

# DACUM Research Chart for Class II Wastewater Treatment Operator

## DACUM Panel

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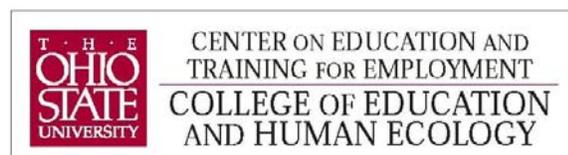
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Duties		Tasks					
A	<b>Operate Plant</b>	A-1 Perform daily plant rounds (e.g., meter readings, bar screen, supernatant)		A-2 Collect daily totalizer readings	A-3 Collect samples (see <i>Process &amp; Permit Parameters</i> list)	A-4 Analyze samples (see <i>Process &amp; Permit Parameters</i> list)	
		B-1 Check lift station(s)	B-2 Complete routine maintenance	B-3 Check for overflows	B-4 Perform I&I evaluation (e.g., smoke, dye, t.v., grout, repair, flow metering, report overflows)		
B	<b>Operate Collection System</b>	C-1 Generate work orders (per O&M)	C-2 Write P.M. plan	C-3 Develop policies & procedures	C-4 Hire personnel	C-5 Terminate personnel	
		C-12 Develop annual budget (e.g., fees costs, needs)	C-13 Develop sewer rate report	C-14 Maintain professional memberships (e.g., ORWA, OWEA)	C-15 Track inventory		
C	<b>Perform Administrative Functions</b>	D-1 Implement policies & procedures	D-2 Manage timekeeping (e.g., overtime, sick leave, vacation, Family Leave Act)		D-3 Conduct personnel evaluations	D-4 Develop job descriptions	
		E-1 Train employees on policies & procedures (e.g., local, state, federal regulations)	E-2 Train employees on safety issues (e.g., local state, federal regulations)		E-3 Train employees on plant operations	E-4 Train employees on plant maintenance	
D	<b>Manage Employees</b>	F-1 Perform general housekeeping (e.g., mop/wax floors, clean restrooms, refuse)		F-2 Perform grounds maintenance	F-3 Maintain safety & security systems (e.g., lighting, fencing)		
		G-1 Rotate pumps	G-2 Exercise equipment (e.g., generators, valves)	G-3 Service utilities (e.g., water, electric)	G-4 Evaluate shipment performance (e.g., temperature, thermal, vibration)	G-5 Calibrate equipment	
E	<b>Train Employees</b>	H-1 Participate in selection of engineer	H-2 Review construction plans	H-3 Consult with EPA, engineer, & local administration	H-4 Coordinate with contractors	H-5 Inspect construction projects	
F	<b>Maintain Facilities</b>						
G	<b>Maintain Equipment</b>						
H	<b>Manage Construction</b>						

## \*Process and Permit Parameters

Temperature  
 pH  
 BOD  
 CBOD  
 Ammonia  
 Fecal coliform  
 Chlorine residuals  
 Low level chlorine  
 Solids  
 Total Suspended solids  
 Dissolved oxygen  
 30 minute settleability  
 Centrifuge

Core sampling  
 Mlss  
 Microscopic examination  
 Metals  
 PP +40  
 Bioassay  
 Testing per NPDES

## Primary Process Control Adjustments

Measure dissolved oxygen  
 Adjust chemical feed rate  
 Adjust wasting rate  
 Adjust return rate

A-5 Analyze results	A-6 Perform process adjustments (see <i>Primary Process Control Adjustments</i> list)	A-7 Dispose of biosolids	A-8 Post entries daily to journal			
C-6 Process personnel data (e.g., time keeping, union issues)	C-7 Generate regulatory reports	C-8 Assure regulatory compliance	C-9 Maintain personnel & regulatory documents	C-10 Develop tracking spreadsheets	C-11 Develop capital improvement plans (1, 5, 10 year)	
D-5 Implement union contracts	D-6 Develop employee incentive program	D-7 Address employee issues (e.g., discipline, promotion, suggestions)		D-8 Manage day-to-day scheduling		
E-5 Train employees on laboratory procedures	E-6 Train employees on laboratory analysis	E-7 Train employees on interpretation of lab results	E-8 Train employees on equipment operation	E-9 Provide state approved contact hours	E-10 Train employees on computer based systems	E-11 Train employees to read blueprints & schematics
F-4 Service treatment components (e.g., tanks, buildings)	F-5 Apply protective coatings	F-6 Monitor utilities (e.g., gas, electric)				
G-6 Perform PM on process equipment	G-7 Perform PM on vehicles	G-8 Perform PM on electrical equipment	G-9 Perform PM on mechanical equipment	G-10 Repair failed equipment	G-11 Replace failed equipment	
H-6 Generate change orders	H-7 Generate punch list	H-8 Conduct final inspection				

**Note:** Although panelists are licensed Class II Wastewater Treatment Operators, all members of the panel do not perform every task on this chart.

**Reference Manuals**

- O & M manuals
- Ten state standards
- Standard methods
- Personnel policy manual
- Ohio revised code

- “Orange, triangle” hazardous chemical emergency response guide
- Manual of practice #11 (operations)
- Manual of practice #8 (design)
- California State University, Sacramento manuals
- Local ordinances

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## General Knowledge and Skills

PTI permit to install  
PTO permit to operate  
Ability to mentor  
Map reading  
Blueprint reading  
Schematic reading  
Proper record keeping  
Permits  
Laboratory analysis  
Local county health department, auditor, local government  
Federal regulations (OSHA, USEPA, HAZCOM)  
State regulations (OEPA, ODH, BWC, OUPS)  
Communication skills: written, oral, group, one-on-one  
Microbiology  
Analyze and interpret wastewater concepts

## Worker Behaviors

Understanding  
Positive  
Self motivated  
Organized  
Goal oriented  
Safety oriented  
Follow directions  
Integrity  
Humor  
Detail oriented  
Dedicated  
Patient  
Reliable

## Tools, Equipment, Supplies and Materials

Lab equipment	Sewer jet truck
DO meter	Microscope
Centrifuge	Computers
Core sampler	Mechanical tools
pH meter	Electrician's tools
balance	Protective coating
drying oven	Chemicals
muffle furnace	lab
incubator	process
refrigerator	grounds keeping
glassware	maintenance
portable meter	

## Future Trends and Concerns

Loss of experienced staff  
Lack of incoming qualified staff  
Compensation commensurate with level of regulations  
Ability to meet regulation compliance requirements  
Personal liability issues  
Budgetary concerns  
Staff not seeking certification  
Job loss due to computerization  
Water reuse  
Stricter discharge limits

## Acronyms

503	USEPA Biosolids Rules	ORWA	Ohio Rural Water Association
CMOM	Capacity, Management, Operations and Maintenance	OSHA	Occupational, Safety and Health Administration
CSOs	Combined Sewer Overflows	OUPS	Ohio Utilities Protection System
Haz Com	Hazardous Communication	OWEA	Ohio Water Environment Association
I&I	Infiltration and Inflow	PERRPS	Public Employees Risk Reduction Program
Mlss	Mixed liquor suspended solids	PM	Preventative Maintenance
MOR	Monthly Operating Report	PP +40	Priority Pollutants plus 40
MSDS	Material Safety Data Sheet	PTI	Permit To Install
NPDES	National Pollutant Discharge Elimination System	PTO	Permit to Operate
ODH	Ohio Department of Health	SSOs	Sanitary Sewer Overflows
O&M	Operation & Maintenance	TSS	Total Suspended Solids
OEPA	Ohio Environmental Protection Agency	USEPA	United States Environmental Protection Agency
ORC	Ohio Revised Code		