PREPARED IN COOPERATION WITH THE
SUFFOLK COUNTY WATER AUTHORITY
SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES

ALTITUDE OF THE TOP OF THE MATAWAN GROUP-MAGOTHY FORMATION,

SUFFOLK COUNTY, LONG ISLAND, NEW YORK

By

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The large and growing demand for ground water in Suffolk County has created a need for detailed knowledge of the hydrogeologic characteristics of the ground-water reservoir. Several reports and maps were published during the 1960's and 1970's, and additional data from many deep wells and test holes in the county have become available since then. This map, prepared as part of a continuing cooperative program of water-resource studies with the Suffolk County Water Authority and the Suffolk County Department of Health Services, incorporates the latest data on the surface altitude of the Magothy aquifer (Matawan Group-Magothy Formation undifferentiated) in Suffolk County. Much of the interpretation is based on data from Jensen and Soren (1974) and Krulikas (1981).

The upper surface of the Matawan-Magothy Formation is not planar, in contrast to those of the underlying units, and ranges in altitude from as much as 200 feet above sea level (National Geodetic Vertical Datum of 1929) to about 600 feet below sea level. The Matawan-Magothy surface was deeply eroded during Tertiary time and probably also during Pleistocene time. The erosion cut through the unit near the South Huntington area and formed a valley that was later filled with Pleistocene deposits (Lubke, 1964, pl. 3, 4). Recent data indicate several other buried valleys, especially in the Brookhaven area, but their depth and lateral extent are unknown.

A large buried valley in the Matawan-Magothy surface is apparent in the St. James-Ronkonkoma area. Lubke (1964, pl. 3) indicated the Matawan-Magothy surface to be more than 200 feet below NGVD in this area, but more recent information suggests that it could extend as deep as 500 feet below NGVD. Although the origin of this buried valley is not known, it probably was at least partly a result of Pleistocene glacial scouring of a former valley (Soren, 1971, p. 11).

In a large area near Gardiners Bay, a deep valley is shown to extend southward to the Amagansett-East Hampton vicinity. Its presence is only inferred, however, and more information would be needed to verify its extent.

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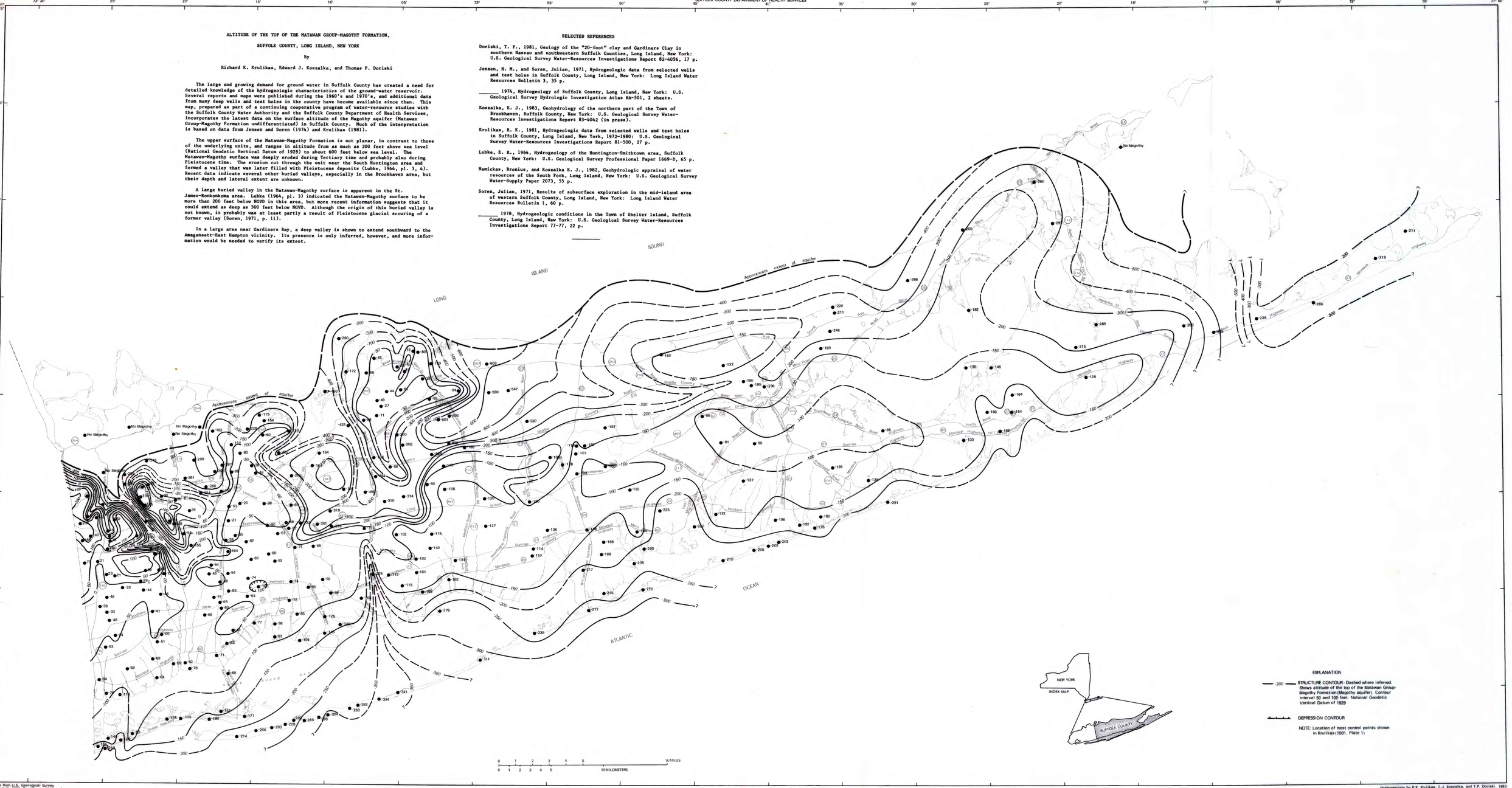

Base from U.S. Geological Survey
New York, 1969, Providence, 1966, and
Hartford, 1975, 1:250,000 scale

Hydrogeology by R.K. Krulikas, E.J. Koszalka, and T.P. Doriski, 1983

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