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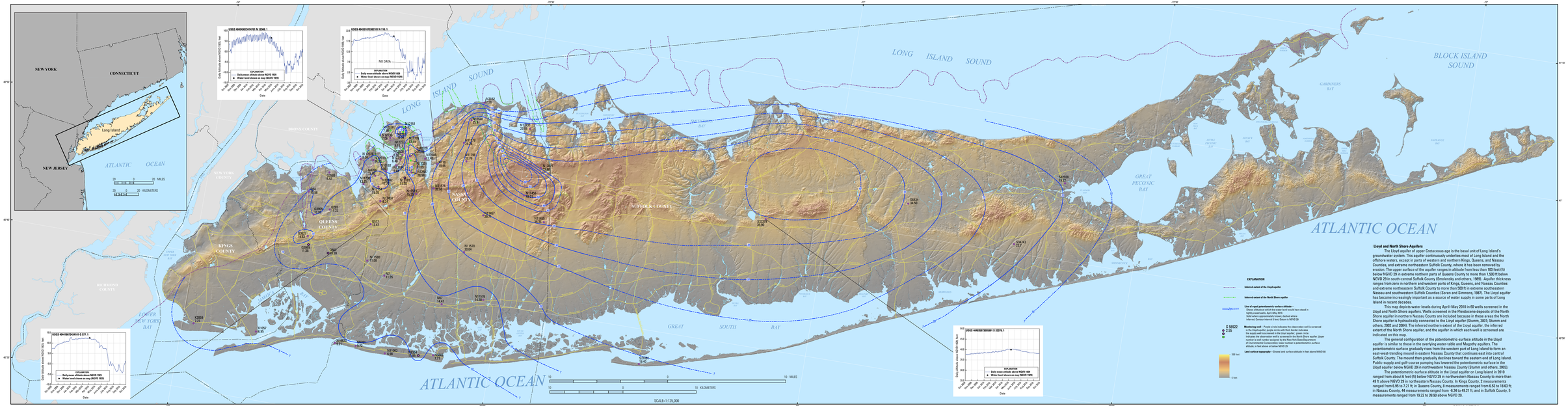
SUFFOLK COUNTY WATER AUTHORITY
TOWN OF NORTH HEMPSTEAD
TOWN OF SHELTER ISLAND
AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY

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

SCIENTIFIC INVESTIGATIONS MAP 3270
Potentiometric-surface altitudes in the Lloyd and North Shore aquifers—SHEET 3 of 4
Pamphlet to accompany
Water-Table and Potentiometric-Surface Altitudes in the Upper Glacial, Magothy, and Lloyd Aquifers beneath Long Island, New York, April–May 2010



Base from U.S. Geological Survey digital data 1:100,000 series
Universal Transverse Mercator projection
Zone 18 (central meridian 75° W to 84° 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, April–May 2010

By
Jack Monti, Jr., Michael Como, and Ronald Busciolano

2013

Lloyd and North Shore Aquifers

The Lloyd aquifer of upper Cretaceous age is the basal unit of Long Island's groundwater 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 upper surface of the aquifer ranges in altitude from less than 100 feet (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 southwestern 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 water levels during April–May 2010 in 60 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 inferred northern extent of the Lloyd aquifer, the inferred 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. Public-supply and golf-course pumping has lowered the potentiometric surface in the Lloyd aquifer below NGVD 29 in northwestern Nassau County (Stumm and others, 2002).

The potentiometric-surface altitude in the Lloyd aquifer on Long Island in 2010 ranged from about 6 feet (ft) below NGVD 29 in northwestern Nassau County to more than 49 ft above NGVD 29 in northeastern Nassau County. In Kings County, 2 measurements ranged from 6.95 to 7.21 ft; in Queens County, 8 measurements ranged from 6.53 to 18.63 ft; in Nassau County, 44 measurements ranged from -6.34 to 49.21 ft; and in Suffolk County, 5 measurements ranged from 19.22 to 39.90 above NGVD 29.

Publishing by Jack Monti, Jr.
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