

Table 1. -- Stratigraphy of Long Island and the southern Long Island inner shelf

SYSTEM	SERIES	ONSHORE GEOLOGIC UNITS (Smolensky and others, 1989)	OFFSHORE STRATIGRAPHY (Williams, 1976)	SEISMIC STRATIGRAPHY- THIS STUDY
QUATERNARY	HOLOCENE	Recent deposits: salt marsh deposits, stream alluvium, shoreline deposits and fill	Discontinuous sheet deposits of modern-marine sand over back-barrier lagoonal organic-rich mud	Modern-marine fine sand derived from erosion of underlying early Holocene, Pleistocene and Cretaceous deposits. Early Holocene estuarine deposits and possible tidal-inlet fill, both deposited in paleochannel systems cut into Pleistocene outwash.
	PLEISTOCENE	UPPER PLEISTOCENE DEPOSITS	Glacial outwash deposits with possible fluvioglacial deposits within deep channels cut into the Coastal Plain strata	Cut-and-fill channels at the surface of the Pleistocene unit may be filled or partially filled with Pleistocene fluvioglacial or fluvial deposits. Higher-reflection amplitudes at the base of the channels suggest a coarse basal layer. Glacial outwash deposits with possible fluvioglacial deposits within deep channels cut in to the Coastal Plain strata. Channels cut in to the Coastal Plain are more prevalent off of eastern Long Island. An upper-outwash unit is restricted to the South Hampton area.
		GARDINERS CLAY	Gardiners Clay (presence of Gardiners Clay is inferred from vibrocore data)	The seismic profiles do not show evidence of the Gardiners Clay beneath the southern Long Island shelf
		JAMECO GRAVEL	Not present in southern Long Island inner shelf	Not present beneath southern Long Island inner shelf
CRETACEOUS	UPPER CRETACEOUS	COASTAL PLAIN UNCONFORMITY MONMOUTH GROUP	COASTAL PLAIN UNCONFORMITY Coastal Plain strata are truncated at the upper boundary of this seismic stratigraphic unit by the Coastal Plain unconformity	COASTAL PLAIN UNCONFORMITY Coastal Plain strata are truncated at the upper boundary of this seismic stratigraphic unit by the Coastal Plain unconformity. The unit crops out at the sea floor off the Watch Hill area.
		MATAWAN GROUP - MAGOTHY FORMATION, UNDIFFERENTIATED	Vibrocore and seismic stratigraphy suggest the Monmouth Group or possibly Tertiary-age strata subcrops at the Coastal Plain unconformity beneath the southern Long Island inner shelf	The Coastal Plain unconformity is a well-defined, angular unconformity west of Shinnecock Inlet to Fire Island. East of Shinnecock Inlet to Montauk Point the unconformity does not show an angular truncation of reflectors. This change in character of the unconformity is thought to coincide with the contact between the Monmouth Group and the Matawan Group - Magothy Formation, undifferentiated in the Shinnecock Inlet area (Smolensky and others, 1989)
		UNNAMED CLAY MEMBER RARITAN FORMATION LOYD SAND MEMBER		
PALEOZOIC AND PRECAMBRIAN		UNCONFORMITY BEDROCK	UNCONFORMITY Upper surface of bedrock is a seismic reflector beneath northern Gardiners Bay	Upper-surface bedrock reflector not observed beneath southern Long Island shelf due to the limited penetration of the seismic profiling systems used.