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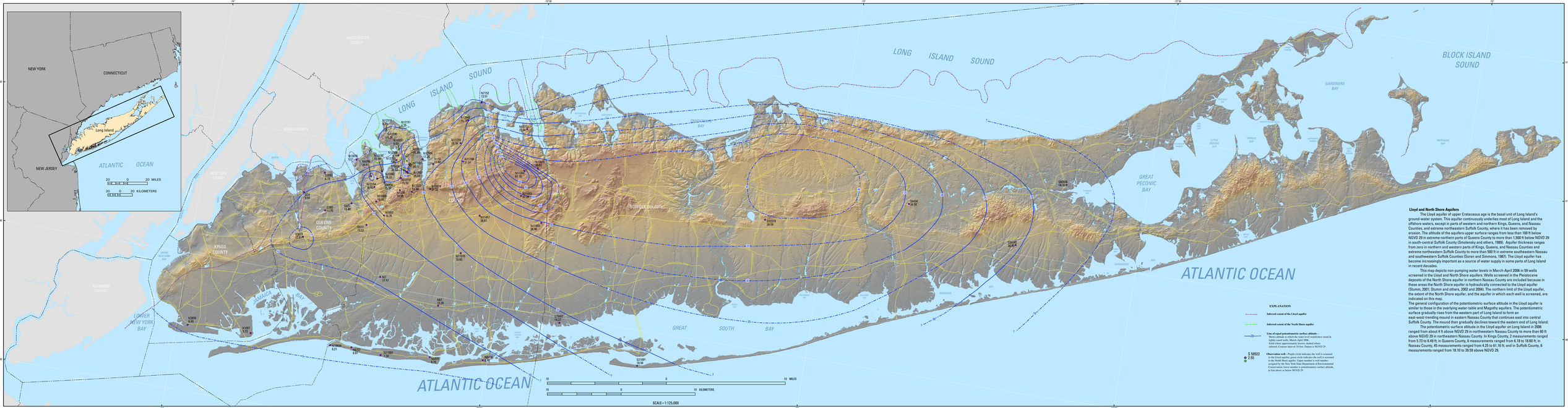
NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
SUFFOLK COUNTY WATER AUTHORITY
TOWN OF EAST HAMPTON
TOWN OF NORTH HEMPSTEAD
TOWN OF SHELTER ISLAND
TOWN OF SOUTHAMPTON
AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY

USGS U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

SCIENTIFIC INVESTIGATIONS MAP 3066
Potentiometric surface in the Lloyd and North Shore aquifers—SHEET 3 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



Lloyd and North Shore Aquifers

The Lloyd aquifer of upper Cretaceous age is the basal unit of Long Island's ground-water system. This aquifer continuously underlies most of Long Island and the offshore waters, except in parts of western and northern Kings, Queens, and Nassau Counties, and extreme northeastern Suffolk County, where it has been removed by erosion. The altitude of the aquifers upper surface ranges from less than 100 ft below NGVD 29 in extreme northern parts of Queens County to more than 1,500 ft below NGVD 29 in south-central Suffolk County (Smolensky and others, 1989). Aquifer thickness ranges from zero in northern and western parts of Kings, Queens, and Nassau Counties and extreme northeastern Suffolk County to more than 500 ft in extreme southeastern Nassau and southwestern Suffolk Counties (Soren and Simmons, 1987). The Lloyd aquifer has become increasingly important as a source of water supply in some parts of Long Island in recent decades.

This map depicts non-pumping water levels in March-April 2006 in 59 wells screened in the Lloyd and North Shore aquifers. Wells screened in the Pleistocene deposits of the North Shore aquifer in northern Nassau County are included because in these areas the North Shore aquifer is hydraulically connected to the Lloyd aquifer (Stumm, 2001; Stumm and others, 2002 and 2004). The northern limit of the Lloyd aquifer, the extent of the North Shore aquifer, and the aquifer in which each well is screened, are indicated on this map.

The general configuration of the potentiometric-surface altitude in the Lloyd aquifer is similar to those in the overlying water-table and Magothy aquifers. The potentiometric surface gradually rises from the western part of Long Island to form an east-west-trending mound in eastern Nassau County that continues east into central Suffolk County. The mound then gradually declines toward the eastern end of Long Island.

The potentiometric-surface altitude in the Lloyd aquifer on Long Island in 2006 ranged from about 4 ft above NGVD 29 in northwestern Nassau County to more than 60 ft above NGVD 29 in northeastern Nassau County. In Kings County, 2 measurements ranged from 5.73 to 6.48 ft; in Queens County, 6 measurements ranged from 6.18 to 18.60 ft; in Nassau County, 45 measurements ranged from 4.25 to 61.16 ft; and in Suffolk County, 6 measurements ranged from 18.10 to 39.59 above NGVD 29.

EXPLANATION

Inferred extent of the Lloyd aquifer

Inferred extent of the North Shore aquifer

Line of equal potentiometric-surface altitude—Shows altitude at which the water level would have stood in tightly cased wells, March-April 2006. Solid where approximately known; dashed where inferred. Contour interval 10 feet. Datum is NGVD 29

S 58922
2.55

Observation well—Purple circle indicates the well is screened in the Lloyd aquifer; green circle indicates the well is screened in the North Shore aquifer. Upper number is well number assigned by the New York State Department of Environmental Conservation; lower number is potentiometric-surface altitude, in feet above or below NGVD 29

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

Hydrology by Jack Monti, Jr., 2007
For additional information write to:
Director, U.S. Geological Survey, 2007 Bruce Lee Lane, Vol 1 (1/2)

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U.S. Geological Survey, Branch of Information Services, Box 25286, Denver, CO 80225-0286

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By
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2009