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Preliminary study of outflow of ground water
into Huntington Harbor, Long Island, New York

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in cooperation with the
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A set of salinity samples was taken on November 3, 1950, in Huntington Harbor, Long Island, N. Y., to obtain information on the outflow of fresh ground water from the water-bearing formations on the east side of the harbor. The possibility of such an outflow is indicated by the geology and topography of this locality, particularly along the small navigation channel recently dredged along the east bank to a depth of about 15 feet. Several samples were obtained at about low tide on each of three lines approximately at right angles to the shore line and to the navigation channel (pl. 1).

As indicated in table 1, very little difference in salinity and temperature was noted in water sampled about 1 foot from the bottom of the harbor and that taken at the surface. The salinity of all samples was high, ranging from 15,300 to 16,100 parts per million of chloride. The very small variations in the chloride content of the water in the harbor were considered, in the main, to be errors of analysis due to the use of field-type of titration equipment.

It appears that the tidal action and local underwater currents in Huntington Harbor provide sufficient movement of water, agitation and turbulence to mix thoroughly and very rapidly the heavier salt water with the lighter fresh ground water, at least at depths above 1 foot from the bed of the channel, and that the escape of fresh ground water either is comparatively small or could not be detected because of the thorough mixing. A more complete set of samples will be collected next summer, and an effort will be made to sample within an inch or two of the bottom of the channel; at the same time some method of sampling water from the sediments several inches beneath the bed of the channel will be attempted.

This brief study is part of a continuing systematic investigation of the availability, quantity, and quality of ground-water resources in Long Island conducted since 1932 by the United States Geological Survey in cooperation with the New York State Water Power and Control Commission, the Nassau County Department of Public Works, the Suffolk County Board of Supervisors, and the Suffolk County Water Authority. Field work for the preliminary investigation at Huntington Harbor was done by the writer, by M. L. Brashears, Jr., District Geologist of the Geological Survey, and by Arthur H. Johnson of the New York State Water Power and Control Commission.

Table 1. Salinity and temperature of water in Huntington Harbor, Long Island, N. Y., November 3, 1950

S. Surface sample

B. Sample taken about 1 foot from bottom

Profile line <u>a/</u>	Distance from east bank, in feet	Depth of water, in feet	Depth of sample	Temperature, in degrees F.	Chloride content, in parts per million
A	50	17	S	59	15,400
			B	54	15,500
	70	15	S	-	-
			B	59.5	15,500
	140	14	S	-	-
			B	59.5	16,100
	200	17	S	60	15,600
B			B	60	15,700
	275	3	S	-	-
			B	60	15,500
	20	3	S	-	-
			B	-	-
	50	14	S	60	15,400
			B	61	15,700
C	100	15	S	60	-
			B	60	15,700
	175	17	S	59.5	-
			B	60	15,800
	275	4	S	59.5	-
			B	-	15,600
	50	7	S	60	15,300
			B	62	15,600
	105	19	S	60	-
			B	62	15,800
	200	17	S	59.5	-
			B	60	15,800
	250	6	S	60	-
			B	61.5	15,700

a/ Refer to plate 1 for location of profile lines.