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HENV-11-W

Home & Environment

Obtaining a Septic System Permit

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Introduction

All septic systems in Indiana must receive a permit when they are installed or repaired, according to Indiana State Department of Health (ISDH) Rule 410 IAC 6-8.1. This publication describes how homeowners can obtain septic system permits for single-family residential households.

Contact the County Health Department

The first step is to request a septic system permit application from your county health department, the regulatory agent responsible for administering permits in your county. Many health departments also have information to help guide you through the process.

Each county's health department must enforce ISDH Rule 410 IAC 6-8.1. In addition, each county has the option of developing further regulations for their own counties (as long as they do not conflict with the ISDH rule).

If you have an existing septic system requiring repairs, you must request a permit from your county health department before any repairs can be made. If you do not obtain a permit before repairing an existing system, you are violating state rules. When it comes to existing septic systems, county health departments have some flexibility in addressing homeowners' needs; however, health departments must follow design parameters prescribed in the state rule for new systems. The following sections discuss issues you should consider in order to comply with state rules regarding new septic systems, and those existing homes where the septic systems need replacement.

Locate a New Soil Absorption Field Site

The first (and arguably most important) issue homeowners should consider when planning a new septic system is to determine the best location for the new septic system's soil absorption field. Selecting this location is critical and should be determined before any construction activities occur on the site. Most often, homeowners will save money by using the best soil on their lots for the soil absorption field. For more information about suitable soil characteristics, see HENV–7–W, *Indiana Soils and Septic Systems*, http://www.ces.purdue.edu/extmedia/HENV/HENV-7-W.pdf.

Typically, the best soils on a lot will be located in higher landscape positions, where water does not pond on the surface any time during the year. Septic systems should not be located in low areas or flood plains. If you do not know if any part of your property is located in a flood plain, you can get that information by calling the Indiana Department of Natural Resources Division of Water toll-free at (877) WATER55 (928-3755).

Soils on the lot need to be evaluated by an Indiana Registered Soil Scientist, or a technically competent representative of your county health department. To get a list of soil scientists who work in your county, you can contact your county health department by visiting: http://www.isco.purdue.edu/irss/obtaining_services.htm.

Ideally, the homeowner, county health department representative, and septic system installer/designer should meet the soil scientist on the homeowner's lot to discuss the soils together. The soil scientist will evaluate the site's soils and select the best location for the soil absorption field. The soil scientist will prepare a formal soils report, and copies should be sent to the property owner and the county health department.

Remember, once the soil scientist identifies the ideal location for a soil absorption field, it needs to be clearly identified by flags so no construction activities take place on this area until septic system construction begins.

System Design Parameters

Once they receive the soils report, county health departments evaluate it and consider a number of factors. In lots where the soil is not suitable for conventional

trench septic systems, the county health department will identify possible alternative systems (for example, a mound system, or a flood dose system). The rest of this bulletin will focus on general requirements for obtaining a permit for conventional trench systems. The factors county health departments will consider after receiving a soils report are described below.

Soil loading rate: This is the rate that effluent from the septic tank is supplied to the soil absorption field for treatment. This rate is determined by identifying the most restrictive soil horizon in the soil report based on soil texture and structure. From this most restrictive horizon, the soil will be assigned a loading rate. The loading rate is the estimated volume of water (in gallons) that a square foot of the most restrictive soil horizon will accept and properly treat without ponding in a day. For example, a sandy loam textured soil with medium structure will have a higher loading rate than a clayey textured soil with weak structure. Acceptable loading rates in Indiana range from 1.2 gallons per day per square foot (gpd/ft^2) in a sandy soil to 0.25 gpd/ft^2 in a clayey soil. Loading rates greater than 1.2 gpd/ft^2 are considered too porous to properly treat septic tank effluent. Loading rates less than 0.25 gpd/ft^2 are considered too impermeable to accept effluent at a reasonable rate. When soil is considered too porous or too impermeable, it is called a restrictive layer and cannot be used as a soil absorption field.

Maximum and minimum trench depth: The maximum trench depth for any new home's septic system is 36 inches. For replacement systems, the maximum trench depth is 48 inches. If a restrictive layer (soil horizon with a loading rate greater than 1.2 gpd/ft^2 or less than 0.25 gpd/ft^2) is present within 5 feet of the soil surface, the maximum trench depth must be at least 24 inches above the restrictive layer. For example, a well-drained soil without a limiting layer will have a maximum trench depth of 36 inches, while a soil with a limiting layer at a depth of 48 inches will have a maximum trench depth less than 24 inches. The minimum trench depth is 10 inches. At least 12 inches of soil must cover the top of the trenches.

System size: The county health department determines the septic system's minimum size based on the number of bedrooms in the proposed house plan: the more bedrooms, the larger the septic tank and soil absorption field. Some rooms may be considered bedrooms for the purpose of sizing the system, regardless of what they are labeled on the floor plans (for example, a den with a closet). The size required for septic tanks is based on the number of a home's bedrooms are listed in Table 1. For more information about septic tanks see HENV-5-W, *Septic Tanks: The Primary Treatment Device of Your Septic System*, http://www.ces.purdue.edu/extmedia/HENV/HENV-5-W.pdf.

Number of bedrooms in home	Required capacity of septic tank (in gallons)
2 or less	750
3	1,000
4	1,250
5	1,500
Over 5	1,500 + (150 x number of bedrooms)

Table 1. *Required septic tank sizes according to the number of a home's bedrooms as defined by Indiana State Department of Health Rule 410 IAC 6-8.1.*

The size required for soil absorption fields is determined by the gallons of wastewater flow per day (which is determined by multiplying the number of bedrooms by 150 gallons) divided by the soil loading rate (gallons per day per square foot of soil trench bottom). Note that a soil absorption field for a three-bedroom home could range in size from 375 ft^2 in sandy soils to 1,800 ft^2 in clayey soils. The square feet of a soil absorption field trench is measured on the bottom of the trench. So, if you need 1,800 square feet of trench, you will need 600 linear feet of trenches that are 3 feet wide for the soil absorption field.

Design

Experienced septic system installers or designers should design new septic systems. Based on maximum and minimum trench depths, soil absorption field size, and septic tank size, these experienced professionals will develop a plan to install the system. In some situations, county health departments require that septic system design plans be reviewed before construction can begin.

Selecting the Right Installer or Designer

To find good, qualified designers or installers for your septic system project, follow these tips.

- Contact your county health department for a list of contractors who install septic systems in your county.
- Select an experienced contractor (installer and/or designer) who has met or exceeded your county's certification requirements.
- Look for contractors who have been certified by the Indiana Onsite Wastewater Professionals Association.
- Request at least three references from homeowners who have hired the contractor in the last one to three years, then ask these homeowners about their system performance.
- Make sure the contractor is licensed and bonded.

Once a homeowner and the county health department approve the septic system design, construction can commence — provided the soils are not too wet. Constructing septic systems during wet conditions can smear the soils on the trench walls and compact the soil surface, reducing the system's ability to absorb and treat wastewater. Too much compaction can even lead to premature failure.

If weather conditions are good, installing a septic system typically takes one to three days. Once installed, the system will remain only partially covered until the county health department can inspect it. The inspection involves:

1. measuring the trench depths to ensure they are within the previously determined maximums and minimums.
2. confirming that the soil absorption field size is appropriate for the soil loading rate.
3. checking that the septic tank's size is appropriate for the number of a home's bedrooms.
4. measuring the slope of the system's components to ensure wastewater flows toward the soil absorption field and that there will be equal wastewater distribution in the trenches. For more about equal distribution of wastewater, see Purdue Extension publication HENV-4-W, *Septic System Distribution Boxes: Importance of Equal Distribution in Trenches*, http://www.ces.purdue.edu/extmedia/HENV/HENV-4-W.pdf.

If the inspector requires any changes to meet legal requirements, the homeowner and/or the homeowner's agent will be notified immediately. Once the septic system passes health department inspection, the system can be covered and the installation completed. Some county health departments may require an additional inspection to verify that there is a minimum of 12 inches of soil over the septic system trenches.

Operation

Once installation is complete, the homeowner can operate the septic system. For most systems, there are no other permits issued. Proper operation of the system is the homeowner's responsibility. At a minimum, homeowners should have their septic tanks pumped every three to five years. For more information about responsible septic system use and maintenance, see Purdue Extension publication HENV-2-W, *Increasing the Longevity of Your Septic System*, http://www.ces.purdue.edu/extmedia/HENV/HENV-2-W.pdf).

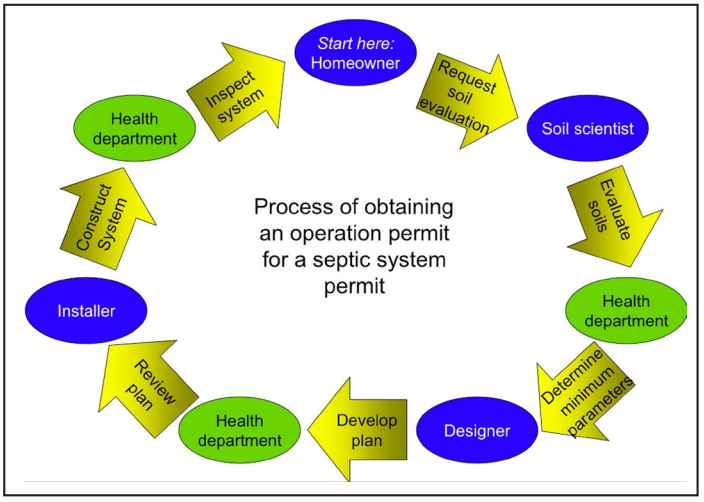

Figure 1. *This figure shows the process of obtaining a septic system permit. The process is initiated by the homeowner, who hires a soil scientist, designer, and installer to serve as representative agents. At several points during the permit process, the county health department will review the progress and make necessary adjustments.* ***Remember:*** *If a homeowner abuses the septic system, which leads to failure, the process must be repeated.*

Summary

The permit process varies slightly from county to county, but key elements remain the same (see Figure 1). Homeowners are responsible for the proper design, construction, and maintenance of septic systems. Contractors hired to describe the soils, and to design and construct the system are agents who represent the homeowner. If you have any questions concerning the permit process, contact your county health department.

For more information

Specific information regarding septic system permits can be found in ISDH Rule 410 IAC 6-8.1. To read the rule, contact your county health department or visit http://www.in.gov/isdh/regsvcs/saneng/laws_rules/410_iac_6-8_1/410_iac_6-8_1.htm. If the county where you reside has additional requirements, your county health department will be able to assist you with inquiries.

Other Purdue Extension bulletins in this series:

HENV-1-W, *Septic System Failure*, http://www.ces.purdue.edu/extmedia/HENV/HENV-1-W.pdf.

HENV-2-W, *Increasing the Longevity of Your Septic System*, http://www.ces.purdue.edu/extmedia/HENV/HENV-2-W.pdf.

HENV-3-W, *Turfgrass Color: Indicator of Septic System Performance*, http://www.ces.purdue.edu/extmedia/HENV/HENV-3-W.pdf.

HENV-4-W, *Septic System Distribution Boxes: Importance of Equal Distribution in Trenches*, http://www.ces.purdue.edu/extmedia/HENV/HENV-4-W.pdf.

HENV-5-W, *Septic Tanks: The Primary Treatment Device of Your Septic System*, http://www.ces.purdue.edu/extmedia/HENV/HENV-5-W.pdf.

HENV-6-W, *Grandfathered Septic Systems: Location and Replacement/Repair*, http://www.ces.purdue.edu/extmedia/HENV/HENV-6-W.pdf.

HENV-7-W, *Indiana Soils and Septic Systems*, http://www.ces.purdue.edu/extmedia/HENV/HENV-7-W.pdf.

HENV-8-W, *Gravel and Gravelless Trench Soil Absorption Fields*, http://www.ces.purdue.edu/extmedia/HENV/HENV-8-W.pdf.

HENV-9-W, *Water Use and Septic System Performance*, http://www.ces.purdue.edu/extmedia/HENV/HENV-9-W.pdf.

HENV-10-W, *Septic Systems in Flooded and Wet Soil Conditions*, http://www.ces.purdue.edu/extmedia/HENV/HENV-10-W.pdf.

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