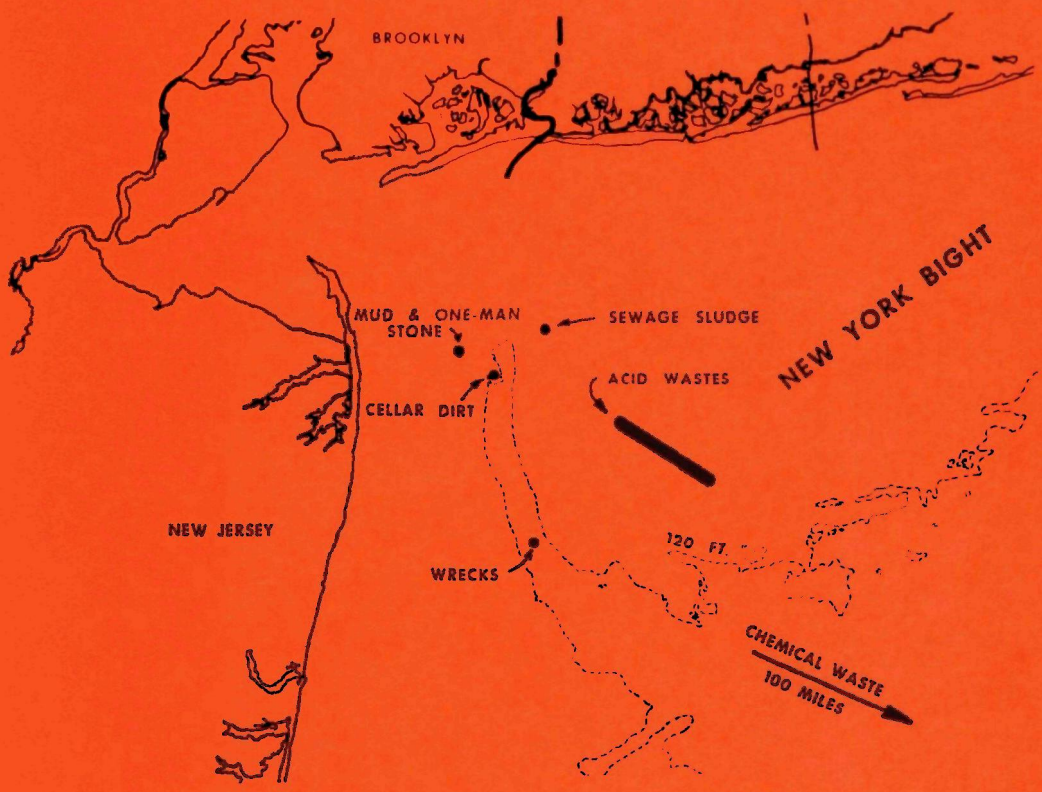
OCEAN DISPOSAL
IN THE NEW YORK BIGHT
TECHNICAL BRIEFING REPORT
NUMBER 1



U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION II
SURVEILLANCE & ANALYSIS DIVISION

JULY 1974

CONTENTS

INTRODUCTION

The purpose of this technical document, to be updated and released semi-annually, is to brief interested agencies and individuals on EPA's program in carrying out its mandated responsibilities under the Marine Protection, Research, and Sanctuaries Act of 1972 (Public Law 92-532). Two previously issued reports, "Ocean Dumping in the New York Bight, Facts and Figures, July 1973" and "Briefing Report, Ocean Dumping in the New York Bight Since 1973, April 1974", indicate proposed alternate sites to be used for ocean disposal; describe the complexities of this overall environmental problem; detail the sources and volumes of wastes being disposed of into the ocean; and outline the general and special conditions of municipal and industrial permits issued by EPA.

Early in 1974, EPA made public its commitment to carry out an intensive three-phase monitoring program of the sewage sludge and dredge spoil sites. The purpose of this investigation was four-fold:

(1) to demonstrate that the present practice of ocean disposal at the 12-mile sewage sludge site and 6-mile dredge spoil site was not adversely affecting water quality along the high-use beach areas of New York and New Jersey;

(2) to demonstrate that there was no immediate threat to public health or welfare, as reported in the press;

(3) to track the movement, if any, of the sludge mass which was reportedly moving towards the Long Island shore; and

(4) to aid EPA in decision making regarding the use of alternate methods of disposal and the location of new and alternate sites.

This briefing document not only provides in detail the technical information gathered during this monitoring program, but also adds additional facts and figures relating to EPA's strategy in setting a goal of ultimately phasing out ocean disposal of municipal sludge by 1981.

Any specific questions relative to data presented should be directed to Mr. Peter W. Anderson, Surveillance and Analysis Division, Environmental Protection Agency, Edison, New Jersey 08817.

FINDINGS

(1) EPA's position that the present sewage sludge disposal ground be moved by 1976 is still firm. In addition, it is recommended that the dredge spoil site, which presently influences and impacts the sludge site, be moved at the same time. From a technical standpoint, to move one without the other would be short-sighted, and to say the least, environmentally unwise.

(2) An orderly and environmentally acceptable plan has been developed with the ultimate goal of phasing out ocean disposal of municipal sludges by 1981. A recommendation to immediately move the present disposal site, founded on emotionalism rather than technical data, could prove environmentally disastrous.

(3) Renewed claims and reports that the sludge mass is moving toward the Long Island shore at an alarming and unprecedented rate have not been substantiated. In fact, our report presents contradictory data, not from the standpoint of disclaiming the findings of private researchers - since EPA has also found "black mayonnaise" one-half mile from shore at random locations - but in technically disagreeing completely with the conclusions drawn by these scientists.

(4) Surf zone studies along the beaches of Long Island and New Jersey clearly indicate that the water is safe for contact recreation. The absence of pathogens in the surf zone waters provides further verification of excellent water quality.

(5) Near shore cruises have also indicated excellent quality water, and the absence of "sewage sludge" in the sediments. The "black mayonnaise" found at random locations one-half mile from the beach has been identified as organic material of natural origin.

(6) Results of transect cruises give further support to EPA's stated position that the organic material near shore is related to inland occurrences and not associated with a massive movement of material from the disposal site. If, in fact, there was a massive movement toward shore, one would expect to find a gradual diminution of pollutant levels from the disposal site to the shore area. The data presented clearly indicate that this is not the case.

(7) The leading edge of the sludge mass, associated with the sewage sludge disposal site, is still located approximately 5½ - 6 miles from the shore of Long Island, thus negating the urgency to move the present disposal site before the scheduled 1976 closure.

VOLUME OF WASTE MATERIALS - 1973

TWENTY-ONE MILLION CUBIC YARDS OF WASTE MATERIALS WERE DISPOSED OF IN THE NEW YORK BIGHT DURING 1973. MUNICIPAL SLUDGES AMOUNTED TO 5.6 MILLION CUBIC YARDS OR ROUGHLY 70% OF ALL MUNICIPAL WASTES DISPOSED OF VIA OCEAN DUMPING IN THE UNITED STATES. APPROXIMATELY 58% OF THESE SLUDGES WERE FROM NEW YORK CITY, 33% FROM SOURCES IN NEW JERSEY, AND THE REMAINDER FROM NASSAU AND WESTCHESTER COUNTIES IN NEW YORK. INDUSTRIAL WASTES AMOUNTED TO 3.8 MILLION CUBIC YARDS OR ABOUT 60% OF THE TOTAL VOLUME DISPOSED OF IN THE OCEAN WITHIN THE UNITED STATES. THE REMAINDER, 11.8 MILLION CUBIC YARDS, RESULTS FROM THE DISPOSAL OF DREDGED SPOILS.

VOLUME OF WASTE MATERIAL DISPOSED INTO NEW YORK BIGHT

1973

Municipal

Applicant	Volume (yd^3)	Volume (gal)
Modern Trans. Co.	307,925	62,354,850
Bergen County SA	284,741	57,660,000
Joint Meeting	120,747	24,451,194
Linden Roselle	62,701	12,696,966
Middlesex CSA	401,681	81,340,402
Middletown SA	22,200	4,495,500
Passaic Valley SC	701,955	142,145,983
City of Long Beach	24,000	4,860,000
Nassau County	292,502	59,231,720
Westchester County	100,004	20,250,750
West Long Beach	3,874	784,500
Joint Venture	37,037	7,499,922
Bowery Bay	448,122	90,744,627
Coney Island	144,530	29,267,280
Hunts Point	284,501	57,611,547
Jamaica	234,481	47,482,392
Owl's Head	219,215	44,390,997
Port Richmond	27,963	5,662,410
Rockaway	35,226	7,133,325
Tallman Island	85,338	17,280,960
Wards Island	511,715	103,622,246

VOLUME OF WASTE MATERIAL DISPOSED INTO NEW YORK BIGHT (Cont)

1973

Municipal

Applicant	Volume (yd^3)	Volume (gal)
26th Ward	77,227	15,638,532
Newtown Creek	1,162,459	235,397,880
TOTAL	5,590,144	1,132,003,983

VOLUME OF WASTE MATERIAL DISPOSED INTO NEW YORK BIGHT

1973

Industrial

Applicant	Volume (yd^3)	Volume (gal)
Allied Chemical	68,128	13,795,992
American Cyanamid	151,371	30,652,640
Chevron	40,677	8,237,184
E.I. duPont	291,528	59,034,482
Hess Oil	8,959	1,814,172
Modern Trans. Co.	99,537	20,156,250
NL Industries	3,135,947	635,029,200
TOTAL	3,796,147	768,719,920

DREDGE SPOIL FISCAL YEAR 1973 - 11,818,250 cu.yds.

LONG-RANGE GOAL FOR PHASE OUT OF OCEAN DISPOSAL IN NEW YORK BIGHT BY 1981.

PROGRAMS INITIATED

1970 - N.Y. BIGHT STUDY BY COE-NOAA

1971 - EPA CONDITIONS CONSTRUCTION GRANTS

1972 - EPA-OCEAN COUNTY INITIATE "LAND RECYCLING" STUDY; $200,000, 3 YEARS

1973 - OCEAN DUMPING BILL EFFECTIVE - EPA PERMIT PROGRAM STARTED

- EPA SEGREGATES WASTES AT DUMP SITES

1974 - EIGHT (8) INDUSTRIAL PERMITS/APPLICATIONS DENIED OR WITHDRAWN

- FORTY-SEVEN (47) INDUSTRIAL DUMPERS PHASED OUT
- TWELVE (12) INDUSTRIAL DUMPERS REQUIRED TO PHASE OUT BY 6/75
- MUNICIPALITIES NOTIFIED OF MOVING TO ALTERNATE SITE BY 1976
- EPA INITIATES THREE-PHASE MONITORING PROGRAM
- NOAA INITIATES FIELD STUDIES OF ALTERNATE SITES FOR EIS
- EPA-ISC INITIATES "ENVIRONMENTALLY ACCEPTABLE ALTERNATIVE" STUDY, $200,000, 2 YEARS
- NOTIFY COE OF SITE CHANGE FOR DREDGE SPOIL

SHORT RANGE PROGRAM

- IMPLEMENT PRETREATMENT REQUIREMENTS
- CONTINUE THREE-PHASE MONITORING PROGRAM
- MOVE DUMPING GROUND (SEWAGE SLUDGE AND DREDGE SPOIL) IMMEDIATELY IF TECHNICAL DATA — NOT PROCRASTINATION — INDICATES NEED
- PHASE OUT ADDITIONAL INDUSTRIAL DUMPERS
- IMPLEMENT SECTION 228 - SELF-MONITORING REQUIREMENTS OF THE ACT
- CONTINUE "POLICE TYPE" MONITORING AND ENFORCEMENT ACTIVITIES

LONG RANGE PROGRAM

By 1976

SOURCES

- START IMPLEMENTATION OF ALTERNATIVES TO OCEAN DISPOSAL AS RECOMMENDED BY EPA-ISC STUDY (SITE SELECTION, EIS, CONSTRUCTION)

SITES

- EIS ON NEW SITES COMPLETED
- CLOSE EXISTING SEWAGE SLUDGE SITE
- MOVE TO ALTERNATE SITE

By 1981

SOURCES

- GOAL - OCEAN DISPOSAL PHASED OUT
- COMPLETE IMPLEMENTATION OF ALTERNATIVES

SITES

- DECISION TO KEEP ALTERNATE SITE ACTIVE OR MOVE OFF SHELF, IF CONTROLLED OCEAN DISPOSAL IS CONSIDERED MOST SUITABLE ENVIRONMENTAL ALTERNATIVE AS PER PL 92-532

TECHNICAL FINDINGS

(APRIL-JULY 1974)

IN APRIL 1974, EPA, REGION II, INITIATED A COMPREHENSIVE THREE-PHASE MONITORING PROGRAM TO INVESTIGATE THE QUALITY OF THE WATER AND BOTTOM SEDIMENTS IN THE NEW YORK BIGHT AND ALONG THE LONG ISLAND AND NEW JERSEY BEACHES. A SUMMARY OF THE DATA AND A BRIEF DISCUSSION OF THE RESULTS OF THIS MONITORING PROGRAM TO DATE FOLLOWS.

EPA MONITORING PROGRAM OF SLUDGE/DREDGE SPOIL DUMPING SITES

A comprehensive sampling program was initiated by the EPA, Region II in April 1974 to monitor the quality of water and bottom sediments in the apex of the New York Bight and along the beaches of Long Island and New Jersey. Sites sampled in the program are illustrated in Figure 0 and information as to their location is given in Table 0. This monitoring program is segmented into three phases as shown below:

Type I	Surf Zone	Biweekly
Type II	Near Shore	Monthly
Type III	Transect	Monthly

Type I samples are collected in the surf zone at selected sites along the Long Island and New Jersey coastlines. Type II are collected by boat approximately 100 yards from shore and in water about 15-20 feet deep. Similarly, Type III samples are collected by boat in three transects, each running from the 12-mile sewage sludge dump site, one to the Long Island beaches, a second to the New Jersey beaches, and a third to the New York Harbor entrance. Water-quality data, including sediment characterization, collected at these sampling sites from April to early July 1974 are summarized in Tables 1-12 and selected parameters are illustrated in Figures 1-12.

Long Island Surf Zone and Near Shore

Data from the samples collected in the surf zone and near shore (Figs. 1-2) indicate low total and fecal coliform densities. The levels of fecal coliform at all sampling stations are significantly

below the geometric mean density standards for primary and secondary contact recreation waters under New York's Class SB standard of 200 organisms/100 ml. The effect of poorer quality runoff from New York Harbor and through East Rockaway inlet is evident from elevated values observed at LC101 and LC106, respectively. It is important to note that attempts to isolate Salmonella (enteric pathogens) at four sampling stations were unsuccessful.

Data on coliform densities, total organic carbon content, and heavy metals in bottom sediments are illustrated in Figures 3 and 3a for near shore sampling stations. Highest values are again found at stations LIC01 and LIC06, reflecting the influence of New York Harbor and East Rockaway inlet. Comparison of data presented in these two graphs (Figs. 3 and 3a) with similar data collected in the vicinity of the sewage sludge dump site (Figs. 5 and 5a) indicate wide variations in quality. For example, the highest geometric mean fecal coliform recorded at Long Island near shore sampling stations was 400/100g, while that near the dump site was 962/100g. Similarly, along the Long Island near shore the highest mean total organics observed was 2.6 percent and that for metals was 134 mg/kg, while those near the dump site were 4.6 percent and 426 mg/kg, respectively. (Note about 80 mg/kg in the metals value reflect the use of absolute values when summing individual metals reported as less than analytical sensitivity.) Salmonella were not isolated in bottom sediment samples collected at LIC06 even though high fecal coliform densities were observed.

New York Bight Transects

Water and bottom sediment samples were collected along three transects, each originating in the vicinity of the sewage sludge dump site and extending to the Long Island coast, the New Jersey coast, and the New York Harbor entrance.

Geometric mean fecal coliform densities observed in samples collected from the water column in the Long Island transect (Fig. 4) and New York Harbor transect (Fig. 6) indicate that the New York Class SB standard of 200/100 ml is not contravened, except at station NYB30 (436 fecal coliform/100 ml). This station is located closest to New York Harbor and thus, reflects a combination runoff and wastewater discharges from the Hudson River and Raritan Bay. Even at sampling stations within the sewage dump site, observed fecal coliform densities in both surface and bottom water samples were low. A similar review of bacteriological quality in water column samples collected along the New Jersey transect (Fig. 8) indicate that the more stringent New Jersey Class CW-1 standard for primary contact recreation of a geometric mean of 50 fecal coliform/100 ml is not contravened except by the 61/100 ml at the near shore station (NYB20).

Review of the data illustrated for mean coliform densities at bottom sediment sampling stations in the three transects (Figs. 5, 7, and 9) indicate extreme elevated counts of both total and fecal coliform in the vicinity of the sewage sludge dump site. Total coliform densities (geometric means) generally exceed 15,000/100g and fecal coliform, 500/100g in the vicinity of the dump site. A distance of 5½ - 6 miles of low coliform densities separates the high counts in

the vicinity of the dump site and the slightly elevated values found at near shore sampling stations. Salmonella were not found at six (6) of the twenty-two (22) transect sampling stations, even though elevated fecal coliform densities were observed at some of the six sites tested.

Results of total organic carbon and heavy metal analyses on bottom sediments at the transect stations (Figs. 5a, 7a, and 9a) also show wide variations in quality. Highest mean values are found in the vicinity of the dump site, with total organic carbon content generally exceeding four percent and metals exceeding 300mg/kg. The data illustrated show a "clean water-sediment" zone of about 5½ - 6 miles separating the dump site from the New Jersey and Long Island bathing beaches. Total organic content are in the main less than one percent and metals under 100/mg/kg in this "clean water-sediment" zone.

New Jersey Surf Zone and Near Shore

Results of sampling in the surf zone and near shore (Figs. 10 and 12) indicate low total and fecal coliform densities. The level of fecal coliform at all sampling stations generally are far below the geometric mean density standards for primary contact recreation under New Jersey's Class CW-1 standard of 50 organisms/100 ml. Elevated coliform values observed at JC14 (Fig. 10) are related to an ocean outfall from a local municipal treatment plant.

Data on coliform densities, total organic carbon content, and heavy metals in bottom sediments are illustrated in Figures 11 and 11a for near shore sampling stations. Comparison of data presented

in these two graphs with similar data collected in the vicinity of the sewage sludge dump site (Figs. 5 and 5a) indicate wide variations in quality. For example, the highest geometric mean fecal coliform recorded at New Jersey near shore sampling stations was 382/100g, while that near the dump site was 962/100g. Likewise, along the New Jersey near shore the highest mean total organics observed was 1.6 percent and that for metals was 123 mg/kg, while those near the dump site were 4.6 percent and 426 mg/kg, respectively. Note that while tested at two sites, Salmonella were not found in the bottom sediments.

Discussion

Based upon sampling in the surf and near shore waters along the Long Island and New Jersey beaches, it is evident that water quality remains excellent with respect to coliform density and is acceptable for contact recreation. More important, there is no evidence of a trend towards increased coliform density and thus, no indication of degradation. The occasional elevated coliform counts noted in Tables 1, 2, 10, and 12 appear randomly distributed in time and location, and does not indicate a systematic change or degradation of water quality.

Review of data from sampling in the Bight of the water column and bottom sediments indicate the general location of the sludge mass associated with the sewage sludge and dredge spoil dump site. A "clean water-sediment" zone of about 5½ - 6 miles separates the leading edge of the sludge mass from the New Jersey and Long Island coasts.

Slightly elevated organic carbon content and bacterial counts at selected near shore sampling stations can be related to inland occurrences, such as runoff and wastewater discharges.

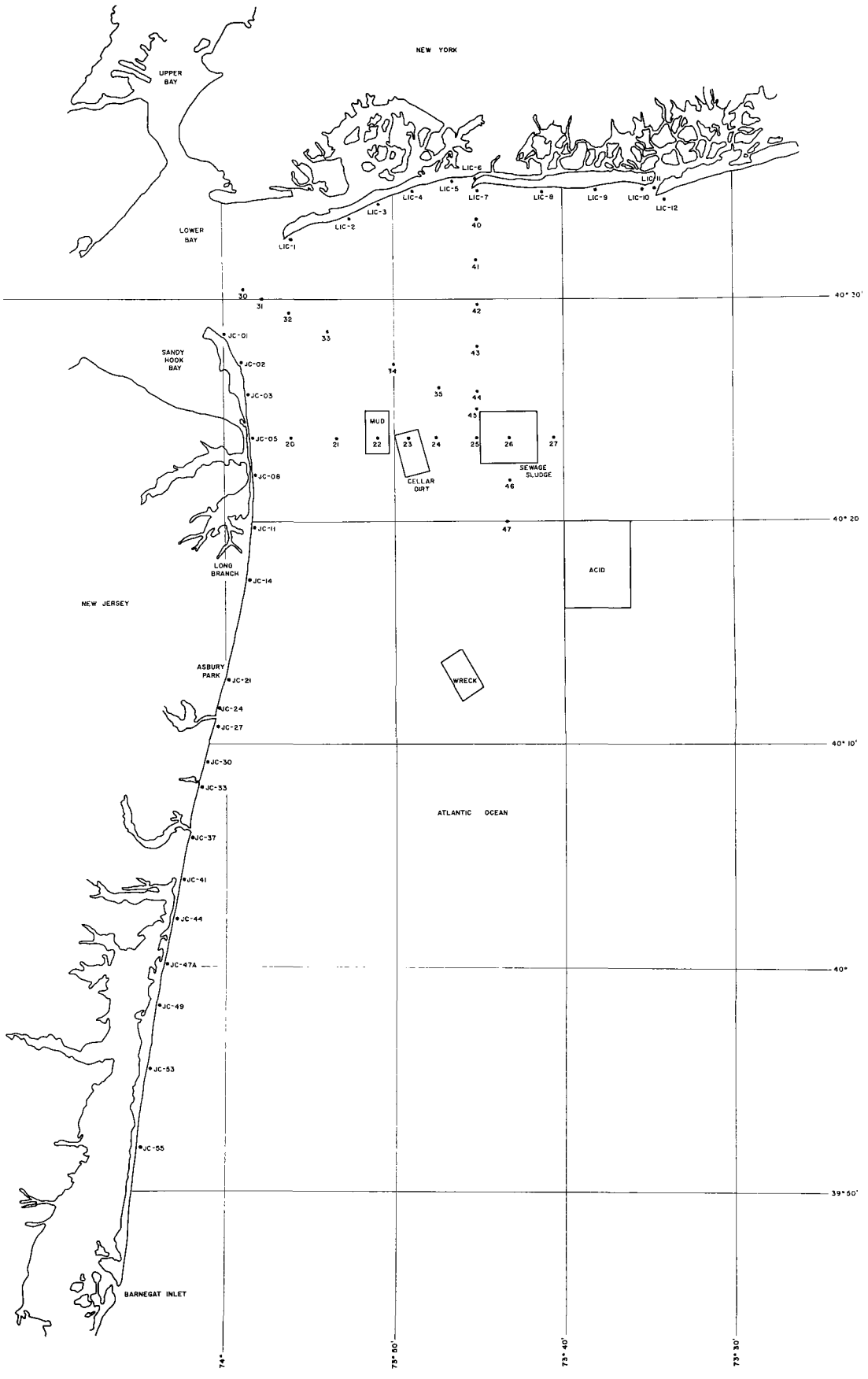

NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
40
41
42
43
44
45
46
47
30
31
32
33
34
35
MUD
CELLAR DIRT
SEWAGE SLUDGE
ACID
WRECK
20
21
22
23
24
25
26
27
40° 30'
40° 20'
40° 10'
40°
39° 50'
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
LONG BRANCH
JC-14
NEW JERSEY
ASBURY PARK
JC-21
JC-24
JC-27
JC-30
JC-33
ATLANTIC OCEAN
JC-37
JC-41
JC-44
JC-47A
JC-49
JC-53
JC-55
BARNEGAT INLET
74°
73° 50'
73° 40'
73° 30'

Figure 0

TABLE O

STATION LOCATIONS

Station	Latitude	Longitude	Loran 3H4 (Brown)	Loran 3H5 (Green)	Visuals
NYB20	40°23'54"	73°56'03"	4560	3294	
NYB21	40°23'54"	73°53'30"	4575	3274	
NYB22	40°23'54"	73°51'00"	4590	3253	
NYB23	40°23'54"	73°49'12"	4600	3237	
NYB24	40°23'54"	73°47'30"	4609	3223	
NYB25	40°23'54"	73°45'00"	4624	3200	
NYB26	40°23'54"	73°43'15"	4634	3185	
NYB27	40°23'54"	73°40'32"	4649	3161	
NYB30	40°30'25"	73°58'42"			South of Fl "5"
NYB31	40°30'00"	73°57'36"			South of Fl "3"
NYB32	40°29'25"	73°56'00"			South of Fl "1A" WHIS
NYB33	40°28'36"	73°53'45"			South of BW Mo (A) WHIS
NYB34	40°27'15"	73°50'00"			South of Ambrose Horn
NYB35	40°26'10"	73°47'12"	4629	3220	
NYB40	40°33'36"	73°45'00"	4699	3182	
NYB41	40°31'39"	73°45'00"	4684	3188	
NYB42	40°29'42"	73°45'00"	4669	3193	
NYB43	40°27'45"	73°45'00"	4654	3197	
NYB44	40°25'54"	73°45'00"	4640	3200	
NYB45	40°25'00"	73°45'00"	4633	3200	
NYB46	40°22'00"	73°43'15"	4619	3183	
NYB47	40°20'00"	73°43'15"	4603	3182	

Figure

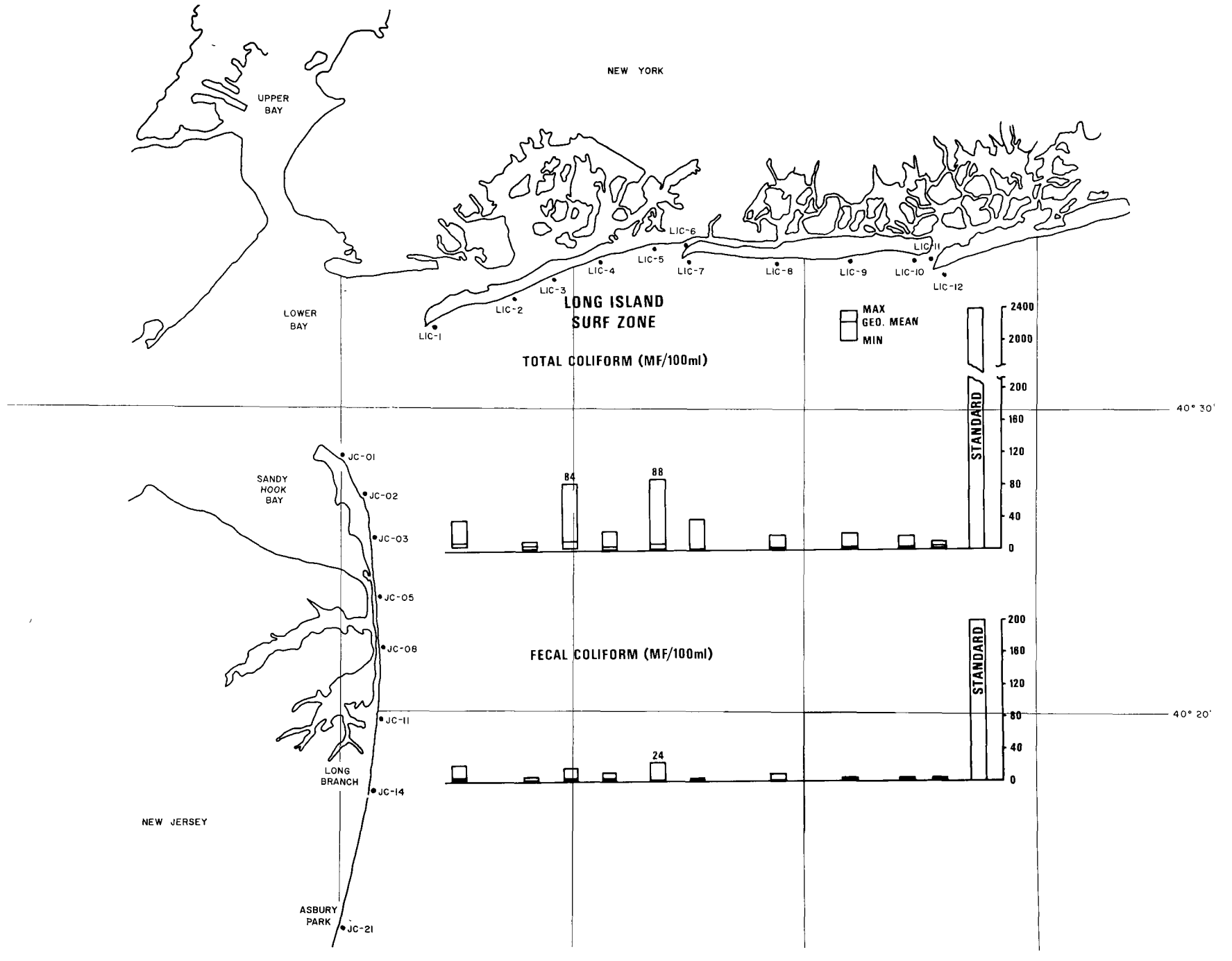

NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
LONG ISLAND SURF ZONE
TOTAL COLIFORM (MF/100ml)
MAX
GEO. MEAN
MIN
STANDARD
2400
2000
200
160
120
80
40
0
84
88
40° 30'
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
JC-21
SANDY HOOK BAY
LONG BRANCH
ASBURY PARK
NEW JERSEY
FECAL COLIFORM (MF/100ml)
24
40° 20'

TABLE 1

SUMMARY OF BACTERIOLOGICAL DATA (WATER COLUMN) COLLECTED ALONG LONG ISLAND SHORELINE

(Samples Collected in Surf Zone)

Date	Station Identification Number									
	LIC01		LIC02		LIC03		LIC04		LIC05	
	TC	FC	TC	FC	TC	FC	TC	FC	TC	FC
4/11/74	38	20	11	6	7	7	1	1	<1	<1
4/23/74	10	7	11	5	84	17	19	10	88	24
5/7/74	5	1	6	3	2	<1	4	1	2	1
5/22/74	12	5	3	2	3	2	9	6	48	3
6/5/74	8	3	4	1	32	11	25	3	5	2
6/19/74	--	--	2	<1	44	5	3	<1	4	<1
7/2/74	8	6	12	<1	5	<1	4	<1	8	<1
Samples to date	6	6	7	7	7	7	7	7	7	7
Median	9		6		7		4		5	
Geometric Mean	11	4	6	2	12	4	5	2	7	2
Max	38	20	12	6	84	17	25	10	88	24
Min	5	1	2	<1	2	<1	1	<1	<1	<1

TC = Total Coliform (MF/100 ml)
FC = Fecal Coliform (MF/100 ml)
< = Less than

TABLE 1 - Cont.

SUMMARY OF BACTERIOLOGICAL DATA (WATER COLUMN) COLLECTED ALONG LONG ISLAND SHORELINE

(Samples Collected in Surf Zone)

Date	Station Identification Number									
	LIC07		LIC08		LIC09		LIC10		LIC12	
	TC	FC	TC	FC	TC	FC	TC	FC	TC	FC
4/11/74	<1	<1	4	1	1	<1	7	3	<1	<1
4/23/74	8	3	11	8	10	4	3	1	7	3
5/7/74	<1	<1	1	<1	2	<1	1	<1	1	<1
5/22/74	15	<1	2	1	5	1	16	3	8	1
6/5/74	<1	<1	1	1	2	<1	2	2	--	--
6/19/74	39	4	18	1	8	4	9	3	7	3
7/2/74	4	<1	2	<1	2	<1	2	<1	4	<1
Samples to date	7	7	7	7	7	7	7	7	6	6
Median	<1		2		2		3		7	
Geometric Mean	2	1	3	1	3	1	3	2	3	2
Max	39	4	18	8	10	<1	16	3	8	3
Min	<1	<1	1	<1	1	4	1	<1	<1	<1

TC = Total Coliform (MF/100 ml)
FC = Fecal Coliform (MF/100 ml)
< = Less than

Figure

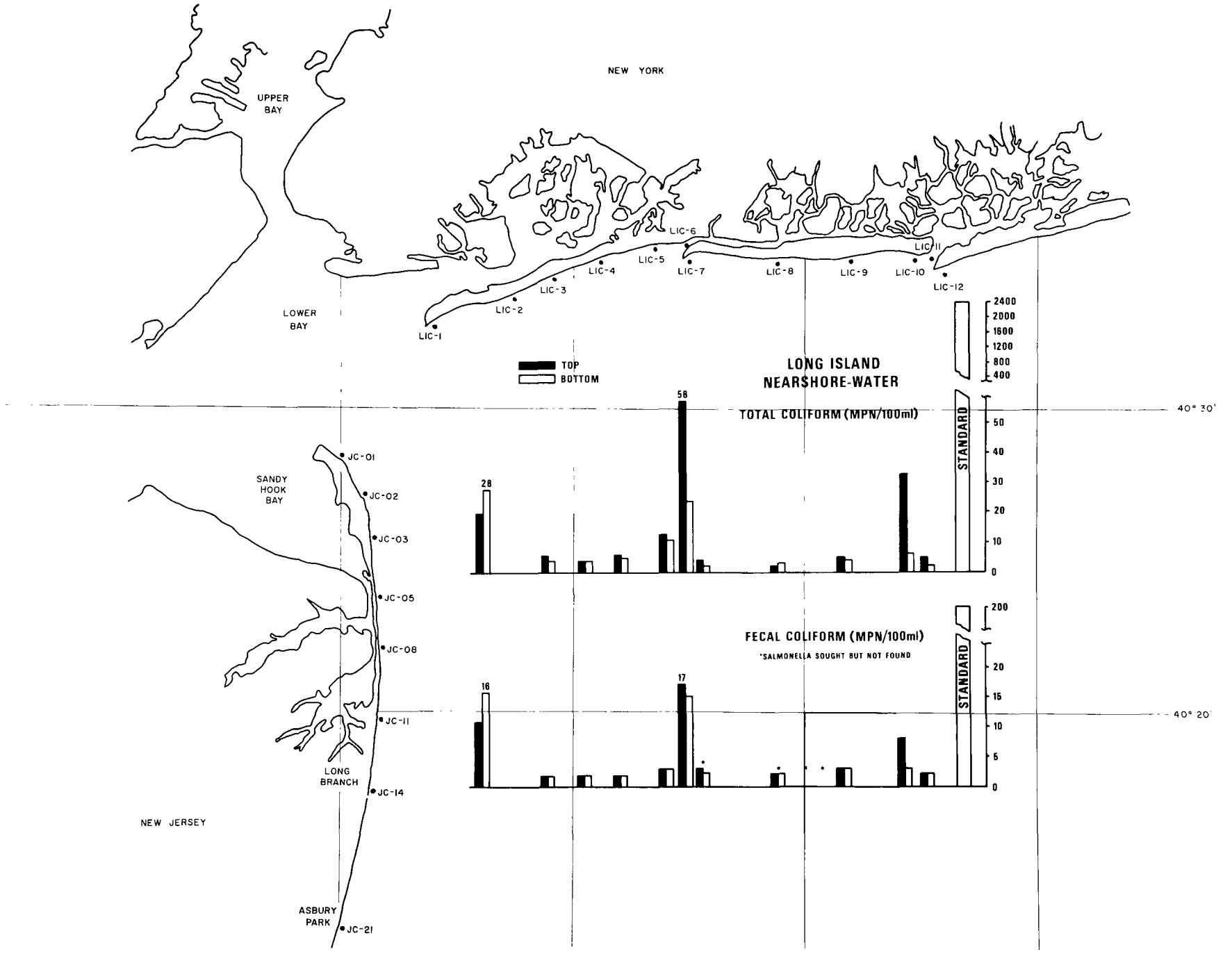

NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
TOP
BOTTOM
LONG ISLAND
NEARSHORE-WATER
TOTAL COLIFORM (MPN/100ml)
STANDARD
2400
2000
1600
1200
800
400
58
28
50
40
30
20
10
0
40° 30'
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
JC-21
SANDY HOOK BAY
LONG BRANCH
ASBURY PARK
NEW JERSEY
FECAL COLIFORM (MPN/100ml)
*SALMONELLA SOUGHT BUT NOT FOUND
200
20
15
10
5
0
16
17
40° 20'

TABLE 2

SUMMARY OF WATER-QUALITY DATA (WATER COLUMN) COLLECTED ALONG THE LONG ISLAND COAST
(by boat approximately 100 yards from beach)

Parameter	Date	Top/ Bottom	Station Identification Number										
			LIC01	LIC02	LIC03	LIC04	LIC05	LIC06	LIC07	LIC08	LIC09	LIC11	LIC12
Total Coliform	05-01-74	T	790	23	2	7	8	3,480	2	< 2	< 2	1,300	31
(MPN/100 ml)	05-01-74	B	2,210	< 2	< 2	11	17	3,480	< 2	< 2	2	8	< 2
	06-06-74	T	5	4	7	7	17	8	17	2	5	4	< 2
	06-06-74	B	2	2	5	2	17	< 2	< 2	5	2	11	< 2
	07-11-74	T	2	< 2	5	5	17	7	2	< 2	13	7	< 2
	07-11-74	B	5	11	7	5	5	2	2	2	17	< 2	2
Fecal Coliform	05-01-74	T	330	2	< 2	< 2	< 2	1,300	2	< 2	< 2	109	< 2
(MPN/100 ml)	05-01-74	B	1,090	< 2	< 2	< 2	< 2	790	< 2	< 2	< 2	5	< 2
	06-06-74	T	< 2	< 2	2	< 2	2	< 2	4	< 2	2	2	< 2
	06-06-74	B	< 2	< 2	< 2	< 2	5	< 2	< 2	2	2	4	< 2
	07-11-74	T	< 2	< 2	2	2	5	< 2	< 2	< 2	5	2	< 2
	07-11-74	B	< 2	< 2	4	< 2	< 2	< 2	< 2	2	4	< 2	2
Water Temperature	05-01-74	T	9.4	9.0	9.8	9.6	10.7	11.5	9.3	10.1	9.6	8.9	
(°C)	05-01-74	B	8.1	8.5	8.7	8.2	9.5	11.5	8.8	9.9	8.4	7.6	
	06-06-74	T	16.4	16.8	16.6	16.9	15.8	15.8	16.3	16.8	17.9	15.7	16.2
	06-06-74	B	16.2	15.2	16.6	16.4	15.2	15.6	15.6	16.7	17.4	15.7	15.4
	07-11-74	T	16.1	15.8	15.4	15.2	16.1	15.2	14.7	15.2	18.3	16.3	16.0
	07-11-74	B	16.1	15.7	15.2	15.1	14.8	15.3	14.3	14.7	16.0	15.5	15.5
Dissolved Oxygen	05-01-74	T	9.4	9.4	10.7	9.6	9.6	7.8	10.3	9.6	9.6	10.0	8.5
(mg/l)	05-01-74	B	8.9	9.3	10.5	8.9	9.2	7.8	10.2	9.7	9.0	9.2	9.5
	06-06-74	T	8.2	8.4	8.3	8.9	8.3	8.4	8.4	9.2	9.6	8.6	9.5
	06-06-74	B	8.4	8.0	7.8	7.2	7.4	8.0	7.2	9.3	9.1	8.6	8.6
	07-11-74	T	5.7	6.0	4.8	4.5	5.2	4.7	4.7	5.0	6.9	6.0	6.0
	07-11-74	B	5.7	5.9	4.8	4.3	4.3	4.6	4.3	4.4	6.0	6.0	5.8
Conductivity	05-01-74	T	33,000	33,100	33,400	34,000	34,200	34,900	33,700	34,500	34,200	33,500	
(micromhos)	05-01-74	B	32,600	33,000	33,200	33,100	33,600	34,800	33,500	34,400	33,400	32,600	
	06-06-74	T	35,600	35,900	35,900	36,300	36,600	36,000	36,400	36,900	37,500	35,800	36,300
	06-06-74	B	35,600	34,900	35,700	36,200	35,000	35,600	36,100	36,700	37,400	35,800	35,400
	07-11-74	T	37,000	36,300	36,400	36,300	36,900	36,500	36,100	36,300	38,600	37,200	37,300
	07-11-74	B	37,000	36,800	36,400	36,200	36,200	36,500	35,900	35,900	37,100	36,900	36,900
Salinity	05-01-74	T	29.6	29.9	29.7	30.5	29.9	30.0	30.6	30.6	30.8	30.6	
(g/l)	05-01-74	B	30.4	30.4	30.4	31.0	30.2	29.9	30.5	30.8	31.1	30.9	
	06-06-74	T	27.2	27.2	27.3	27.4	27.3	28.0	27.9	28.0	27.8	27.7	27.9
	06-06-74	B	27.2	27.4	27.1	27.5	27.5	27.6	28.1	28.0	28.0	27.8	27.4
	07-11-74	T	28.7	28.2	28.5	28.6	28.6	28.7	28.7	28.7	28.5	28.8	28.9
	07-11-74	B	28.9	28.8	28.8	28.6	29.0	28.7	28.9	28.7	28.8	29.0	29.9

T Top - Approximately 2 ft. from surface
B Bottom - Approximately 2 ft. from bottom (Total depth at sampling sites ranged from 12-22 ft.)

LIC06 E. Rockaway Inlet
LIC11 Jones Inlet

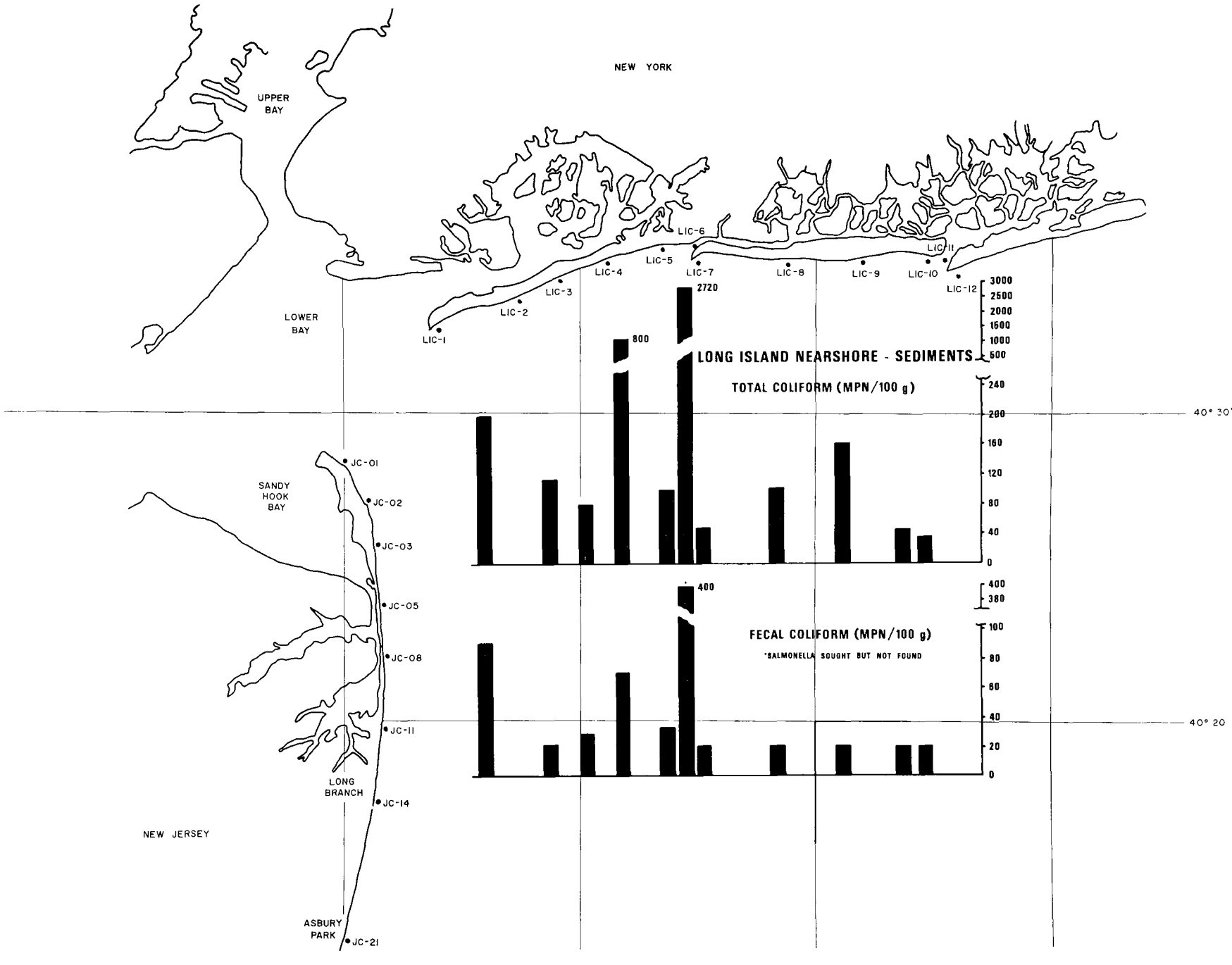

NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
LONG ISLAND NEARSHORE - SEDIMENTS
TOTAL COLIFORM (MPN/100 g)
2720
800
3000
2500
2000
1500
1000
500
240
200
160
120
80
40
0
40° 30'
FECAL COLIFORM (MPN/100 g)
*SALMONELLA SOUGHT BUT NOT FOUND
400
400
380
100
80
60
40
20
0
40° 20'
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
LONG BRANCH
JC-14
NEW JERSEY
ASBURY PARK
JC-21

Figure 7

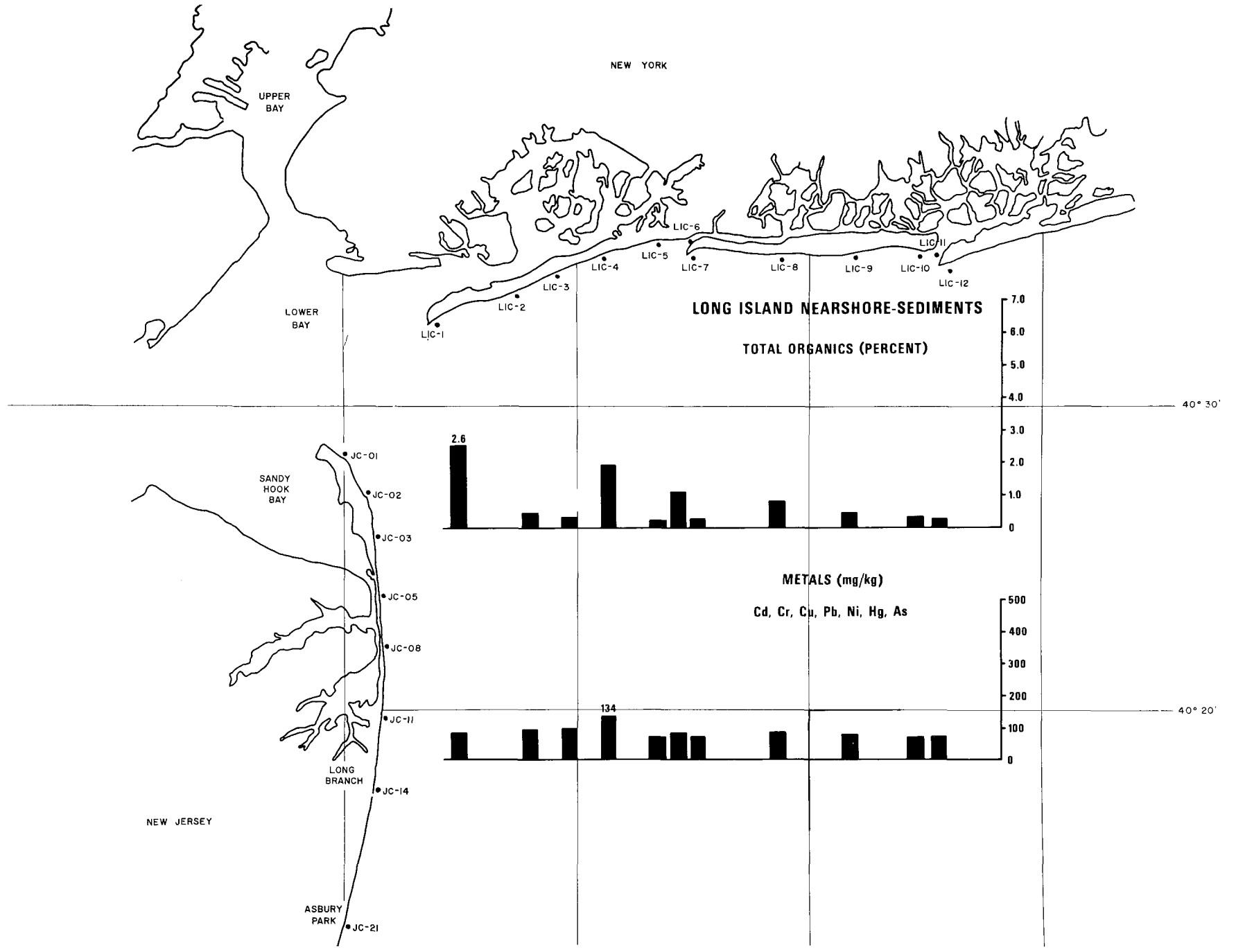

NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
LONG ISLAND NEARSHORE-SEDIMENTS
TOTAL ORGANICS (PERCENT)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
2.6
40° 30'
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
LONG BRANCH
JC-14
NEW JERSEY
ASBURY PARK
JC-21
METALS (mg/kg)
Cd, Cr, Cu, Pb, Ni, Hg, As
500
400
300
200
100
0
134
40° 20'

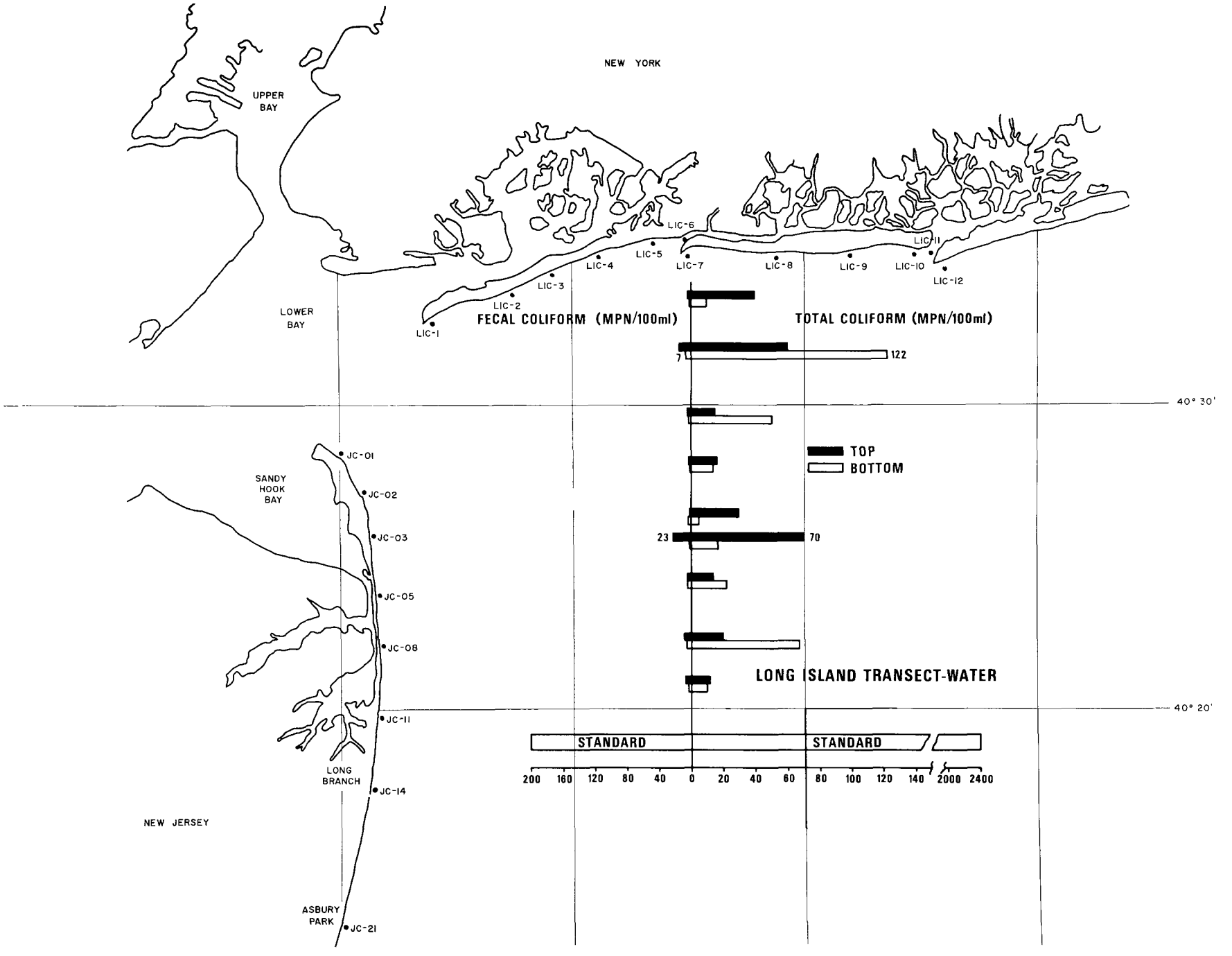
Figure 36

TABLE 3

SUMMARY OF WATER-QUALITY DATA (BOTTOM SEDIMENTS) COLLECTED ALONG THE LONG ISLAND COAST
(Samples collected by boat approximately 100 yds. from beach)

Parameter	Date	Station Identification Number											
		LIC01	LIC02	LIC03	LIC04	LIC05	LIC06	LIC07	LIC08	LIC09	LIC10	LIC11	LIC12
Total Coliform	05-01-74	7,900	130	220	490	460	2,210	70	230	230	--	230	110
(MPN/100 g)	06-06-74	< 20	230	50	13,000	110	7,000	80	20	80	--	< 20	20
	07-11-74	50	50	50	80	20	1,300	20	230	230	--	< 20	20
Fecal Coliform	05-01-74	1,720	< 20	50	50	80	630	< 20	< 20	< 20	--	< 20	20
(MPN/100 g)	06-06-74	< 20	20	< 20	330	< 20	790	< 20	< 20	< 20	--	< 20	< 20
	07-11-74	< 20	20	20	< 20	< 20	130	< 20	< 20	< 20	--	< 20	< 20
Salmonella (qualitative)	05-01-74	--	--	--	--	--	Neg.	--	--	--	--	--	--
Total Organics	05-01-74	--	5,450	2,510	3,850	1,770	2,570	3,300	10,600	5,620	--	1,240	3,000
(mg/kg)	06-06-74	25,600	3,400	3,860	34,100	2,430	18,300	1,810	4,900	3,090	--	1,280	1,840
	07-11-74	2,550	12,770	2,490	5,260	1,450	2,890	1,980	3,340	3,340	--	1,450	2,990
Cadmium	05-01-74	--	--	--	--	< 5	< 5	< 5	< 5	--	--	< 5	< 5
(mg/kg)	06-06-74	< 3	< 3	< 3	< 3	--	--	--	--	< 3	--	--	--
	07-11-74	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	--	< 5	< 5
Chromium	05-01-74	--	--	--	--	4	< 3	4	12	--	--	< 3	5
(mg/kg)	06-06-74	5	20	20	40	--	--	--	--	< 4	--	--	--
	07-11-74	< 10	< 10	--	< 10	< 10	< 10	< 10	10	< 10	--	< 10	< 10
Copper	05-01-74	--	--	--	--	< 3	3	3	15	--	--	< 3	< 3
(mg/kg)	06-06-74	< 6	< 6	< 6	24	--	--	--	--	< 6	--	--	--
	07-11-74	5	4	4	< 3	< 3	4	< 3	4	3	--	3	3
Lead	05-01-74	--	--	--	--	< 40	< 40	< 40	< 40	--	--	< 40	< 40
(mg/kg)	06-06-74	< 50	< 50	< 50	80	--	--	--	--	< 50	--	--	--
	07-11-74	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	--	< 50	< 50
Nickel	05-01-74	--	--	--	--	< 10	< 10	< 10	< 10	--	--	< 10	< 10
(mg/kg)	06-06-74	< 10	< 10	< 10	< 10	--	--	--	--	< 10	--	--	--
	07-11-74	< 10	< 10	< 10	< 10	< 10	< 10	< 10	15	< 10	--	< 10	< 10
Mercury	05-01-74	--	--	--	--	0.1	0.5	< 0.1	< 0.1	--	--	< 0.1	< 0.1
(mg/kg)	06-06-74	< .5	< .5	< .5	1.02	--	--	--	--	< .5	--	--	--
	07-11-74	.16	.12	.08	.14	.12	.07	.08	.21	.52	--	.01	.21
Arsenic	05-01-74	--	--	--	--	.8	.9	1.8	2.4	--	--	.4	1.2
(mg/kg)	06-06-74	< .5	4.3	1.3	16	--	--	--	--	0.7	--	--	--
	07-11-74	.6	.9	.7	.6	.5	< .5	.6	< .5	.6	--	< .5	.6

Neg. - Sought but not detected


NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
FECAL COLIFORM (MPN/100ml)
TOTAL COLIFORM (MPN/100ml)
7
122
23
70
40° 30'
40° 20'
TOP
BOTTOM
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
LONG BRANCH
JC-14
NEW JERSEY
ASBURY PARK
JC-21
LONG ISLAND TRANSECT-WATER
STANDARD
STANDARD
200 160 120 80 40 0 20 40 60 80 100 120 140 2000 2400

Figure

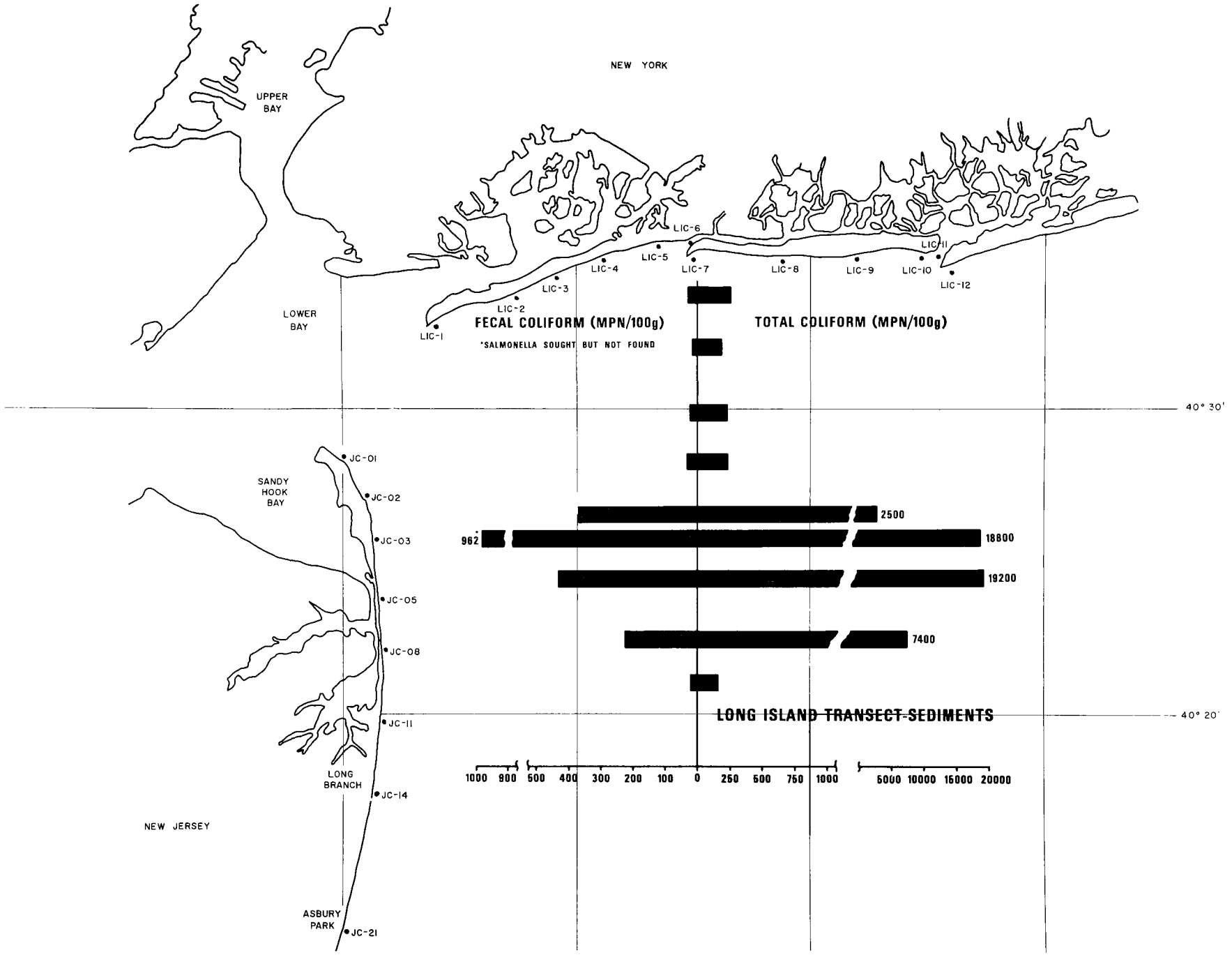
TABLE 4

SUMMARY OF WATER-QUALITY DATA (WATER COLUMN) COLLECTED ALONG LONG ISLAND TRANSECT

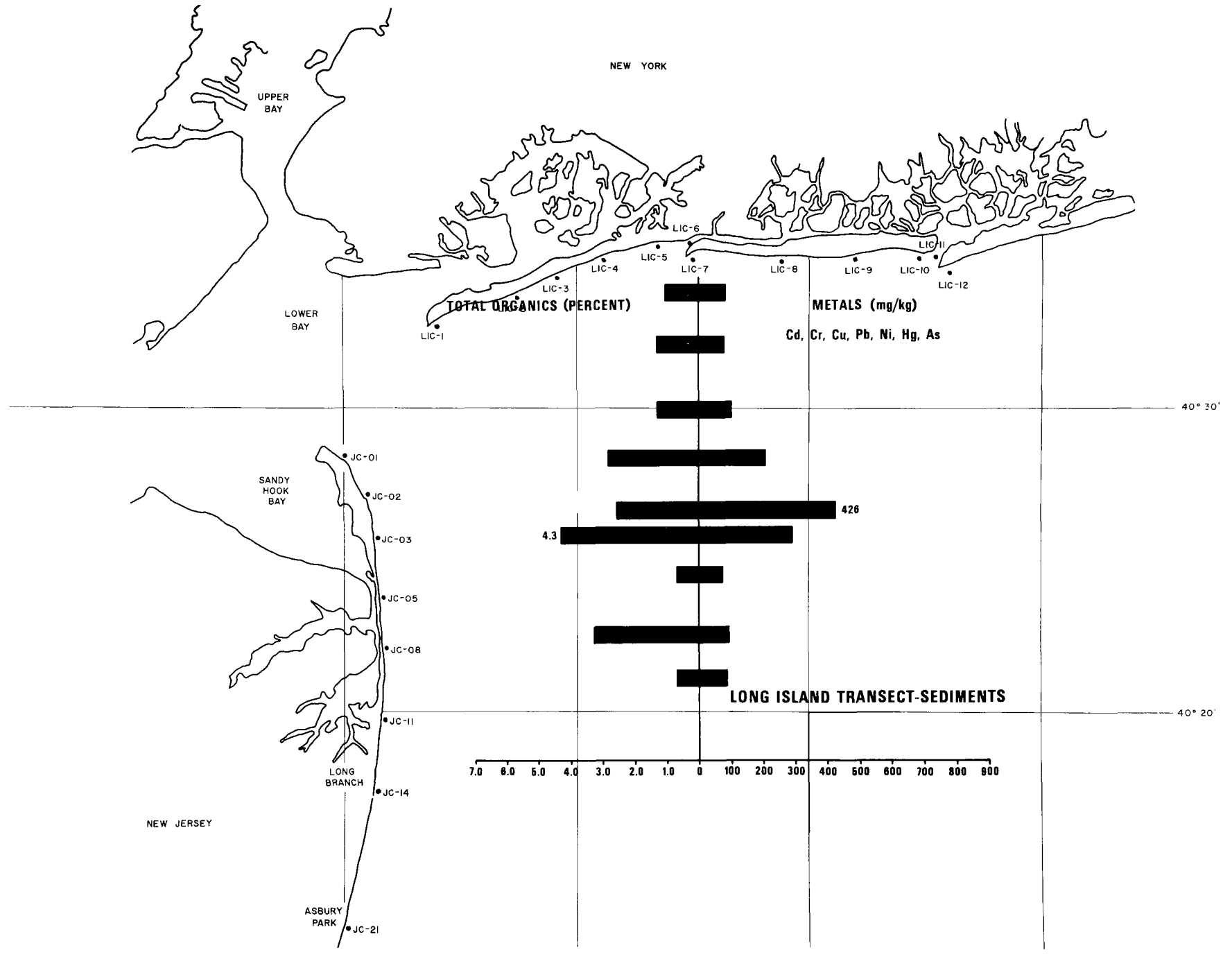
Parameter	Date	Top/ Bottom	Station Identification Number NYB40	NYB41	NYB42	NYB43	NYB44	NYB45	NYB46	NYB47
Total Coliform	04-17-74	T	13+	2+	< 2+	--	--	5,420*	2,210	420
(MPN/100 ml)	04-17-74	B	109+	700+	230+	--	--	49*	8	7
	05-14-74	T	330	3,480	79	5	11	8	< 2$	< 2$
	05-14-74	B	2	1,300	278	79	14	49	79$	17$
	07-09-74	T	13	8	23	49	79	8	< 2#	< 2#
	07-09-74	B	< 2	< 2	< 2	< 2	< 2	< 2	490#	8#
Fecal Coliform	04-17-74	T	< 2+	< 2+	< 2+	--	--	1,300*	49	49
(MPN/100 ml)	04-17-74	B	5+	13+	8+	--	--	< 2*	2	< 2
	05-14-74	T	27	700	11	< 2	< 2	5	< 2$	< 2$
	05-14-74	B	< 2	13	2	5	5	< 2	5$	< 2$
	07-09-74	T	< 2	< 2	5	8	2	< 2	< 2#	< 2#
	07-09-74	B	< 2	< 2	< 2	< 2	< 2	< 2	11#	< 2#
Water Temperature	04-17-74	T	--	--	--	--	--	7.7*	6.9	6.8
(°C)	04-17-74	B	--	--	--	--	--	6.7*	7.0	6.5
	05-14-74	T	12.5	12.1	12.1	12.2	11.7	11.7	14.1$	13.9$
	05-14-74	B	10.0	11.0	11.7	11.8	11.7	11.6	--$	--$
	07-09-74	T	19.4	19.5	20.1	19.9	20.7	21.0	17.5#	17.3#
	07-09-74	B	14.2	13.2	13.9	13.5	14.8	15.1	10.9#	12.1#
Dissolved Oxygen	04-17-74	T	--	--	--	--	--	11.0*	7.3	10.9
(mg/l)	04-17-74	B	--	--	--	--	--	9.2*	8.6	10.0
	05-14-74	T	7.2	7.4	5.6	5.9	3.7	2.7	9.7$	10.3$
	05-14-74	B	5.0	3.5	5.4	4.0	3.4	2.3	7.6$	7.6$
	07-09-74	T	--	--	--	--	--	--	9.0#	8.8#
	07-09-74	B	--	--	--	--	--	--	6.2#	4.7#
Conductivity	04-17-74	T	--	--	--	--	--	30,700*	29,300	28,600
(micromhos)	04-17-74	B	--	--	--	--	--	31,400*	31,000	30,600
	05-14-74	T	32,400	32,300	33,400	33,200	34,100	34,200	35,200$	34,700$
	05-14-74	B	34,300	34,400	34,300	34,400	34,700	34,800	--$	--$
	07-09-74	T	38,500	37,100	37,500	36,100	36,500	37,200	37,500#	37,800#
	07-09-74	B	35,800	34,600	34,800	34,500	35,700	36,000	34,700#	33,000#
Salinity	04-17-74	T	--	--	--	--	--	28.5*	27.8	27.0
(g/l)	04-17-74	B	--	--	--	--	--	30.3*	29.7	29.0
	05-14-74	T	--	27.8	27.9	27.7	28.8	29.1	28.2$	27.7$
	05-14-74	B	--	29.6	28.8	29.1	29.5	29.6	--$	--$
	07-09-74	T	28.2	26.6	26.5	25.7	25.5	26.2	28.3#	28.4#
	07-09-74	B	28.8	28.6	28.7	28.3	29.0	28.8	28.5#	28.1#

T Top - Approximately 2 ft. below surface
B Bottom - Approximately 2 ft. above bottom

* Samples Collected 04-18-74
\+ Samples Collected 04-24-74
$ Samples Collected 05-21-74
\# Samples Collected 06-14-74


NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
FECAL COLIFORM (MPN/100g)
TOTAL COLIFORM (MPN/100g)
*SALMONELLA SOUGHT BUT NOT FOUND
40° 30'
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
JC-21
LONG BRANCH
ASBURY PARK
NEW JERSEY
962*
2500
18800
19200
7400
LONG ISLAND TRANSECT-SEDIMENTS
40° 20'
1000 800 600 400 300 200 100 0 250 500 750 1000
5000 10000 15000 20000

Figure


NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
TOTAL ORGANICS (PERCENT)
METALS (mg/kg)
Cd, Cr, Cu, Pb, Ni, Hg, As
40° 30'
40° 20'
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
JC-21
LONG BRANCH
NEW JERSEY
ASBURY PARK
426
4.3
LONG ISLAND TRANSECT-SEDIMENTS
7.0 6.0 5.0 4.0 3.0 2.0 1.0 0 100 200 300 400 500 600 700 800 900

Figure

TABLE 5

SUMMARY OF WATER-QUALITY DATA (BOTTOM SEDIMENTS) COLLECTED ALONG LONG ISLAND TRANSECT

Parameter	Date	Station Identification Number NYB40	NYB41	NYB42	NYB43	NYB44	NYB45	NYB46	NYB47
Total Coliform	04-17-74	330+	270+	--	--	--	34,800*	2,300	490
(MPN/100 g)	05-14-74	490	230	2,780	2,300	1,300	17,500	7,900$	130$
	07-09-74	110	130	< 20	20	4,900	10,900	22,100#	70#
Fecal Coliform	04-17-74	< 20+	40+	--	--	--	790*	50	20
(MPN/100 g)	05-14-74	50	< 20	20	50	170	230	230$	< 20$
	07-09-74	< 20	< 20	< 20	20	790	4,900	940#	20#
Salmonella	05-14-74	--	--	--	--	--	Neg.	--	--
(qualitative)	07-09-74	--	--	--	--	Neg.	--	--	--
Total Organics	04-17-74	17,500+	7,320+	--	--	--	48,700*	7,560	7,630
(mg/kg)	05-14-74	5,890	16,100	15,000	28,800	21,400	75,500	76,600$	6,840$
	07-09-74	8,370	14,700	10,700	27,600	29,600	4,660	13,700#	6,770#
Cadmium	04-17-74	< 5+	< 5+	--	--	--	9*	< 3	< 3
(mg/kg)	05-14-74	--	--	< 2	2	< 2	2	--	--
	07-09-74	< 5	< 5	< 5	< 5	9	< 5	< 3#	< 3#
Chromium	04-17-74	13+	9+	--	--	--	115*	9	8
(mg/kg)	05-14-74	--	--	12	54	30	48	--	--
	07-09-74	12	< 10	19	71	146	12	10#	8#
Copper	04-17-74	4+	4+	--	--	--	133*	5	4
(mg/kg)	05-14-74	--	--	9	42	38	97	--	--
	07-09-74	5	< 3	8	51	156	8	10#	19#
Lead	04-17-74	< 40+	< 40+	--	--	--	208*	< 40	< 40
(mg/kg)	05-14-74	--	--	< 50	82	50	130	--	--
	07-09-74	< 50	< 50	< 50	60	370	< 50	< 50#	< 50#
Nickel	04-17-74	< 10+	< 10+	--	--	--	17*	6	5
(mg/kg)	05-14-74	--	--	7	11	9	12	--	--
	07-09-74	< 10	< 10	< 10	15	27	< 10	< 10#	< 10#
Mercury	04-17-74	.2+	< .2+	--	--	--	1.8*	5.0	1.4
(mg/kg)	05-14-74	--	--	.2	.8	.7	1.1	--	1.0$
	07-09-74	.42	.06	.09	.65	2.4	1.35	.16#	< .1#
Arsenic	04-17-74	6.3+	5.2+	--	--	--	3.7*	5.6	3.0
(mg/kg)	05-14-74	--	--	17.8	7.8	6.3	4.2	--	--
	07-09-74	2.4	5.2	26.0	4.8	3.6	.8	21#	2.2#

* Samples Collected 04-18-74
\+ Samples Collected 04-24-74
$ Samples Collected 05-21-74
\# Samples Collected 06-14-74

Neg. - Sought but not detected

NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
1590
NEW YORK HARBOR TRANSECT-WATER
371
392
TOTAL COLIFORM (MPN/100ml)
STANDARD
2500
2000
1500
1000
200
160
120
80
40
0
40° 30'
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
JC-21
436
FECAL COLIFORM (MPN/100ml)
TOP
BOTTOM
500
400
200
160
120
80
40
0
40° 20
LONG BRANCH
NEW JERSEY
ASBURY PARK

Figure 6

TABLE 6

SUMMARY OF WATER-QUALITY DATA (WATER COLUMN) COLLECTED ALONG N.Y. HARBOR TRANSECT

Parameter	Date	Top/ Bottom	Station Identification Number NYB30	NYB31	NYB32	NYB33	NYB34	NYB35
Total Coliform	04-17-74	T	3,480	--	2,400	3,480	1,300	130
(MPN/100 ml)	04-17-74	B	330	--	23	22	< 2	2
	05-21-74	T	330	172	109	< 2	< 2	< 2
	05-21-74	B	70	17	33	13	2	17
	07-09-74	T	3,480*	--	230	330	79	11+
	07-09-74	B	2,210*	--	5	8	8	2+
Fecal Coliform	04-17-74	T	490	--	790	1,090	230	9
(MPN/100 ml)	04-17-74	B	109	--	23	< 2	< 2	< 2
	05-21-74	T	130	109	23	< 2	< 2	< 2
	05-21-74	B	5	< 2	17	< 2	2	2
	07-09-74	T	1,300*	--	23	79	8	2+
	07-09-74	B	790*	--	2	5	2	< 2+
Water Temperature	04-17-74	T	7.5	--	7.1	7.2	7.9	8.0
(^{o}C)	04-17-74	B	6.4	--	5.8	5.9	6.5	7.4
	05-21-74	T	11.9	12.3	12.7	12.8	13.0	14.2
	05-21-74	B	10.2	9.6	10.8	9.5	--	--
	07-09-74	T	18.6*	--	21.3	19.4	19.6	17.6+
	07-09-74	B	16.7*	--	14.0	13.0	10.9	18.2+
Dissolved Oxygen	04-17-74	T	9.8	--	10.9	8.5	10.0	11.9
(mg/l)	04-17-74	B	7.2	--	9.3	9.3	9.1	9.5
	05-21-74	T	9.0	9.4	9.6	8.7	9.9	9.5
	05-21-74	B	7.3	9.4	8.2	6.3	6.7	6.5
	07-09-74	T	7.2*	--	--	--	--	9.5+
	07-09-74	B	7.0*	--	--	--	--	8.0+
Conductivity	04-17-74	T	19,200	--	23,400	24,300	23,100	26,300
(micromhos)	04-17-74	B	27,400	--	32,000	32,000	30,100	30,200
	05-21-74	T	34,600	34,900	34,700	35,000	35,400	36,400
	05-21-74	B	34,300	34,000	34,700	34,000	--	--
	07-09-74	T	29,600*	--	33,300	35,500	36,300	37,100+
	07-09-74	B	33,100*	--	35,200	34,600	33,100	30,600+
Salinity	04-17-74	T	17.0	--	21.4	22.4	20.7	24.0
(g/l)	04-17-74	B	26.2	--	31.7	31.6	29.1	28.4
	05-21-74	T	29.1	29.3	28.2	28.6	29.0	29.5
	05-21-74	B	29.8	30.2	30.3	30.2	--	--
	07-09-74	T	21.0*	--	22.9	25.5	25.8	27.8+
	07-09-74	B	24.8*	--	28.5	28.7	28.9	28.8+

T Top - Approximately 2 ft. below surface
B Bottom - Approximately 2 ft. above bottom

* Samples Collected 06-11-74
\+ Samples Collected 06-14-74

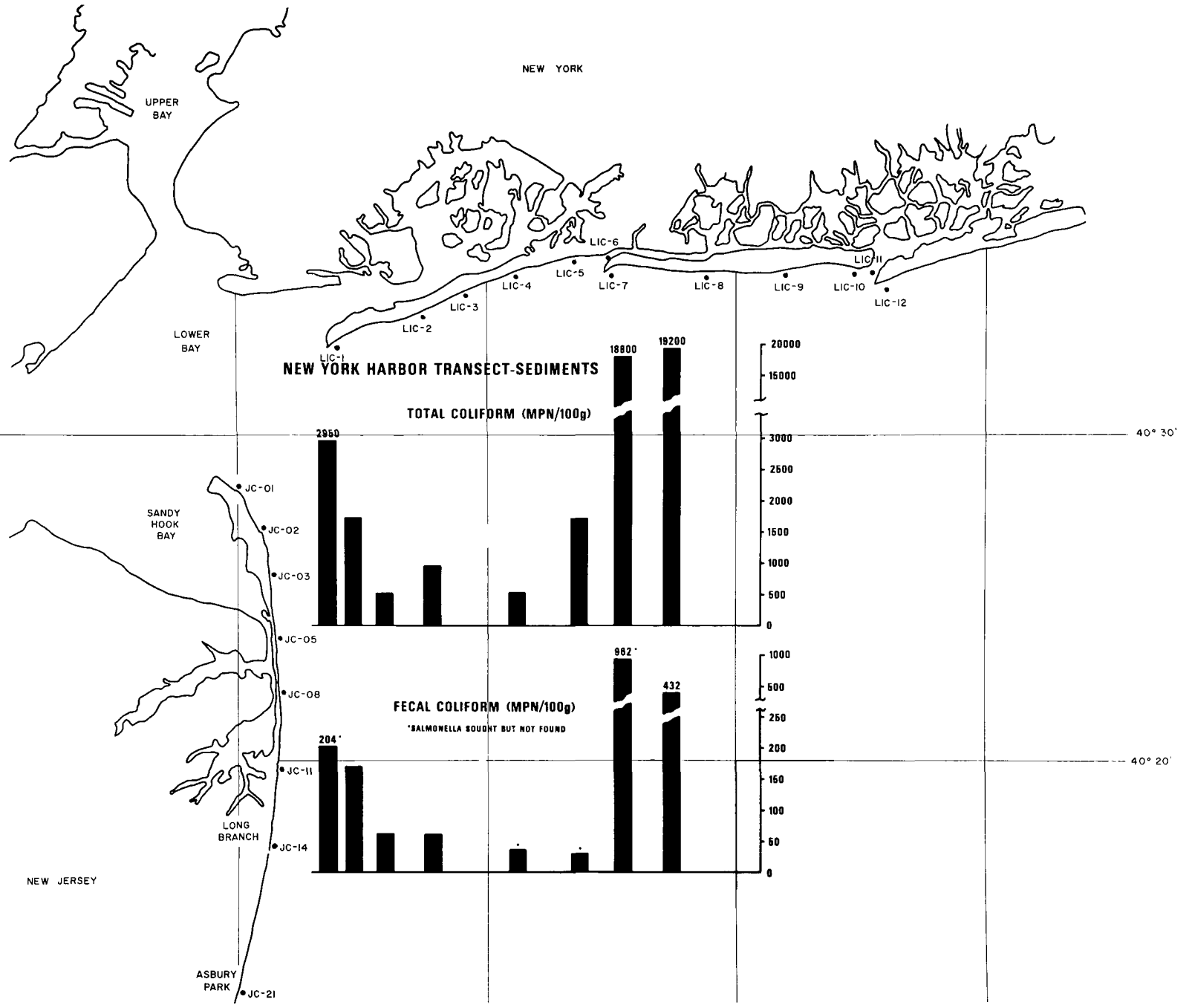

NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
NEW YORK HARBOR TRANSECT-SEDIMENTS
TOTAL COLIFORM (MPN/100g)
2950
18800
19200
20000
15000
3000
2500
2000
1500
1000
500
0
40° 30'
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
LONG BRANCH
NEW JERSEY
ASBURY PARK
JC-21
FECAL COLIFORM (MPN/100g)
*SALMONELLA SOUGHT BUT NOT FOUND
204*
962*
432
1000
500
250
200
150
100
50
0
40° 20'

Figure 1

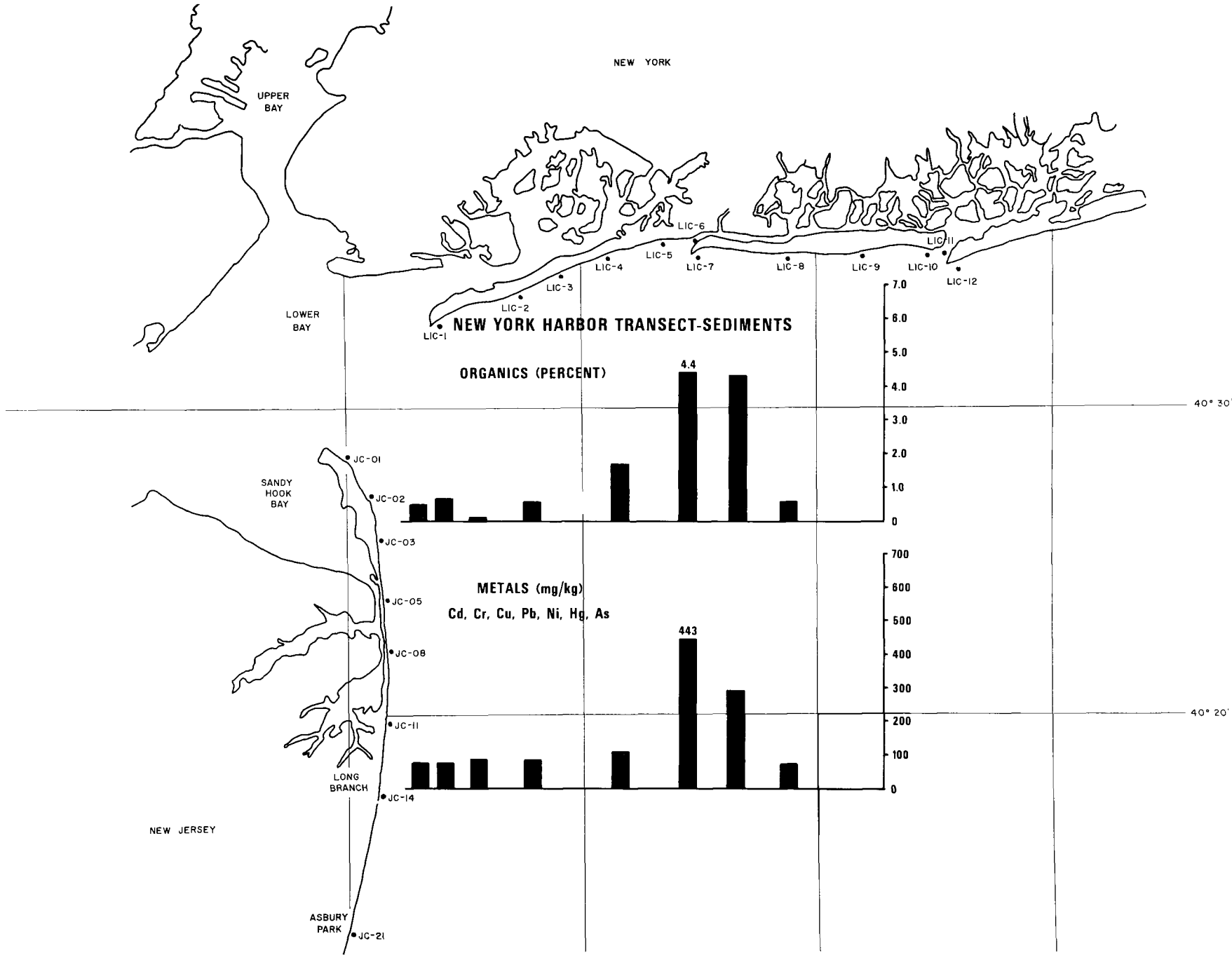

NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
NEW YORK HARBOR TRANSECT-SEDIMENTS
ORGANICS (PERCENT)
4.4
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
40° 30'
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
METALS (mg/kg)
Cd, Cr, Cu, Pb, Ni, Hg, As
443
700
600
500
400
300
200
100
0
40° 20'
LONG BRANCH
NEW JERSEY
ASBURY PARK
JC-21

Figure 7

TABLE 7

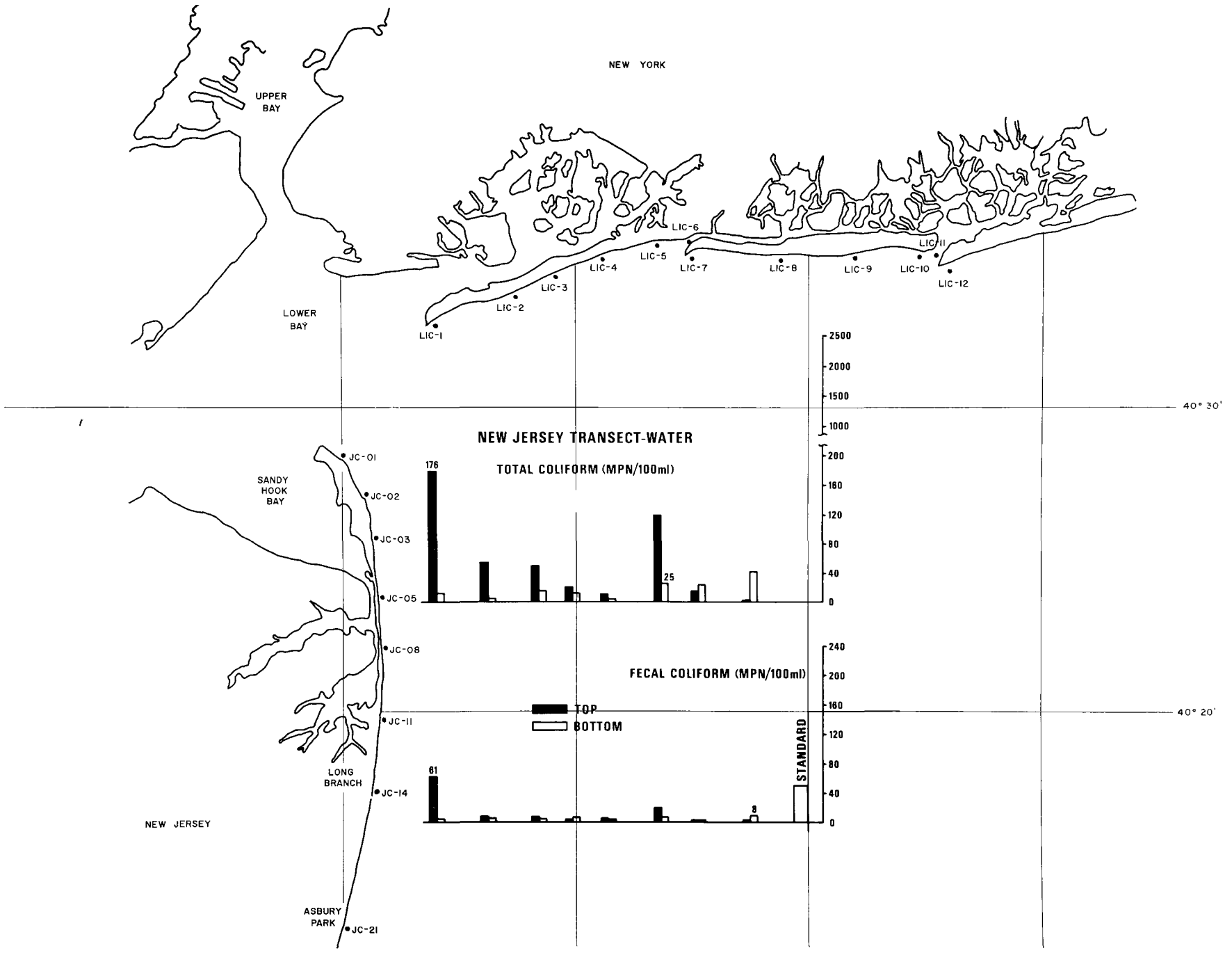
SUMMARY OF WATER-QUALITY DATA (BOTTOM SEDIMENTS) COLLECTED ALONG N.Y. HARBOR TRANSECT

Parameter	Date	Station Identification Number					
		NYB30	NYB31	NYB32	NYB33	NYB34	NYB35
Total Coliform	04-17-74	2,300	--	1,300	790	1,300	2,300
(MPN/100 g)	05-21-74	1,410	1,720	230	1,410	490	1,720
	07-09-74	7,900*	--	490	790	230	1,300+
Fecal Coliform	04-17-74	230	--	130	130	20	50
(MPN/100 g)	05-21-74	80	170	20	110	50	20
	07-09-74	460*	--	110	20	50	20+
Salmonella	04-17-74	--	--	--	--	Neg.	Neg.
(qualitative)	06-11-74	Neg.	--	--	--	--	--
Total Organics	04-17-74	3,490	--	2,580	7,190	27,700	60,900
(mg/kg)	05-21-74	4,630	6,660	3,080	6,260	11,500	32,500
	07-09-74	6,530*	--	1,290	5,380	11,400	38,200+
Cadmium	04-17-74	--	--	--	--	--	3
(mg/kg)	05-21-74	< 2	< 2	< 2	< 2	< 2	--
	07-09-74	< 3*	--	< 5	< 5	< 5	6+
Chromium	04-17-74	--	--	--	--	--	74
(mg/kg)	05-21-74	3	7	3	9	9	--
	07-09-74	4*	--	< 10	11	17	19+
Copper	04-17-74	--	--	--	--	--	82
(mg/kg)	05-21-74	< 6	< 6	< 6	8	42	--
	07-09-74	< 6*	--	3	7	13	140+
Lead	04-17-74	--	--	--	--	--	134
(mg/kg)	05-21-74	< 50	< 50	< 50	< 50	50	--
	07-09-74	< 50*	--	< 50	< 50	< 50	250+
Nickel	04-17-74	--	--	--	--	--	17
(mg/kg)	05-21-74	< 7	< 7	< 7	< 7	8	--
	07-09-74	10*	--	24	< 10	13	20+
Mercury	04-17-74	--	--	--	--	2.1	4.4
(mg/kg)	05-21-74	.2	.5	< .2	1.1	1.0	--
	07-09-74	< .1*	--	.06	.21	.31	1.7+
Arsenic	04-17-74	--	--	--	--	--	2.4
(mg/kg)	05-21-74	1.4	1.8	1.6	4.9	4.5	--
	07-09-74	3.6*	--	.8	1.8	2.4	12+

* Samples Collected 06-11-74

\+ Samples Collected 06-14-74

Neg. - Sought but not detected


NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
40° 30'
NEW JERSEY TRANSECT-WATER
TOTAL COLIFORM (MPN/100ml)
176
25
2500
2000
1500
1000
200
160
120
80
40
0
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
LONG BRANCH
NEW JERSEY
ASBURY PARK
JC-21
FECAL COLIFORM (MPN/100ml)
TOP
BOTTOM
STANDARD
61
8
240
200
160
120
80
40
0
40° 20'

Figure

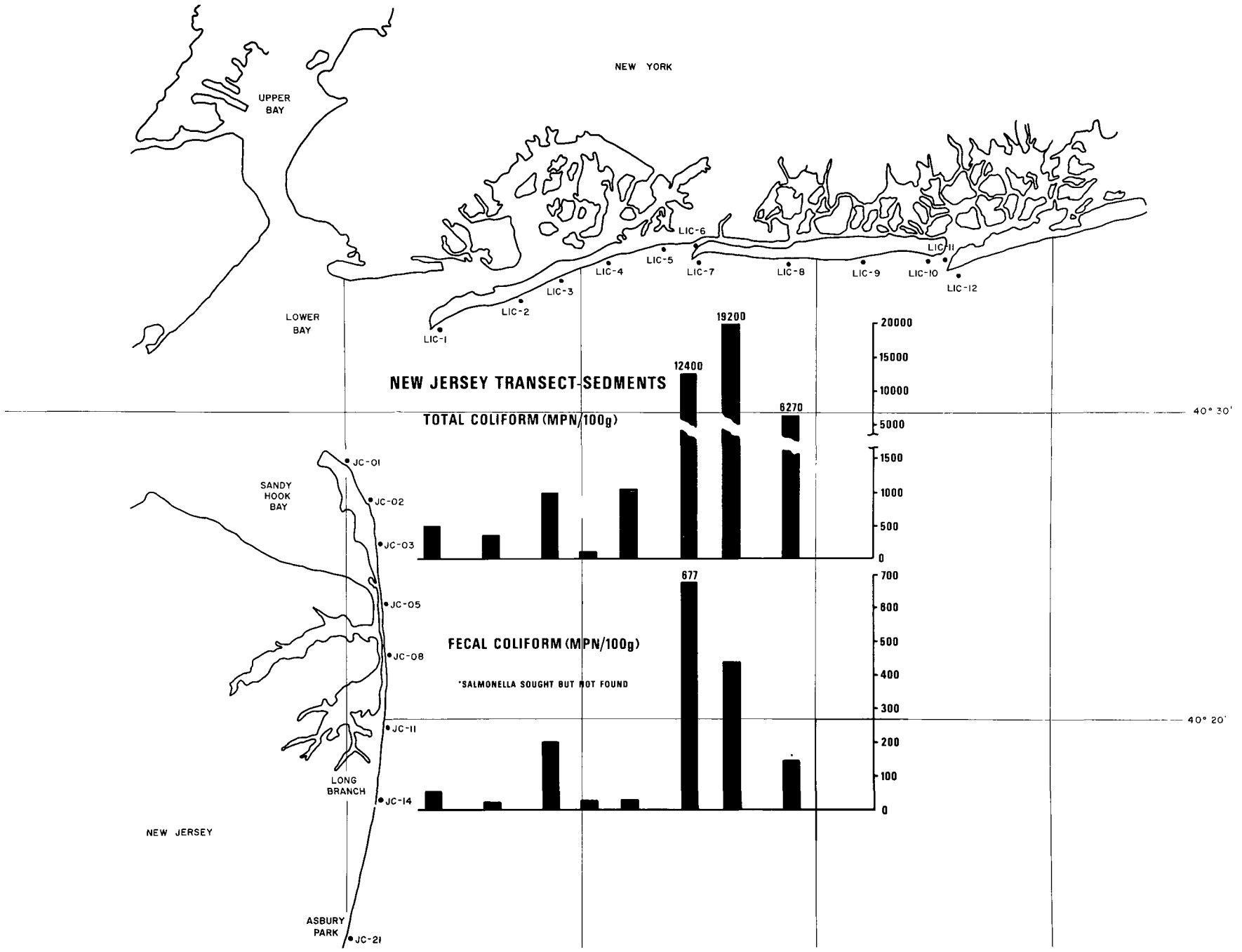
TABLE 8

SUMMARY OF WATER-QUALITY DATA (WATER COLUMN) COLLECTED ALONG NEW JERSEY TRANSECT

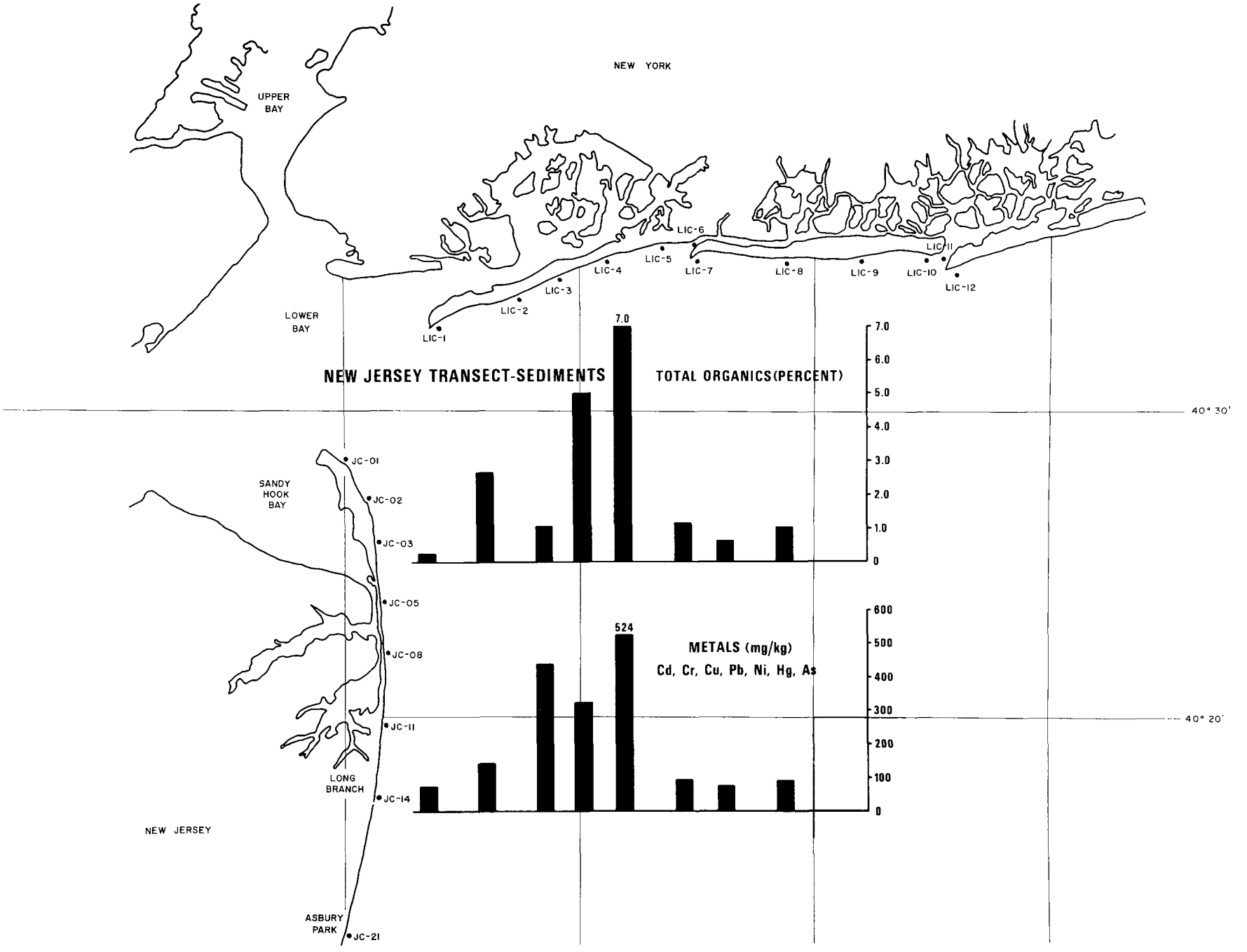
Parameter	Date	Top/ Bottom	Station Identification Number NYB20	NYB21	NYB22	NYB23	NYB24	NYB25	NYB26	NYB27
Total Coliform	04-18-74	T	460	17	70	79	46	3,480	79*	8
(MPN/100 ml)	04-18-74	B	5	< 2	13	< 2	2	9	490*	1,720
	05-16-74	T	2,400	33	22	< 2	2	< 2+	< 2	< 2$
	05-16-74	B	27	2	2	7	< 2	14+	2	< 2$
	06-14-74	T	5	79	79	49	11	230	17	< 2
	06-14-74	B	13	22	141	130	11	130	13	22
Fecal Coliform	04-18-74	T	230	5	5	5	5	175	2*	2
(MPN/100 ml)	04-18-74	B	< 2	< 2	< 2	< 2	< 2	2	2*	33
	05-16-74	T	490	7	7	< 2	< 2	< 2+	< 2	< 2$
	05-16-74	B	2	< 2	< 2	2	< 2	2+	< 2	< 2$
	06-14-74	T	< 2	< 2	5	2	5	22	2	< 2
	06-14-74	B	8	5	14	33	< 2	79	2	7
Water Temperature	04-18-74	T	7.9	7.6	7.8	7.8	7.8	7.8	7.2*	7.9
(^{o}C)	04-18-74	B	5.9	6.1	7.8	7.1	6.9	7.1	6.9*	7.2
	05-16-74	T	14.1	9.9	9.9	10.2	10.8	11.7+	11.6	14.1$
	05-16-74	B	9.3	8.7	9.3	9.7	10.1	11.5+	10.7	--$
	06-14-74	T	18.2	17.9	18.1	17.7	17.5	17.1	16.9	17.9
	06-14-74	B	12.2	9.2	9.4	8.1	7.3	10.6	11.4	9.8
Dissolved Oxygen	04-18-74	T	8.7	7.3	7.6	6.4	11.2	12.0	8.0*	8.8
(mg/1)	04-18-74	B	4.5	8.2	9.1	6.4	9.2	7.2	9.5*	9.1
	05-16-74	T	11.0	7.6	9.2	9.0	9.8	4.5+	8.7	9.2$
	05-16-74	B	7.4	8.9	8.3	8.1	9.0	2.7+	8.0	6.7$
	06-14-74	T	9.8	10.4	11.4	11.2	10.0	9.3	9.2	10.0
	06-14-74	B	9.2	4.5	7.5	5.0	10.0	6.6	9.1	5.2
Conductivity	04-18-74	T	24,700	30,100	29,900	31,000	30,400	30,500	27,300*	29,100
(micromhos)	04-18-74	B	31,800	31,300	29,900	31,800	31,500	31,200	30,100*	30,700
	05-16-74	T	25,900	33,300	34,100	34,200	34,500	34,800+	34,900	36,900$
	05-16-74	B	32,800	33,200	33,900	34,100	34,300	34,900+	34,600	--$
	06-14-74	T	34,000	33,100	34,000	34,500	36,600	31,200	37,100	37,300
	06-14-74	B	33,600	31,800	31,700	31,100	30,700	32,600	33,200	32,000
Salinity	04-18-74	T	22.4	28.2	27.7	29.0	28.4	28.4	25.5*	26.7
(g/1)	04-18-74	B	31.4	30.9	27.8	30.3	30.2	29.8	28.6*	29.2
	05-16-74	T	20.2	29.8	30.3	30.3	30.0	29.8+	29.7	29.6$
	05-16-74	B	29.4	30.4	30.8	30.6	30.4	29.8+	30.3	--$
	06-14-74	T	24.8	24.5	25.1	25.6	27.3	28.1	28.2	27.9
	06-14-74	B	28.2	28.3	28.4	28.9	29.4	28.6	28.4	28.5

T Top - Approximately 2 ft. below surface
B Bottom - Approximately 2 ft. above bottom

* Samples Collected 04-17-74
\+ Samples Collected 05-14-74
$ Samples Collected 05-21-74


NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
NEW JERSEY TRANSECT-SEDMENTS
TOTAL COLIFORM (MPN/100g)
12400
19200
6270
20000
15000
10000
5000
1500
1000
500
0
40° 30'
SANDY HOOK BAY
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
LONG BRANCH
NEW JERSEY
ASBURY PARK
JC-21
FECAL COLIFORM (MPN/100g)
*SALMONELLA SOUGHT BUT NOT FOUND
677
700
600
500
400
300
200
100
0
40° 20'

Figure


NEW YORK
UPPER BAY
LOWER BAY
LIC-1
LIC-2
LIC-3
LIC-4
LIC-5
LIC-6
LIC-7
LIC-8
LIC-9
LIC-10
LIC-11
LIC-12
NEW JERSEY TRANSECT-SEDIMENTS
TOTAL ORGANICS(PERCENT)
7.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
40° 30'
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
JC-21
SANDY HOOK BAY
LONG BRANCH
ASBURY PARK
NEW JERSEY
524
METALS (mg/kg)
Cd, Cr, Cu, Pb, Ni, Hg, As
600
500
400
300
200
100
0
40° 20'

Figure

TABLE 9

SUMMARY OF WATER-QUALITY DATA (BOTTOM SEDIMENTS) COLLECTED ALONG NEW JERSEY TRANSECT

Parameter	Date	Station Identification Number NYB20	NYB21	NYB22	NYB23	NYB24	NYB25	NYB26	NYB27
Total Coliform	04-18-74	2,300	130	490	20	790	7,900	92,000*	24,000
(MPN/100 g)	05-16-74	230	490	1,090	220	1,300	7,000+	1,410	7,900$
	06-14-74	230	490	1,720	230	1,300	34,800	54,200	1,300
Fecal Coliform	04-18-74	330	< 20	110	< 20	< 20	80	490*	490
(MPN/100 g)	05-16-74	20	20	230	< 20	50	490+	50	130$
	06-14-74	< 20	20	330	50	20	7,900	3,300	50
Salmonella (qualitative)	04-18-74	--	--	--	--	--	--	--	Neg.
Total Organics	04-18-74	1,640	31,500	13,200	--	96,700	7,030	5,670*	7,670
(mg/kg)	05-16-74	2,840	24,000	12,300	72,600	73,800	13,000+	4,850	11,300$
	06-14-75	3,330	24,000	18,600	27,900	38,900	13,400	7,740	11,600
Cadmium	04-18-74	--	--	< 3	3	13	< 3	< 3*	--
(mg/kg)	05-16-74	< 2	< 2	< 2	--	--	--	--	< 2$
	06-14-74	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Chromium	04-18-74	--	--	38	87	240	10	9*	--
(mg/kg)	05-16-74	< 3	33	19	--	--	--	--	10$
	06-14-74	5	40	31	59	41	10	8	14
Copper	04-18-74	--	--	47	100	260	5	5*	--
(mg/kg)	05-16-74	< 6	34	35	--	--	--	--	7$
	06-14-74	< 6	34	30	68	37	10	6	9
Lead	04-18-74	--	--	58	126	302	< 40	< 40*	--
(mg/kg)	05-16-74	< 50	< 50	< 50	--	--	--	--	< 50$
	06-14-74	< 50	58	52	118	70	< 50	< 50	< 50
Nickel	04-18-74	--	--	12	24	39	< 10	5*	--
(mg/kg)	05-16-74	< 7	10	13	--	--	--	--	< 7$
	06-14-74	< 10	14	13	25	21	< 10	< 10	< 10
Mercury	04-18-74	--	--	3.8	4.0	8.7	2.9	2.2*	--
(mg/kg)	05-16-74	< .2	.7	.4	--	--	--	--	.3$
	06-14-74	.1	.7	.35	1.0	.75	< .1	< .1	< .1
Arsenic	04-18-74	--	--	3.6	12.8	2.4	5.0	3.0*	--
(mg/kg)	05-16-74	2.8	4.7	3.4	--	--	--	--	3.7$
	06-14-74	4.1	4.7	2.6	14	11	13	--	3.3

* Samples Collected 04-17-74
\+ Samples Collected 05-14-74
$ Samples Collected 05-21-74

Neg. - Sought but not detected

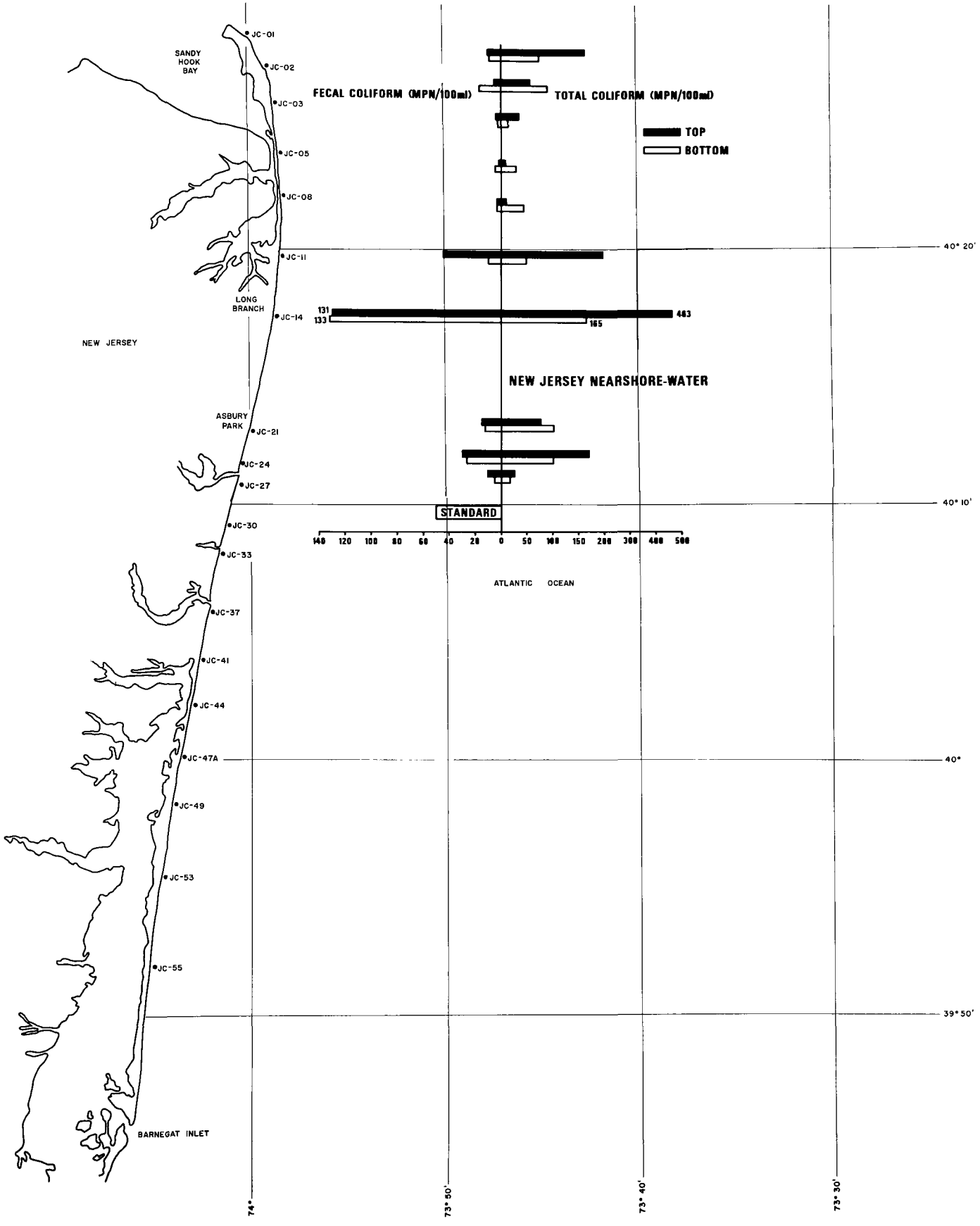

JC-01
SANDY HOOK BAY
JC-02
JC-03
JC-05
JC-08
JC-11
LONG BRANCH
JC-14
NEW JERSEY
ASBURY PARK
JC-21
JC-24
JC-27
JC-30
JC-33
JC-37
JC-41
JC-44
JC-47A
JC-49
JC-53
JC-55
BARNEGAT INLET
FECAL COLIFORM (MPN/100ml)
TOTAL COLIFORM (MPN/100ml)
TOP
BOTTOM
131
133
483
165
NEW JERSEY NEARSHORE-WATER
STANDARD
140 120 100 80 60 40 20 0 50 100 150 200 300 400 500
ATLANTIC OCEAN
40° 20'
40° 10'
40°
39° 50'
74°
73° 50'
73° 40'
73° 30'

Figure 10

TABLE 10

SUMMARY OF WATER-QUALITY DATA (WATER COLUMN) COLLECTED ALONG THE NEW JERSEY COAST
(by boat approximately 100 yards from beach)

Parameter	Date	Top/ Bottom	Station Identification Number JC01	JC02	JC03	JC05	JC08	JC11	JC14	JC21	JC24	JC27
Total Coliform	04-06-74	T	141	70	23	13	11	9	22	17	22	2
(MPN/100 ml)	04-06-74	B	330	79	33	79	17	8	14	34	49	2
	04-30-74	T	130	120	49	23	70	33	490	330	1,300	278
	04-30-74	B	94	221	33	49	490	172	3,480	49	172	330
	07-10-74	T	230	23	23	2	2	> 24,000	9,200	79	172	33
	07-10-74	B	13	33	2	7	11	790	1,300	700	130	8
Fecal Coliform	04-06-74	T	14	13	2	< 2	2	2	5	2	2	< 2
(MPN/100 ml)	04-06-74	B	17	23	5	5	2	< 2	< 2	5	5	< 2
	04-30-74	T	17	9	8	2	8	2	130	49	109	49
	04-30-74	B	11	46	4	13	5	2	2,400	14	49	34
	07-10-74	T	5	2	8	< 2	< 2	> 24,000	3,480	33	130	11
	07-10-74	B	5	5	< 2	< 2	2	230	490	23	79	2
Water Temperature	04-06-74	T	16.1	15.7	16.9	16.6	16.3	14.9	14.8	15.1	14.7	15.5
(°C)	04-06-74	B	16.4	15.8	16.9	16.8	16.5	15.6	15.1	15.3	15.3	15.5
	04-30-74	T	14.4	11.1	10.5	11.1	9.7	9.7	8.4	10.0	9.5	9.8
	04-30-74	B	10.0	8.7	10.5	8.8	8.3	8.5	8.5	9.3	8.2	8.6
	07-10-74	T	21.9	21.6	21.8	21.4	21.2	21.7	22.3	20.7	21.0	21.6
	07-10-74	B	19.6	21.1	20.1	17.6	16.7	15.7	18.1	17.8	18.8	18.2
Dissolved Oxygen	04-06-74	T	7.0	7.7	7.6	7.8	8.2	7.0	8.2	9.3	7.0	8.3
(mg/l)	04-06-74	B	7.0	8.2	8.3	8.7	9.3	8.4	9.5	9.0	8.2	8.4
	04-30-74	T	12.4	12.9	12.0	12.0	11.3	11.3	11.3	10.8	10.1	9.5
	04-30-74	B	11.1	10.2	11.6	10.5	11.2	9.0	9.2	11.2	10.5	6.5
	07-10-74	T	10.0	9.4	10.2	10.5	8.5	9.2	10.2	8.6	7.9	8.6
	07-10-74	B	7.6	9.1	7.2	4.2	3.5	2.5	4.6	7.4	6.3	5.6
Conductivity	04-06-74	T	29,500	31,600	32,000	32,700	33,000	33,600	33,400	33,400	33,400	33,700
(micromhos)	04-06-74	B	29,200	31,700	32,000	32,100	32,600	33,800	33,900	33,400	33,200	33,700
	04-30-74	T	29,400	29,700	30,000	29,700	31,200	30,400	30,800	31,700	32,500	33,100
	04-30-74	B	30,400	31,600	30,200	31,700	32,800	30,500	32,600	32,100	32,900	33,400
	07-10-74	T	34,100	35,900	36,600	38,600	37,500	38,300	38,200	39,100	39,300	39,800
	07-10-74	B	36,100	36,400	36,800	37,300	36,800	36,500	38,300	38,100	38,500	38,200
Salinity	04-06-74	T	22.3	24.2	24.1	24.7	25.2	26.4	26.1	26.1	26.3	26.4
(g/l)	04-06-74	B	21.9	24.3	24.1	24.2	24.7	26.1	26.4	25.8	25.7	26.0
	04-30-74	T	23.3	25.2	25.9	25.4	27.7	27.0	26.8	27.9	29.5	29.1
	04-30-74	B	26.7	28.8	26.3	28.8	30.5	27.6	30.0	28.8	30.5	30.4
	07-10-74	T	23.0	24.5	24.9	26.6	25.9	26.2	25.9	27.6	27.3	27.6
	07-10-74	B	25.7	27.4	26.0	27.2	27.8	28.4	28.0	28.2	28.1	28.1

T Top - Approximately 2 ft. from surface
B Bottom - Approximately 2 ft. from bottom

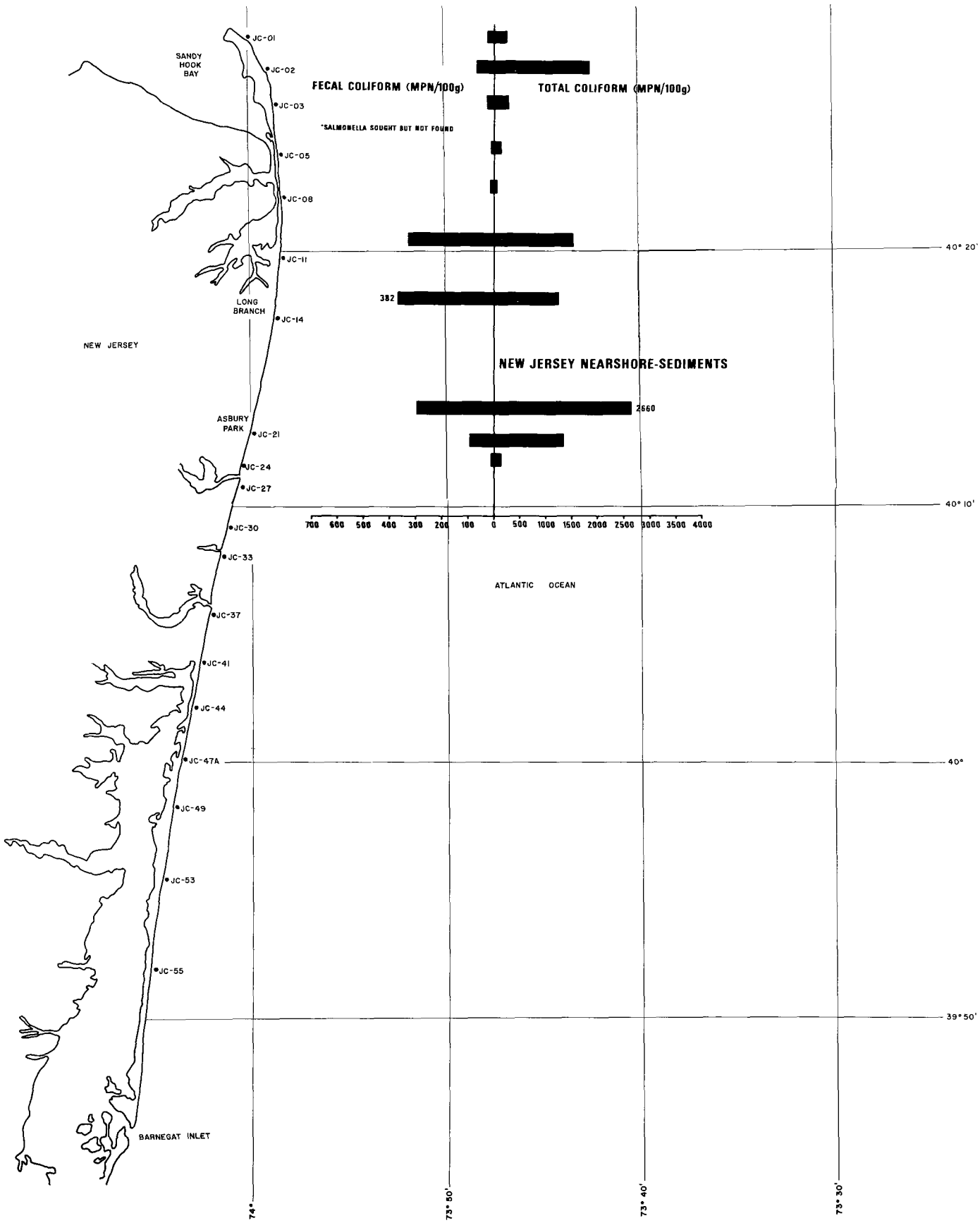

FECAL COLIFORM (MPN/100g)
TOTAL COLIFORM (MPN/100g)
*SALMONELLA SOUGHT BUT NOT FOUND
NEW JERSEY NEARSHORE-SEDIMENTS
382
2660
700 600 500 400 300 200 100 0 500 1000 1500 2000 2500 3000 3500 4000
JC-01
JC-02
JC-03
JC-05
JC-08
JC-11
JC-14
JC-21
JC-24
JC-27
JC-30
JC-33
JC-37
JC-41
JC-44
JC-47A
JC-49
JC-53
JC-55
SANDY HOOK BAY
LONG BRANCH
ASBURY PARK
NEW JERSEY
ATLANTIC OCEAN
BARNEGAT INLET
40° 20'
40° 10'
40°
39° 50'
74°
73° 50'
73° 40'
73° 30'

Figure 11

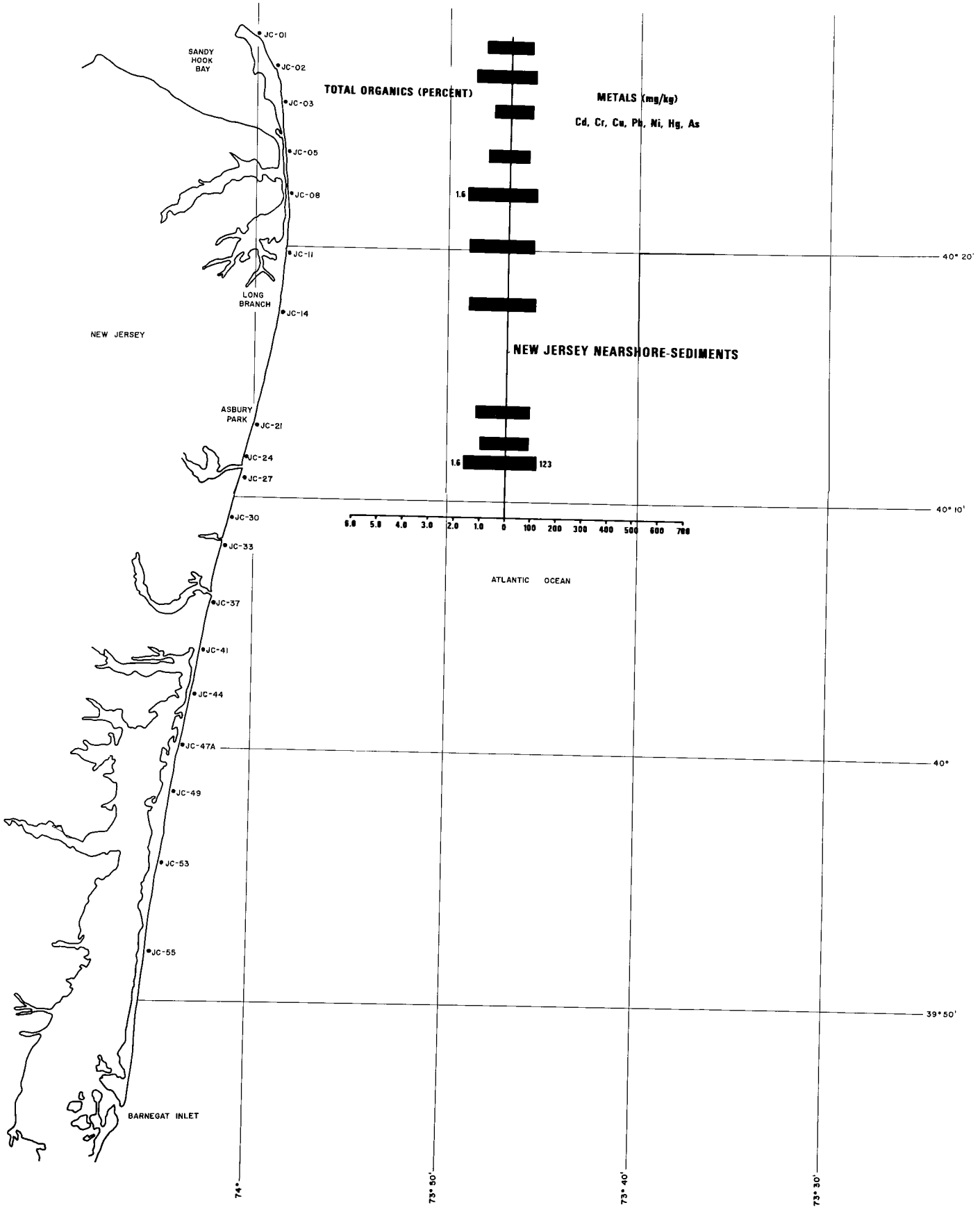

JC-01
SANDY HOOK BAY
JC-02
JC-03
JC-05
JC-08
JC-11
LONG BRANCH
JC-14
NEW JERSEY
ASBURY PARK
JC-21
JC-24
JC-27
JC-30
JC-33
JC-37
JC-41
JC-44
JC-47A
JC-49
JC-53
JC-55
BARNEGAT INLET
TOTAL ORGANICS (PERCENT)
METALS (mg/kg)
Cd, Cr, Cu, Pb, Ni, Hg, As
1.6
1.6
123
NEW JERSEY NEARSHORE-SEDIMENTS
6.0 5.0 4.0 3.0 2.0 1.0 0 100 200 300 400 500 600 700
ATLANTIC OCEAN
40° 20'
40° 10'
40°
39° 50'
74°
73° 50'
73° 40'
73° 30'

Figure 11a

TABLE 11

SUMMARY OF WATER-QUALITY DATA (BOTTOM SEDIMENTS) COLLECTED ALONG THE NEW JERSEY COAST
(by boat approximately 100 yards from beach)

Parameter	Date	Station Identification Number									
		JC01	JC02	JC03	JC05	JC08	JC11	JC14	JC21	JC24	JC27
Total Coliform	04-06-74	1,720	17,200	130	230	130	50	790	3,300	1,300	230
(MPN/100 g)	04-30-74	110	2,780	1,300	490	1,720	22,100	4,900	1,720	2,210	50
	07-10-74	80	130	130	20	80	3,300	490	3,300	790	230
Fecal Coliform	04-06-74	230	1,300	< 20	< 20	20	< 20	110	330	50	< 20
(MPN/100 g)	04-30-74	40	110	40	20	40	2,300	2,300	230	50	< 20
	07-10-74	< 2	< 2	20	< 2	< 2	790	220	330	330	< 2
Salmonella	04-06-74	--	--	--	--	--	Neg.	--	--	--	--
(qualitative)	04-30-74	--	--	--	Neg.	--	--	--	--	--	--
Total Organics	04-06-74	11,000	17,700	7,130	8,500	15,300	15,800	18,900	13,300	11,300	14,200
(mg/kg)	04-30-74	8,010	8,610	5,930	8,750	16,900	14,900	12,600	10,900	9,500	28,400
	07-10-74	7,460	6,350	6,440	7,400	11,120	16,340	9,880	9,460	11,020	9,680
Cadmium	04-06-74	--	< 3	< 3	--	< 3	--	< 3	< 3	< 3	< 3
(mg/kg)	04-30-74	< 5	< 5	--	< 5	--	< 5	--	< 5	--	< 5
	07-10-74	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chromium	04-06-74	--	43	18	--	28	--	26	27	17	6
(mg/kg)	04-30-74	9	15	--	13	--	27	--	16	--	51
	07-10-74	14	16	12	9	30	29	27	13	16	18
Copper	04-06-74	--	14	< 6	--	< 6	--	< 6	< 6	< 6	< 6
(mg/kg)	04-30-74	3	3	--	4	--	4	--	7	--	65
	07-10-74	5	< 3	< 3	3	16	5	< 3	< 3	7	4
Lead	04-06-74	--	< 50	< 50	--	< 50	--	< 50	< 50	< 50	< 50
(mg/kg)	04-30-74	40	< 40	--	< 40	--	< 40	--	< 40	--	< 40
	07-10-74	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Nickel	04-06-74	--	< 10	< 10	--	< 10	--	< 10	< 10	< 10	< 10
(mg/kg)	04-30-74	< 10	< 10	--	< 10	--	< 10	--	< 10	--	34
	07-10-74	< 10	< 10	< 10	< 10	10	< 10	10	< 10	< 10	< 10
Mercury	04-06-74	--	0.26	< 0.1	--	0.32	--	0.10	< 0.1	< 0.1	< 0.1
(mg/kg)	04-30-74	0.1	< 0.1	--	0.2	--	< 0.1	--	0.8	--	0.1
	07-10-74	.42	.17	.95	.17	.08	.08	.06	.07	1.16	1.25
Arsenic	04-06-74	--	11	2.1	--	4.9	--	12	3.7	3.0	3.8
(mg/kg)	04-30-74	4.7	2.9	--	4.3	--	9.2	--	5.0	--	2.1
	07-10-74	1.9	2.1	1.4	1.7	3.0	3.6	2.6	2.7	4.7	2.8

Neg. - Sought but not detected

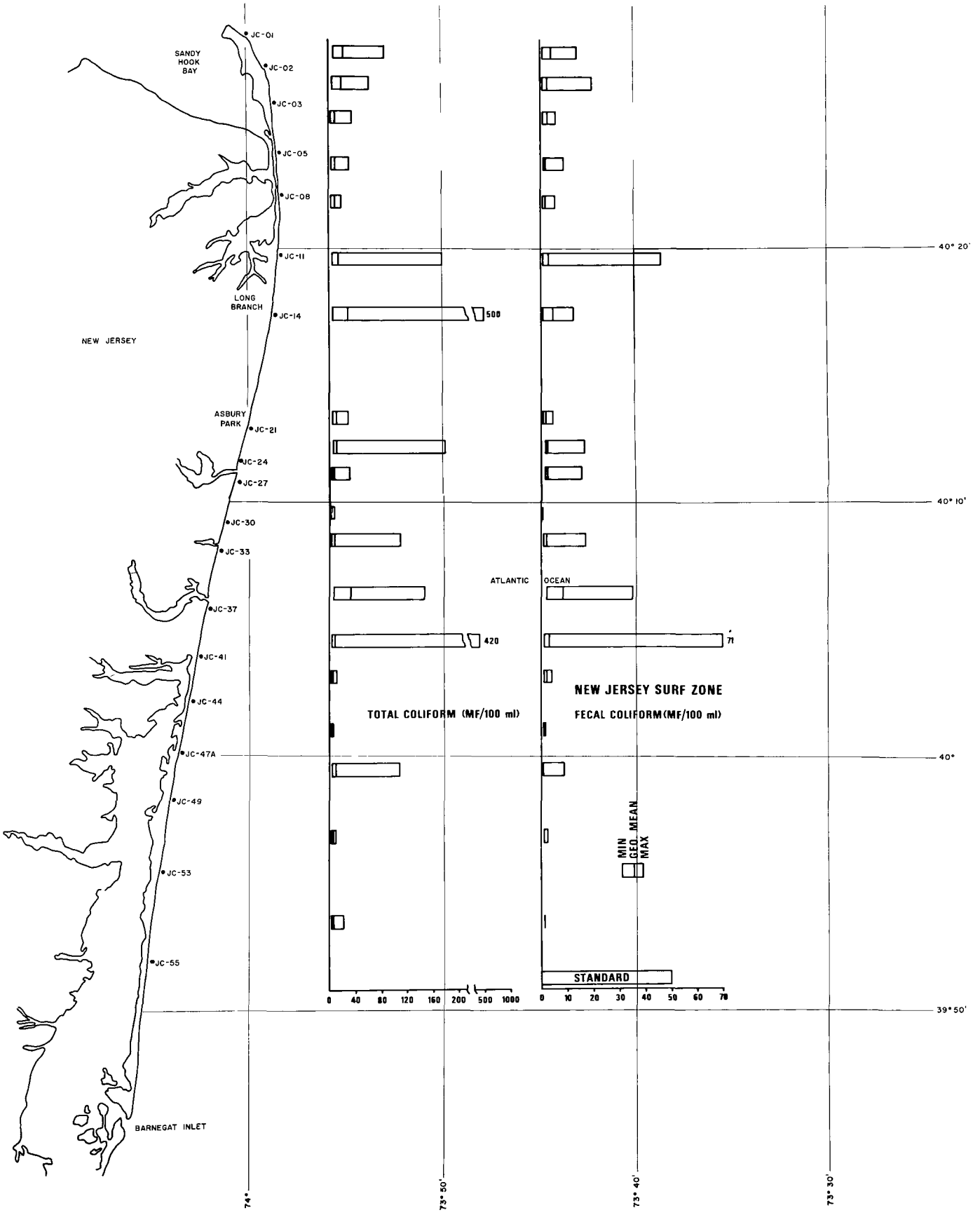

JC-01
SANDY HOOK BAY
JC-02
JC-03
JC-05
JC-08
JC-11
LONG BRANCH
JC-14
NEW JERSEY
ASBURY PARK
JC-21
JC-24
JC-27
JC-30
JC-33
JC-37
JC-41
JC-44
JC-47A
JC-49
JC-53
JC-55
BARNEGAT INLET
ATLANTIC OCEAN
40° 20'
40° 10'
40°
39° 50'
74°
73° 50'
73° 40'
73° 30'
500
420
71
TOTAL COLIFORM (MF/100 ml)
FECAL COLIFORM (MF/100 ml)
NEW JERSEY SURF ZONE
MIN
GEO. MEAN
MAX
STANDARD
0 40 80 120 160 200 500 1000
0 10 20 30 40 50 60 70

Figure 12

TABLE 12

SUMMARY OF BACTERIOLOGICAL DATA (WATER COLUMN) COLLECTED ALONG NEW JERSEY SHORELINE

(Samples Collected in Surf Zone)

Date	Station Identification Number									
	JC01A		JC02		JC03		JC05		JC08	
	TC	FC	TC	FC	TC	FC	TC	FC	TC	FC
4/8/74	12	1	4	1	10	1	12	<1	12	1
4/22/74	--	--	48	19	4	2	12	2	15	2
5/6/74	10	2	14	<1	8	5	8	<1	16	6
5/20/74	44	6	64	4	36	6	31	3	20	4
6/3/74	41	13	15	5	28	2	34	9	16	4
6/18/74	84	3	44	<1	--	--	11	4	10	2
7/1/74	6	<1	7	<1	3	--	1	1	1	<1
Samples to date	6	6	7	7	6	5	7	7	7	7
Geometric Mean	22	3	19	2	10	3	10	2	10	2
Max	84	13	64	19	36	6	34	9	20	6
Min	6	<1	4	<1	3	1	1	<1	1	<1

TC = Total Coliform (MF/100 ml)
FC = Fecal Coliform (MF/100 ml)
< = Less than

TABLE 12 - Cont.

SUMMARY OF BACTERIOLOGICAL DATA (WATER COLUMN) COLLECTED ALONG NEW JERSEY SHORELINE

(Samples Collected in Surf Zone)

Date	Station Identification Number									
	JC11		JC14		JC21		JC24		JC27	
	TC	FC	TC	FC	TC	FC	TC	FC	TC	FC
4/8/74	6	1	18	9	--	--	4	2	8	4
4/22/74	7	<1	3	1	9	<1	2	1	<1	<1
5/6/74	176	47	23	5	31	5	3	1	4	1
5/20/74	12	5	500	13	9	1	2	1	2	2
6/3/74	10	1	17	6	14	3	16	3	10	2
6/18/74	18	3	64	8	23	3	168	17	19	16
7/1/74	5	<1	96	3	2	<1	5	<1	28	1
Samples to date	7	7	7	7	6	6	7	7	7	7
Geometric Mean	13	3	35	5	11	2	7	2	6	2
Max	176	47	500	13	31	5	168	17	28	16
Min	5	<1	3	1	2	<1	2	<1	<1	<1

TC = Total Coliform (MF/100 ml)
FC = Fecal Coliform (MF/100 ml)
< = Less than

TABLE 12 - Cont.

SUMMARY OF BACTERIOLOGICAL DATA (WATER COLUMN) COLLECTED ALONG NEW JERSEY SHORELINE

(Samples Collected in Surf Zone)

Date	Station Identification Number									
	JC30		JC33		JC37		JC41		JC44	
	TC	FC	TC	FC	TC	FC	TC	FC	TC	FC
4/8/74	<2	<1	6	2	94	46	--	--	--	--
4/22/74	1	1	1	<1	10	3	--	--	--	--
5/6/74	2	<1	2	<1	15	6	6	1	10	2
5/20/74	<1	<1	<1	<1	8	2	7	7	<1	<1
6/3/74	8	<1	60	8	82	13	420	71	12	4
6/18/74	2	<1	112	17	148	32	4	<1	5	1
7/1/74	2	<1	28	1	35	2	1	<1	1	<1
Samples to date	7	7	7	7	7	7	5	5	5	5
Geometric Mean	2	<1	8	2	34	8	9	3	4	2
Max	8	1	112	17	148	46	420	71	12	4
Min	<1	<1	<1	<1	8	2	1	<1	<1	<1

TC = Total Coliform (MF/100 ml)
FC = Fecal Coliform (MF/100 ml)
< = Less than

TABLE 12 - Cont.

SUMMARY OF BACTERIOLOGICAL DATA (WATER COLUMN) COLLECTED ALONG NEW JERSEY SHORELINE

(Samples Collected in Surf Zone)

Date	Station Identification Number							
	JC47A		JC49		JC53		JC55	
	TC	FC	TC	FC	TC	FC	TC	FC
4/8/74	--	--	110	9	6	2	<2	<1
4/22/74	--	--	56	1	4	<1	<1	<1
5/6/74	1	1	2	1	8	2	23	<1
5/20/74	<1	<1	1	<1	<1	<1	1	1
6/3/74	3	2	6	1	5	<1	11	1
6/18/74	2	<1	2	<1	8	2	2	<1
7/1/74	1	<1	6	<1	2	<1	1	<1
Samples to date	5	5	7	7	7	7	7	7
Geometric Mean	1	1	7	1	4	1	3	<1
Max	3	2	110	9	8	2	23	1
Min	<1	<1	1	<1	<1	<1	<1	<1

TC = Total Coliform (MF/100 ml)
FC = Fecal Coliform (MF/100 ml)
< = Less than