

STORMWATER MANAGEMENT

125 Attachment 3

Whitpain Township

Soil Infiltration Testing Requirements for the Installation of Infiltration Facilities

Appendix C

I. SOIL INFILTRATION TESTING REQUIREMENTS:

a. Infiltration Test Requirements:

A soil infiltration test report shall be submitted to Whitpain Township with the submission of any planned infiltration facility. The report shall include the name of the company and the qualifications of the person conducting the test. All soil infiltration tests shall comply with the PaDEP Stormwater BMP Manual as last revised.

b. Soil infiltration tests shall be conducted in accordance with the following procedure:

- (1) Testing conditions: Tests should not be conducted in the rain or within 24 hours of a significant rainfall event (>0.5 inches), or when the temperature is below freezing. The preferred testing is between January and June. Tests conducted between June 1st and December 31st must use a twenty-four-hour presoaking before testing.
- (2) Procedure for presoaking: Presoaking shall be performed between June 1st and December 31st. Holes shall be presoaked, according to the following procedure, to approximate normal wet weather or in-use conditions in the soil:
 - (i) Initial Presoak: Holes shall be filled with water to a minimum depth of 12 inches from the bottom elevation of the proposed infiltration facility and allowed to stand undisturbed for eight hours to 24 hours prior to the infiltration test.
 - (ii) Final presoak: Immediately before the infiltration test, water shall be placed in the hole to a minimum depth of six inches from the bottom elevation of the proposed infiltration facility and readjusted every 30 minutes for one hour.
- (3) Number and location: A minimum of three tests shall be made in separate test holes spaced uniformly over the proposed absorption area site.
- (4) Results: Infiltration holes located within the proposed absorption area shall be used in the calculation of the arithmetic average infiltration rate.
- (5) Type of hole: Holes shall have a uniform diameter of six inches to 10 inches. The hole must be dug to the proposed bottom elevation of the infiltration facility.

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- (6) Preparation: The bottom and sides of the hole shall be scarified with a knife blade or sharp-pointed instrument to completely remove any smeared soil surfaces and to provide a natural soil interface into which water may infiltrate. Loose material shall be removed from the hole.
- (7) Test Procedure: The preferred testing method is the double-ring infiltrometer test. The test consists of filling the holes with water and measuring from the original ground level the drop in water surface every five minutes for 30 minutes. This test shall be witnessed by the Township Engineering Inspector or another designated person. Test results must be submitted to the Township for review.

The infiltration test can fail for one of the following reasons:

- (a) Groundwater/seasonally high water table encountered within two feet of the bottom of the storage facility.
 - (b) Rock encountered within two feet of the bottom of the storage facility.
 - (c) The drop in the infiltration test water surface elevation for any of the test holes is less than 1/4 of an inch in the thirty-minute test period.
- c. Determination of site suitability for an infiltration facility (If the infiltration test results meet the below requirements, location is suitable for an infiltration facility):
- (1) The bottom of the facility is at least two feet above the seasonally high water table.
 - (2) The bottom of the facility is at least two feet above bedrock.
 - (3) The infiltration rate is between 0.50 and 10 in./hr.
 - (4) The bottom of the facility is at least 50 feet from individual water supply wells and 100 feet from community or municipal supply wells.
 - (5) The bottom of the facility is at least 20 feet downgradient or 100 feet upgradient from building basement foundations.
 - (6) The bottom of the facility is at least 50 feet from septic system drainfields.