



**SURFICIAL GEOLOGY
OF THE ADELPHIA QUADRANGLE
MONMOUTH AND OCEAN COUNTIES, NEW JERSEY**

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DESCRIPTION OF MAP UNITS

- Age of unit indicated in parentheses. For units spanning more than one period, principal age is listed first. Order of map units in list does not necessarily indicate chronologic sequence.
-  **ARTIFICIAL FILL**—Sand, silt, clay, gravel; brown, gray, yellowish brown; may include demolition debris (concrete, brick, asphalt, glass) and trash. As much as 50 feet thick. In road and railroad embankments, solid-waste landfills, and made land. Many small areas of fill in urban areas are not shown.
 -  **Qal ALLUVIUM (Holocene and late Pleistocene)**—Sand, silt, clay, peat, yellowish-brown, dark brown, gray, and pebble gravel. Abundant organic matter. Sand is chiefly quartz, with some glauconite and mica. Gravel is quartz and quartzite with minor ironstone. As much as 15 feet thick. Deposited in floodplains, channels, and ground-water seepage areas.
 -  **Qs SWAMP AND MARSH DEPOSITS (Holocene and late Pleistocene)**—Freshwater peat and organic silt, sand, and clay; dark brown to black. As much as 10 feet thick.
 -  **Qcal COLLUVIUM AND ALLUVIUM (Holocene and late Pleistocene)**—Interbedded alluvium and colluvium in headwater valleys. As much as 15 feet thick.
 -  **Qe EOLIAN DEPOSITS (late Pleistocene and Holocene)**—Fine-to-medium sand, very pale brown to reddish yellow. Sand is chiefly quartz with minor glauconite and mica in places. As much as 10 feet thick. Forms dunes and sand sheets.
 -  **Qt LOWER TERRACE DEPOSITS (late Pleistocene)**—Sand and minor silt; yellow, yellowish brown, reddish yellow, and pebble gravel. Sand is chiefly quartz, with some glauconite and mica. Gravel is quartz and quartzite with minor ironstone. As much as 30 feet thick. Forms stream terraces with surfaces 5 to 20 feet above the modern floodplain.
 -  **Qcl LOWER COLLUVIUM (late Pleistocene)**—Sand, silt, minor clay; yellow, yellowish brown, reddish yellow, light gray; some quartz and ironstone pebbles. As much as 20 feet thick, generally less than 10 feet thick. Forms aprons graded to lower terraces or the modern floodplain.
 -  **Qtu UPPER TERRACE DEPOSITS (middle Pleistocene)**—Sand, minor silt; yellow, reddish yellow, and pebble gravel. Sand is chiefly quartz; glauconite and mica are generally less abundant than in the lower terrace deposits and alluvium. Gravel is quartz, quartzite, and minor ironstone. As much as 20 feet thick. Forms terraces with surfaces 20 to 50 feet above the modern floodplain.
 -  **Qcu UPPER COLLUVIUM (middle Pleistocene)**—Sand, silt, minor clay; pale brown, yellow, reddish yellow; some quartz, quartzite and ironstone pebbles. As much as 20 feet thick. Forms aprons graded to upper terraces.
 -  **Tg UPLAND GRAVEL (Pliocene-early Pleistocene)**—Sand, yellow to reddish yellow, and pebble gravel; minor fine-cobble gravel. Sand is chiefly quartz, with minor glauconite in places; gravel is quartz and quartzite with minor weathered chert. Locally iron-cemented. As much as 20 feet thick. In erosional remnants on hillslopes and interfluvies.
 -  **Qwcp WEATHERED COASTAL PLAIN FORMATIONS**—Exposed sand and clay of Coastal Plain bedrock formations. May be overlain by thin, patchy alluvium and colluvium. Quartz and ironstone pebbles left from erosion of surficial deposits may be present on the surface and in the upper several feet of the formation.

DESCRIPTION OF MAP SYMBOLS

-  **Contact**—Contacts of alluvium and swamp and marsh deposits are well-defined by landforms and are drawn from 1:12,000 scale aerial stereophotos. Contacts of other units are approximately located based on both landforms and field observation points.
-  **Material observed in hand-auger hole, exposure, or excavation.**
-  **Shallow topographic basin**—Of probable periglacial origin. Drawn from 1:12,000 scale aerial stereophotos taken in 1979.

