

Infiltration Test

The soil should be relatively dry when this test is performed.

Equipment: - a large empty can (old coffee or juice cans work well)
 - a can opener
 - a wooden plank (a little larger than the empty can)
 - a hammer
 - a ruler
 - a timer
 - about half a gallon of water

Time: 30 minutes to set up
 1 to 4 hours to run

Method:

1. Use a can opener to fully remove both the top and the bottom of your can so that you are left with an open cylinder.
2. Drive the can approximately 3 inches into the ground. To prevent denting, it is easiest to place the board over the top of the can and use this surface to hammer the can down. Tamp down soil around the edges of the can so that there are no leaks.
3. Measure the distance from the top of the can to the ground. This height should be greater than 3 inches.
4. Fill the can to the top with water and start your timer.
5. After one hour measure the distance between the top of the can and the surface of the water. This will give you your height h_1 .
6. Continue measuring the difference between the height of the can and the height of the water over one hour intervals for three more hours (or until all the water has infiltrated the ground). This will give you heights h_2 , h_3 , and h_4 .

Results:

1. If all of the water infiltrated into the ground, then the soil has good permeability and the proposed site is a good place for a rain garden.
2. If h_1 , h_2 , h_3 , and h_4 are all greater than $\frac{1}{4}$ inch, then the soil is sufficiently permeable and the site can be used for a rain garden.
3. If h_1 , h_2 , h_3 , or h_4 is less than $\frac{1}{4}$ inch, then the soil has poor permeability and that area should not be used for a rain garden.