

## Introduction

The main focus of this training document is to assist you in becoming proficient in the operation and maintenance of a small wastewater treatment system. Specifically this training material will focus on the effective operations and maintenance of the extended aeration activated sludge treatment system commonly referred to as a "Package Plant".

The concepts and information presented in this training material have been identified by other successful certified operators of package treatment systems as critical in producing clean water acceptable for discharge into your local waterways; your environment.

This training document is designed to explain the concepts that were identified by those wastewater experts operating in the field and should be useful in guiding you in the proper operation and maintenance of your package plant. As you become more knowledgeable in the treatment of wastewater, you also become better prepared for successfully obtaining your wastewater certification. This material should be useful in your preparation for the Ohio EPA's Class "A" Wastewater certification examination. While this information will encompass many of the basic concepts for proper operation of your package plant, it should not be the only source of training material that you explore.

Maintaining a wastewater treatment system to provide the highest quality effluent being discharged to Ohio's receiving streams is an important responsibility. As a certified wastewater operator in the state of Ohio, you will be the front line of defense protecting your local water resource.



The Ohio EPA is responsible for the protection of the state's water quality. Direct dischargers into Ohio's receiving streams and lakes can significantly impact environmental quality. This requires the state to monitor each discharger to ensure water quality is maintained or improved. Discharges from even small wastewater treatment systems can significantly impact the water quality in Ohio.

The Ohio EPA requires the operator in responsible charge of these small treatment systems, to be certified. This certified operator, through an examination procedure, has demonstrated a level of competency in the proper operation of a treatment system. This is one of many steps the Ohio EPA uses to ensure protection of the receiving waters from dischargers.

So who determines what concepts are critical to producing a quality effluent? Competent operators do. Operators of treatment systems which have demonstrated high quality effluent were gathered together and asked a simple question. What do you do? What are the duties you perform on a routine basis that results in the high quality of your effluent? We next asked, "Of these duties, how often do you perform this duty?", and, "How critical is this duty in achieving compliance with your discharge requirements?"

The data collected from this process was used to first, determine the content of this training material and second, used to determine the composition of the Class "A" wastewater examination.

Competent operators have identified critical concepts necessary for proper operation of a wastewater treatment system. These same concepts are presented in this training material and will also be the focus of the Class "A" wastewater examination.



Wastewater Operator Duties	Frequency						Compliance			
	Daily	Weekly	Monthly	Annually	Once every 5 years	Never performed	Major effect	Minimum effect	Minor effect	No effect
Compliance: Major effect on a long term repetitive basis. Minimum effect on a routine basis or major effect on a periodic basis Minor effect on compliance No effect on maintaining compliance										
A- 1 Perform visual walk through analysis										
A- 2 Record flow meter readings										
A- 3 Collect grab samples										
A- 4 Measure sample temperature										
A- 5 Measure sample dissolved oxygen concentration										
A- 6 Measure sample pH										
A- 7 Record odor, color, and turbidity values										
A- 8 Measure chlorine residual										
A- 9 Collect fecal coliform sample										
A-10 Set up composite sampler										
A-11 Collect composite samples										

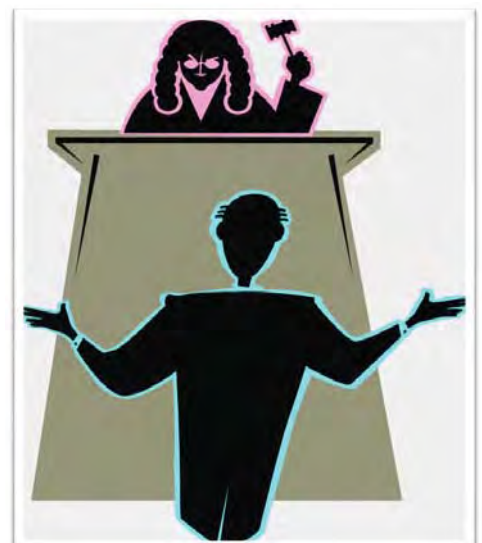
Select one column for **Frequency** and one column for **Compliance** for each **Duty** listed.

Because of the process used to assemble this training material, if reviewed and applied in the field, should provide direction in the operation of your treatment system to produce a high quality effluent, as well as, provide direction in becoming certified as a Class "A" wastewater operator.

This is not the only material you should rely on, nor does it guarantee successfully passing the certification examination, however, it does contain critical concepts to understand and build on.

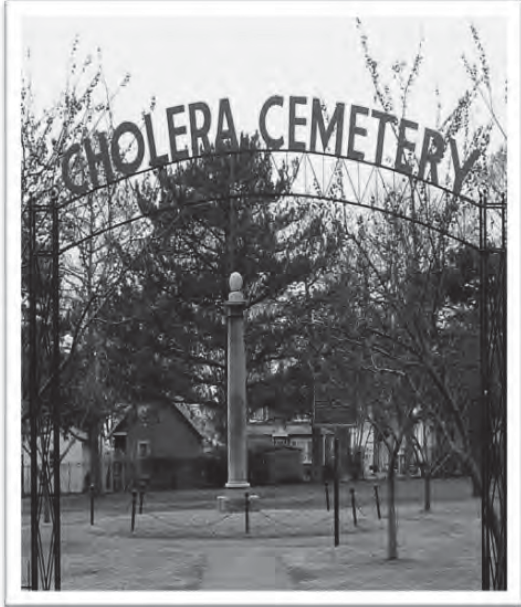
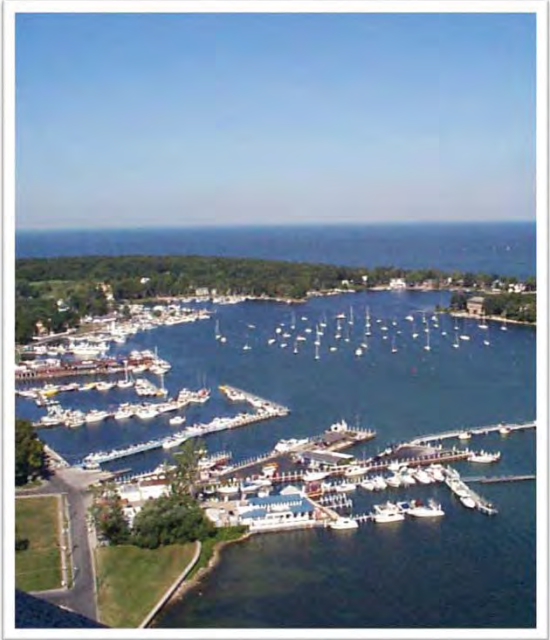
Why is it so important that we are diligent in producing the highest quality of effluent to the receiving stream? Another way of asking this is, . . . "What are the consequences of discharging pollutants into the receiving stream?"

One consequence is failure to operate the system properly and maintain compliance with the permit limits, which could eventually lead to enforcement action. The Ohio EPA's responsibility is to protect the water quality in Ohio for all of its citizens. If owners and operators fail to do their part, the Ohio EPA will use various forms of enforcement action to protect the environment.



Another consequence is degradation of one of Ohio's most valued resources. Ohioans enjoy the benefit of many sources of high quality water environments, from the great lakes to the Ohio River, and many other streams, rivers and reservoirs in between. As water quality decreases, so do the benefits we receive from these environments.

Not only is there damage to the environment, but it can also impact the health of the citizens of Ohio. Untreated waste or discharges from upset conditions within the treatment system can lead to public health issues.



This cemetery, located in Ohio, tells of a different time when we did not fully accept the responsibility of protecting our water resources.

Initially it was dedicated to the physicians and nurses who struggled to reduce the loss of life from this outbreak from untreated human waste. Many Ohioans lost their lives from our insufficient response in protecting the public's health. Today, this monument stands as a constant reminder of the dangers when we view wastewater treatment as a job, and not as a responsibility.

Although they are significantly fewer, even today, events can still occur which could affect our health and the environment.

The Ohio EPA works diligently to bring enforcement action against owners and operators who neglect their responsibility of protecting our water resources.

The Ohio EPA would prefer to work alongside owners and operators to assist in prevention of these events. Together we can protect this resource.

As we experienced these tragic events we gained wisdom and began to work diligently to protect Ohio's waters so that future generations will also have access to clean water.

As an owner or operator of a wastewater treatment system you are the first line of defense in its protection. The Ohio EPA is here to assist you and to prevent others from abusing it.

Previous generations were unaware of their impact on the environment and the public's health. This training document was developed to provide the knowledge and tools to assist you in continuing the protection of our state's finest resource.

We offer this training as a first step in assisting you in our responsibility. Together we can protect Ohio's water resources for our benefit and for future generations.

