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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

WATER-RESOURCES INVESTIGATIONS REPORT 85-4149
PLATE 1--LOCATION OF WELLS AND TEST HOLES

HYDROGEOLOGY OF THE SALAMANCA AREA, CATTARAUGUS COUNTY, NEW YORK

by
Phillip J. Zarriello

LOCATION OF WELLS AND TEST HOLES

INTRODUCTION

Ground water provides approximately 36 percent of the water supply for upstate New York, excluding Long Island and New York City (New York State Department of Health, 1981). Most of the aquifers that supply this water consist of glacially derived sand and gravel (stratified drift) that partly fill major river valleys and their tributaries. Ground water in these stratified-drift aquifers can be under water-table (unconfined) or artesian (confined) conditions.

Agricultural, industrial, and urban development has occurred on many of these aquifers because they form level areas suitable for development and provide an ample ground-water supply. However, the generally shallow depth to the water table and the typically high permeability of the stratified deposits make these aquifers susceptible to contamination from surface sources such as landfills, road-salt stockpiles, hydrocarbon-fuel storage, and industrial facilities with a potential for contaminant leakage. In addition, contamination from urban and agricultural runoff, septic-tank leachate, and discharges from other nonpoint sources may adversely affect ground-water quality over large areas.

To facilitate management decisions by State and local agencies governing the use of ground-water resources in New York, the U.S. Geological Survey, in cooperation with the New York State Department of Health, began a study in 1980 to define the hydrogeology of selected heavily used aquifers in upstate New York. By 1982, 11 aquifers had been studied and the results published (Waller and Finch, 1982). As a continuation of this effort, the U.S. Geological Survey, in cooperation with the New York State Department of Environmental Conservation, began a study in 1983 to investigate the hydrogeology of other heavily used aquifers. Each report in this series consists of a set of maps at a scale of 1:24,000 that depict the hydrogeology of the aquifer, including well locations, surficial geology, geologic sections, land use, and soil permeability. Also included are maps that depict water-table and (or) potentiometric-surface altitude, saturated thickness of the aquifer, bedrock topography, and, where data are adequate, well yields. The number and types of maps in each report depends on the amount of hydrogeologic data available for each aquifer.

Purpose and Scope

This report describes the hydrogeology of the valley-fill aquifer system in the Salamanca area. It consists of five maps derived from current hydrogeologic data and include locations of wells and test holes (pl. 1), surficial geology (pl. 2A), geologic sections (pl. 2B), water-table altitude (pl. 3), soil permeability (pl. 4), and land use (pl. 5).

SALAMANCA AREA

The Salamanca area is in south-central Cattaraugus County in southwestern New York State. The valley-fill aquifer system there underlies the Allegheny River, Little Valley Creek, Great Valley Creek, Red House Creek, and parts of their tributaries.

LOCATION OF WELLS AND TEST HOLES

This map shows the locations of wells and test holes from which the hydrogeologic information for this study was obtained. These data were obtained from records of well inventories made during the late 1940's and early 1950's and in 1967, from engineering borings, from a report on ground water in this area (Frimpter, 1974), and a report on the ground-water supply of Allegheny State Park (Thawaites, 1935). The data are available from files of the U.S. Geological Survey office in Ithaca, N.Y. and, in part, from the references cited below or from the Geological Surveys' WATSTORE data base. Some of the reported wells may no longer exist, particularly the older domestic wells in the area now inundated by the Allegheny flood-control reservoir.

The four-digit number next to the well and test-hole symbols corresponds to the seconds of latitude and longitude of the well location. For example, a well at 42°09'25" latitude and 78°42'26" longitude would have an identification number 25-26. Some public-supply wells have been further identified by an 8-digit community water-system number assigned by the New York State Department of Health.

SELECTED REFERENCES

Frimpter, M. H., 1974, Ground-water resources, Allegheny River basin and part of the Lake Erie basin, New York: New York State Department of Environmental Conservation Basin Planning Report ABB-2, 98 p.

New York State Department of Health, 1981, Report on ground-water dependence in New York state: New York State Department of Health report, 49 p.

Thawaites, F. T., 1935, Ground water supplies of the Allegany State Park, 1932: Albany, N.Y., New York State Museum Circular 11, 63 p.

Waller, R. M., and Finch, A. J., 1982, Atlas of eleven selected aquifers in New York: U.S. Geological Survey Water-Resources Investigations 82-553, 255 p.

EXPLANATION

- ○ 32-22 / 01211000 — PUBLIC-SUPPLY WELL--large-capacity wells serving municipal water-supply systems. Upper number is well location, in seconds of latitude and longitude; lower number is community water-system number assigned by New York State Department of Health.
- ○ 25-26 — INDUSTRIAL OR INSTITUTIONAL WELL--large-capacity wells for industrial or institutional supply. Number is well location, in seconds of latitude and longitude.
- ⊙ 33-02 — OBSERVATION WELL--well used for monitoring ground-water quality and water levels; includes exploratory wells where casing was installed. Number is well location, in seconds of latitude and longitude.
- ● 21-55 — DOMESTIC WELL--well that serves individual residence. Number is well location, in seconds of latitude and longitude.
- ⊙ 13-09 — TEST HOLE--test hole or test boring used for determining subsurface characteristics for construction engineering properties or as exploratory water-supply wells; no casing installed. Number is location, in seconds of latitude and longitude.
- ——— — AQUIFER BOUNDARY--Approximate boundary of aquifer, based on alluvial or glacial-drift contact with bedrock valley walls.
- A — A' — TRACE OF GEOLOGIC SECTION--Geologic sections are shown on plate 2.

Base from New York State Department of Transportation, 1:24,000 series:
Limestone, N.Y., 1975; Little Valley, N.Y., 1975; Red House, N.Y., 1975; Salamanca, N.Y., 1975

NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Mean Sea Level".

0 ½ 1 2 MILES
0 ½ 1 2 KILOMETERS