Remove illegal connections</td>
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<td>H-1 Inspect safety equipment</td>
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<td>I-1 Record collection system problem areas</td>
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<tr>
<td>A-6 Inspect overflow regulators</td>
<td>A-7 Inspect CSO outfalls</td>
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<tr>
<td>B-5 Perform preventative maintenance on air releases</td>
<td>B-6 Exercise force main valves</td>
</tr>
<tr>
<td>C-6 Degrease sanitary sewers</td>
<td>C-7 Perform calcium removal</td>
</tr>
<tr>
<td>D-6 Repair/replace air releases</td>
<td>D-7 Repair gravity sewer leaks</td>
</tr>
<tr>
<td>E-6 Mark OUPS responses</td>
<td>E-7 Demonstrate collection system equipment to public</td>
</tr>
<tr>
<td>F-5 Conduct dye test of sewers</td>
<td>F-6 Perform video inspections of sewers</td>
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<td>G-6 Reline sanitary sewer</td>
<td>G-7 Relocate catch basin connections</td>
</tr>
<tr>
<td>H-5 Perform preventive maintenance on portable pumps</td>
<td>H-6 Perform preventive maintenance on portable generators</td>
</tr>
<tr>
<td>I-6 Process equipment maintenance records</td>
<td>I-7 Update sewer maps</td>
</tr>
</tbody>
</table>

**Acronyms**

- CSO: Combined sewer overflow
- MH: Manhole
- OUPS: Ohio Utility Protection Service
- PLC’s: Programmable Logic Controllers
- SCADA: Supervisory Control and Data Acquisition
- SSO: Sanitary sewer overflow
- VFD: Variable Frequency Drive
- W.W.C.S.: Waste Water Collection System
### General Knowledge and Skills
- Communication skills
- Mechanical aptitude
- Ability to multi-task
- Listening skills
- Physical strength
- Pump operating knowledge
- Time management skills
- Read for comprehension
- Blueprint reading skills
- Ability to follow directions

### Worker Behaviors
- Detailed oriented
- Conscientious
- Observant
- Common sense
- Customer service oriented
- Oriented
- Go getter
- Strong stomach
- Team player

### Tools, Equipment, Supplies and Materials
- Manhole hook
- Dye
- Back hoe
- Shoring
- Hand tools
- Jet-Truck
- TV van
- Pick
- Shovel
- Sledge hammer
- Small power tools
- Crane truck
- Air compressor
- Gas monitors
- Portable generator
- Pipe
- Personal protection equipment
- Grout
- Testing equipment (e.g., electrical, pressure)
- Connectors
- Hardware (e.g. fasteners, clamps)

### Future Trends and Concerns
- Storm water regulations
- Problem finding qualified personnel to fill positions vacated by retiring baby-boomers
- Technologically savvy younger generation needs less computer training
- Lower population growth equals fewer rate payers
- Water saving devices (e.g. low-flow toilets) causes less water to process but it is more contaminated
- Doing more with less
- Increased capital costs
- Training issues on new technologies
- Urban sprawl, more concrete and pavement equals more run-off
- Storm water control efforts
- Change in public perception about “saving the planet” means they are willing to pay more for environmentally friendly sewer services
- New piping materials change process and training
- Trenchless technologies
- Aging infrastructure
- Privatization