

## ABC Wastewater Treatment Standardized Exam Description

Evaluate Wastestream Characteristics	Exam Level			
	Class I	Class II	Class III	Class IV
Color				
Flow pattern	1	1	1	
Foam				1
Mixing pattern				1
Odor/Off gas	1	1	1	
Solids concentration		1	1	1
Temperature	1		1	1
Volume	2	2	1	1
Monitor, Evaluate and Adjust Treatment Processes	Class I	Class II	Class III	Class IV
<b>Preliminary Treatment</b>				
Plant pumping of main flow				
Screening	2	1		
Grit removal	3	1		
Flow equalization	1			
<b>Primary Treatment</b>				
Clarifiers	5	2	2	1
<b>Secondary Treatment</b>				
Fixed-film reactor (trickling filters, RBCs)	2	2	4	2
Activated sludge	4	7	7	10
Stabilization ponds without aeration	3	3		
Stabilization ponds with aeration		2		
<b>Advanced (Tertiary) Treatment</b>			1	
Chemical/physical advanced waste treatment without secondary (carbon adsorption, air stripping, chemical coagulation, precipitation, etc.)				
Chemical/physical advanced waste treatment following secondary (carbon adsorption, air stripping, chemical coagulation, precipitation, etc.)		1	2	1
Biological or chemical/biological advanced waste treatment (nitrification, denitrification, phosphorus removal)	2	1	2	3
Nitrification by designed extended aeration only		3		
Ion exchange for advanced waste treatment				
Reverse osmosis, electrodialysis and other membrane filtration				
Media filtration			1	2
<b>Additional Treatment</b>	3			
Dissolved air flotation (for other than sludge thickening)				
Septage				
Fats, oils, and grease				
Odor control			1	2
Microscreens				
<b>Chemical Addition</b>			2	1

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Add dry chemicals	3	3	1	
Add gaseous chemicals				
Add liquid chemicals				
<b>Disinfection</b>		1		
Chlorination		1	1	2
Dechlorination				1
Ultraviolet irradiation			1	2
Ozonation			1	
<b>Solids Handling</b>			1	
Conditioning (chemical, thermal, elutriation)			1	
Dewatering (filtration, centrifugation, drying beds)	2			
Effluent discharge and reuse	1	3	2	
Stabilization (digestion, thermal, chemical)	2	3	2	4
Thickening (gravity, flotation, centrifugation, filtration)	1		1	2
Volume reduction (drying, incineration, composting)			1	1
<b>Evaluate and Maintain Equipment</b>	<b>Class I</b>	<b>Class II</b>	<b>Class III</b>	<b>Class IV</b>
<b>Evaluate Equipment</b>				
Check and evaluate capacity of equipment	1	1	1	2
Inspect equipment for abnormal conditions		3	1	1
Measure and evaluate head loss	1	2	1	1
Measure and evaluate temperature of equipment				
Read and evaluate chart results				
Read and evaluate meters		1	2	1
Read and evaluate gauges				
<b>Perform Maintenance</b>	1	2		1
Backflow prevention devices	1		1	
Blowers and compressors	2	1		1
Boilers				
Cathodic and lightning protection systems				
Chemical feeders	3		1	1
Digesters		1		
Drives	1	1		
Engines (gas, diesel)				
Fittings/Piping	1			2
Gates				
Generators				
Heat exchangers				
HVAC equipment				
Hydrants				
Hydraulic equipment			1	
Instrumentation			1	2
Motors		2	1	
Off-gas equipment				
Pneumatic equipment			1	
Pumps	5	1	4	2
Safety equipment				

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Traps and drains				
Valves				1
<b>Operate Equipment</b>	<b>Class I</b>	<b>Class II</b>	<b>Class III</b>	<b>Class IV</b>
Backflow prevention devices	1	1		
Blowers and compressors	1		1	2
Boilers				
Cathodic and lightning protection systems		1		
Chemical feeders	2	4	1	1
Computers				
Digesters and gas collection				
Drives	1	1		
Electronic testing equipment				
Engines		1		
Fittings/Piping				1
Flow meters	1	1	1	3
Gates				
Generators				
Hand and power tools				
Heat exchangers				
Heavy vehicles				
HVAC equipment				
Hydrants	1			
Hydraulic equipment				
Incinerators				
Instrumentation				2
Motors				
Off-gas/odor control equipment				
Pneumatic equipment				
Pumps	6	6	12	6
Pure oxygen				
SCADA				
Traps and drains				
Valves	4	1	1	1
<b>Collect Samples and Interpret Analyses</b>	<b>Class I</b>	<b>Class II</b>	<b>Class III</b>	<b>Class IV</b>
<b>Collect Samples</b>	4	1	1	3
Alkalinity				
Ammonia (nitrate/nitrite)			1	2
Bacteriological	1			
Biochemical oxygen demand	2	2	2	
Carbon dioxide				1
Chemical oxygen demand				1
Chlorine residual				
Conductivity				
Dissolved oxygen				
Effluent toxicity				
Metal analysis				

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Oxidation reduction potential				
Oxygen uptake/Respiration rate				
pH			1	
Phosphorus				
Settleability testing				
Solids				
Temperature				
Turbidity				
Volatile acids				
<b>Interpret Laboratory Analyses</b>				1
Alkalinity			1	
Ammonia (nitrate/nitrite)		1	2	
Bacteriological		2		
Biochemical oxygen demand		1		
Carbon dioxide			1	
Chemical oxygen demand		1		
Chlorine residual				
Conductivity				
Dissolved oxygen				
Effluent toxicity			1	1
Metal analysis				1
Oxidation reduction potential				
Oxygen uptake/Respiration rate				
pH				
Phosphorus				
Settleability testing				
Solids		1		
Temperature				
Turbidity	1			
Volatile acids				
<b>Perform Laboratory Analyses</b>	<b>Class I</b>	<b>Class II</b>	<b>Class III</b>	<b>Class IV</b>
Alkalinity			1	
Ammonia (nitrate/nitrite)			1	1
Bacteriological	3	2	2	2
Biochemical oxygen demand		3	2	1
Carbon dioxide				
Chemical oxygen demand			1	1
Chlorine residual				1
Conductivity				
Dissolved oxygen				
Oxidation reduction potential				
Oxygen uptake/Respiration rate			1	1
pH	1	1		
Phosphorus				2
Settleability testing				
Solids	1	1	1	

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Temperature				
Turbidity				
Volatile acids				
<b>Perform Security, Safety and Administrative Procedures</b>	<b>Class I</b>	<b>Class II</b>	<b>Class III</b>	<b>Class IV</b>
<b>Perform Safety Procedures</b>				
Blood borne pathogens				
Chemical handling	3	4	2	
Confined space entry	4	1	1	
Electrical hazards				
Facility upset				
Fire safety				
Hazardous environment	1			
Lock-out/tag-out	1	1		
Natural and manmade disasters				
Personal protective equipment				
Respiratory protection		1	1	1
Spill response				
Traffic control				
Transportation				
Trenching and shoring				
<b>Administrative Procedures</b>				
Administer compliance, emergency preparedness and safety program	4	4	6	7
Develop budget				2
Develop operation and maintenance plan	1	1	1	
Plan and organize work activities	1	1		1
Record and evaluate data		1		
Respond to complaints				
Write regulatory authority reports				
	100	100	100	100