



**ESTIMATED THICKNESS AND POTENTIAL WELL YIELD OF STRATIFIED-DRIFT DEPOSITS IN THE UPPER CROTON RIVER BASIN, WESTCHESTER COUNTY, NEW YORK**  
By  
**Stephen W. Wolcott and Don J. Irwin**  
**Plate 1A. Location of Wells and Springs**  
1988

**INTRODUCTION**

The population of the 123-square-mile upper Croton River basin in Westchester County, N.Y., is growing rapidly. Ground water is an important source of public and domestic supplies within the basin. In 1986, the U.S. Geological Survey, in cooperation with the Westchester County Water Agency, reviewed and compiled available well and soils information and used the data to plot the estimated thickness and potential well yield of stratified-drift deposits of the study area.

This map set consists of six plates at a scale of 1:24,000. Plates 1A and 1B show the locations of wells and springs in the northern and southern parts of the area, respectively; plates 2A and 2B show the estimated thickness of the stratified-drift deposits, and plates 3A and 3B show the estimated potential yields of wells that tap the stratified-drift deposits.

**METHODS**

Stratified-drift deposits are of two types; (a) those that consist mainly of sand and gravel and occur primarily in glacially scoured valleys, and (b) those that are recent accumulations of silt, clay, or sand alluvium or organic material underlying flood plains or filling local depressions in till and bedrock. Only deposits that are under water-table conditions are indicated here.

The boundaries of stratified-drift deposits were mapped from previous reports. Soils maps prepared by the U.S. Soil Conservation Service were then used to refine the aquifer boundaries on the basis of soils that are interpreted to have developed from glacial deposits of sand and gravel. Deposits of alluvium and some organic soils also were mapped because they transmit water readily and commonly overlie large thicknesses of stratified drift. Many accumulations of organic soils, particularly in upland areas, probably overlie till and bedrock but are not considered a significant source of water to wells and therefore are not delineated. Well-log data, where available, were used to confirm the presence of stratified-drift deposits and to refine the boundaries.

The data and publications used to prepare these maps were obtained from a variety of sources. Well and spring data were obtained from records on file at the U.S. Geological Survey in Albany, N.Y., the Westchester County Departments of Health and Planning, and the Town of Bedford (Leggett, Brashears and Graham, Inc., 1985). Data on stratified-drift deposits were obtained from (1) reports on ground-water resources of Westchester County by Asselstine and Grossman (1955), Van der Leeden (1962), and Geraghty and Miller Inc. (1977), Hanson (1983), and Jason M. Cortell and Associates (1985), (2) a map atlas published by the Westchester County Department of Planning (1982), (3) soils maps from the U.S. Soil Conservation Service (W. A. Duckery, U.S. Soil Conservation Service, written commun., 1986), and (4) an unpublished map on file with the U.S. Geological Survey in Albany, N.Y. (I. H. Kantorowicz, U.S. Geological Survey, written commun., 1969).

**LOCATIONS OF WELLS AND SPRINGS**

Plates 1A and 1B show the locations of wells, test holes, and springs from which hydrogeologic information is available. Only selected wells shown in areas with numerous wells. The latitude and longitude of wells and test holes whose local identification number is greater than or equal to W2000 were obtained from 1:24,000-scale maps on which locations were plotted by the Westchester County Department of Planning. Locations of wells, test holes, and springs with local identification numbers less than W2000 or preceded by WESP (Westchester County spring) were obtained from 1:24,000- and 1:62,500-scale maps plotted by the U.S. Geological Survey. These wells were field located by the Geological Survey in the mid-1950's. The latitude and longitude numbers of wells whose local identification number is preceded by BE (Town of Bedford) were taken from a 1:12,000-scale map prepared by Leggett, Brashears and Graham, Inc. (1985) and from data in files of the Westchester County Department of Health. Other identifying prefixes are as follows: IE (Town of Lewisboro), NS (Town of North Salem), NW (Town of New Castle), and SO (Town of Somers). Most of these wells were field checked by the U.S. Geological Survey in 1986.

Other information, such as well-log and production data, is available from U.S. Geological Survey files or from a computerized ground-water-site inventory data base at the Geological Survey office in Albany, N.Y.

**REFERENCES CITED**

Asselstine, E. S., and Grossman, I. G., 1955, The ground water resources of Westchester County, New York, part 1, records of wells and test holes: New York State Department of Conservation, Water Power and Control Commission, Bulletin CW-35, 79 p.

Geraghty and Miller, Inc., 1977, 208 Arealwide waste-treatment management planning for Westchester County, New York, north county technical study, groundwater section: Fort Washington, N.Y., Geraghty and Miller Inc., 105 p.

Hanson, E. L., 1983, Hydrogeologic investigation of the Lincoln Hall property, Anawalk-Sheronok Water District, Litchfield, New York: Latham, N.Y., Dunn Geoscience Corporation, 39 p.

Jason M. Cortell and Associates, Inc., 1985, Kipp property, Somers, New York, preliminary site feasibility analysis: Waltham, Mass., Jason M. Cortell and Associates, Inc., 53 p.

Leggett, Brashears and Graham, Inc., 1985, Ground-water assessment, Town of Bedford, New York: Wilton, Conn., Leggett, Brashears and Graham, Consulting Ground-Water Geologists, 1129 p.

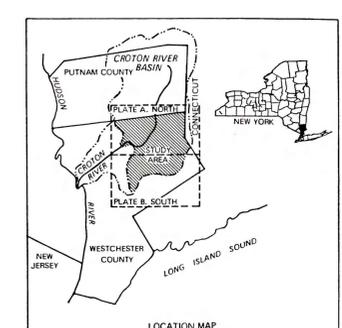
Van der Leeden, Fritz, 1962, The groundwater resources of Westchester County, New York: New York University, unpublished master's thesis, 90 p.

**REFERENCES CITED (CONTINUED)**

Westchester County Department of Planning, 1982, Westchester County environmental planning atlas, water-quality management program: Westchester County Department of Planning, 1 p.

**EXPLANATION**

- W1392 - Well or test hole that penetrates only unconsolidated deposits—number shown is local identification number.
- W1059 - Well of test hole that penetrate bedrock—number shown is local identification number.
- WESP50 - Spring flowing from bedrock—number shown is local identification number.
- Basin boundary



LOCATION MAP