

# Is wastewater operations the career for you?

Clean water is the most valuable resource on the planet, and keeping water clean is the job of wastewater operators. This brochure describes:

- what wastewater collection and treatment are.
- the types of work that wastewater operators perform.
- what education is necessary to perform this vital work.

Becoming a wastewater operator is a very meaningful career choice. As an operator, you make a huge, positive difference in the life of your community by ensuring that the health of its residents is protected and that the environment is respected. It is one of the original "green" jobs.

The national average of salaries for wastewater operator positions is \$40,000 per year, but experienced wastewater operators can earn around \$80,000 per year in large communities.

Now is the time to start preparing for this career. Many wastewater operators are retiring, and there is expected to be an operator shortage in the near future. It's a great time to be entering this career area!

## Training to be a wastewater operator

Most states and some tribes have a wastewater operator training and certification program. Exams are given to ensure operators are capable of overseeing all aspects of wastewater operations. Advancement in the profession requires a combination of education and experience.

To learn more about this exciting career opportunity, visit the following websites:

- Rural Community Assistance Partnership  
[www.rcap.org](http://www.rcap.org)
- SmallWaterSupply.org  
[www.smallwatersupply.org](http://www.smallwatersupply.org)
- Water Environment Federation  
[www.wef.org](http://www.wef.org)
- Association of Boards of Certification  
[www.abccert.org](http://www.abccert.org)

Or search for "wastewater operator" on your state's website.



Rural Community Assistance Partnership  
National Office

1701 K St. NW, Suite 700  
Washington, DC 20006  
202/408-1273 or 800/321-7227  
[www.rcap.org](http://www.rcap.org)  
[info@rcap.org](mailto:info@rcap.org)

# Wastewater OPERATOR



## A world of career opportunities

Jobs that offer:

- stability
- work in places all over the country
- advancement opportunities
- being part of a "green" industry
- a chance to make a difference in your community



[www.rcap.org](http://www.rcap.org)



## How is wastewater collected and treated?

Wastewater is the water used and discarded by residents in a community. It includes water that flows out of drains in homes and water used in businesses and industries.

Wastewater travels through pipes (either by gravity or with the use of pumps) to a wastewater treatment system. The treatment system is designed to remove contaminants that may be harmful to humans or the environment or that may damage the system's components.

Wastewater treatment can be either centralized, meaning that the wastewater is collected by pipes from its many sources in a community and delivered to one location for treatment (such as the plant on the outskirts of the community) or decentralized, meaning that wastewater is treated onsite, close to where it originated.

In centralized systems, wastewater is first generally screened in a physical process to remove plastics, leaves, rags, large items, and other debris that could damage the equipment in the plant. This debris is usually sent to a landfill. Primary treatment is the first step in removing contaminants. Dense solids sink to the bottom of primary clarifier tanks by gravity, where they are removed by bottom scrapers, and floatable solids rise to the top, where they

are removed by skimming. The solids move on to the sludge treatment step, while the liquid moves on to secondary treatment.

Secondary treatment is the removal of organic contaminants left in the wastewater after primary treatment. There are several types of secondary treatment, but they generally rely on a biological process in which microorganisms consume the organic contaminants in the wastewater as food.

The primary and secondary treatment steps both produce sludge. Sludge consists of the contaminants removed from the water, plus any chemicals and microorganisms used to remove them. Sludge receives its own treatment and is then disposed of in a landfill or reused as a soil conditioner.

The wastewater is then disinfected to kill any biological contaminants still remaining. Disinfection can be done with chlorine, ozone, or ultraviolet light. If disinfection uses chlorine (a chemical process), the wastewater must be dechlorinated before being released back into a river, lake, or ocean.

Decentralized systems usually use septic tanks for primary treatment. Wastewater flows into a septic tank, where heavier solids sink to the bottom by gravity. The leftover water then flows into a drainfield and is released slowly into the ground, where the soil and microorganisms physically, chemically, and biologically break down the remaining contaminants.

Want to see the  
*process*  
in  
*action?*



## What would I be doing?

Wastewater operators are the first line of defense in public health. They make sure the water used by their communities is cleaned before it is returned to the environment.

Operators run the equipment and control the physical, biological, and chemical processes that clean water. They maintain and repair the pipes, valves, pumps, controls, gates, engines, generators, and other equipment used to collect and treat wastewater. They sample and test the wastewater at various points during treatment to ensure the cleaning processes are working correctly.

View an animation of the wastewater treatment process and videos explaining each of the steps at [www.rcap.org/dwwwtreatment](http://www.rcap.org/dwwwtreatment)