

STEP (Septic Tank Effluent Pump)

Wastewater System

A STEP wastewater treatment system operates in a clear, three-stage process.

First, your home's wastewater collects in a septic tank (no field lines) for initial treatment. Next, a special pump moves the resulting liquid out of the tank. Finally, this liquid travels to a municipal facility for final treatment. This simple sequence allows your property to connect to a public sewer, even without a gravity-fed line.

Wastewater Collection and Separation

All the wastewater from your home flows into a buried, watertight septic tank. This includes water from your toilets, showers, sinks, and washing machine. Inside the tank, a natural separation process begins. Heavier solid materials settle to the bottom and form a layer called sludge. Lighter materials, like grease and oil, float to the top, creating a layer of scum.

The wastewater must stay in the septic tank for an effective period, typically between one and three days. This retention time is critical. It gives the solids enough time to settle completely. This process leaves a middle layer of relatively clear liquid. This pre-treated liquid is called effluent. The septic tank effectively prepares the effluent for the next step in the journey.

The Septic Tank Effluent Pump Process

The clarified effluent flows from the septic tank into a second container, the pump chamber. This chamber houses the septic tank effluent pump. The pump does not run constantly. Instead, it uses float switches that detect the liquid level. When the effluent reaches a certain height, a float switch activates the pump.

The pump then pushes the effluent out of the chamber and into a small-diameter pipe. This pipe leads to the municipal sewer main. The pump needs enough power to move the liquid over long distances or uphill. Choosing the correct horsepower is essential for the system to work efficiently and prevent premature wear. Some advanced pumps even maintain a consistent flow rate as pressure changes, which helps keep the pipes clear of any small particles.

Centralized Treatment

The final stage of the STEP process happens away from your property. The effluent pumped from your home travels through the pressurized sewer line. It eventually joins with wastewater from other homes in the main municipal sewer. From there, it all flows to a centralized wastewater treatment plant.

At the plant, your home's pre-treated liquid undergoes a complete and rigorous wastewater treatment process alongside the rest of the community's sewage. This ensures all water is safely cleaned before being returned to the environment. STEP systems are a key link in this larger public health infrastructure.

Pre-Treatment of Waste

STEP systems use a septic tank for primary treatment. Solids settle to the bottom, and grease floats to the top. This natural process cleans the wastewater inside the tank.

STEP systems pump only the liquid portion of the waste, called effluent. The solids remain in your septic tank for later removal. This puts less strain on the pump and the public sewer lines.

Your on-property STEP wastewater treatment system has three main parts working together. These are the septic tank, the pump chamber, and the control panel. You should understand each component's job to know how your system functions.

The Septic Tank

Your home's wastewater first enters the septic tank. This is the primary holding and separation container. The tank gives solids time to settle before the liquid moves to the next stage. These large septic tanks come in several common materials, each with its own benefits.

The Pump Chamber and Pump

After leaving the septic tank, the effluent liquid flows into the pump chamber. This chamber contains the septic tank effluent pump. This pump is the heart of all step systems, pushing the pre-treated liquid to the main sewer line.

The Control Panel and Alarm

You can think of the control panel as the brain of your STEP system. It receives power and manages the pump's operation. The panel has indicator lights that give you important information at a glance.

- **Power Indicator:** Shows the system has electricity.
- **Pump Status:** A green light often means the pump is running, while a red light signals an alarm condition.

The control panel also houses an alarm. If the water level in the pump chamber gets too high, the alarm will sound. This alerts you to a potential problem, like a pump failure, so you can call for service before a backup occurs.

Homeowner Responsibilities and Costs

Owning a home with a STEP system involves specific duties and expenses. You play a vital role in keeping the system running smoothly. Understanding your responsibilities for maintenance, repairs, and billing helps you manage your system effectively and avoid unexpected costs.

Routine Maintenance

Proper maintenance is the most important thing you can do for your system. Your main job is to have the septic tank pumped regularly. This service removes the solid sludge and scum that build up over time. Most experts recommend you pump your tank every three to five years. *(In Diamondhead this averages about once every 5 years if no heavy paper products, etc. are present. LCWW/Riviera will typically provide notification)* This regular maintenance prevents solids from flowing into the pump chamber, which could damage the pump.

You should also be mindful of what goes down your drains. Avoid flushing items like wipes, feminine hygiene products, or paper towels. These materials do not break down easily and can cause clogs. Proper care is the best way to ensure long-term performance and avoid costly emergency repairs. The cost for this essential maintenance can vary.

Service	Average National Cost
Septic Tank Pumping	\$400 – \$600

Service	Average National Cost
Routine Maintenance (pump or controller issues, etc.)	\$100 – \$1,000

Ownership and Repair Liability

Knowing who owns and fixes each part of the system is crucial. You own all the components on your property. This includes the septic tank, the pump chamber, the pump itself, and the control panel. If any of these parts fail, you are typically responsible for the repair or replacement costs.

A failed pump is one of the most common and significant repairs. The cost to replace an effluent pump can vary widely. The price depends on the pump model and the amount of labor required for the job.

- The total cost to replace a pump, including labor, often falls between **\$800 and \$3,000**.
- Labor alone can cost **\$500 to \$1,200**, as the job may take four to eight hours.
- The utility or sewer district usually owns and maintains the main sewer line that your step system connects to.

Pro Tip Your local sewer utility or Property Owners Association (POA) have specific rules about ownership and repairs. Always check your service agreement or with your utility to understand your exact responsibilities.

Understanding Your Sewer Bill

Your monthly sewer bill may look different from that of a neighbor with a standard septic system with field lines (Grandfathered) connection. Many utilities charge a flat monthly fee for customers with pressure sewer systems. This fee often covers the costs associated with managing the pressurized main lines and the final treatment of the wastewater at the central plant.

This fee and/or other fees contribute to a fund for future repairs or upgrades to the public portions of the system. Some bills may include a base rate plus a charge based on your water usage. Because your on-site septic tank handles the solids, your bill reflects the service of transporting and treating the liquid effluent. Reading your bill carefully helps you understand what services you are paying for.

Your STEP wastewater treatment system is a smart link between your private septic system and the public sewer. It pumps only pre-treated liquid, unlike a grinder pump that handles raw solids. Your main responsibility is the routine care of your septic tank – not flushing heavy paper or wipes, etc.

This approach offers affordable long-term operation. It also helps the main treatment plant work more efficiently by preventing extra groundwater from entering the sewer pipes.

FAQ

What happens to my STEP system if the power goes out?

Your septic tank provides temporary storage during a power outage. You should limit your water use until power returns. The pump cannot move effluent without electricity. Heavy water use could cause the tank to overflow and create a backup in your home.

How often do I need to pump the septic tank?

You should have your septic tank pumped every three to five years. The exact timing depends on several factors:

- The size of your tank
- The number of people in your household
- Your daily water usage

Can I plant trees or shrubs near the system components?

You should not plant trees or large shrubs near your septic tank or pump chamber. Their roots can grow into the system. This root intrusion can damage the tank, pipes, and other components, leading to expensive repairs.

Gardening Tip Keep a clear area of at least 10-15 feet around all system parts. You can plant grass or small flowers with shallow roots safely over the tank area.

What should I do if the system alarm sounds?

The alarm means the water level in your pump chamber is too high. You should immediately stop using water to prevent a sewage backup. Then, you need to call your local sewer utility or a qualified service technician for repair.