



CALVERT COUNTY
HEALTH
DEPARTMENT

Division of Environmental Health

Percolation Testing Guidance Document

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Percolation Testing Guidance Document Outline

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What is a Percolation Test?

Percolation testing (perc test) is a component of any proper site evaluation for onsite sewage disposal in Maryland. The test determines the permeability & suitability of the soils on a property for the purposes of onsite sewage disposal. During this process, excavations are dug on the property using a backhoe, excavator or mini-excavator and a soil evaluation is documented by a Licensed Environmental Health Specialist (LEHS) to create a soil profile. A soil evaluation means that a description of the physical properties of a soil including color, texture, structure, limiting horizons and soil moisture content are recorded. Once the soil profile is documented, the soil is then tested for permeability at a depth that maximizes the most favorable soils. The chosen depth tested for permeability is at the discretion of the LEHS onsite and is based on their experience and knowledge as to what best satisfies COMAR requirements and should be the ultimate depth of the soil absorption component. A percolation stick (perc stick), a tool used in measuring the soil permeability, is an instrument that has 3 bolts on it that are staggered at one-inch apart. During permeability testing, the perc stick is lowered in the test hole and the hole is filled with water. The times at which each of the 3 bolts on the perc stick individually emerge from the water is documented to determine how many minutes per inch the water percolates through the soil. This is called the percolation rate. Test holes may be refilled and rates measured multiple times in order to achieve a consistent rate, at the discretion of the LEHS. The minimum allowable percolation rate is 2 minutes per inch and the maximum allowable percolation rate is 30 minutes per inch, per COMAR. Any percolation rate greater than 30 minutes per inch is considered “unsatisfactory” for a conventional onsite sewage disposal system.

Different Types of Percolation Tests/Site Evaluations

There are two different types of perc testing/site evaluations;

- 1) Perc tests for repair/replacement systems on properties with existing dwellings whose septic systems are no longer functioning properly.
- 2) Perc tests for new construction projects/subdivision of land.

Site evaluations/percolation testing for repair/replacement septic systems may be conducted at any time of the year which allows property owners to repair/replace failing septic systems anytime and ensures the protection of public health. Typically, only one hole is dug for this type of perc test. However, if soils prove to be insufficient, more holes may be dug to find soils suitable for sewage disposal.

Wet season percolation testing/site evaluations for subdivision of land should be performed only at the time of the year when the highest water table can be expected per

COMAR 26.04.03.02. Site evaluations/percolation testing for new construction projects on existing lots of record are typically conducted during the wet season, but also may be conducted outside of the wet season per LEHS discretion based on soil surveys, sufficient soil information from neighboring lots and/or experience in the area. Wet season typically runs anywhere from March to May depending upon groundwater levels. **All properties must have either proposed test locations or property lines staked by a licensed surveyor prior to testing. Failure to do so will delay testing, potentially missing the window for wet season testing in the season applied for.**

The minimum number of perc tests required to establish a suitable disposal area for existing lots of record or subdivision is two. Three tests are standard and suggested, however, more tests or evaluations may be necessary to firmly establish consistency within the area depending upon specific soil and site constraints. Please note that up to three perc tests will be conducted per Site Evaluation Application. Additional testing will require additional fees. The number of requested evaluations should be indicated on the Site Evaluation Application.

Steps Required to Schedule a Perc Test

The first step required to schedule a perc test is to submit a Site Evaluation Application to Environmental Health. The application can be obtained from the Environmental Health Office which is located at 205 Duke Street, Prince Frederick, MD 20678 or can be found on our website at www.calverthealth.org. (From the home page click on *Environmental Health Applications and Forms* [left hand side]. Click on *Site Evaluation Application*.) If perc testing for subdivision of land please follow all of the directions listed above, however, choose *Subdivision Application* instead of *Site Evaluation Application*. **Applications for wet season testing are accepted year-round. Please be aware that scheduling for wet season is first come, first serve.**

The next step is to submit the appropriate fee to Environmental Health. The fee will depend on the type of testing proposed. Repair/replacement systems have a different fee than new construction lots or subdivision of land. Please refer to our Environmental Health Fee List for a complete list of fee amounts. Environmental Health accepts cash, checks, money orders and MasterCard or Visa. Please make any checks payable to the Calvert County Health Department (C.C.H.D) and be aware that no payments may be taken over the phone. If mailing an application and fee please mail to: Calvert County Health Department, P.O. Box 980 Prince Frederick, MD, 20678.

The last step is to select a contractor and note your choice clearly on the Site Evaluation Application under the section *Septic Installer of Choice*. The contractor must be a licensed septic installer in Calvert County. We can provide a list of licensed septic installers upon request but may not give recommendations. Please be aware, the septic

contractor of your choice will have their own fee for conducting the excavation for a perc test(s). Additionally, during wet season, site evaluations and perc testing will only be scheduled with the chosen licensed septic installer. **Property owners, surveyors or other interested parties will not be contacted for scheduling by the assigned LEHS.** If a licensed contractor is not listed on the application, we do not know who to contact to schedule the testing. This can result in delays and possible inability to schedule testing, especially during wet season.

Equipment Needed to Conduct Percolation Testing

There is equipment needed in order to properly conduct a percolation test/site evaluation. The LEHS will provide a perc stick and a measuring tape. The contractor you hire to dig the holes must provide a backhoe/excavator with an extend-a-hoe that is capable of digging to a depth of at least 18 feet, hand-auger, water and a bucket. Please understand there may be times when it is necessary to have a machine onsite that is capable of digging deeper than 18 feet. This may require a second visit and application.

Who needs to be Present at a Percolation Test?

During a percolation test/site evaluation a Licensed Environmental Health Specialist (LEHS) and licensed septic installer need to be present. Property owners, surveyors, realtors or anyone else with an interest in the property are always welcome to observe.

How Long Does a Percolation Test Take?

The time needed to conduct percolation testing/site evaluation differs at each site. The factors that can affect the amount of time required to conduct a site evaluation/perc test include ease or difficulty accessing the perc site(s), percolation rates and weather conditions. Typically, perc tests for replacement systems take anywhere from 1-2 hours while new construction perc tests take roughly 1-3 hours per lot. However, there are times when a site evaluation may take up to 6 hours.

Who is Authorized to Dig a Perc Test?

Only a licensed septic installer is authorized to dig a perc test. This ensures that the test can be conducted properly with all the necessary equipment onsite. Percolation test holes must be dug under the supervision of a LEHS and **may NOT be dug ahead of time. If holes are dug prior to LEHS arrival the holes will have to be dug again.**

Required Site Preparations Prior to Perc Test

There are site preparations that need to take place prior to the scheduled testing date to ensure a safe, accurate and efficient process. First, the licensed contractor hired to conduct the perc test should contact Miss Utility to safeguard against hitting power, cable or phone lines during excavation. Next, for perc tests conducted for new construction, during the wet season, the property owner should ensure that a licensed surveyor has either staked out the property lines or placed stakes in the area of proposed perc sites. This confirms that the tests are taking place on the correct lot and/or in the correct area that is being proposed for sewage disposal. Please note that any property scheduled for testing that is not staked will lose its place in the order for that wet season and is not guaranteed to be tested during the wet season applied for. Finally, if there is an area on the property or multiple lots that are in the woods it is helpful and time saving to have the contractor clear a path to the area/areas that are to be tested prior to the arrival of the LEHS.

How Long is a Perc Test Valid?

Percolation testing is valid for 2-years and can be renewed every 2-years. To renew perc tests a *Request for Renewal* form will need to be submitted to the Environmental Health Office along with the appropriate fee. The form can be obtained from the Environmental Health Office which is located at 205 Duke Street Prince Frederick, MD 20678 or can be found on our website at www.calverthealth.org. (*From the home page click on Environmental Health Applications and Forms [left hand side]. Click on Request for Renewal Form.*)

Is it Possible for a Perc Test Renewal to be Denied?

Previous perc test results are renewed at the discretion of the Approving Authority and may be denied. Additional percolation testing or evaluations may be required before the renewal of a percolation test/tests is granted. During the review of perc renewal requests, the LEHS is tasked with verifying that the perc testing conducted in the past provides thorough soil information within the proposed onsite sewage disposal area (OSDS). Additionally, the OSDS specifications are confirmed to be up to date with the latest regulations and are updated if necessary. Further, other site evaluation criteria must be taken into consideration such as neighboring development impacts, changes in surface and subsurface drainage patterns, history of OSDS failures in the area among other site evaluation criteria. All percolation tests must be field located by a licensed surveyor following testing. Failure to do so may result in losing the test locations and invalidation of prior test results.

Factors that Deem a Perc Test as “Unsatisfactory” for Sewage Disposal

There are several factors that render a perc test as unsatisfactory:

- (1) Percolation rates slower than 30 minutes/inch.
- (2) Insufficient soil treatment zone, 4 feet required per COMAR 26.04.02.04C (1).
- (3) Drainage areas closer than 25 feet.
- (4) Steep slopes closer than 25 feet.
- (5) Water bodies including intermittent and perennial streams closer than 100 feet.
- (6) Insufficient area for replacement OSDS replacement areas.

It is also important to note that a passing percolation test alone does not mean that the property is buildable. A percolation test is just one step in conducting a proper site evaluation and determining the suitability of a property for sewage disposal.