Bixby Wastewater Treatment and Collection System
Homeowner's Guide Disclaimer

This Homeowner's Septic Guide is intended for information purposes only and is provided as a public service. While the University of Minnesota has made reasonable efforts to ensure the accuracy of the information provided in this homeowner's guide, it is not responsible for any damages resulting from reliance on the information. Please consult a septic professional or permitting agency if you have specific questions about your system and its management needs. The University of Minnesota reserves the right to make additions, changes, or corrections to this guide at any time and without notice.

This operation and maintenance (O&M) guide was developed using a tool funded by the National Institute of Food and Agriculture and created by the University of Minnesota. For more information on the University of Minnesota please see H2OandM.com and www.septic.umn.edu.

The developer of the guide is Aaron Wills. Please contact the developer at aaron@crwp.net, (507) 786-3913 for more information or to have this O&M guide updated.
This community system owner's guide is for Bixby Wastewater Treatment and Collection System.

This guide was created on September 28, 2015.
The septic system is located at 10240 Bixby Ln, Bixby MN United States 55917.
Primary Contact for your system: Aaron Wills.
Phone: (507) 786-3913
Email: aaron@crwp.net
Mailing Address: 400 Washington St, Northfield MN United States 55057
Introduction

This community septic system owner's guide will help you:

1. understand the basic principles of how your septic system works,
2. learn how to operate your system efficiently and effectively,
3. know how to maintain the system to prevent costly repairs and water contamination,
4. resolve problems with the system, and
5. know where to go if you need more information or assistance.

Health and safety - Why we need good wastewater treatment

A wastewater system is professionally designed to treat wastewater for a specific home, business or group of properties. Proper treatment of wastewater recycles water back into the natural environment with reduced health risks to humans and animals and also prevents surface and groundwater contamination as shown in the figure.

Wastewater management involves:

- collection and transport of wastewater to a treatment process,
- removal of the waste products that are suspended and/or dissolved in the water,
- returning the water back to the environment, and
- management of processes to ensure that a wastewater system is fully functional.
The primary goal of all wastewater management systems is to remove waste products from water and to safely return the water back into the environment. Every day, society generates a significant volume of wastewater because we depend on water to transport wastes away from our bodies, our clothes, and our homes. Once water comes in contact with waste products, the water becomes wastewater. It contains pathogens (viruses and bacteria), solids, nutrients and other waste products we add into the system as demonstrated in the diagram. This wastewater can impact the quality of ground and surface water resources. Used water does not simply go away. We must clean it before we can safely recycle it back into the natural environment. Proper handling and treatment of wastewater will protect our waters and ourselves from contamination.

**Risks to human and animal health**

It is unhealthy for humans, pets, and wildlife to drink or come in contact with surface or groundwater contaminated with wastewater. Inadequate treatment of wastewater allows bacteria, viruses, and other disease-causing pathogens to enter surface and groundwater. Hepatitis, dysentery, and other diseases may result from pathogens in drinking water. Disease-causing organisms may make lakes or streams unsafe for recreation. Flies and mosquitoes that are attracted to and breed in wet areas where wastewater reaches the surface may also spread disease.

Inadequate treatment of wastewater can raise the nitrate levels in groundwater. High concentrations of nitrate in drinking water are a special risk to infants. Nitrate affects the ability of an infant's blood to carry oxygen, a condition called methemoglobinemia (blue-baby syndrome).
Risks to the environment

A septic system that fails to fully treat wastewater also allows excess nutrients (phosphorus and nitrogen) to reach nearby lakes and streams, promoting algae and plant growth. Algal blooms and abundant weeds may make the lake unpleasant for swimming and boating, and can affect water quality for fish and wildlife habitat. Many synthetic cleaning products, pharmaceuticals, and other chemicals used in the house can be toxic to humans, pets, and wildlife. If allowed to enter a septic system, these products may reach groundwater or nearby surface water.

Treatment options

There are two primary methods to treat and disperse wastewater back into the environment - centralized and decentralized. It is easy to describe a centralized approach to wastewater management - all the community's wastewater drains to a common collection network and is transferred to a centralized treatment and disposal facility. With a decentralized approach, the wastewater treatment infrastructure is distributed across a community. This may be accomplished by building individual onsite septic systems, having small residential clusters of homes on shared systems, and/or by some combination of both to serve multiple wastewater management zones. This guide will focus on YOUR decentralized septic system.

A properly designed, installed, operated and maintained septic system will provide economical and effective wastewater treatment. Pathogens and solids are removed and destroyed by filtration and naturally occurring microscopic organisms. Nutrients are removed, absorbed by soil particles or taken up by plants.
Organization of the System

Basic System Information

Daily Design Flow for the System
Your system was designed for a maximum flow of 9067 gpd. Your average flows should be 70% of this value or less for system longevity. Check with your septic system professional to determine your average flows.

Population
There are 65 people connected to this septic system. If the number or type of users changes, you should inform your septic system professional to determine if changes in your system or management are needed.

Initial Construction Date
Your system was constructed in October 2013.

Repairs
Repairs were made to the system in 2015.

Sources of Drinking Water

Public or Private Water Supply Well Location
Your property has a public or private water supply well located. Private wells are located on each property connected to the community septic system.

Regulatory Body

County Permit
Your system has a county permit: Steele County, Permit SEP2800.

Local Permit
Your system has a local permit: Bixby Environmental Subordinate Service District.

Additional Assistance and Contacts

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Website</th>
<th>Phone Number</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steele County Call M-F 8:00-4:30</td>
<td>Dale Oolman</td>
<td></td>
<td>507-444-7482</td>
<td><a href="mailto:doolman@co.steele.mn.us">doolman@co.steele.mn.us</a></td>
</tr>
<tr>
<td>Type</td>
<td>Name</td>
<td>Website</td>
<td>Phone Number</td>
<td>Email</td>
</tr>
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<td>-------------------------------------------</td>
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<td>----------------------</td>
</tr>
<tr>
<td>Sewer Committee, Call after 4:30 and weekends</td>
<td>Ed Lee</td>
<td></td>
<td>507-583-7143</td>
<td><a href="mailto:eclee2@frontier.com">eclee2@frontier.com</a></td>
</tr>
<tr>
<td>Service Provider (through 01/31/17)</td>
<td>Mike Steffens</td>
<td></td>
<td>507-835-7766</td>
<td><a href="mailto:mkstffns@gmail.com">mkstffns@gmail.com</a></td>
</tr>
<tr>
<td>Sewer Committee, Call after 4:30 and weekends</td>
<td>Dan Johnson</td>
<td></td>
<td>507-213-0322</td>
<td><a href="mailto:BeckyDanScott@gmail.com">BeckyDanScott@gmail.com</a></td>
</tr>
<tr>
<td>Sewer Committee, Call after 4:30 and weekends</td>
<td>Doug Bartelt</td>
<td></td>
<td>507-838-2567</td>
<td></td>
</tr>
</tbody>
</table>
Wastewater Treatment System

Location

This section provides site-specific information about your system's location.

Diagram of the System

The system's location in relation to your property is critical information. The arrangement of system components may affect the operation and maintenance of the system and the use of the property for other purposes.

A collection system using individual tanks at each source, a high-head pressure pump inside a screened vault transfers effluent to an additional treatment area via a 2-inch forcemain. Final dispersal incorporates two mounds and a series of chambered pressurized drainfield trenches oversized by 50% safety factor.

In Relation to the Community

The system's location in relation to your community is shown in the diagram.

Sources

All wastewater treatment systems, both individual onsite and municipal, are designed for a specific capacity, flow and type of wastewater. There are many variations in how health jurisdictions regulate these discharges and you should contact them to determine your options (see Additional Assistance - Regulatory). All wastewater in a home must be treated including both black and gray water as shown in the figure.
Residential
You have residential system which collects, transports and treats normal domestic wastewater.

Commercial or Non-Residential
You have a commercial or non-residential system. There is a restroom at the Feed Mill (est. flow 525 gpd). Be sure to discuss with your septic system professional any special considerations due to the nature of the business or activity.
Expenses

Various System Expenses

All waste water treatment systems, both individual onsite and municipal have capital costs, replacement costs, administrative costs plus operation and maintenance costs. All wastewater treatment systems require regular maintenance.

Capital expenses are the costs of a new system including the cost of design, permitting, purchase of collection and treatment components, land and installation. For example the capital expense of a new septic system may be $3,500 - $20,000+ for a single family home.

Replacement expenses include both the costs to keep the system running plus possibly repeating the capital costs in the future. This also includes the costs of replacing and repairing parts in the system i.e. pumps, wiring, switches etc.

Administrative costs are all the fees and reporting costs associated with your system such as permitting, reporting, and billing.

Final costs include the actual care, operation and maintenance of the system. These include regular service visits and all the activities to keep your system technology working. The specifics will be identified later.

Rates/fees

This system is part of a managed community system and properties pay a usage fees of $600.

Terms of Payment (Frequency)

Your payments are due yearly, along with Steele County property taxes.
Interior Plumbing

Wastewater Treatment Plumbing

Plumbing is the system of pipes, drains fittings, valves, valve assemblies, and devices installed in a building for the distribution of water for drinking, heating and washing, and the removal of wastes. The wastewater is taken away by a system of gravity, pumps and connections, also called 'traps'. Traps retain a small amount of water which acts as a barrier preventing gasses from coming back into your home. In most cases, both incoming and outgoing piping has shut off valves and stop cocks.

Gravity

Gravity is by far the most common means of taking wastewater out of your home: flushed toilets, showers and sinks travel down in pipes from the upper floors and sloped pipes from the main floor kitchen, laundry leave the building to collection and treatment.

Interior Sewage Pump

Your structure includes a pump typically located in the basement as a mean of moving waste water from lower elevations.
Basement bathrooms often require a sewage lift to discharge waste to the septic tank.
Collection of Wastewater

Your Collection System

Gravity

You have a gravity flow collection system. This means that as the piping leaves the home(s) or structure(s) the pipes are sloped appropriately to have drainage towards the septic system.
**Septic Tank Effluent Pressure**

Your home or structure is connected to a septic tank effluent pressure (STEP) system. Your wastewater is first treated in a septic tank and then is pumped through a small pressure line to the next treatment component. Maintenance of this septic tank is critical. See septic tank section of this manual for more information.

Sewage from each home enters a two-compartment concrete tank located in each yard, the first compartment of which holds back solids and paper, allowing mostly liquid to flow to the second compartment, into a pump vault with a filter to remove large particles from the sewage effluent. This pump sends the effluent out to the collector lines and on to the large main treatment area south of the community.
Access

All systems require regular maintenance service. It is important to know where the access points are and how to reach them.

Access Type

The three large manhole (or “maintenance access”) lids in the yard provide access to the two compartments of the tank. Septic professionals will need access to these lids at various times for pumping the tanks, checking the pumps, and cleaning the filters. Do not add more landscaping or soil cover over the manhole lids. Some owners place a flower planter, fake rock or other moveable object on the lid, but make sure it is something that can be easily moved when the professional needs to access the tank. Do not remove the tank lids for any reason. Harmful and potentially deadly gases accumulate in the tank risers. Only specially trained licensed professionals are authorized to remove the lids and perform maintenance on the tanks.

Location

Collection System Location

Your collection system is wholly contained within your property boundaries.

Easement for Access

There are recorded easements for access to perform service or periodic inspections on the system. The Bixby Subordinate Service District has an easement on your property to be able to access the septic tank and pump for regular maintenance and emergencies.

Access Location

The access point for your collection system is located above grade.

Green plastic manhole covers must remain accessible and above grade.
Tanks

Septic Tanks

A septic tank is a watertight, covered receptacle for treatment of sewage from a building. The purpose of the septic tank is to provide an environment for the first stage of treatment in an onsite wastewater treatment system by promoting physical settling, flotation, and the anaerobic digestion of sewage. Additionally, the tank allows storage of both digested and undigested solids until they are removed.

Location

Your septic tank is located on your property each septic tank is located on the owner's property.
Three lids on individual septic tank are visible in each yard.

**Material**
Your septic tank is made of concrete. In areas of high water tables, tanks can be prone to flotation, so in this situation protection against flotation is needed depending on the weight of the tank, wastewater and soil cover.

**Capacity**
Your septic tank holds size varies - 2, 3, 4 bedroom homes & Feed Mill = 1000 gal, 5BR = 1500 gal.

Your septic tank meets local codes.

**Effluent Screen**
Your septic tank has an effluent screen. An effluent screen is a device typically installed in the outlet piping of a tank to keep suspended solids in the tank, thereby protecting your downstream components (typically your soil treatment area). This effluent screen may have additional maintenance requirements. Check the O&M section for more information.

**Access**
The type of access to your septic tank is a manhole and is above grade which makes maintenance easier to perform.
**Pump Tanks**

A pump tank provides storage of effluent and houses a pump and associated parts used to convey effluent to another pretreatment process or a final treatment and dispersal component (typically the soil).

**Image**

![Image of a pump tank installation](image)

**Location**

Your pump tank is located off your property at the main Bixby treatment site south of town.

**Material**

Your pump tank is made of concrete.

**Capacity**

Your pump tank holds 5000 gallons.

Your pump tank meets local codes.

**Access**

The type of access to your pump tank is a manhole and is above grade which makes maintenance easier to perform.
Stilling Tanks

A stilling or settling tank is a tank that is part of a collection system. The purpose of this tank is to provide dissipation of energy and additional settling and to filter out particles that can be introduced into the collection system due to a pipe break, screen, or baffle failure or illegal discharge into the collection system.

Location

Your stilling tank is located off your property at the main Bixby treatment site south of town.

Material

Your stilling tank is made of concrete.

Capacity

Your stilling tank holds 8,000 gallons.

Stilling tank meets local codes.
Final Treatment and Dispersal

Trenches

Your final treatment and dispersal system consists of one or more trenches. A trench is a below-grade excavation in the soil that is typically less than 3 feet in width and contains distribution material (like rock or gravel) and a distribution pipe. It receives wastewater from the septic tank or other pretreatment component and distributes it to the native soil for final treatment and dispersal.

Image

36 (95 l.f.) below-grade trenches containing chambers with pressurized 1.5" laterals
Your final treatment and dispersal system is a mound. A mound system is a soil treatment system placed above the natural surface of the ground consisting of clean sand that receives wastewater through pressure distribution and is capped with suitable soil to stabilize the surface and encourage vegetation growth. Mounds are used to provide enough separation between where the sewage is applied and a limiting condition like high groundwater. Mound systems require regular O&M.

![Diagram of mound system](image)

**Image**

10295 Bixby Place—Main treatment site southeast of town.
Maintenance

Requirements and Recommendations

Your onsite system is a vital part of your property's infrastructure. Taking care of it, just as you would your roof or windows, will ensure longevity and save you money. Depending on your system type there may be specific guidance listed elsewhere in this guide. For conventional systems, a schedule of suggested pumping and cleaning will depend on the size of your property, number of residents, size of tank and type of treatment field. Your current system requires regular service to prevent early failure or poor treatment performance. Below are the components of your system and the suggested maintenance activities, frequencies and responsible parties.

Contracts

Your property has a maintenance contract. Your system will be regularly inspected and serviced by a service provider.

Ron's plumbing is contracted to maintain the community septic system components which include the septic tank on your property and the community treatment site.

Limiting water use and being careful of what you send down your drains, together with regular maintenance can greatly extend the useful life for your system. Information below gives some specific suggestions.

Interior Plumbing Operations & Maintenance

Who Pays for These Expenses?

Homeowner is responsible for all interior plumbing pays for these Operations & Maintenance expenses.

<table>
<thead>
<tr>
<th>Component</th>
<th>Activity</th>
<th>Frequency</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior Plumbing</td>
<td>Each homeowner owns all plumbing inside the home and is responsible for maintaining all the plumbing inside your home.</td>
<td></td>
<td>Owner</td>
</tr>
<tr>
<td>Interior Plumbing</td>
<td>See current Service Provider contract</td>
<td>Service Provider contract is valid through January 31, 2017</td>
<td>Both</td>
</tr>
</tbody>
</table>
### Interior Plumbing
- **Activity:** Repair all leaky fixtures; Do not allow clear water to discharge to septic tank; Do not allow anything other than sewage to enter the septic tank.
- **Frequency:** As needed
- **Responsible Party:** Owner

### Collection of Wastewater Operations & Maintenance

<table>
<thead>
<tr>
<th>Component</th>
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<th>Frequency</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection of Wastewater</td>
<td>The post near the septic tank in your yard holds an alarm panel. A red beacon will alert you of problems. When the light is on continually, this is a “low level” alert. The liquid level in the tank is lower than what it should be. It was on continually after the tank was installed, before the tank filled up. Your light will again be on after the septic pumper empties the tank in your yard, which will happen about every three years or so.</td>
<td>Owner</td>
<td>Owner</td>
</tr>
<tr>
<td>Collection of Wastewater</td>
<td>When the light is blinking, this is a “high-level” alert. The liquid level in the tank has risen above what it should be. Sewage has filled up the tank and for some reason not leaving the second compartment. This might mean there is a problem with the pump. RESTRICT YOUR WATER USE at this point, and contact Steele County or a committee representative as soon as possible. If you continue to discharge normal amounts of sewage to the tank, it may have nowhere to go but back into your house. No one wants that.</td>
<td>Owner</td>
<td>Owner</td>
</tr>
<tr>
<td>Collection of Wastewater</td>
<td>If the indicator light is on, call a contact person listed on page 8. For a problem other than an indicator light, call your plumber or electrician.</td>
<td>Owner</td>
<td>Owner</td>
</tr>
</tbody>
</table>

### Tanks Operations & Maintenance

<table>
<thead>
<tr>
<th>Component</th>
<th>Activity</th>
<th>Frequency</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Septic Tanks</td>
<td>Alarm. Monitor alarm daily – make sure the alarm has not signaled. Alarms signal when your tank is nearly full; therefore, NEVER unplug, reset, or cover your alarm if it has activated, but contact your Service provider immediately.</td>
<td>Daily</td>
<td>Homeowner Activity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Activity</th>
<th>Frequency</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Septic Tanks</td>
<td>Alarm. Test the “PUSH TO TEST” button on the alarm panel if present. Replace or repair if necessary.</td>
<td>Monthly</td>
<td>Homeowner Activity</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Tank structural condition. Check to make sure that the tank is watertight (no visual leaks), no rebar is exposed, no corrosion or spalling is present, no cracks are present, no roots are present, no tank deflection is found.</td>
<td>At the time of pumping or annually - whichever is the shorter time period.</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Tank operating condition. Check to make sure that there is no evidence that the liquid level has been higher or lower than operating level. Check to make sure that there are 3 layers. Check to make sure that the combined scum and sludge layer is less than 25% of the total liquid depth.</td>
<td>At the time of pumping or annually - whichever is the shorter time period.</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Tank cleaning. Septic tanks need to be pumped/cleaned periodically.</td>
<td></td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Access. A riser is recommended if the lid is not accessible from the ground surface. Check to make sure there is no infiltration in the risers. Insulate the riser cover for frost protection. Make sure that lids are securely fastened and in operable condition.</td>
<td>Annually</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Inspection pipes. Replace damaged caps.</td>
<td>Annually</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Baffles. Check to make sure the inlet, outlet, and compartment (if a multi-compartment tank) baffles are in place.</td>
<td>At the time of pumping or annually - whichever is the shorter time period.</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Effluent screen. Check to make sure that effluent screen is accessible from the ground surface.</td>
<td>At the time of pumping or annually - whichever is the shorter time period.</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Component</td>
<td>Activity</td>
<td>Frequency</td>
<td>Responsible Party</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Effluent screen. Remove solids trapped on screen by washing back into septic tank.</td>
<td>At the time of pumping or annually - whichever is the shorter time period.</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Pump operation. Ensure that the pump is operating properly. This may include measuring the amps and volts and making sure the pump turns on and off. Check the pump operation independently from the controls.</td>
<td>At the time of pumping or annually - whichever is the shorter time period.</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Pump operation. The pump discharge rate should be checked by timing the period it takes the pump to empty the chamber. If the time has increased significantly, the pump should be removed and inspected for wear, clogging, or impeller damage.</td>
<td>At the time of pumping or annually - whichever is the shorter time period.</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Electrical. Check to make sure electrical components are sealed and watertight.</td>
<td>At the time of pumping or annually - whichever is the shorter time period.</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Alarm. Verify that the alarm float/sensor operates in all modes present (audible, visual, remote) and that there is at least 25% reserve capacity.</td>
<td>At the time of pumping or annually - whichever is the shorter time period.</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Water-level sensors. Verify that pump floats/sensors are functioning properly</td>
<td>At the time of pumping or annually - whichever is the shorter time period.</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>End of year seasonal property pumping. Remind owner of most frequent causes of tank and building sewer freeze-ups. Ensure that there are no “micro-sources” of water such as a high efficiency furnace or other dripping devices.</td>
<td>Annually</td>
<td>Service Provider</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Water use. Pay attention to when you use water and how much you use daily. Conserving water saves you money!</td>
<td>Seasonally</td>
<td>Owner</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Water conditioning devices. When possible, discharge clear water sources to another location. Program the recharge frequency based on water demand (gallons) rather than time (days). Recharging too frequently will result in increased pumping costs.</td>
<td>Annually</td>
<td>Owner</td>
</tr>
</tbody>
</table>
### Bixby Wastewater Treatment and Collection System

#### 10240 Bixby Ln

**Jan 16, 2017**

**Owner's Guide**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Septic Tanks</td>
<td>Leaks. Check (listen, look) for leaks in toilets and dripping faucets. Repair leaks promptly.</td>
<td>Seasonally</td>
<td>Owner</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Caps. Make sure that all caps and lids are intact and in place. Inspect for damaged caps at least every fall. Fix or replace damaged caps before winter to help prevent freezing issues.</td>
<td>Annually</td>
<td>Owner</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Access. Make sure that your Service provider has clear access to the septic tank.</td>
<td>Each visit</td>
<td>Owner</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Tank cleaning. Make sure the Service Provider completely empties the tank.</td>
<td>Each visit</td>
<td>Owner</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Alarm. Monitor alarm daily - make sure the alarm has not signaled. Alarms signal when your tank is nearly full; therefore, NEVER unplug, reset, or cover your alarm if it has activated, but contact your Service provider immediately.</td>
<td>Daily</td>
<td>Owner</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>Alarm. Test the “PUSH TO TEST” button on the alarm panel if present. Replace or repair if necessary.</td>
<td>Monthly</td>
<td>Owner</td>
</tr>
<tr>
<td>Pump Tanks</td>
<td>The Bixby Subordinate Service District is responsible operating and maintaining all the tanks at the treatment site.</td>
<td></td>
<td>Service Provider</td>
</tr>
<tr>
<td>Stilling Tanks</td>
<td>The Bixby Subordinate Service District is responsible operating and maintaining all the tanks at the treatment site.</td>
<td></td>
<td>Service Provider</td>
</tr>
</tbody>
</table>

### Final Treatment and Dispersal Operations & Maintenance

<table>
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<th>Component</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Mound</td>
<td>The Bixby Environmental Subordinate Service District is responsible operating and maintaining all the mounds at the treatment site.</td>
<td>See Maintenance schedule</td>
<td>Service Provider</td>
</tr>
</tbody>
</table>
Problems and Troubleshooting

What to Do?

If you have having a problem with your system your best plan of attack is to contact a septic professional to evaluate the problem and recommend a course of action. See the Additional Assistance and Contacts to determine who can best assist you with your problem. Some of the most typical general and specific issues are identified below.

Common problems

The three most common causes of septic system failure are:

1. Overuse of water. Abnormally high water use above or close to the amount your system was designed for, leaks, or short periods of very high water use can all cause failure. Even normal water volumes delivered to a partially damaged system may be too much.

2. Improper maintenance. When too many solids are allowed to accumulate in the septic tank, they will be carried out into the soil treatment area and cause plugging. This usually happens because the owner did not have the septic tank pumped regularly.

3. Improper design or installation. This could result from bad choices or mistakes made by designers, installers and inspectors, or homeowners who have remodeled their home increasing or changing the water use without making appropriate adjustments to their septic system.

Septic System Troubleshooting Guide for Homeowners

Diagnosing the specific causes of failure may be difficult for the owner and often requires the skills of a professional. The following chart shows common problems, possible causes and remedies.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Risk</th>
<th>Potential Causes</th>
<th>Potential Remedies</th>
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</table>
| Sewage surfacing in yard | Human contact with sewage is a serious public health risk. Many water-borne diseases exist in household sewage. Avoid Contact | - Excess water use  
- System blockages  
- Improper system elevations  
- Undersized soil treatment system  
- Pump failure or improper operation  
- Improper separation from limiting condition | • Fix leaks  
• Install water-saving fixtures  
• Clean septic tank and check pumps  
• Consult professionals  
• Fence off area until problem is fixed |
## Troubleshooting Guide

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<td>Sewage odors — indoors</td>
<td>Toxic gases can cause discomfort and illness. Do not light matches/lighters or use appliances that may spark.</td>
<td>Improper plumbing, Sewage backup in house, Unsealed basement sewage pump, Roof vent pipe blocked</td>
<td>Repair plumbing by checking traps and vent penetrations, Clean septic tank and check pumps, Replace water in drain traps, Check and tighten seals on pumps and cleanouts, Clear roof vent</td>
</tr>
<tr>
<td>Sewage odors — outdoors</td>
<td>Major nuisance, but no serious health risk</td>
<td>Source other than owner’s system, Sewage surfacing in yard, Inspection pipe caps damaged or removed, Unsealed manhole cover, Short roof vent pipe(yours/neighbors)</td>
<td>Clean tank and check pumps, Check and replace damaged caps, Repair or replace system, Seal manhole cover, Extend roof plumbing vent pipe, Add carbon filter to plumbing roof vent</td>
</tr>
<tr>
<td>Distribution pipes and/or soil treatment system freezes in winter</td>
<td>The system may be inoperable</td>
<td>Cold temperature with lack of snow cover, Water standing in pipes, sags, lack of draining back, undersized pump, Foot or vehicle traffic over pipes, trenches, mound or bed, Low flow rates or lack of use, Lack of vegetative cover, Leaking plumbing fixture(s), Low flow [drip] from high efficiency furnace, Open or cracked manhole or inspection pipes, Saturated system</td>
<td>Check piping and pumps, Consult a professional, Keep people and vehicles off area, Increase water use and temperature, Have someone use water in house if you are away, Don’t use automobile antifreeze, salt, or other additives, Fix leaking fixtures, Add insulation over tanks, pipes and soil treatment area, Do NOT run water continuously, Operate septic tank as a holding tank, Do NOT build a fire over system</td>
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# Troubleshooting Guide

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<td>Pest or rodents are living or borrowing into system</td>
<td>Pests can be dangerous such as bees, spiders, snakes. Rodents can burrow into system and damage components &amp; cause surfacing of sewage. Vegetation over system can be damaged.</td>
<td>- The system is located in an area prone to pest or rodents.</td>
<td>• Make sure all components are tightly sealed to limit intrusion. • Eliminate pests and rodents. • Have a septic professional fix any areas where the soil and vegetation have been impacted.</td>
</tr>
<tr>
<td>Power failure</td>
<td>If electricity is needed to power pumps or treatment components they will not operate during the outage. Could result in improper sewage treatment, surfacing of effluent or back-up of effluent into the home.</td>
<td>- Nature disaster. - Electrical line being cut. - Fuse breaker being tripped.</td>
<td>• Verify fuse breaker has not been tripped. • Report power outage to electrical company. • After power is restored if issues persists, have a septic professional evaluate panels, pumps or other components to determine if damaged.</td>
</tr>
<tr>
<td>Roots plugging pipes or components</td>
<td>If roots are excessive in pipes or components they can cause blockages resulting in improper sewage treatment, surfacing of effluent or back-up of effluent into the home.</td>
<td>- Components not sealed properly. - Old piping or components are in need of replacement. - Components located near water loving trees.</td>
<td>• Confirm where roots are growing into system. • Seal up or replace areas where roots are getting into the system. • Copper sulfate is a short term Band-Aid but not the solution and should only be a temporary solution.</td>
</tr>
<tr>
<td>Trees uprooting near or on septic system</td>
<td>Damage to system components. Compaction due to trees or equipment used to remove trees. Loss of vegetation.</td>
<td>- Natural disaster. - Water logged soils. - High winds.</td>
<td>• Keep heavy equipment off of septic system components. • Re-establish vegetation. • Have a septic professional evaluate system to determine if damaged.</td>
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| Contaminated well | Health risks are magnified by possible ingestion of contaminated water. Drinking contaminated water can cause health problems such as dysentery, hepatitis, and, for infants, methemo-globinemia. | - System too close to well, water table, or fractured bedrock  
- Cesspool or drywell in use  
- Sewage discharges to surface or groundwater  
- Improper well construction  
- Broken water supply pipe  
- High levels from other sources  
- Broken sewage lines | - Replace your well and/or septic system  
- Contact your local government to investigate other potential sources |

### Contact Your Septic Professional

**Contact Details**

Contact your septic professional – Ron’s Plumbing at 507-456-5565
General Use and Operation

Improving Septic System Performance: Room by Room

The homeowner can improve performance of the septic system and avoid major problems by controlling water use, selecting appropriate products, and making wise disposal decisions. A typical person uses from 60 to 100 gallons of water per day. About 60 percent of that water is used in the bathroom. Reducing water use conserves water resources and helps the septic system. In the course of daily living, many materials used in the home enter the sewage system for disposal and treatment. Some belong down the drain and others belong in the trash.

Home Management Ideas to Improve Septic System Performance:

All Rooms

- Be conservative with water usage. Spread out the usage as much as possible to avoid large volumes of water entering the system.
- Install aerators on faucets to cut down on water use.
- Do not use antibacterial soaps and cleansers.
- Limit use of bleach-based cleansers and detergents. Use more elbow grease.
- Read the label on your cleaning products. Recommended non-toxic cleaners include: baking soda, borax, white vinegar, castile soap and other natural products free of harsh disinfectants, dyes, phosphates, petroleum compounds and artificial perfumes.
- Repair leaky faucets and toilets.
- Do not use septic system additives, feeders or starters. These products make all kinds of claims to improve your system, but lack third party research supporting their use. Simply using your system provides all the good bacteria needed and no additive can replace proper maintenance.

Bathroom

- Repair leaking toilets. A basic repair kit costs about $5 and can save you hundreds of gallons of water per day.
• Only human waste and moderate amounts of plain toilet paper should go down the toilet – nothing else. Toilet paper should break down easily.
• Do not flush any other products or items. The toilet is not a garbage can!
• Do not use “every flush” toilet bowl disinfectants; they introduce a chemical each time you flush.
• Do not use disposable toilet brushes. If you must, throw them in the trash – do not flush down the toilet as shown on packaging.
• Install low-flow showerheads and low-flush toilets. Look for EPA WaterSense labeled models.
• No not use drain cleaners, instead a plumbers snake should be used to clear obstructions.
• Do not use cleaners meant to spray on shower stalls after each use – this also introduces chemicals with every use.
• Use bath oils, soaps, shaving creams and other products sparingly.
• Large whirlpool bathtubs use large volumes of water which may overload the system. Be sure the tank has additional capacity. Avoid laundry or other large water uses at the same time.
• Shut off water while shaving and brushing teeth (save up to five gallons per minute).
• Quick showers use less water than tub baths – particularly big Jacuzzi style tubs.
• Do not flush unwanted medications. Return to the pharmacy, or place in zip-lock bags in the original containers, place in the trash (be sure to remove identifying information from labels).

Kitchen

• Scrape plates into garbage or compost.
• Use gel or highly biodegradable dish washing detergents. Read labels and purchase those with no phosphorus content.
• When replacing a dishwasher, consider a low-water use model. Scrape dishes well before placing in the dishwasher. New models advertised as “no-scraping needed” have a built-in garbage disposal. Scraping dishes into the trash reduces solids in the tank.
• Do not use a garbage disposal or dispose of vegetables, meat, fat, oil, coffee grounds, and other undigested food products in the septic system- it adds solids to your tank and uses large amounts of water. Compost kitchen wastes or throw them in the garbage.
• Be sure there is a shutoff valve on the drinking water treatment device so the system does not run continuously when the reservoir is full.
• Keep a pitcher of drinking water in the refrigerator instead of running the tap for cool water.
• Reduce clogs in piping by minimizing the amount of grease and food...
that go down the drain.

**Laundry**

- Use liquid or highly biodegradable powdered detergents with no clay filler.
- Do not use liquid fabric softeners. They add petroleum into your system. Instead, use dryer sheets, vinegar or “dryer balls” to soften your clothes.
- Only use detergents containing bleach when absolutely necessary - not every load.
- Use the minimum amounts of detergents or bleach required to do the job.
- Select a front-loading washing machine which uses 40 — 65% less water and less electricity to dry the clothes, or a new water efficient top loader when replacing your washer. Look for EPAWaterSense label.
- Distribute wash loads evenly throughout the week to avoid overloading the system in a short period of time. A good rule of thumb is one load of laundry per day.
- Wash only full loads when possible; adjust the water level to fit the load.
- Install a filter on the washer to remove lint and an effluent screen on the septic tank outlet baffle.
- Avoid installing second-floor laundry. It will reduce tank performance due to the rapid speed of water entering the tank. If laundry is on 2nd floor, extra septic tank capacity and an effluent screen are recommended.

**Basement, Utility Rooms and Lawn Sprinkling**

- Reroute water softener, iron filter and other treatment filter recharge outside of the septic system. Consider using an old drainfield or dig a dry well. The salts used in these systems are hard on concrete septic tanks.
- Route condensation water from a high-efficiency furnace outside of the septic system to prevent freezing problems. It can run to a sump pump, be directed to an old drainfield or dry well or be vented directly out of the house onto the ground.
- Recharge the water softener as infrequently as possible. If replacing, look for an on-demand unit so the system recharges only as needed.
- Be sure sump pumps, floor drains, garage drains, roof drains and other methods of routing water away from your house are not going into the septic system. This is clean water and can easily overload the system due to the high volume.
- Route chlorine treated water from hot tubs and pools outside of the septic system.
- Install a water meter to monitor water use.
- Dispose of solvents, paints, antifreeze and chemicals through recycling and hazardous waste channels. Do not wash paint brushes in the sink. Disposable paint brushes are a good idea.
- Be sure your automatic lawn sprinkler system does not water the soil treatment area.

**Landscaping Your Septic System**

Landscaping near, around, and on septic systems is of concern to many homeowners. To ensure a properly functioning soil-based septic system, a suitable vegetative cover must be established. The right vegetation cover helps the soil to stay in place, helps the septic system to function optimally by removing moisture and nutrients from the soil treatment area, and makes the area more attractive. Minimizing irrigation is critical for long-term performance of the system.

Herbaceous plants such as turf grasses, wildflowers, and native grasses are suitable cover for septic systems. Turf grasses have fibrous root systems that hold soil in place, require maintenance similar to a lawn, and are available in a variety of mixes designed to suit site conditions. Wild flowers and native grasses are an attractive alternative to turf grass while providing many of the same benefits including fibrous roots, low maintenance (once established), and tolerance of dry soil conditions. Do not place trees and shrubs on the septic system, their roots may invade the piping and cause damage.

Look for good advice on how to landscape your septic system from your local Conservation District or Extension.