



EXPLANATION

FILL Man-made deposits of natural earth material used to extend shore land and/or to fill a low-lying area such as where a road crosses a valley or marsh. Most of the fill in the map area is dredged marsh deposits from channel construction and deepening through the marshes. Some construction debris (concrete, bricks, etc.) may be incorporated in the unit.

NEARSHORE DEPOSITS *offshore*

Pale-yellow to light-gray, cross-bedded, very fine, silty sand to fine to coarse sand with laminae to thin beds of very coarse sand, granules, and pebbles. Shells are a common constituent of the sands and range from fragmented, granule-size pieces to whole shells. Nearshore deposits are mapped from the shoreline to where the seafloor drops from the gradual slope from the beach with water depths of less than 10 ft to water depths of greater than 20 ft. Texture of nearshore sediments is related to texture of underlying sand from which they are reworked and are fine silt sand off the Pleistocene beach at Rehoboth Beach and fine to coarse sand off the barrier shore of Dewey Beach. Nearshore deposits fine offshore from the coarse sand to gravel in the surf zone to very fine silt sand and are thin, usually less than 2 ft in thickness. Holocene.

FINGER SHOAL DEPOSITS *offshore* Q1s

Gray, silty, coarse, medium to fine, and fine to very fine sand that fines seaward to very fine sandy silt. In the medium sands, shell fragments and *Mercesaria* shells are common. Clay and clayey silt-lined barrens are common throughout. The sands are finely laminated with opaque heavy minerals and textural laminae of very fine silty sand and coarser sand. The deposits interfinger with the quick-water deposits. Finger shoal deposits extend from the bathymetric break between 10 and 20 f offshore that marks the

limb of the nearshore deposits to water depths of about 50 ft. They have a characteristic bathymetric signature of shoos-oblique highs that extend like fingers from the nearshore. Thickness ranges from less than 1 ft off Rehoboth Beach to greater than 10 ft where best developed off the Rehoboth Bay barrier. Holocene.

Burrows are common in the shoal deposits; in places the sediment is completely bioturbated. Shells ranging from sand-size fragments to whole shells are rare to common. Shoal deposits are commonly over 10 ft thick and range from less than 3 ft to over 20 ft in thickness. The shoal deposits related to the deposition of Hen and Chickens Shoal, Holocene.

granules, pebbles, and shell fragments. Cross-bedding is common consisting of laminae of sand, granules, and pebbles. Shells most common within the sheet sand deposits are *Schizotha*, *Eosia* and *Assinia* are few to common and lesser amounts of sand dollars, *Scrinipoda* spines, and solitary corals (*Astrangia*? have been observed. Sheet sand deposits range from a few inches to over 5 ft in thickness. Where thin (<2 ft), the deposits tend to be patchy overlying silt, finger silt, or quiet-water deposits. Where thicker, the deposits form an extensive layer or sheet of sand on the seafloor; most commonly where the Beavertown Fm. underlies, and was the source of sand for, the sheet sand deposits. Holocene.

QUIET-WATER DEPOSITS *offshore*

Light-gray to very-dark-gray, very fine silty sand to silt. Burrows are common to abundant. While to fragments of *Exos* shell are common to abundant. Thin laminae of sand and very fine silt are common. These deposits are commonly found at water depths greater than 45 ft (below storm wave base). Deposits range from one to 10 ft in thickness. Holocene.

SHORELINE DEPOSITS

White to light-gray, well-sorted, very coarse to fine sand with scattered pebbles. Along the western shoreline of Rehoboth Bay, they are thin, ephemeral bodies of sand less than 3 ft thick. Along the Atlantic shoreline, the sands range up to 10 ft thick. These sands grade laterally into dune deposits and washover deposits. Holocene.

BARRIER WASHOVER DEPOSITS

While to gray, very coarse to fine sand with scattered laminae of pebbles and heavy mineral laminae. Laminae of organic fragments and thin peat layers are also common. These deposits are the result of stream events transporting shelling and dense deposits into the margin of Rehoboth Bay. The peat and organic debris layers represent established marshes that are buried by subsequent washover events. Washover deposits are up to 25 ft thick (Chrzanowski, 1986). Holocene.

finebedded fine to coarse sand, gravelly sand, silty sand, and sandy silt. Scattered shelly beds are also present. The unit represents the spit complex of Cape Henlopen that has prograded into the mouth of Delaware Bay and overlies marine deposits. Thickness ranges from 0 to 80 ft. Holocene.

SWAMP DEPOSITS

Consist of 1 to 3 ft of gray to brown, silty and clayey, gravelly sand at the base overlain

by organic-rich silt to coarse sand. In some of the larger stream valleys, the unit has several feet of organic silt at the top. Up to 15 ft thick in the larger stream valleys and less than 5 ft thick in the smaller tributaries. Holocene.

MARSH DEPOSITS

Light-gray to brown, organic-rich, clayey silt. Peat beds consisting of finely comminuted organic fragments (primarily of marsh grass) are common near the base of the unit and scattered elsewhere. *Marsh deposits are generally less than 10 ft thick along the western*

LAGOON DEPOSITS on cross section

DUNE DEPOSITS

White to light-yellow, well-sorted, medium to fine sand. Laminae of coarse sand are common. Thin, brown soil lamellae are commonly found at depths of 1 to 3 ft within the dunes. Inland dune deposits range up to 15 ft thick. The deposits are eolian features

land dates across the landscape. Latest Pleistocene to Holocene.

CAROLINA BAY DEPOSITS

Found in circular features in the northwestern part of the Fairmount Quadrangle. They consist of raised rims of well-sorted medium to fine sand and silty sand in the interior of the circular features. They may have contained thin organic-rich sands in the interior, but much of these deposits have been disturbed and destroyed by farming. A few of the

is high. The deposits are less than 5 ft thick in their interiors and up to 10 ft thick where the sand rins are best developed. The features are related to cold-climate processes during the latest Pleistocene. Latest Pleistocene to Holocene.

SCOTTS CORNERS FORMATION (YOUNGER)

Pale-yellow to light-gray, gravelly sand grading up to medium to coarse sand, to fine sand, commonly capped by 1 to 3 ft of very fine, sandy, clayey silt. Scattered beds of

deposits are found beneath low terrace flats less than 5 ft in elevation along the margins of Rehoboth Bay and range up to 15 ft in thickness. They are considered to be lagoon-margin deposits; the result of a high stand of sea level along the margins of an ancestral Rehoboth Bay at approximately 80,000 yrs B.P. (Ramney, 2010a).

Late Pleistocene.

SCOTTS CORNERS FORMATION (OLDER)

White to pale-yellow, well-sorted, fine to coarse sand with scattered very coarse to large beds of grey silty clay. These deposits are found beneath summer flume between 10 and 18 m in elevation along the margin of Robohot Bay and range up to 10 m in thickness. They are primarily tidal-flat deposits related to a high stand of sea level at approximately 120,000 yrs B.P. (Ramsey, 2010a). Late Pleistocene.

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<p>Clear, white to pale-yellow, well-sorted, fine to coarse sand with scattered very coarse to</p>	

phibed laminae and very clayey laminae overlying light-gray to greenish-gray, compact silty clay with rare laminae of mafic shells and shell fragments. The unit thickness is estimated to be ranging from 10 ft thick to over 60 ft in thickness. The silty clay beds are gradually inclined to well-sorted sands with clay laminae. The deposits were deposited in a lagoon (silty clay with shell) with tidal flats (sand with clay laminae) that was prograded by silt deposits (well-sorted fine to coarse sand). The lagoonal and tidal flat deposits are considered to have been deposited during a high stand of sea level at approximately 340,000 years B.P. (Ramsey, 2010a). The overlying silt deposits may be related to the same event or may be related to a later high stand of sea level at 320,000 years B.P. (Ramsey, 2010a). Late Pleistocene.

Where shown with pattern in the western half of the Fairmont quadrangle, the Lynch Heights Formation consists of thin (< 10 ft and in most areas < 3 ft thick) layers of heterogeneous deposits ranging from reddish-brown, pale-yellow, and light-gray, silty, clayey, very coarse to fine sand, to pale-yellow to light-gray gravely sand to sandy clay. The Lynch Heights Formation is overlain by the Beaverton Formation and underlies the Lynch Heights Beaverton Formation sediments. These deposits grade laterally into the Lynch Heights Beaverton (described above). Deposited in shallow water along the margins of a tidal system during a high stand of sea level at approximately 400,000 yrs B.P. that has been strongly overprinted by later cold climate and soil-forming processes. It is likely that in many places in the area mapped that this unit is absent and the Beaverton Formation forms the vertical deposit. They are differentiated from the

Beaverdam Formation in that they lack the characteristic white silt matrix and generally have a layer of coarse sand to gravel overlying typical Beaverdam sands.

Late Pleistocene.

BEAVERDAM FORMATION

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Heterogeneous unit ranging from very coarse sand with pebbles to silty clay. The predominant lithologies at the land surface are white to mottled light-gray and reddish-brown, silty to clayey, fine to coarse sand. Laminar and beds of very coarse sand with pebbles to gravel are common as are laminae and beds of mudstone to lithomery silty

clay, in a few places near land surface, but more commonly in the subsurface, beds ranging from 2 to 20 ft thick of finely laminated, very fine sand and silt clay are present. The sands of the Beaverdam Formation have a white silt matrix that gives samples a milky appearance when wet. This white silt matrix is the most distinguishing characteristic of this unit and readily differentiates the Beaverdam Formation from the adjacent, cleaner sands of the Lynch Heights and Scotts Corners Formations. The Beaverdam Formation is interpreted to be a late Pliocene fluvial to estuarine deposit. The Beaverdam ranges from 50 to 100 ft thick in the map area. Late Pliocene.

