



THE WATER-TABLE AQUIFER ON LONG ISLAND, NEW YORK, IN MARCH-APRIL 1984

The general configuration of the water table on Long Island is an east-west-trending mound along the center axis of Long Island. The highest areas are in central Nassau County and in central Suffolk County. This map depicts the static water levels of March-April 1984 in wells that tap the water-table aquifer.

The New York State Department of Environmental Conservation well numbers are shown on plate 2. These wells are screened in the upper glacial aquifer except in areas where the entire thickness of the aquifer is unsaturated and the water table is in the upper part of the Magothy aquifer.

Water-table altitudes range from 11.6 ft below sea level in central Queens County to 109.8 ft above sea level in western Suffolk County. The water table is, in general, 0.5 to 4 ft lower than the apparent record highs of 1979 (Donaldson and Koszalka, 1983) but 0.5 to 4.5 ft higher than in 1983 (Doriski, 1987). The areas of depressed water table in central Queens County have changed in size and shape from 1983, and an area in which water-table altitudes exceed 10 ft has developed in south-central Queens County. Also indicated are the approximate water-surface altitudes of south-shore streams that have been surveyed; the water levels in these gaining streams indicate the water-table altitude adjacent to the stream.

The water table is high in several areas on Long Island because the geologic units in these areas, primarily tills and clays, have low hydraulic conductivity. These areas are the eastern (Montauk) and north-central part of the south fork in eastern Suffolk County (this sheet); the Flanders area in eastern Suffolk County along Riverhead-Hampton Bays Road (Rt. 24) (this sheet); several areas near the Northern State Parkway in western Suffolk County (sheet 1); northern Nassau County, particularly Manhasset Neck north of Northern State Parkway (sheet 1); the northeastern part of Queens County (sheet 1); and the Park Slope section of Brooklyn, south-southwest of Flatbush Avenue (sheet 1). The 80- and 100-ft contours in Manhasset Neck are based on measurements made in 1983 (Doriski, 1987). The water table tends to be slightly elevated where the clay at Smithtown is present--particularly in the Lake Ronkonkoma area (sheet 1), which is underlain by the clay. Here the water table is higher than in the area south of the lake, where the clay is absent. The extent of the clay at Smithtown is depicted in Krulik and Koszalka (1983).

Most of the wells plotted on this map were measured in March and April 1984. In comparing water levels in the water-table aquifer with water levels in the Magothy aquifer, also measured in March-April 1984 (pl. 3), the user should verify whether the wells in each aquifer were measured at approximately the same time of the measurement period to account for differences related to precipitation. Information on the date and time of water-level measurements is available at the U.S. Geological Survey in Syosset, N.Y. In Queens and Suffolk County, synoptic measurements were made at several public well fields with wells screened in both aquifers, which allow vertical-head comparison between aquifers.

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REFERENCES CITED

- Donaldson, C. D., and Koszalka, E. J., 1983, Water table on Long Island, New York, March 1979: U.S. Geological Survey Open-File Report 82-163, 2 sheets, scale 1:125,000.
- Doriski, T. P., 1987, Potentiometric-surface altitudes of major aquifers on Long Island, New York, in 1983: U.S. Geological Survey Water-Resources Investigations Report 85-4321, 4 sheets, scale 1:125,000.
- Krulik, R. K., and Koszalka, E. J., 1983, Geologic reconnaissance of an extensive clay unit in north-central Suffolk County, Long Island, New York: U.S. Geological Survey Water-Resources Investigations Report 82-4075, 9 p.