

**EVALUATION OF SUPERIMPOSED DRIFT SHEETS,
PORT JEFFERSON, NEW YORK -
STRATIGRAPHIC AND GROUND-WATER FLOW IMPLICATIONS**

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Superimposed drift sheets at Port Jefferson, New York, provide evidence in central Long Island of two glacial advances during the late Pleistocene. The lower drift, designated the Port Jefferson Formation (Stokes, 1989), crops out as gray lodgement till. Northeasterly till fabric data indicate probable deposition by a glacial lobe controlled by the Connecticut River valley. Woodfordian drift (Sirkin, 1982) overlies the lower till and features a massive basal till overlain by recessional deposits, including a delta deposited in a local proglacial lake, formed during the recession of the Connecticut Lobe.

The upper drift is attributed to the Woodfordian Substage of the Wisconsin Stage; the lower drift, tentatively assigned to the Illinoian Stage of the Pleistocene Epoch. Color, grain size, till fabric, stratigraphic, magnetic and hand specimen analytical data are presented as evidence to support separation of the drift sheets and incorporation of the lower drift exposure at Port Jefferson into the updated stratigraphy of the Long Island Pleistocene deposits.

The gray lodgement till associated with the lower drift can act as an aquatard if located in the saturated zone (Sirkin and Buscheck, 1978; Stone and Sirkin, 1994). The upper surface of the lodgement till may control the percolation of precipitation or other free-phase liquids through the unsaturated zone. The orientation of the upper surface and extent of the lower till should be evaluated if present on a site where the movement of ground water is being studied.

The Port Jefferson Formation is tentatively assigned as the stratigraphic equivalent of the Manhasset, East Hampton, Camp Hero, and Lighthouse Cove Formations (Sirkin, 1982, 1986), of whose age remains undefined. The central Long Island exposure of lower drift deposited by a glacial lobe from the Connecticut River valley supports the two separate glaciations and glacial lobes model proposed in earlier studies (Sirkin, 1982, 1986).