

Materials mapping by Jenn C. Prescott, Jr. completed during the 1990 field season. Supplemental materials data were collected by Maine Geological Survey field assistants during the 1990 field season. Additional materials data sources include, but are not limited to, municipal water company records, U.S. Geological Survey Basic-Data Reports, Maine Geological Survey bedrock well database and published bedrock geology maps, Maine Department of Environmental Protection site files, Maine Department of Transportation highway construction records, and the Maine Department of Human Services public water-supply well database.



Topographic base from U.S. Geological Survey Guilford quadrangle, scale 1:24,000 using standard U.S. Geological Survey topographic map symbols.

The use of industry, firm, or local government names on this map is for location purposes only and does not impute responsibility for any present or potential effects on the natural resources.

This map shows the textures of surficial sediments in the quadrangle, independent of interpretations regarding their origin. For example, poorly sorted sediments deposited directly from glacial ice are shown here as "diamicton," although they may be genetically classified as "till."

The symbols listed below indicate materials observed in borrow pits and other surface exposures, as well as subsurface data from various sources. Where more than one textural class is present, materials are separated by commas and listed in decreasing order of abundance (e.g. st, cy). Individual materials may occur in distinct layers, or they may be mixed. Hypens show the ranges of particle sizes present where their relative abundances are uncertain (e.g. st-c). Slash marks indicate superposition of materials. Numbers are observed thicknesses in feet (e.g. 10s/3cy) and in many cases do not indicate the thickness of surficial materials that may exist at greater depths. * indicates a significant stratigraphic sequence of interbedded materials. Not all symbols will necessarily be found on the map.

MIXED UNITS

gs	Gravelly sand (this is a special case for sand with lesser amounts of intermixed gravel, i.e. pebbly sand, cobbly sand, or bouldery sand).
sg	Sand and gravel (used only to describe slumped face or other site where relative abundances of sand vs. gravel are unknown).

vcs	Very coarse sand	(1-2 mm)
cs	Coarse sand	(0.5-1 mm)
ms	Medium sand	(0.25-0.5 mm)
fs	Fine sand	(0.125-0.25 mm)
vfs	Very fine sand	(0.0625-0.125 mm)

CLAY	cv	Clay	(≤ 0.002 mm)
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Note: Diamictons of glacial origin may be classified as one of the following varieties of till (shown on the map in parentheses):

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Organic-rich sediment (can be any organic material, including forest litter, wood, shells, etc.)

Peat (reserved for actual fibrous peat)

MATERIALS

bd Scattered boulders; interpreted as till where followed by (t)
rk Bedrock (observed in pit floor, boring, or natural exposure)
rs Rottenstone, disintegrated or weathered bedrock, saprolite,
u Unknown (material unidentified)
R Refusal (in test boring or well)
(f) Fossiliferous (used to indicate fossiliferous units within a sequence).

- 56 Depth to bedrock from seismic line, in feet below land surface
- + Bedrock outcrop

1. Hanson, L. S. and Caldwell, D. W., 1981, Reconnaissance surficial geology of the Guilford 15' quadrangle, Maine: Maine Geological Survey, Open-File Map 81-18.
2. Lewis, E. B., Locke, D. B. and Neil, C. D. (compilers), 2001, Significant sand and gravel aquifers in the Guilford quadrangle, Maine: Maine Geological Survey, Open-File Map 01-79.
3. Thompson, W. B., 1979, Surficial geology handbook for coastal Maine: Maine Geological Survey, 68p. (out of print)
4. Thompson, W. B., and Borns, H. W., Jr., 1985, Surficial geologic map of Maine: Maine Geological Survey, scale 1:500,000.



SURFICIAL MATERIALS

Uses of Materials Maps

Geologic processes such as weathering and erosion break bedrock down into smaller particles of sediment. Sediments such as clay, silt, sand, gravel, and other loose deposits which lie on top of bedrock are grouped together in the general category of "surficial materials." These materials are not soils; they are the deeper earth materials that lie between the soil zone and the underlying bedrock. Soils commonly develop by weathering of the uppermost part of these materials.

Mapping Surficial Materials

When mapping the surficial geology or the extent of sand and gravel aquifers in a quadrangle, a geologist first makes observations about the surficial materials at a network of points throughout the area. These points of observation may be auger holes, road cuts, gravel pits, stream cuts, or other places where sediments are visible. The geologist describes the materials at each location using the size abbreviations shown in the explanation below the map at left. Sedimentary materials range in particle size from clay (<0.002 mm) to boulders (>256 mm or 10"). The observation points plotted on the quadrangle and the resulting surficial materials map shows what is known about the distribution, thickness, and texture of sediments in the area.

By combining materials data with well and test hole data, seismic studies, other published information, and analysis of aerial photographs, the geologist then interprets the pattern of these materials to create a geologic map.

