U.S. Department of the Interior U.S. Geological Survey

Transverse Mercator projection

North American Datum of 1983

Prepared in cooperation with the NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MAP LOCATION

Open-File Report 2022–1119
Sheet 3 of 3
Pamphlet accompanies map

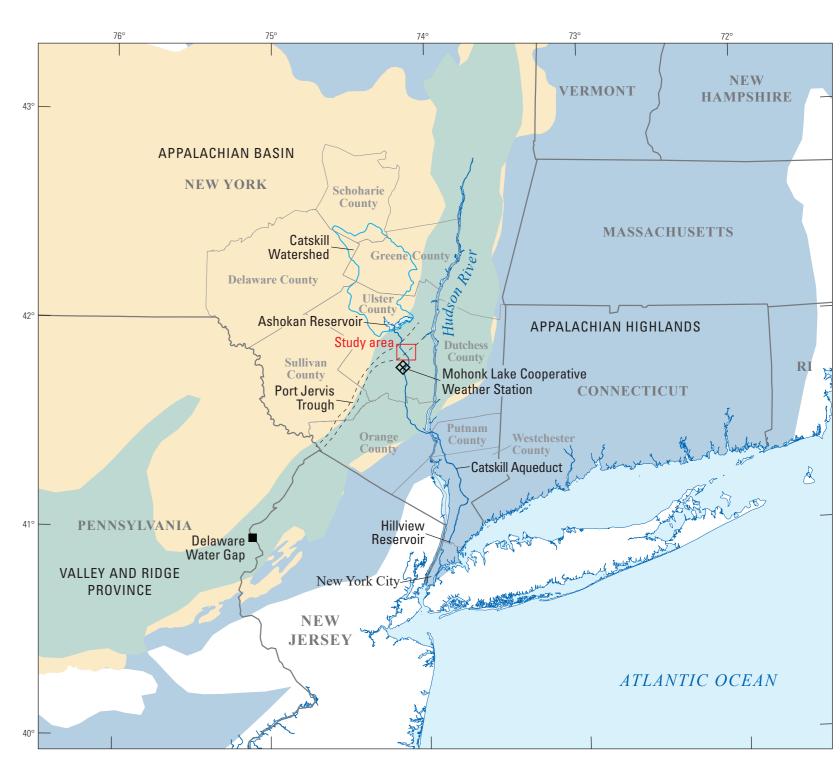
U-262³ U-263⁴ U-274 U-8877 U-246 High Falls U-245 SCALE 1:15,173 Shaded-relief base from U.S. Geological Survey 3D Elevation Program (3DEP) Geology from Fluhr and Terenzio (1984) 1-meter digital elevation model (DEM) Well locations and data from the U.S. Geological Survey (2021) Elevation data from U.S. Geological Survey 3DEP 1-meter DEM National Water Information System database and from this study Tunnel data and drainages from New York City Department of Environmental Protection; GIS database and digital cartography by Michael L. Noll 1 KILOMETER streets from New York State Geographic Information System Program Office Manuscript approved for publication December 20, 2022

EXPLANATION Unconsolidated sediments— Inclined bedding—Showing approximate strike and direction Quaternary of dip Dh Hamilton Group—Devonian Do **Onondaga Limestone**—Devonian Contact De **Esopus Shale**—Devonian Dsh Helderberg Group—Devonian Thrust fault—Sawteeth on upper Sb Binnewater Sandstone—Silurian plate, pointing towards hanging Ss Shawangunk Formation—Silurian Ou Martinsburg Formation— Ordovician 850 feet ____ Land surface topography—Elevation in feet above NAVD 88. Black-lined area indicates no data Study area boundary **Hamlet of High Falls** Tunnel and shaft number Tunnel and steel interliner Potential tunnel-leakage influence—Upper number represents New York State well identifier. Lower number indicates water-level change (in feet) between November 2019 and January 2020. Symbol size is proportional to the amount of potential influence of tunnel leakage on the water levels in the well. Superscript text after well identifier indicates the figure number of the hydrograph 0-20 feet

>20-40 feet

>40-60 feet

>60-80 feet



INDEX MAP SHOWING STUDY AREA (RED OUTLINE), CATSKILL WATERSHED (BLUE OUTLINE), AND SURROUNDING GEOGRAPHIC FEATURES. PHYSIOGRAPHIC PROVINCES FROM U.S. ENVIRONMENTAL PROTECTION AGENCY (2015): YELLOW SHADING, APPALACHIAN BASIN; BLUE SHADING, APPALACHIAN HIGHLANDS; GREEN SHADING, VALLEY AND RIDGE PROVINCE

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Water-Level Change in Wells Potentially Influenced by Tunnel Leakage in the Bedrock Aquifer near High Falls, New York, November 2019–January 2020

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