Prepared in cooperation with the
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
SUFFOLK COUNTY WATER AUTHORITY
TOWN OF EAST HAMPTON
TOWN OF NORTH HEMPSTEAD
TOWN OF SOUTHAMPTON
TOWN OF SOUTHOLD
AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY

USGS U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
science for a changing world

SCIENTIFIC INVESTIGATIONS MAP 3066
Depth to water table—SHEET 4 of 4

Monti, Jack, Jr., and Busciolano, Ronald, 2009,
Water-Table and Potentiometric-Surface Altitudes in the Upper Glacial, Magothy, and Lloyd Aquifers beneath Long Island, New York, in March-April 2006



Depth to Water Table

This map depicts the depth to the water table beneath Long Island in March-April 2006. A geographic information system was used to create a continuous surface of the water table using a nearest neighbor interpolation of 342 measurements at observation wells, interpreted 10-ft contour intervals, and the coastline. The altitude of this surface was subtracted from the altitude of the same location in a 10-meter digital elevation model of the topography of Long Island, and the results are shown.

The general configuration of the depth to the water table reflects the topography data; however, because the map scales of the topography (1:24,000) and water-table altitude (1:125,000) differ, the horizontal accuracy of the depth to water table is 1:125,000 and has a vertical error of ± 5 ft. Areas in which no water-level data were available for comparison are shown in gray; however, in areas along the south shore of Long Island, including marshes and the barrier island, the water-table altitude was assumed to be NGVD 29. Areas in which the water table is shallow are shown in red and indicate areas where potential subsurface flooding may occur.

Ground-Water Level Data

Ground-water level data were downloaded from the USGS National Water Information System (NWIS) database, accessed at http://waterdata.usgs.gov/nwis/qw. This database consists of more than 850,000 records of wells, springs, test holes, tunnels, drains, and excavations in the United States. Available site descriptive information includes well-location and completion information, such as latitude, longitude, well depth, and aquifer. NWIS water-level data may be queried and used to construct historical time-series hydrographs for wells. As an example, for Suffolk County mapped well '316783' search NWIS on Site Name "167B3", and chose match any part; then click submit. A search will be performed and a resulting list of site numbers will appear, click on the site number link, then click on the field ground-water-level measurements link.

References Cited

Smolensky, D.A., Buxton, H.T., and Shernoff, P.K., 1989, Hydrologic framework of Long Island, New York: U.S. Geological Survey Hydrologic Investigations Atlas HA-709, 3 sheets, scale 1:250,000.

Soren, Julian, and Simmons, D.L., 1987, Thickness and hydrogeology of aquifers and confining units below the upper glacial aquifer on Long Island, New York: U.S. Geological Survey Water-Resources Investigations Report 86-4175, 3 sheets, scale 1:125,000.

Stumm, Frederick, 2001, Hydrogeology and extent of saltwater intrusion of the Great Neck peninsula, Great Neck, Long Island, New York: U.S. Geological Survey Water-Resources Investigations Report 99-4280, 41 p.

Stumm, Frederick, Lange, A.D., and Candela, J.L., 2002, Hydrogeology and extent of saltwater intrusion on Manhasset Neck, Nassau County, New York: U.S. Geological Survey Water-Resources Investigations Report 00-4193, 42 p.

Stumm, Frederick, Lange, A.D., and Candela, J.L., 2004, Hydrogeology and extent of saltwater intrusion in the northern part of the town of Oyster Bay, Nassau County, New York: U.S. Geological Survey Water-Resources Investigations Report 03-4288, 55 p.

Base from U.S. Geological Survey digital data 1:100,000 series
Lambert Conformal Conic projection
Standard parallels 40° 40' N and 41° 2' N, central meridian 74° 00' W
North American Datum of 1983

Water-Table and Potentiometric-Surface Altitudes in the Upper Glacial, Magothy, and Lloyd Aquifers beneath Long Island, New York, March-April 2006

By
Jack Monti, Jr., and Ronald Busciolano

2009

Hydrology by Jack Monti, Jr., 2005

For additional information write to:
Director, U.S. Geological Survey, 2045 Route 112, Coram, NY 11727

Copies of this report are available on-line at http://ny.water.usgs.gov or can be purchased from:
U.S. Geological Survey, Branch of Information Services, Box 25286, Denver, CO 80225-0286