

## CREREDENTIALS

HERBERT E. JOHNSTON  
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**OCCUPATION:** Hydrogeologist

### POSITIONS:

- Groundwater consultant (1991-present)
- U.S. Geological Survey, Water Resources Division  
Chief, Rhode Island Office (1968-90)  
Project Hydrologist, RI & PA, (1959-68)
- U.S. Army, Mngr, Public Inf. Off.; Giessen, Ger.  
(1955-56)
- Dominion Gulf Co., Ltd, Toronto, Ontario;  
Asst. Field Geologist. (Summers, 1953-54)

### CONSULTING EXPERIENCE:

○ Delineated the area of contribution to wells at the former Ladd Center complex in Exeter, RI. Assessed how much ground-water was available for development, how much of the water could be recovered by existing wells, and how withdrawals would affect streamflow and wetlands, as part of a study conducted for the Rhode Island Economic Development Commission.

○ As ground-water consultant to the Kingston Water District, S. Kingston, R.I., conducted a test-drilling program resulting in location of 700 gal/min supply well, designed and conducted aquifer tests, prepared well-construction specifications for supply well, evaluated potential sustained yield of supply well and its potential effect on streamflow and associated wetlands, developed a flow-duration curve for a nearby stream, and prepared a ground-water development plan designed to minimize environmental impacts.

○ Provided geohydrologic services for the following existing or proposed golf clubs in Rhode Island: proposed Brae Bern Golf Course in Hopkinton, proposed golf club at Sucker Pond in Burrillville, Boulder Hills Golf Club in Richmond, Rhode Island Golf Club in Barrington, Fenner Hill Golf Club in Hopkinton, proposed Brushy Brook Golf Club in Foster-Glocester, proposed Cobblestone Golf & Country Club in Exeter, and Shelter Harbor Golf Course, Westerly, RI.

○ Services to golf clubs have included estimation of irrigation needs during average and dry-weather periods; location and development of ground-water supplies for irrigation; evaluation of the effects of withdrawing water from ponds and/or wells on ground-water levels, wetlands, yields of nearby wells, and on the low flows of nearby streams.

- Mapped areal extent and thickness of a glacial aquifer and determined its transmissivity, using test drilling and aquifer-test analysis, at a proposed waste recycling plant in Lisbon, CT.

- Mapped historic pattern of groundwater development and determined annual withdrawals from major pumping centers in Pensacola, FL, for use in modeling patterns of regional contaminant flow in the groundwater.

- Identified site for a proposed supply well for the Rhode Island Medical Center potentially capable of producing 250 gallons per minute, using knowledge of glacial deposition and interpretation of subsequent test drilling and slug-test results.

- Used water-budget and aquifer-test analyses to determine effect of pumping from 22 proposed bedrock wells in the Tipping Rock housing development, East Greenwich, R.I., on water levels and yields of wells adjacent to the development. Used similar methods to determine effects of pumping from two bedrock supply wells at the proposed Deerfield Apartments complex, North Smithfield, R.I. Findings were presented at Town Council meetings in the respective towns.

- Collected and described lithology of selected test borings for Combined Sewer Overflow project, Providence, R.I., and provided interpretation of glacial deposition.

- Estimated yield obtainable from proposed wells at a proposed casino site in West Greenwich, R.I., based interpretation of test drilling results and knowledge of recharge characteristics of the aquifer.

**USGS EXPERIENCE:**

- Supervised staff of 8 to 12 hydrologists and technicians involved in ground-water, surface-water, and water-quality studies.

- Developed, conducted and/or managed USGS water-resources investigations projects in Rhode Island in financial cooperation with state agencies (Water Resources Board; Department of Environmental Management; Governor's Office of Housing, Energy, and Intergovernmental Relations, City of Providence, and Town of Block Island.

- Designed test-drilling and aquifer-test programs for Rhode Island Water Resources Board in principal glacial aquifers in Rhode Island and analyzed data therefrom to determine hydraulic characteristics of aquifer materials.

Credentials: H.E. Johnston (Continued)

- o Used analytical and computer models to assess long-term yields available from Rhode Island's principal glacial aquifers and to assess impact of ground-water withdrawals on low flows of associated streams.

- o Determined ground-water availability from fractured-rock aquifers using aquifer-test analysis, borehole geophysical methods, and fracture-trace analysis, in Pennsylvania.

- o Authored or co-authored 16 publications and numerous administrative reports dealing with ground water, surface water, water quality, and water use.

- o Contributing member on ad hoc committees and task forces created to develop hazardous waste disposal regulations, revise ISDS regulations, develop siting criteria for landfills, develop well-head protection criteria, and establish official river-basin boundaries for the State of Rhode Island.

- o Testified in County Court and at Rhode Island State agency hearings on issues related to ground-water flow direction, stream-aquifer interrelations, and ground-water contamination.

- o Lectured on ground-water issues at local schools and universities, municipal and state agencies, and before environmental and engineering groups.

**EDUCATION:**

- o Bates College, B.S., Geology, 1954
- o Brown University, Geology, 1957-58

**MEMBERSHIPS:**

- o Society of Sigma Xi
- o National Ground Water Association
- o Rhode Island Water Works Association

#### **PUBLICATIONS**

Dickerman, D.C., and Johnston, H.E., 1976, Geohydrologic data for the Beaver-Pasquiset ground-water reservoir, Rhode Island: Rhode Island Water Resources Board Information Series Report 3, 128 p., 2 pl.

Gonthier, J.B., Johnston, H.E., and Malmberg, G.T., 1974, Availability of ground water in the Lower Pawcatuck River basin, Rhode Island: U.S. Geological Survey Water-Supply Paper 2033, 40 p.

Johnston, H.E., 1966, Hydrology of the New Oxford Formation in Lancaster County, Pennsylvania: Pennsylvania Geological

Credentials: H.E. Johnston (Continued)

- Survey, 4th Ser. , Bull. W-23, 80 p.
- Johnston, H.E., 1970, Ground-water resources of the Loysville and Mifflintown quadrangles in south-central Pennsylvania: Pennsylvania Geological Survey, 4th Ser. , Bull. W-27, 96 p.
- Johnston, H.E., 1985, Ground-water resources: Rhode Island, in National Water Summary, 1984--Hydrologic events, selected water-quality trends, and ground-water resources: U.S. Geological Survey, Water Supply Paper 2275, p. 373-378
- Johnston, H.E., 1986, Surface-water resources: Rhode Island, in National Water Summary, 1985--Hydrologic events and surface-water resources: U.S. Geological Survey, Water Supply Paper 2300, p. 407-412
- Johnston, H.E., and Barlow, P.M., 1988, Ground-water quality: Rhode Island, in National Water Summary, 1986--Hydrologic events and ground-water quality: U.S. Geological Survey, Water Supply Paper 2325, p. 443-448
- Johnston, H.E., and Bear, M.J., 1990, Water supply and use: Rhode Island, in National Water Summary, 1987--Hydrologic events and water supply and use: U.S. Geological Survey, Water Supply Paper 2350, p. 447-452
- Johnston, H.E., and Dickerman, D.C., 1974, Availability of ground water in the Branch River basin, Rhode Island: U.S. Geological Survey Water Resources Investigations 18-74, 29 p.
- Johnston, H.E., and Dickerman, D.C., 1974, Geologic and hydrologic data for the Blackstone River area, Rhode Island: Rhode Island Water Resources Board, Hydrologic Bulletin 7.
- Johnston, H.E., and Dickerman, D.C., 1985, Hydrology, Water Quality, and ground-water development alternatives in the Chipuxet ground-water reservoir, Rhode Island: U.S. Geological Survey Water Resources Investigations Report 84-4254, 100 p.
- Johnston, H.E., and Dickerman, D.C., 1974, Availability of ground water in the Blackstone River area, Rhode Island: U.S. Geological Survey Water Resources Investigations 4-74.
- Johnston, H.E., and Veeger, A.I., 1994, Generalized water-table map of Block Island, Rhode Island: U.S. Geological Survey Open-File report 92-49.

Credentials: H.E. Johnston (Continued)

Silvey, W.D., and Johnston, H.E., 1977, Preliminary study of sources and processes of enrichment of manganese in water from University of Rhode Island supply wells: U.S. Geological Survey Open-File Report, 33 p.

Veeger, A.I., and Johnston, H.E., 1996, Geohydrology and water resources of Block Island, Rhode Island: U.S. Geological Survey Water Resources Investigations 94-4096, 68 p.

Wood, P.R., and Johnston, H.E., 1964, Hydrology of the New Oxford Formation in Adams and York Counties, Pennsylvania: Pennsylvania Geological Survey, 4th Ser., Bull. W-21, 66 p.