

GENERALIZED THICKNESS OF THE CONFINED AQUIFER

Wells at most homes, farms, and commercial facilities from the Village of Greene to the northern part of Chenango Valley State Park tap the confined aquifer. The confined aquifer consists of sand and gravel that typically overlies bedrock and underlies lacustrine silt and clay. The sand and gravel and lacustrine sediments were deposited in a proglacial lake after a period of glacial stillstand (plate 3) that deposited the valley-wide moraine in the area now occupied by Chenango Valley State Park. The lake expanded northward following the retreating ice front as far as the next major stillstand, which is marked by a kame delta across the Chenango River valley near Warn Lake (plate 1), about 1.5 miles north of the Village of Brisben (Hetcher and others, 2003), which is approximately 6 miles northeast of the Village of Greene and outside the boundary of this map (see plate 1).

Northwest of Greene Landing Field (airport) the thickness of the confined aquifer is more than 40 feet; it is typically 10 to 25 feet thick elsewhere. In some areas, such as near the Village of Greene and the Greene Landing Field, there are sufficient well data to adequately define the thickness of the confined aquifer, but in most areas between Greene Landing Field and Chenango Valley State Park, the thickness was estimated from scant well data. It is unknown whether a confined aquifer exists at and to the south of Chenango Valley State Park.

REFERENCES CITED

Cadwell, D.H., 1972, Late Wisconsinan deglaciation chronology of the Chenango River valley and vicinity, New York: State University of New York at Binghamton, Ph.D. thesis, 102 p.

Cadwell, D.H., and Muller, E.H., 1986, Surficial geologic map of New York: New York State Museum - Geological Survey, Map and Chart Series 40, Finger Lakes Sheet, New York State Geological Survey, 1:250,000, digital compilation by Beckie Ugolini, 1998, from New York State Geological Survey 90 meter digital elevation models.

Hetcher, K.K., Miller, T.S., Garry, J.D., and Reynolds, R.J., 2003, Geohydrology of the valley-fill aquifer in the Norwich-Oxford-Brisben area, Chenango County, New York: U.S. Geological Survey Open-File Report 03-242, 7 plates.

EXPLANATION

GENERALIZED THICKNESS OF CONFINED AQUIFER

- Less than 10 feet
- 10 to 30 feet
- Greater than 30 feet

AQUIFER BOUNDARY -- shows extent of contiguous sand and gravel deposits that form the valley-fill aquifers; thinly saturated or unsaturated near the aquifer boundary (see plates 6 and 7); dashed where valley-fill aquifers extend beyond the study area.

CONFINED AQUIFER BOUNDARY -- shows extent of confined aquifer; question mark (?) where extent is unknown.

CHENANGO VALLEY STATE PARK BOUNDARY

LOCATION OF GLACIAL STILLSTAND -- ice-contact deposits with abundant fine sand.

LINE OF GEOHYDROLOGIC SECTION -- depicted on plate 8.

DATA POINT -- well that had data on thickness of confined aquifer. Number below is thickness of confined aquifer in feet.

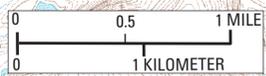
TEST BORING

COMMERCIAL WELL

OTHER PRODUCTION WELL

DOMESTIC WELL COMPLETED IN UNCONSOLIDATED DEPOSITS

DOMESTIC WELL COMPLETED IN BEDROCK



Base from U.S. Geological Survey 1:24,000 series Digital Raster Graphic topographic maps, from New York State Department of Environmental Conservation image catalog, 2000. Universal Transverse Mercator, Zone 18, NAD83.

Aquifer boundary based on surficial geology modified from Cadwell and Muller (1986) and Cadwell (1972).

GENERALIZED THICKNESS OF THE CONFINED AQUIFER BETWEEN VILLAGE OF GREENE AND CHENANGO VALLEY STATE PARK, NEW YORK

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