

Boone County Guide to Onsite Wastewater Treatment Systems and Soil Properties



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Introduction

The purpose of this publication is to provide information about installing onsite wastewater treatment systems in Boone County, Missouri. While public sewers are available in many areas, 40% of residential areas, communities and commercial businesses in the United States are served by onsite systems. Boone County has an ordinance that specifies the type of systems that can be installed. This ordinance provides the minimum requirements for each system. However, the type of system that is ultimately installed depends on variable factors such as soil properties, site selection and the size of the home that will be served.

Household domestic waste includes wastewater that we flush down the toilet, the water that we rinse down the sink and tub and the water that runs through the dishwasher. Household wastewater must be disposed of properly because it contains bacteria and viruses that can cause illness and contains high concentrations of nutrients that can have negative effects on the environment. Examples of diseases that can be contracted from sewage include hepatitis A, cholera, salmonellosis, shigellosis, typhoid fever, giardia and cryptosporidiosis.

Onsite wastewater treatment technology has advanced significantly in the last decade. In addition, our understanding of the variables that effect how systems perform has also improved. Soil properties and site conditions vary greatly throughout our landscape. In Boone County, there are certain site limitations that are encountered regularly. These limitations, including methods to overcome them, are discussed in this publication. This document is presented with the goal of providing the information in a form that is easily understood by the general public.

Regulations

Across the state of Missouri, various agencies have jurisdiction over the regulation of wastewater. Wastewater amounts that exceed 3,000 gallons per day or types generated by commercial processes are regulated by the Missouri Department of Natural Resources (MDNR). The type and amount of wastewater generated by a single-family home is usually regulated by the Health Department. Depending on the county the property is located in, the Health Department could be the county or city Health Department or the Missouri Department of Health and Senior Services (MDHSS).

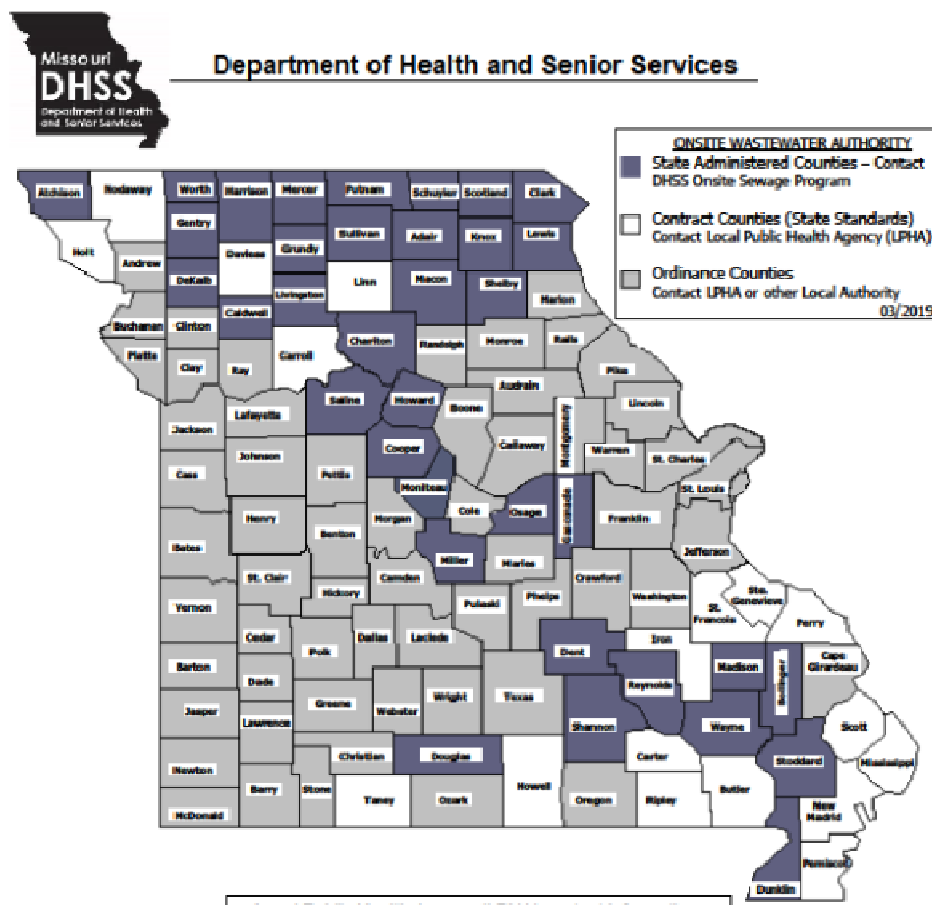
Missouri Department of Natural Resources (MDNR)

The Missouri Department of Natural Resources has jurisdictional responsibility for wastewater systems designed to treat more than 3,000 gallons per day of wastewater flow. MDNR also regulates lagoons that serve any type of facility other than a single family dwelling. In other words, if there is more than one home connected to a lagoon or if there is a multiple family dwelling connected to a lagoon, MDNR has regulatory

authority. If a lagoon is to serve a commercial facility with less than 3,000 gallons per day of flow, an MDNR annual permit for that lagoon must be obtained. The MDNR permit application process involves approval by MDNR staff of the design and operation of the lagoon, including sampling of the effluent and application of effluent, and includes an annual permit fee. The alternative to a lagoon for a commercial facility with less than 3,000 per day of wastewater flow is a subsurface disposal system. The Columbia/Boone County Health Department has regulatory authority if this option is chosen.

Missouri Department of Health and Senior Services (MDHSS)

The Missouri Department of Health and Senior Services has jurisdictional authority in counties where there is no local Health Department ordinance or authority. There is a construction permit requirement and associated fee. As of 2019, the map below shows the counties that are regulated by MDHSS. Boone County has a local ordinance, so is not regulated by DHSS.



Local Public Health Agency (LPHA) contact information:
<http://health.mo.gov/living/lpha/lphas.php>

In state administered counties contact:
Onsite Wastewater Treatment Program
 930 Wildwood Dr.
 Jefferson City, MO 65102
 (573) 751-6095
 (573) 526-7377 Fax

absorption field, sewage odors in the home or yard or slow or backed up drains.

Some septic systems have a pump installed in the tank to distribute the wastewater to the absorption field. Most of these pressure dosed systems will have an alarm wired to the pump to warn the homeowner of a problem.

Failure of your septic system can be caused by excessive water entering the system. The tank must be watertight. Leaking toilets and faucets can add a significant amount of water to your system. Keep surface water from entering the absorption field. Have your tank pumped and inspected every 3-5 years. Keep a record of maintenance. Practice water conservation. Don't do all of your laundry in one day – space it out throughout the week. If your system has a curtain drain, do not cover it with soil. Do not discard grease in the drain or pour large amounts of strong cleaning chemicals down the drain. Don't use septic tank additives - some may actually promote clogging of your absorption field. Don't use your toilet as a trash can by dumping non-biodegradables down your toilets or drains. Keep heavy equipment or automobiles away from your absorption field. This can damage the laterals.

Drip Absorption Systems

Drip irrigation systems require regular maintenance to keep them functioning properly. The drip lines must be flushed regularly and filters must be cleaned. The pretreatment components should be inspected for proper function. Water conservation is important with these systems. The Health Department recommends an annual service agreement with a maintenance company to keep these types of systems working. The recommendations regarding excessive water use listed above in the Septic System section also applies to drip absorption systems.

Constructed Wetlands

Constructed wetlands have some labor-intensive maintenance – all dead vegetation must be removed each winter to prevent the gravel or sand beds from clogging. Dead plants must be replaced with new ones. The water level must be monitored to make sure it does not exceed the top of the substrate.

Maintenance Schedule

Wastewater Treatment System Layout – not to scale
Show location of house, tank, lateral field, well, property lines
Property physical address: _____

System Permit:

Issued to: _____ Date issued: _____

Address: _____

Legal description: _____

System Description: _____

System Type: _____

Design flow (gpd) or number of bedrooms: _____

Lagoon size: _____

Septic tank volume: _____ Number of compartments: _____

Dosing tank or pump compartment capacity: _____

Tank manufacturer: _____

Advanced pretreatment device: _____

Method of Application: gravity dosed with pump

Absorption area type: trenches drip irrigation LPP mound

Accessories: tank filter pump distribution box control panel

Installation contractor: _____

Address: _____

Telephone number: _____

Service provider: _____

Address: _____

Telephone number: _____

Service contract: yes no

Pumper: _____

Address: _____

Telephone number: _____

Service contract: yes no

