Preliminary Surficial Geologic Map of Martha's Vineyard, Nomans Land, and parts of Naushon and Pasque Islands, Massachusetts

by

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Base compiled from a mosaic of U.S. Geological Survey 7½ minute Massachusetts topographic quadrangles: Naushon Island, 1944; Vineyard Haven, 1951; Edgartown, 1944; Squibnocket, 1951; and Tisbury Great Pond, 1944.

EXPLANATION [1]

Holocene

Qsw — Swamp Deposits

Mostly peat and organic silt and fine sand

Qb — Beach Deposits

Mostly medium to coarse sand and fine gravel

Holocene and Pleistocene

Qbb — Buzzards Bay - Elizabeth Island Moraine

Bouldery sandy till as much as 20 feet thick, over deformed gray silty clay and fine to medium sand.

Qmvo — Outwash from Martha's Vineyard Moraine

Interbedded sand and gravel. Top 5 to 10 feet silty with boulders; many pebbles are siderite nodules, probably derived from Cretaceous deposits. These siderite nodules have been partly to entirely altered to iron oxide.

- Vertical lines show areas where superglacial outwash overlies Martha's Vineyard Moraine.

Qmv — Martha's Vineyard Moraine

West of Vineyard Haven: thin, bouldery sandy till overlying deformed gray clays and fine to medium clean sands. Vineyard Haven and east: somewhat stratified, silty, fine to coarse sand with embedded pebbles and cobbles. Boulders rare.

- Thick curved lines show location and trend of small push ridges
- Slanting lines show areas where moraine is thin and overlies Gay Head Moraine.

Qgh — Gay Head Moraine

Imbricated thrust sheets consisting of Cretaceous and Miocene sediments and older Pleistocene drifts. Thrust plates dip steeply northwest in Chilmark and north in Gay Head. Boulders as much as 30 feet in diameter are common on surface of moraine in many places and are abundant along outcrops of certain thrust plates and form narrow boulder stripes.

- Heavy lines show location and trend of low topographic ridges that mark outcrops of individual thrust plates.

Qs — Squibnocket Moraine overlain by thin Martha's Vineyard Moraine

Very compact and sandy, pink, mauve, and purplish gray till. A zone of deformed clays and sands occurs within the till. Till stands in vertical cliffs. Martha's Vineyard Moraine generally less than 15 feet thick.

Dry valleys cut by streams in early post-glacial time

[1] See the following reference for more details: Kaye, C.A. 1964, Outline of Pleistocene geology of Martha's Vineyard, Massachusetts: U.S. Geol. Survey Prof. Paper 501-C, p. C138-C139; Kaye, C.A., 1964, Illinoian and early Wisconsin moraines of Martha's Vineyard, Massachusetts: U.S. Geol. Survey Prof. Paper 501-C, p. C140-C143.

Scale 1:62500

1 MILE

1000 0 1000 2000 FEET

1 KILOMETER