

SECTION D
SOIL EVALUATION REPORT FORMS

**PREPARER: PLEASE READ ALL
INSTRUCTIONS FIRST**

STAFF USE ONLY

**SOIL EVALUATION REPORT
FORM 1: GENERAL SITE INFORMATION**

PROJECT TITLE:
PROJECT NO. :
PREPARED BY :

SHEET: OF
DATE :

1. SITE ADDRESS OR LEGAL DESCRIPTION:

2. PROJECT DESCRIPTION:

3. SITE DESCRIPTION:

4. SUMMARY OF SOILS WORK PERFORMED:

5. ADDITIONAL SOILS WORK RECOMMENDED:

6. FINDINGS (including pre-development site percolation rate):

7. RECOMMENDATIONS:

I hereby state that I prepared this report, and conducted or supervised the performance of related work. I state that I am qualified to do this work. I represent my work to be complete and accurate within the bounds of uncertainty inherent to the practice of soil science, and to be suitable for its intended use.

SIGNED:

DATE:

APPENDIX D (CONTINUED)
SOIL EVALUATION REPORT INSTRUCTIONS FOR COMPLETING FORM 1

Form 1 is the "cover page" for all projects that require a soil evaluation report. One copy of Form 1 must accompany all soil evaluation reports. Certain information may be omitted for soil evaluations completed for small projects (e.g., single-family residences, duplexes). The following instructions should give you the guidance needed to complete the form:

1. Provide project name and address or legal description. Attach a legible map on 8 ½" by 11" paper showing site and major landmarks (e.g., roadways and surface waters) within approximately one-quarter (¼) mile radius around site.
2. Provide acreage, parcel dimensions, type of development proposed, and approximate proposed coverage of impervious surfaces.
3. Describe site topography, geomorphology, terrain, and natural cover. Distinguish among areas of the site with significantly different characteristics.
4. Provide description and purpose of soils work done. List methods used to expose, sample, and test soils. Give number of test holes logged. Describe field and lab tests performed. Attach a scaled map of good accuracy on 8½" by 11" paper showing locations of soil logs, by number. Except small projects, using soil log results, divide map area into sub-areas according to hydrologic group (A through D).
5. Describe soils work still needed. For example, more work may be needed to obtain accurate percolation or infiltration rates for stormwater facilities not yet constructed.
6. Describe results of soil logs and tests and compare with expected soils from SCS Soils maps. **As appropriate for the project, give your best estimate of the (a) overall predeveloped site infiltration rate, (b) the saturated infiltration rate for the above-ground stormwater facility, or (c) the saturated percolation rate for the below-ground stormwater trench or drywell.** Discuss soils factors related to erosion control, infiltration, percolation, and placement of buildings, as these vary on the site.
7. Describe the recommended general approach for managing stormwater on the site. For example, if stormwater can be infiltrated or percolated, indicate where and at what depth. If erosion, soil stability, or high ground water are problems, can these problems be avoided or mitigated?

Sign the form and affix any relevant professional seal (e.g., P.E., ARCPACS). The form becomes the cover page to one or more copies of form 2, which has soil logs for each test hole evaluated.

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SOIL EVALUATION REPORT
FORM 2: SOIL LOG INFORMATION

| | | | | | | | | | |
|---------------------------------|-------|---------|-------------------------------|-----|----------------|----------------------------------|--------|---------|-----|
| PROJECT TITLE: | | | | | SHEET: OF | | | | |
| PROJECT NO. : | | | | | DATE : | | | | |
| PREPARED BY : | | | | | | | | | |
| SOIL LOG : | | | | | | | | | |
| LOCATION: | | | | | | | | | |
| 1. TYPES OF TESTS DONE: | | | 2. SCS SOIL SERIES: | | | 3. LAND FORM: | | | |
| 4. DEPOSITION HISTORY: | | | 5. HYDROLOGIC SOIL GROUP: | | | 6. DEPTH TO SEASONAL HIGH WATER: | | | |
| 7. CURRENT WATER DEPTH: | | | 8. DEPTH TO IMPERVIOUS LAYER: | | | 9. MISC: | | | |
| 10. POTENTIAL FOR: | | | | | | EROSION | RUNOFF | PONDING | |
| | | | | | | | | | |
| 11. SOIL PROFILE DESCRIPTION: | | | | | | | | | |
| HORZ | DEPTH | TEXTURE | %CL | STR | MOT | IND | ROO | (X) | FSP |
| | | | | | | | | | |
| 12. SITE PERCOLATION RATE: | | | | | | | | | |
| 13. FINDINGS & RECOMMENDATIONS: | | | | | | | | | |

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APPENDIX D (CONTINUED)
SOIL EVALUATION REPORT INSTRUCTIONS FOR COMPLETING FORM 2

Form 2 is the detailed record of soil information obtained on the development site. One copy of Form 2 must be completed for each soil location where testing has been done. For tests other than soil logs for which the scientist wants to submit numerical results, please attach a separate sheet and briefly describe the results under "Findings and recommendations". The summary information that heads the sheet should be self-explanatory. Regarding location, reference the location to features that are permanent and static, such as roads or property lines.

1. State briefly tests that were done. Indicate whether tests were field, laboratory, or other.
2. Determine the soil series from the maps provided in the Soil Conservation Service (SCS) *Soil Survey of Pierce County*. Then, indicate what soil series was mapped as a result of the soil testing done.
3. Indicate land form (e.g., till plain).
4. Indicate depositional history (e.g., alluvial plain).
5. Indicate SCS hydrologic soil group (e.g., letter designation A through D).
6. Indicate seasonal high water table depth based upon the presence of mottling, gleying, or other evidence. Indicate how you determined this value under "Findings..." section. If information available is inadequate, state value to be "greater than" bottom of hole depth.
7. Indicate current water table depth based upon observation. If saturated conditions are not observed, state value to be "greater than" bottom of hole depth.
8. Indicate depth to impervious layer (e.g., basal till). If information is inadequate, state value to be "greater than" bottom of hole depth.
9. Space for other miscellaneous observations regarding setting of site (e.g., concave, convex, swale, hillslope).
10. Indicate susceptibility of area to erosion, runoff, and ponding problems. The susceptibility should be rated based upon relevant physical characteristics and development operations planned for the area, such as shape of the area (e.g., concave, convex, flat) removal or addition of fill, time of year, existing and planned vegetative cover, degree of soil compaction, etc.
11. The profile description provides the minimum information on the physical attributes of the soil. Additional factors may be assessed at the option of the scientist, but data on these factors should be tabulated separately and summarized briefly in the "Findings and recommendations" section.

All information provided for the profile shall utilize standard SCS nomenclature and abbreviations. The following are the factors to be addressed, with brief examples of acceptable responses. Further

information on most of these is provided in the *SCS Soil Survey of Pierce County*.

- a. **Hor(izon):** A layer of soil with distinct characteristics, labeled A, AB, B, C, Ccw, etc.
 - b. **Depth:** Starting at 0" (surface), depth and interval of horizon.
 - c. **Textur(al class):** Class that best describes relative percentages of sand, silt, and clay in horizon, such as sandy loam (SL).
 - d. **%Cl(ay):** Clay percentage is very useful as a guide to determining the drainage capability of a soil.
 - e. **Str(ucture):** Describes size and shape of soil "clods".
 - f. **Mot(tling):** Where present, describe using three-letter abbreviation to indicate abundance, size, and contrast, such as CFD (common, fine, distinct).
 - g. **Ind(uration):** Physical compaction of a layer such as a glacial till. Where present, describe as weak, mod(erate), or str(ong).
 - h. **Roo(ts):** Where present, describe using two-letter abbreviation to indicate abundance and size, such as CF (common, fine).
 - i. **Generalized range of infiltration rates from SCS Soil Survey.**
 - j. **F(ield) S(aturated) P(ercolation rate):** Using all available information, estimate the field saturated percolation rate. This rate should be a single number, and may vary from that range (see pervious column) published in the SCS Soil Survey due to horizon-specific factors.
12. Provide overall site (location) field-saturated percolation rate. Rate should reflect effects of the entire soil column. Alternate rates may be provided if placement of the infiltration surface beneath finer surface soils (in coarser subsoils) would increase the rate. If the type of stormwater system to be employed is known (e.g., pond or trench, and depth), factor this knowledge into the assessment.
13. Discuss results of tests done on soil. Indicate features of soil that most affect stormwater management at this location. Provide recommendations to the Project Engineer on soil-related factors such as problems and controls, and for additional work needed (if necessary).