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BACTERIOLOGICAL WATER QUALITY STUDY, GATINEAU PARK LAKES, NATIONAL CAPITAL COMMISSION, 1971

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BACTERIOLOGICAL WATER QUALITY STUDY, GATINEAU PARK LAKES, NATIONAL CAPITAL COMMISSION, 1971

Abstract

This Report records and summarizes the bacteriological water quality data obtained from a study of four lakes in Gatineau Park during the May 27 to September 15, 1971, period.

As in 1970, bacterial density data for three standard pollution index parameters (coliforms, fecal coliforms and fecal streptococci) showed that the four lakes (Lapeche, Meach, Philippe and Pinks) easily met established quality objectives for recreational waters.

Intensive investigation of bacteriological water quality at five public beaches (Meach Lake and Lac Philippe) indicated that all were of good quality throughout the summer season, except for a five-day period at Breton Beach, Lac Philippe, following a sewage overflow on July 23 caused by the malfunction of a sewage pump.

Evidence obtained for all beaches showed that pollution index bacteria are concentrated in sedimented material at the sand - water interface, and that these organisms may be resuspended in the water by mixing associated with bather activity. There was a consistent increase in bacterial numbers associated with increased bather populations; further major increases in the use of these beaches by bathers may be expected to result in degradation of water quality.

Samples from shallow water (1.5 feet deep) tended to have slightly higher bacterial densities than those from 3 - 4 foot depths. Tests for Pseudomonas aeruginosa were negative for a majority of the beach water samples tested.

Recommendations are made for the maintenance of present excellent water quality standards, for the exclusion of all domestic wastes from Gatineau Park waters, for the closure of beaches affected by accidental sewage spills, and for a beach water quality monitoring program in 1972.

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BACTERIOLOGICAL WATER QUALITY STUDY, GATINEAU PARK LAKES, NATIONAL CAPITAL COMMISSION, 1971

Introduction

In 1970, the Bacteriological Laboratories (formerly Public Health Engineering Division, Department of National Health and Welfare) participated in a joint engineering, chemical and bacteriological study of 15 lakes in Gatineau Park, Quebec. Mr. C.H. McBratney, now of the Water Quality Division, Inland Waters Branch, Water Management Service, Department of the Environment, coordinated the joint study. The 1970 bacteriological data were presented in MS Report OR-70-5(1); and the following recommendations were made:

1. The excellent bacterial quality which now exists in the Gatineau Park Lakes studied during 1970 should be maintained through a continued policy of pollution control aimed at excluding the discharge of all domestic wastes into Lake waters.

2. Bacterial quality surveillance programs be conducted in these Lakes, as required, to determine any change from the baseline quality established in the 1970 study. A minimum of three surveys of representative Lake stations should be included in any surveillance study planned, with additional study where degradation of water

quality has occurred.

3. The control criteria and objectives applied should be those cited on Page 66 of Report OR-70-5: (a) Freedom of the waters from direct contamination by untreated or improperly treated sewage or other hazardous substances of public health significance, as demonstrated by sanitary survey; (b) Absence of epidemiological evidence which would disclose the prevalence of an infectious disease considered as related to the use of bathing beach waters; and (c) The bacterial quality of bathing beach waters indicates that no significant amounts of sewage or other hazardous substances are being discharged to the waters, or that bathing has not created a condition which is or may be dangerous to the public health. Coliform, fecal coliform and fecal streptococcus counts of more than 1,000, 200 and 100, respectively, per 100 ml. of water, shall be considered only as a guide requiring futher investigation, survey and analyses, as may be necessary.

4. A routine bacteriological monitor program be established for each public bathing area during periods of use. Protocols for the collection and examination of a series of at least ten water samples per month from each beach area should be established by consultation between the National Capital Commission and the control agency.

The fecal coliform and fecal streptococcus tests should be the prime parameters used, since these appear at present to be the most reliable guides to the bacterial quality and safety of bathing waters.

Four of the 15 Gatineau Park Lakes were selected, on the basis of prime importance to the National Capital Commission, for further study during the summer of 1971. As in 1970, surveillance studies were conducted to provide a broad evaluation of bacteriological water quality in the selected lakes, and to produce baseline data to permit the evaluation of future Park activity and development on lake water quality. In addition, bacteriological monitor studies were conducted in six public beach areas on three of these lakes, and water samples from 20 sampling points on Gatineau Park streams, previously selected for chemical analyses, were subjected to bacteriological tests. The present Report records and summarizes the bacteriological data obtained from the examination of 2,545 water samples collected from 229 sampling stations established in Gatineau Park lakes and streams in 1971.

Sampling Program

1. Lake Surveillance

Water samples were collected by laboratory staff from each lake sampling station on 8 dates during the study. The

stations were selected in 1970 to provide reasonably-adequate coverage of all lake sectors, and were located, where possible, on equally-spaced grid lines expanded from one thousand metre Universal Transverse Mercator Grid used on maps of the National Topographic system.

Samples were collected, in sterile 8-ounce glass bottles, two-three feet below the surface, by means of a reversing grab sampler. Specimens were iced in cooler chests in transit to the Ottawa laboratories, and were subjected to examination immediately upon receipt (normally within 2 to 4 hours of collection).

2. Stream Surveillance

Water samples from 20 of 21 sampling points on Gatineau Park Streams, selected by the Inland Waters Branch for chemical analysis in 1970 and 1971, were submitted for bacteriological analysis during 1971. Samples were collected from each station on 5 dates during the summer by Mr. S. Kennedy of the Water Quality Division for immediate delivery to the Laboratories.

3. Beach Monitor Program

Three Lac Philippe Beaches (Parent, Smith and Breton) and two Meach Lake Beaches (N.C.C. No's. 1 and 3) were selected for additional bacteriological study. Water samples were collected periodically during the summer by laboratory personnel

from selected near-shore sampling points (knee and waist depths) at each beach. Some samples were also collected from the same sampling points by N.C.C. personnel, for immediate delivery to the Laboratories; N.C.C. staff also collected all samples concerned with a monitor study of a beach at Lac Lapeche.

Since it was anticipated that resuspension of fine sediment particles by bather activity would be an important factor affecting beach water quality, attempts were made to devise a sampler for bottom silt. No satisfactory procedure was found for the aseptic collection of "silt" samples from the sand surface which would permit the determination of bacterial densities in the silt on a weight (per gram) basis. It was therefore necessary to use a water sampling device designed to be used at the sand-water interface (Figure 1). The sampler consisted of an eight-inch diameter Pyrex funnel connected by tubing to the water surface via 500 ml. side-arm flask (sample bottle). The sampler was supported on a 4-foot metal rod, and the entire apparatus was wrapped in Kraft paper for autoclaving before each use. At the sampling site, the funnel mouth was pressed firmly into the surface of the sand bottom; the integrity of the air column in the funnel - tube system was maintained until the tube clamp was released above the water surface. Water containing large but variable amounts of fine, flocculent silt particles, but very few sand particles, was

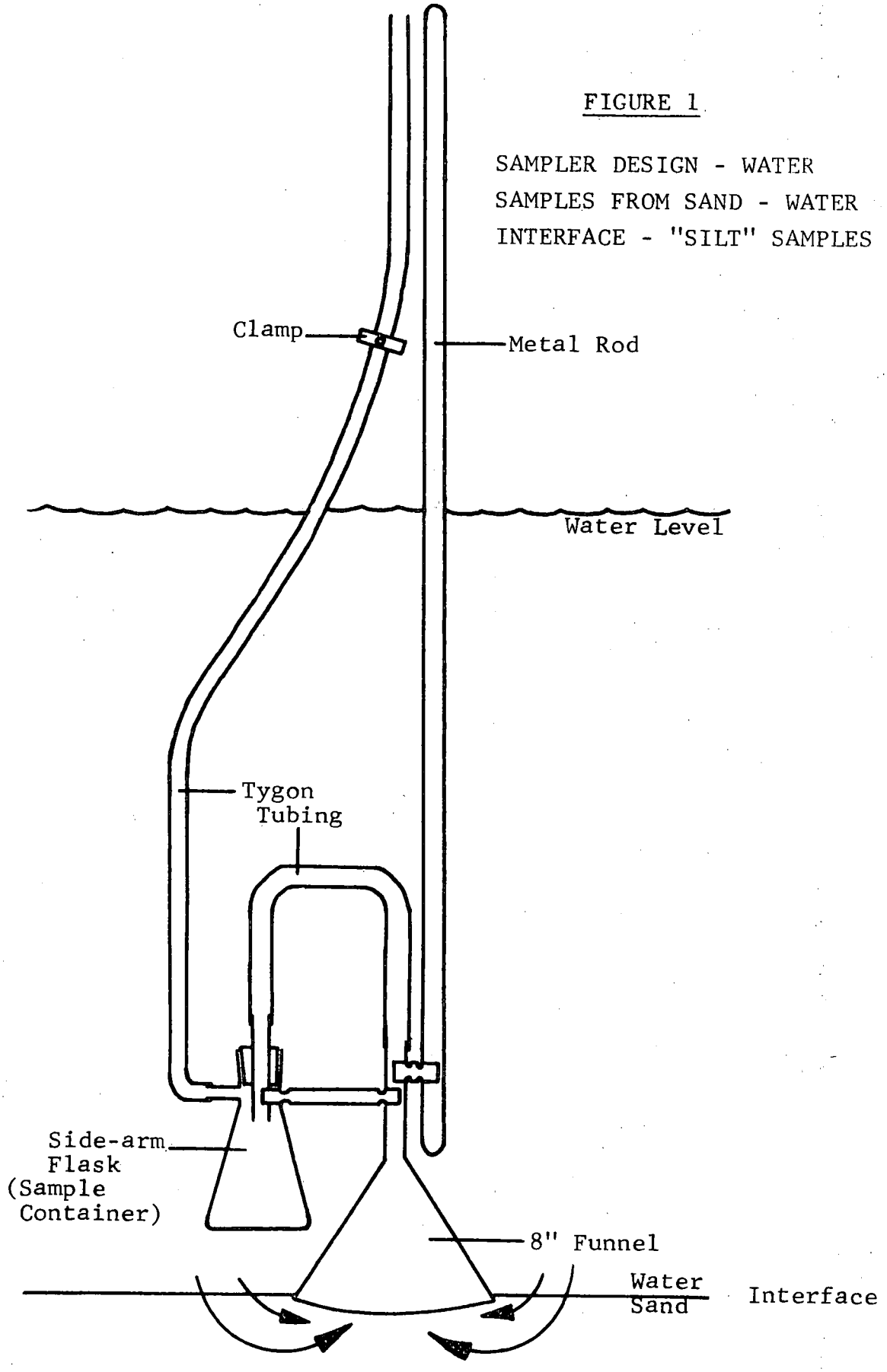


FIGURE 1

SAMPLER DESIGN - WATER SAMPLES FROM SAND - WATER INTERFACE - "SILT" SAMPLES

drawn through the funnel into the sample container, which was then removed for immediate return to the Laboratories.

For convenience, samples obtained in this way are referred to as "silt" samples in this Report; they should more properly be regarded as interface water samples, with a high silt content. Bacterial densities were reported on a volume basis (per 100 ml. of sample).

Bacteriological Procedures

1. Coliform Density Determinations

The A.P.H.A. Standard Methods (2) Membrane Filter (MF) procedure was used for the estimation of coliform densities. The medium used was m-Endo Agar LES*. Membrane filtrations were made for appropriate volumes of each water sample. Incubation was at 35° ± 0.5°C. for 20 ± 2 hours in an atmosphere of saturated humidity. The development of dark colonies with a golden metallic-appearing surface luster (sheen) was interpreted as direct evidence of the presence of coliform organisms. The number of sheened colonies appearing on the MF preparations was determined from the appropriate sample volumes. Counts were calculated and recorded in terms of coliforms per 100 ml. of water. Where 50 ml. was the largest volume

*All test media used were Bacto Brand supplied by Difco Laboratories, Detroit, Michigan.

filtered, negative results were expressed as less than 2 (<2) per 100 ml.

2. Fecal Coliform Density Determinations

The A.P.H.A. Standard Methods (2) Membrane Filter (MF) procedure was used in the determination of fecal coliform numbers. The medium used was m-FC Agar, with rosolic acid. Incubation was for 20 ± 2 hours in sealed plastic bags immersed in a water bath equipped with a circulation device and controlled at 44.5° ± 0.2°C. Membrane filtrations were made for appropriate volumes of each water sample, and the development of typical blue colonies was interpreted as evidence of the presence of fecal coliforms. Counts were recorded in terms of fecal coliforms per 100 ml. of water.

3. Fecal Streptococcus Density Determinations

The A.P.H.A. Standard Methods (2) MF procedure was used, with m-Enterococcus Agar, for the estimation of fecal streptococcus numbers. Membrane filtrations were made for appropriate volumes of each water sample, with incubation at 35° ± 0.5°C. for 48 hours in an atmosphere of saturated humidity. The development of colonies, normally dark red to pink in colour, was interpreted as evidence of fecal streptococci. Counts were determined from the most appropriate dilution and recorded in terms of fecal streptococci per 100 ml.

of water.

4. Pseudomonas aeruginosa MPN Determinations

A modification of the MPN method of Hoadley (3), based on the procedure of Drake (4), was used as a presumptive test for the estimation of *Ps. aeruginosa* numbers in water and silt samples collected from selected beach stations. Medium 10 of Drake (4) was used in an MPN procedure utilizing 3 or more of the following decimal dilutions:

(a) Five 100 ml. aliquots of sample were filtered through sterile membrane filters (Sartorius, 0.45); each membrane (representing 100 ml. of water) was transferred aseptically to a tube of single-strength medium (7 ml.);

(b) Each of 5 tubes (10 ml.) of double-strength medium was inoculated with 10 ml. of sample;

(c) Each of 5 tubes of single-strength medium was inoculated with 1.0 ml. of sample; and

(d) Similarly, 1.0 of each of one or more serial decimal dilutions, as required to cover the range of *Ps. aeruginosa* densities considered possible, was planted in each of 5 tubes of single-strength medium.

All inoculated tubes were incubated at 38°C. for 96 hours, and were examined periodically for green pigment production and/or fluorescence under ultraviolet light (Chromato Vue, Model CC-20, Ultra-Violet Products Inc.).

Fluorescing or pigmented (positive) presumptive test cultures were confirmed by transfer to:

(a) Acetamide Medium (3) slants. The development of a red colour in the Acetamide Medium within 48 hours at 38°C. indicated the hydrolysis of acetamide, and constituted a partially-confirmed test; and

(b) Kings Medium A (4) slants. The development of typical fluorescence under ultraviolet light and/or typical pigment production, within 96 hours at 38°C., together with acetamide positivity, was considered to constitute a positive confirmed test for Ps. aeruginosa.

Most probable numbers (presumptive; acetamide positive; and confirmed positive) were calculated from standard (2) MPN tables on the basis of the array of positive cultures in each decimal dilution tested.

5. Standard Plate Count (SPC) Determinations

A.P.H.A. (2) Standard Plate Count tests were applied to water and silt samples from the same stations selected for Pseudomonas aeruginosa study. Tryptone Glucose Extract Agar plates were poured in duplicate for an appropriate series of decimal dilutions of each sample for incubation at (a) 35°C. for 24 hours, and (b) 20°C. for 3 days. Average plate counts from the most appropriate dilution at each incubator temperature were expressed as SPCs per ml. of sample.

6. Silt Specimens

Interface water (silt) samples were tested for coliform, fecal coliform, fecal streptococcus and Ps. aeruginosa densities,

and Standard Plate Count, as cited above, except that each sample was blended in a standard sterile Waring Blendor jar for two minutes before analyses began.

Observations and Discussion

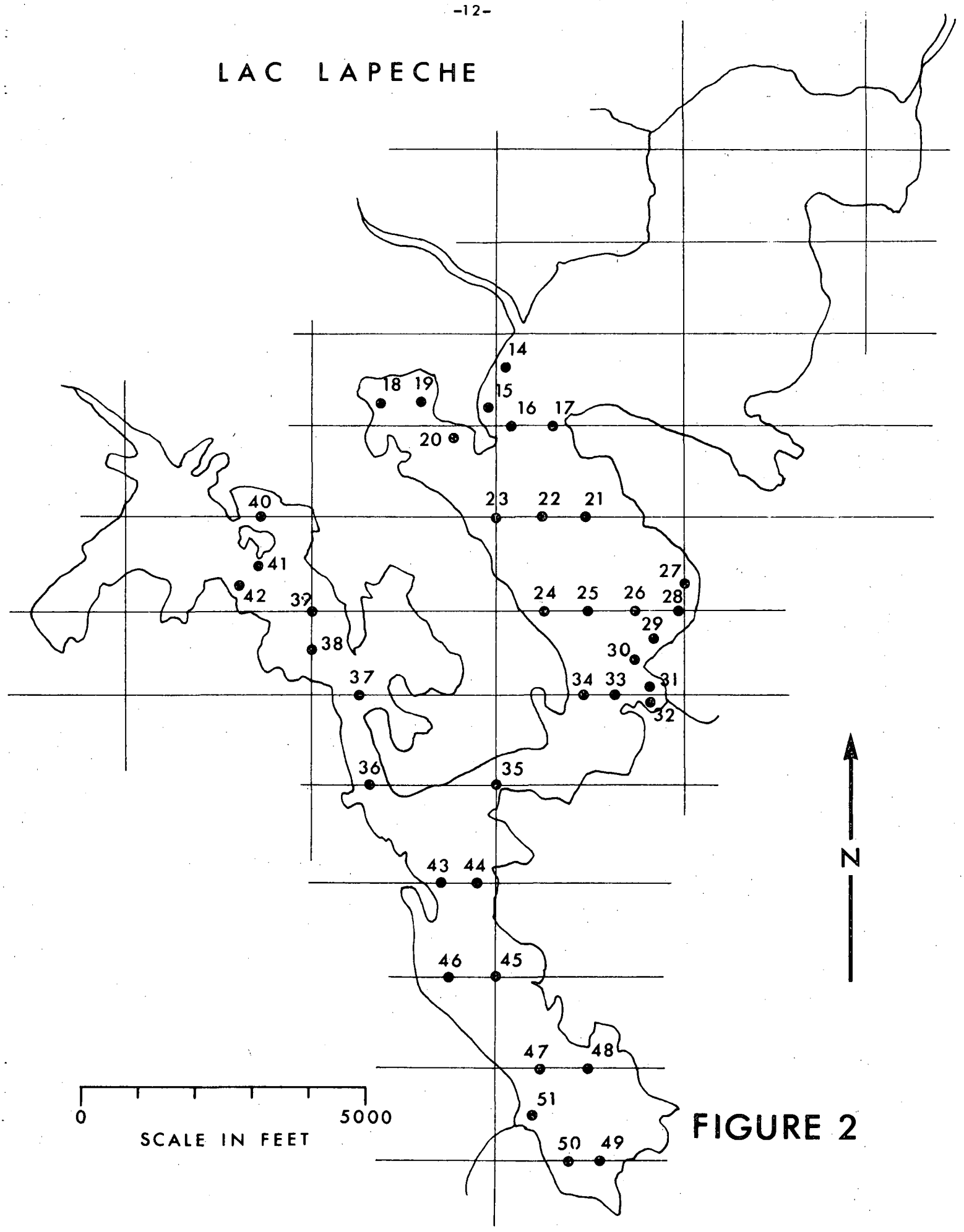
Lake Surveillance Studies

Bacteriological data obtained for lake water samples collected as a part of surveillance studies of 4 Gatineau Park Lakes are recorded, by lake, sampling date and bacteriological parameter, in Appendix A (Tables A-1 and A-3 to A-7, inclusive). Appendix Table A-2 reports similar data for water samples collected by N.C.C. staff from six Lapeche Beach sampling points. Rainfall data for 3 Gatineau Park recording stations are cited in Appendix C (Table C-2).

For purposes of review and discussion, the data for each of the 4 lakes, in alphabetical order, are presented and summarized individually.

1. Lake Lapeche

Figure 2 shows the location of Lac Lapeche Sampling Stations 14 to 51, inclusive, from which water samples were collected on 8 dates in 1971. Stations 1 to 13 in the shallow northern sector of the Lake were included in the 1970 study but were not occupied in 1971.


LAC LAPECHE
14
18
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37
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31
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45
47
48
51
50
49
N
0
5000
SCALE IN FEET

FIGURE 2

Lac Lapeche, in Park District 1, is about 4 miles long, and is remote from positive pollution sources. Cottages are located within 100 feet of the shore near Stations 14, 15, 19, 20, 33, and 35; other potential sources of contamination are in the sector represented by Stations 27 to 31 (restaurant and bathing beach), and near Station 49 (a boat-launching and swimming area).

Coliform, fecal coliform and fecal streptococcus MF count data for 304 water samples from these Stations are reported in Appendix Tables A-1.1, A-1.2 and A-1.3, and are summarized, at three percentile levels in Table 1. For comparative purposes, Table 2 summarizes the 1970 bacteriological data for Lac Lapeche samples.

As in 1970, these data show that the bacteriological quality of Lac Lapeche water was excellent; the median coliform MF count was only 18 per 100 ml., and none of the samples had counts exceeding the 1,000 per 100 ml. objective. Higher coliform counts were recorded on August 23 (median 270), possibly associated with moderate rainfall in the August 20 - 23 period. The fecal coliform and fecal streptococcus parameters remained at normal levels on this date, and tests for these organisms were negative for 77 and 54 per cent, respectively, of all samples analysed during the study.

TABLE 1. - SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, LAC LAPECHE, 1971

DATE	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
4-6	2	9	28	<2	<2	2	<2	<2	2
16-6	<2	2	38	<2	<2	<2	<2	<2	2
30-6	6	19	44	<2	<2	<2	<2	2	12
13-7	8	27	50	<2	<2	2	2	8	86
26-7	8	20	50	<2	<2	2	<2	<2	8
12-8	6	34	62	<2	<2	2	<2	<2	2
23-8	14	270	650	<2	<2	2	<2	<2	4
9-9	6	10	19	<2	2	6	<2	2	6
All Dates	2	18	140	<2	<2	2	<2	<2	8

TABLE 2. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, WATER SAMPLES, LAC LAPECHE, 1970

Date	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
6-6	<2	6	34	<2	<2	12	<2	<2	2
11-6	4	22	98	<2	<2	4	<2	<2	2
23-6	2	6	98	<2	<2	<2	<2	<2	<2
3-7	<2	4	20	<2	<2	2	<2	<2	4
22-7	6	16	79	<2	<2	8	<2	<2	6
11-8	<2	4	15	<2	<2	<2	<2	<2	3
17-9	8	18	68	<2	<2	2	<2	<2	2
All Dates	<2	10	54	<2	<2	4	<2	<2	2

Thus the 1971 surveillance data confirm the 1970 findings, and indicate that no significant pollution sources contribute domestic wastes to Lac Lapeche, which was of consistently acceptable bacteriological quality during both summer study periods.

Figure 3 shows the location of six sampling stations from which water samples were collected on 12 dates by N.C.C. personnel. Bacterial density estimates for 72 water samples from these Stations are given in Appendix A (Table A-2), and are summarized in Table 3.

TABLE 3. SUMMARY, BACTERIOLOGICAL DATA, WATER SAMPLES, LAPECHE BEACH, 1971.

Sta. No.	MEDIAN MF COUNT PER 100 ML. OF WATER		
	Coliform	Fecal Coliform	Fecal Streptococcus
L-1	31	<2	<2
L-2	29	<2	<2
L-3	24	<2	2
L-4	12	<2	<2
L-5	16	<2	<2
L-6	17	<2	<2
All Stations	20	<2	<2

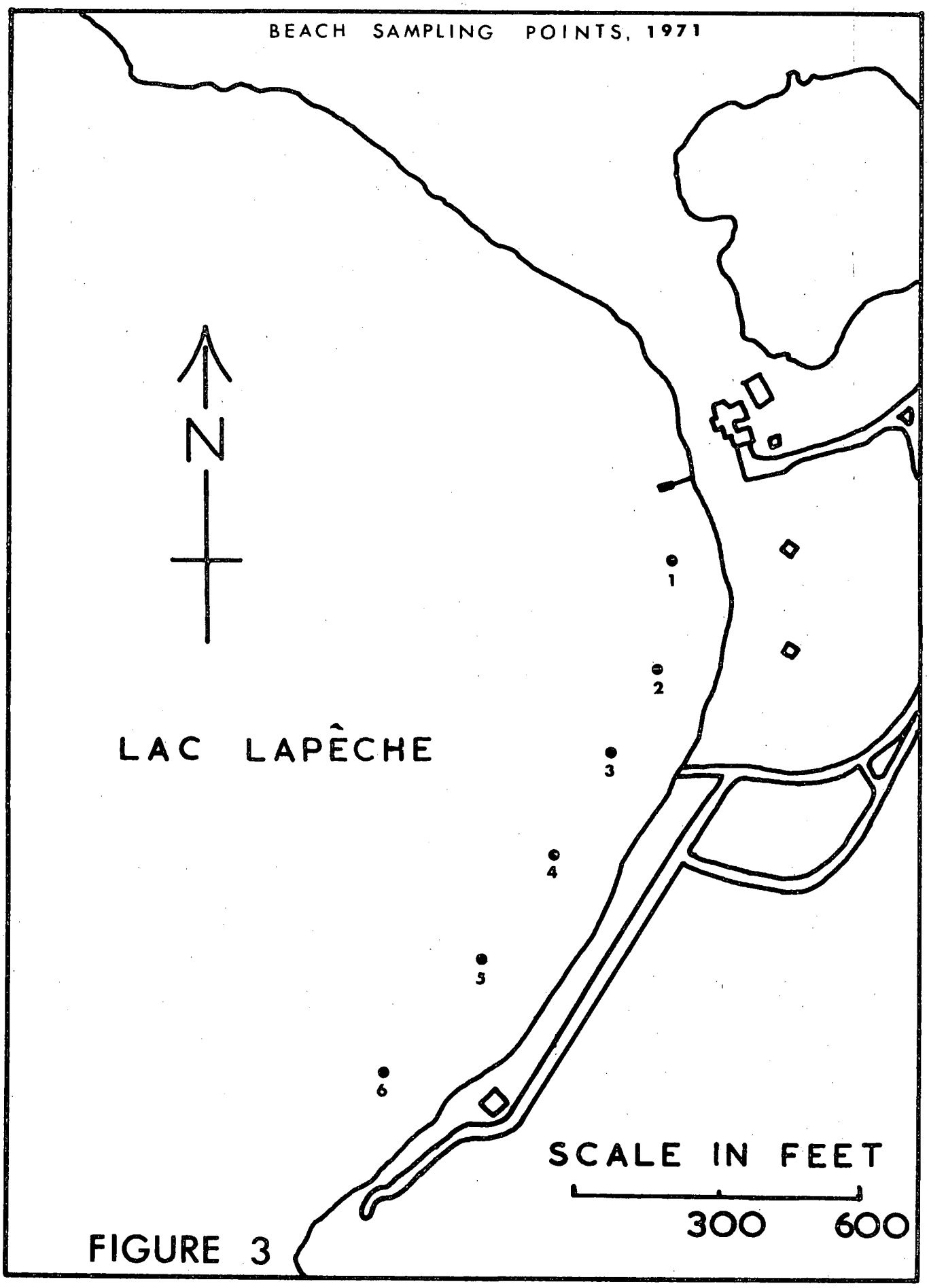

BEACH SAMPLING POINTS, 1971
N
LAC LAPÊCHE
1
2
3
4
5
6
SCALE IN FEET
300
600

FIGURE 3

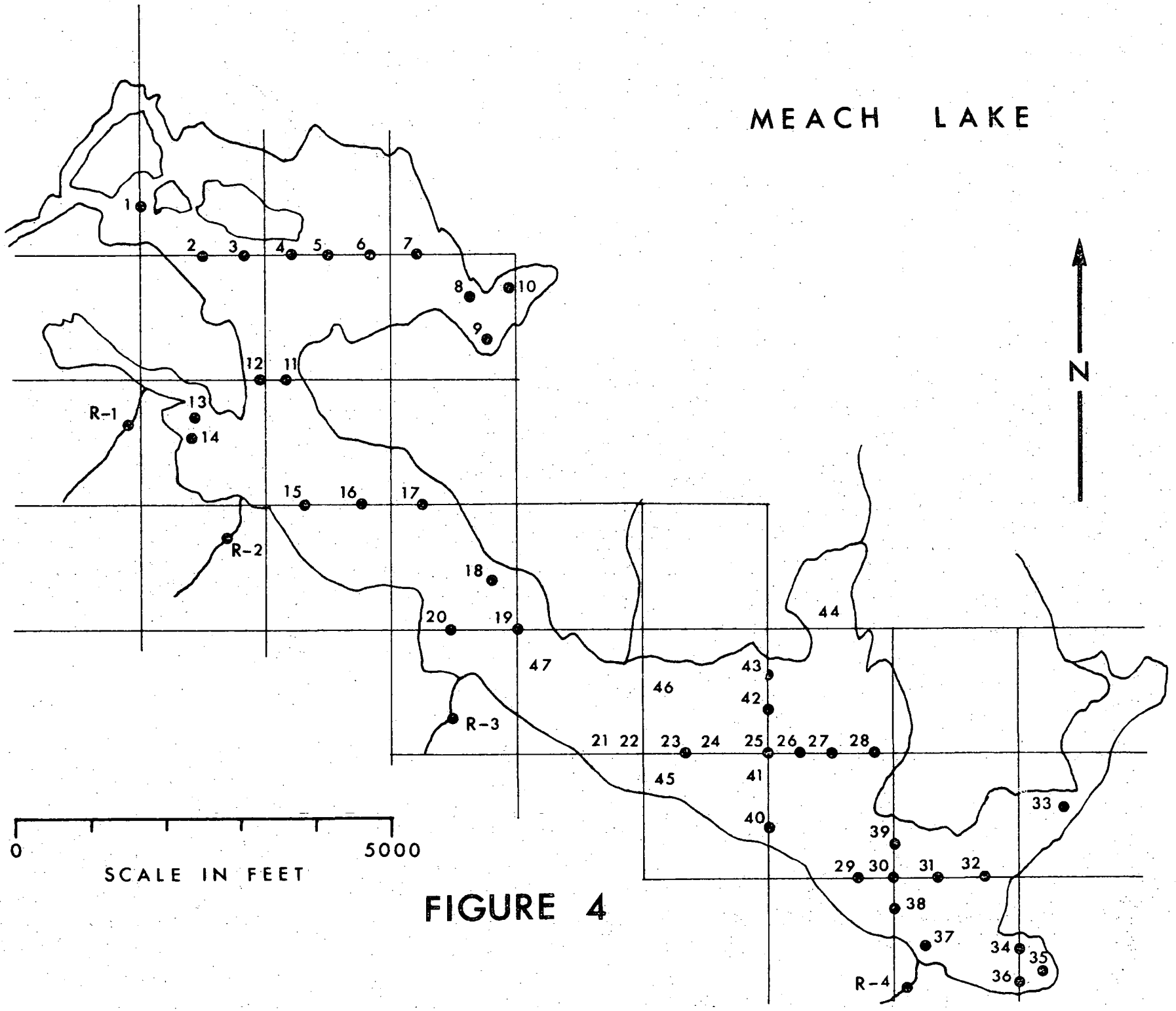
These data show that enteric indicator bacteria were virtually absent from Lapeche Beach waters during the entire monitor period. The results were remarkably good for a public bathing area, and it is evident that bather-introduced contamination was not a significant factor at any time during the summer.

2. Meach Lake

Figure 4 shows the location of 47 Meach Lake Sampling Stations established in 1970 (1); water samples were collected from these Stations on 8 dates during the summer of 1971, as well as from Stations on 4 tributary streams flowing to Meach Lake.

Meach Lake, in Park District 4, receives drainage from Lac Mousseau and is a popular cottage area. One cottage is located on an island (near Stations 11 and 15), and 21 others are sited within 50 feet of the Lake shore; cottages are also potential contributors of domestic wastes to four streams flowing to the southwest shore of the Lake. There are three public, and several private, swimming areas on Meach Lake.

The coliform, fecal coliform and fecal streptococcus MF count data recorded for 411 water samples from lake and stream stations in 1971 are recorded in Appendix Tables A-3.1, A-3.2, A-3.3 and A-4. For comparative purposes, the 1971 and 1970 lake data are summarized, at 3 percentile levels in in Tables 4 and 5, respectively. The two sets of data are


MEACH LAKE
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42
43
44
45
46
47
R-1
R-2
R-3
R-4
0
5000
SCALE IN FEET

FIGURE 4

TABLE 4. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, MEACH LAKE, 1971.

DATE	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
26-5	<2	2	9	<2	<2	2	<2	<2	2
10-6	2	10	29	<2	2	5	<2	<2	2
21-6	8	29	120	<2	4	28	<2	4	26
16-7	4	12	23	<2	<2	2	<2	2	9
3-8	6	20	43	<2	<2	2	<2	<2	4
18-8	8	20	44	<2	<2	2	<2	<2	3
2-9	2	8	23	<2	<2	2	<2	<2	2
15-9	10	22	32	<2	<2	2	<2	<2	4
All Dates	2	14	42	<2	<2	4	<2	<2	6

TABLE 5. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, WATER SAMPLES, MEACH LAKE, 1970

Date	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
26-5	<2	2	8	<2	<2	2	<2	<2	<2
9-6	<2	6	26	<2	<2	2	<2	<2	<2
17-6	2	10	24	<2	<2	4	<2	<2	4
2-7	<2	6	20	<2	<2	2	<2	2	6
10-7	2	24	48	<2	<2	4	<2	4	16
20-7	14	32	54	<2	<2	8	<2	2	12
13-8	4	18	69	<2	2	17	<2	2	72
4-9	2	10	35	<2	<2	6	<2	2	14
21-9	2	10	26	<2	<2	2	<2	<2	2
5-10	2	8	22	<2	<2	2	<2	<2	2
All Dates	2	10	42	<2	<2	4	<2	<2	8

virtually identical; very low counts for all three parameters were consistently obtained at all Lake Stations. In 1971, the median coliform density was only 14 per 100 ml., and tests for fecal coliforms and fecal streptococci were negative for 62 and 60 per cent, respectively, of the samples. Thus all samples easily met all Federal and Provincial objectives for bacteriological quality of recreational waters.

Median bacteriological data for water samples from 4 stream sampling points are cited in Table 6.

Table 6. MEDIAN BACTERIOLOGICAL DATA, MEACH LAKE STREAM WATER SAMPLES, 1971

Sta. No.	MEDIAN MF COUNT PER 100 ML. OF WATER		
	Coliform	Fecal Coliform	Fecal Streptococcus
R-1	440	13	98
R-2	65	2	16
R-3	380	120	90
R-4	1,000	9	110

While the median values cited in Table 6 indicate reasonably-acceptable stream water quality, higher densities for all 3 parameters were recorded periodically, particularly at Stations R-3 and R-4. Rainfall data available

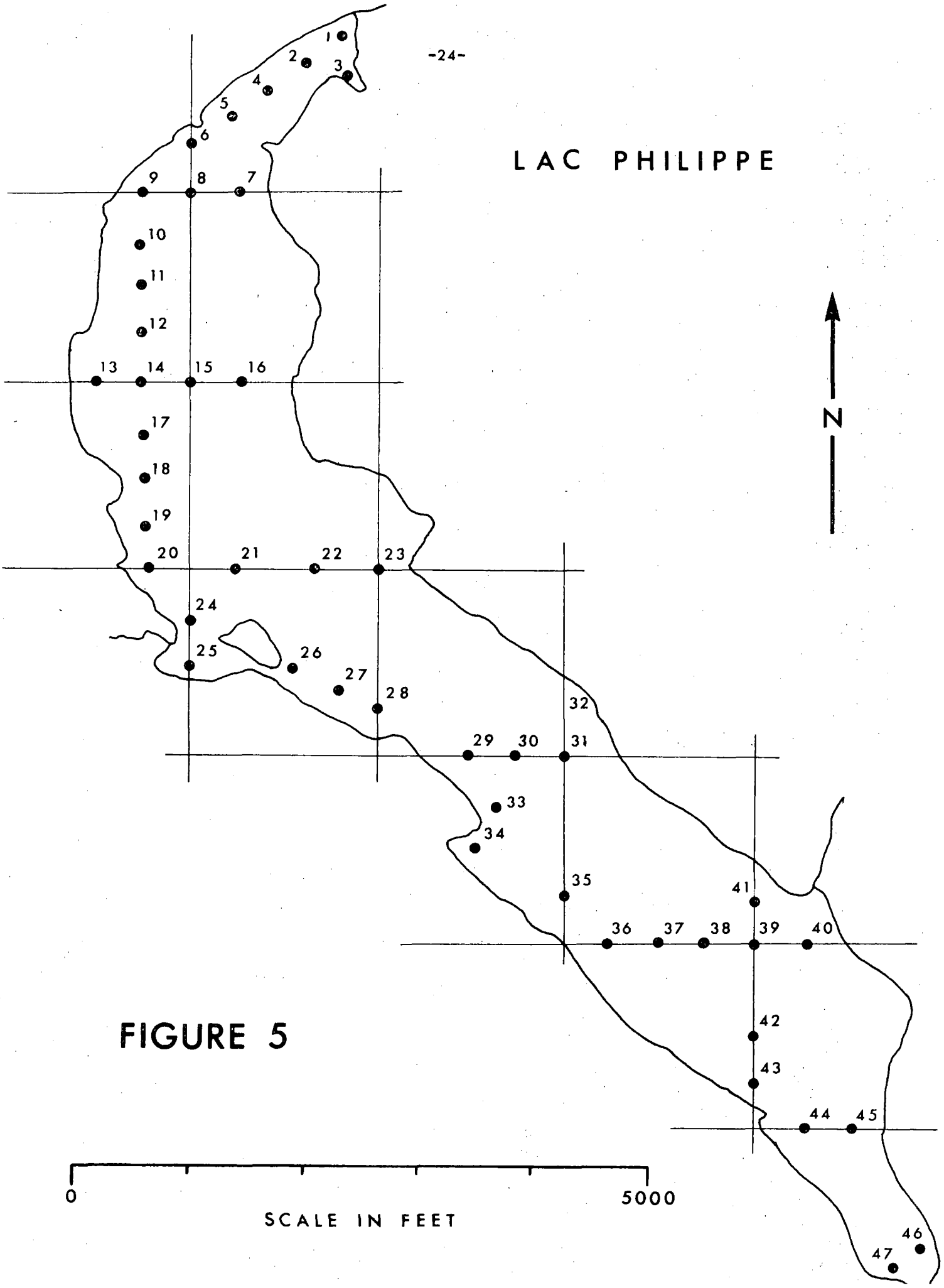
do not explain the sporadic increases in bacterial numbers at these two stations; the 1971 findings thus confirm the 1970 data which indicated that sources on this water shed periodically contribute human or animal pollution to these streams. As in 1970, the low-volume stream flows had no significant effect on the bacteriological quality of lake water.

3. Lac Philippe

The locations of 47 sampling stations on Lac Philippe, Park District 3, used in both the 1970 and 1971 surveillance surveys, are shown in Figure 5. Figure 6, which includes the Lac Philippe shore between Parent and Smith Beaches, shows the location of Stream Stations E and H which were occupied during both summers.

Coliform, fecal coliform and fecal streptococcus MF Counts recorded for 402 lake water samples from these Stations are given in Appendix Tables A-5.1, A-5.2, A-5.3 and A-6, and are summarized, at three percentile levels, in Table 7. The 1970 lake surveillance data are similarly summarized, to permit comparison, in Table 8.

The two sets of data are very similar, and the 1971 results confirm the absence of significant levels of pollution in any sector of the Lake. In 1971 the median coliform count


LAC PHILIPPE
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43
44
45
46
47
0
5000
SCALE IN FEET

FIGURE 5

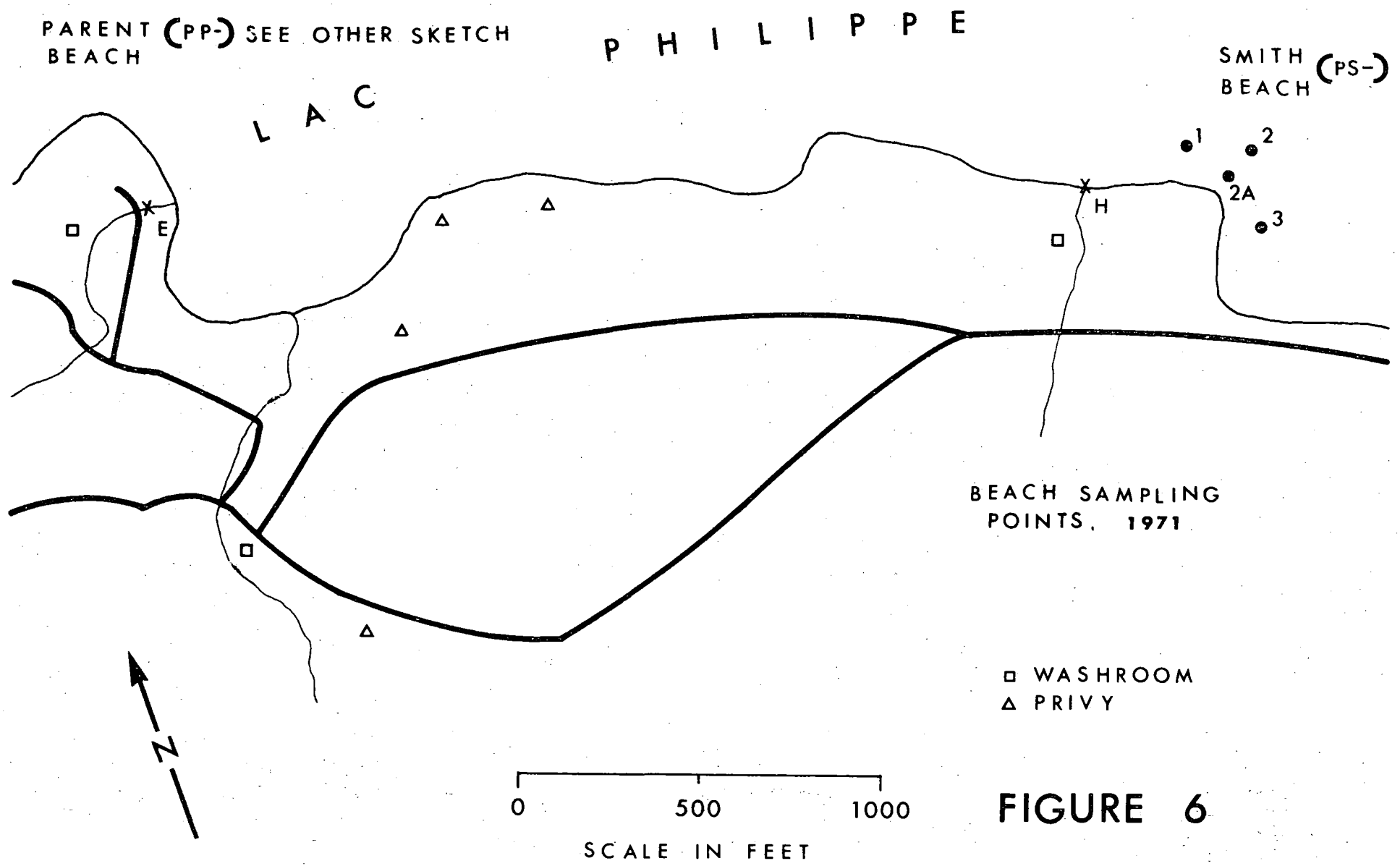

PARENT BEACH (PP-) SEE OTHER SKETCH
LAC PHILIPPE
SMITH BEACH (PS-)
1
2
2A
3
E
H
BEACH SAMPLING POINTS, 1971
WASHROOM
PRIVY
N
0
500
1000
SCALE IN FEET

FIGURE 6

TABLE 7. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, LAC PHILIPPE, 1971

DATE	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
27-5	<2	2	16	<2	<2	4	<2	<2	4
7-6	<2	8	71	<2	<2	2	<2	<2	2
24-6	22	44	130	<2	<2	2	<2	2	4
5-7	6	22	100	<2	<2	18	<2	6	24
20-7	8	20	53	<2	<2	2	<2	2	4
6-8	2	10	28	<2	<2	2	<2	<2	2
19-8	6	15	55	<2	<2	2	<2	<2	2
7-9	12	40	140	<2	<2	10	<2	2	20
All Dates	2	20	74	<2	<2	2	<2	<2	8

TABLE 8. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, WATER SAMPLES, LAC PHILIPPE, 1970

Date	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
27-5	<2	8	29	<2	<2	2	<2	<2	2
8-6	<2	4	19	<2	<2	2	<2	<2	<2
19-6	3	32	110	<2	2	10	<2	2	7
26-6	4	20	110	<2	<2	7	<2	2	8
6-7	2	12	63	<2	<2	2	<2	4	22
21-7	34	70	140	<2	4	10	2	10	27
10-8	3	38	550	<2	<2	4	<2	<2	4
24-8	24	170	320	<2	<2	2	<2	<2	2
10-9	2	12	33	<2	<2	2	<2	<2	5
22-9	11	58	240	<2	<2	2	<2	<2	11
1-10	19	72	210	<2	<2	2	<2	<2	2
All Dates	2	24	190	<2	<2	6	<2	<2	10

was only 20, and 73 and 54 per cent, respectively, of the samples were negative for fecal coliforms and fecal streptococci; the 90 percentile levels for these parameters were only 2 and 8 per 100 ml., respectively.

Higher coliform and fecal streptoccus densities were found in samples from Stream Station E (Table 9), which receives drainage from the Parent Beach campsite area. As in 1970, discharge from this stream apparently had no marked effect on near-shore lake water quality.

TABLE 9. MEDIAN BACTERIAL DENSITIES, LAC PHILIPPE STREAM SAMPLES, 1971

Sta. No.	MEDIAN MF COUNT PER 100 ML. OF WATER		
	Coliform	Fecal Coliform	Fecal Streptococcus
E	2,500	32	280
H	220	6	46

Bacteriological quality at Station H in 1971 was much better than in 1970, presumably because of the replacement of septic tank disposal systems by a collector sewer - waste treatment lagoon system.

4. Pinks Lake

The locations of 20 Pinks Lake sampling stations established in 1970 and also used in 1971 are shown in

Figure 7. While no public beach exists on the Lake, its proximity to Ottawa attracts many visitors and some bathers.

Bacteriological data for 160 water samples from Pinks Lake stations are given in Appendix Tables A-7.1, A-7.2, and A-7.3; these data, and the 1970 results for the same Stations, are summarized at 3 percentile levels, in Tables 10 and 11. While only one sample exceeded federal bacteriological objectives, higher results for all parameters were recorded on July 27, following very heavy rainfall on July 26.

The data confirm the absence of direct pollution sources and show that the bacteriological water quality consistently met recreational area objectives.

Beach Monitor Program

In addition to the beach at Lac Lapeche, the National Capital Commission operates five other public beaches in Gatineau Park; three of these (Parent, Breton and Smith Beaches) are on Lac Philippe, and two are at Meach Lake. All of these were subjected to periodic examination during the summer, and attempts were made to relate bathing activity to variations in bacterial numbers, as measured by the three standard public health parameters and *Pseudomonas aeruginosa* tests, in the waters of four of these beaches. Staff and facilities could not be made available for epidemiological studies.

PINKS LAKE

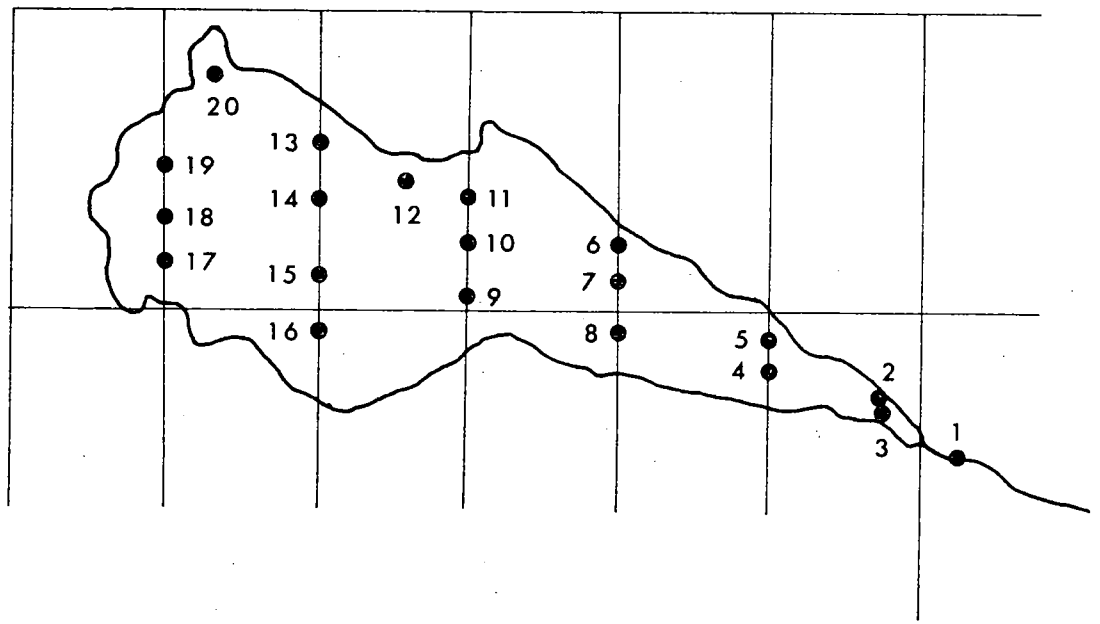


FIGURE 7

TABLE 10. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, PINKS LAKE, 1971

DATE	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
2-6	4	13	46	<2	<2	<2	<2	<2	<2
17-6	38	140	320	<2	<2	2	<2	<2	2
2-7	70	110	210	2	4	8	2	6	18
12-7	<2	8	32	<2	<2	<2	2	2	14
27-7	96	190	250	6	24	48	10	32	66
10-8	20	52	190	2	2	18	<2	6	32
24-8	38	89	170	<2	2	6	<2	<2	4
8-9	8	28	40	<2	<2	2	<2	<2	4
All Dates	8	64	210	<2	<2	18	<2	2	26

TABLE 11. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, WATER SAMPLES, PINKS LAKE, 1970

Date	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
2-6	<2	9	94	<2	<2	2	<2	<2	2
24-6	18	31	350	<2	<2	2	<2	<2	4
14-7	-	-	-	<2	<2	2	<2	4	6
25-8	14	27	66	<2	<2	2	<2	<2	2
31-8	44	72	120	<2	<2	4	<2	4	10
18-9	16	36	68	<2	<2	2	<2	<2	2
2-10	8	25	40	<2	<2	2	<2	<2	2
All Dates	8	32	110	<2	<2	2	<2	<2	6

1. Meach Lake Beaches--Standard Parameters

The location of 10 near-shore beach sampling stations at Meach Lake Area No.1, and 11 stations at Meach Lake Area No.3, are shown in Figures 8 and 9. At each Beach, a series of sampling points was established across the bathing area, at waist-depth (approximately 3-4 feet), and three additional stations were located between these points and the shore where the water was at knee-depth (approximately 1.5 feet). At all stations, water samples were collected about one foot below the water surface. Silt samples were also collected from one knee-depth sampling point at each Beach. Both Beaches were free from direct sources of domestic wastes.

Coliform, fecal coliform and fecal streptococcus MF counts for 423 water samples collected from the 21 stations are recorded in Appendix Table B-1 (a to o, inclusive) and are summarized, at three percentile levels, in Tables 12 and 13.

These data show that the bacteriological quality of beach water was excellent throughout the summer at the two Meach Lake recreational areas. Coliform and fecal coliform objectives of 1,000 and 200, respectively, per 100 ml. were easily met at the 90 percentile level at all stations, and the median fecal streptococcus objective of 100 per 100 ml. was not exceeded at any station. Only 2 samples had coliform

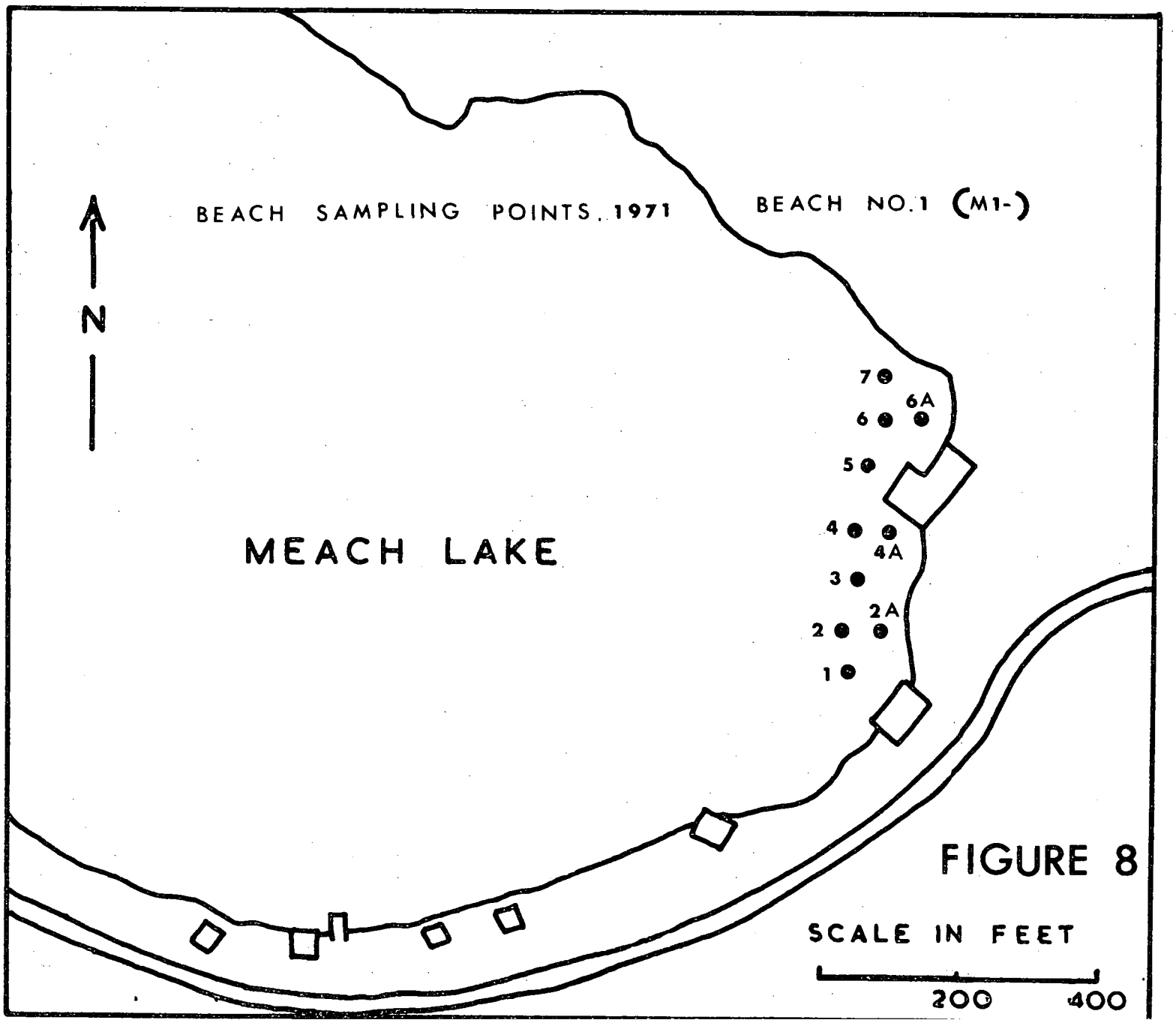

BEACH SAMPLING POINTS, 1971
BEACH NO. 1 (M1-)
N
MEACH LAKE
7
6A
6
5
4
4A
3
2A
2
1
SCALE IN FEET
200
400

FIGURE 8

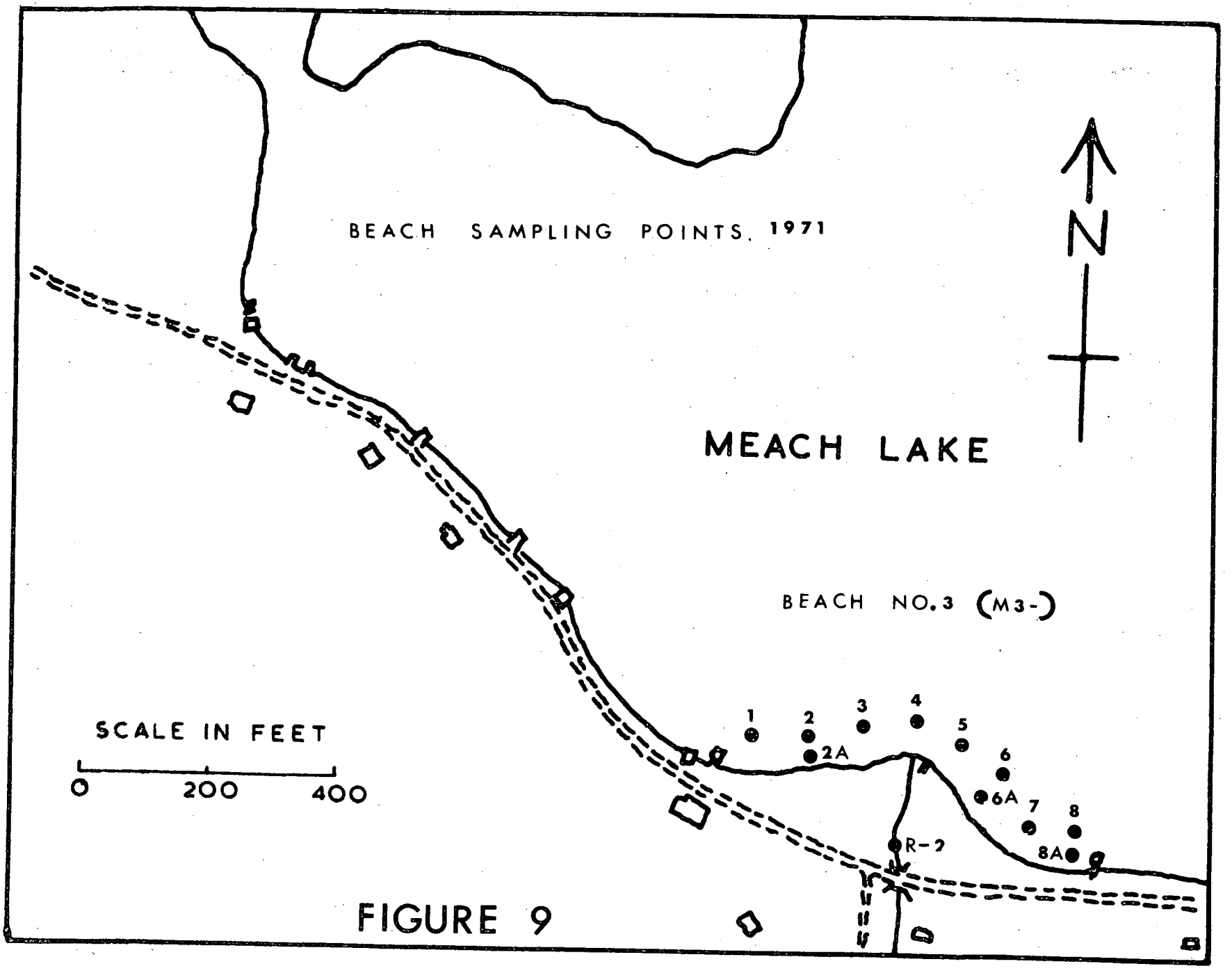

BEACH SAMPLING POINTS, 1971
N
MEACH LAKE
BEACH NO. 3 (M3-)
SCALE IN FEET
0
200
400
1
2
2A
3
4
5
6
6A
7
8
8A
R-2

FIGURE 9

TABLE 12. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, MEACH LAKE BEACH, AREA NO. 1, 1971

Sta. No.	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
M1-1	10	32	330	<2	4	48	<2	22	200
M1-2	10	62	460	<2	8	56	<2	32	300
M1-3	4	36	200	<2	8	24	<2	20	160
M1-4	6	42	200	<2	6	30	<2	36	120
M1-5	14	52	210	<2	4	30	<2	36	130
M1-6	8	56	310	<2	4	24	2	32	120
M1-7	8	80	480	<2	6	44	<2	50	800
Waist Depth	10	42	260	<2	6	30	<2	30	170
M1-2A	11	70	550	<2	5	88	2	39	550
M1-4A	13	90	330	2	10	47	2	40	140
M1-6A	12	74	270	<2	6	35	3	47	490
Knee Depth	12	70	340	<2	6	36	2	40	210
All Stations	12	52	300	<2	6	32	<2	34	180

TABLE 13. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, MEACH LAKE BEACH, AREA NO. 3, 1971

Sta. No.	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
M3-1	12	34	90	<2	2	7	<2	5	13
M3-2	5	32	80	<2	2	4	<2	2	9
M3-3	7	26	110	<2	<2	4	<2	2	8
M3-4	3	32	160	<2	<2	5	<2	2	21
M3-5	11	26	160	<2	2	7	<2	2	23
M3-6	9	20	140	<2	<2	8	<2	4	16
M3-7	6	38	99	<2	2	5	<2	4	21
M3-8	5	28	40	<2	2	12	<2	6	40
Waist Depth	4	32	130	<2	2	6	<2	4	26
M3-2A	2	32	68	<2	2	4	<2	3	14
M3-6A	8	32	92	<2	<2	4	<2	2	12
M3-8A	10	42	320	<2	2	16	<2	6	20
Knee Depth	2	32	110	<2	<2	10	<2	2	20
All Stations	4	32	110	<2	2	6	<2	4	26

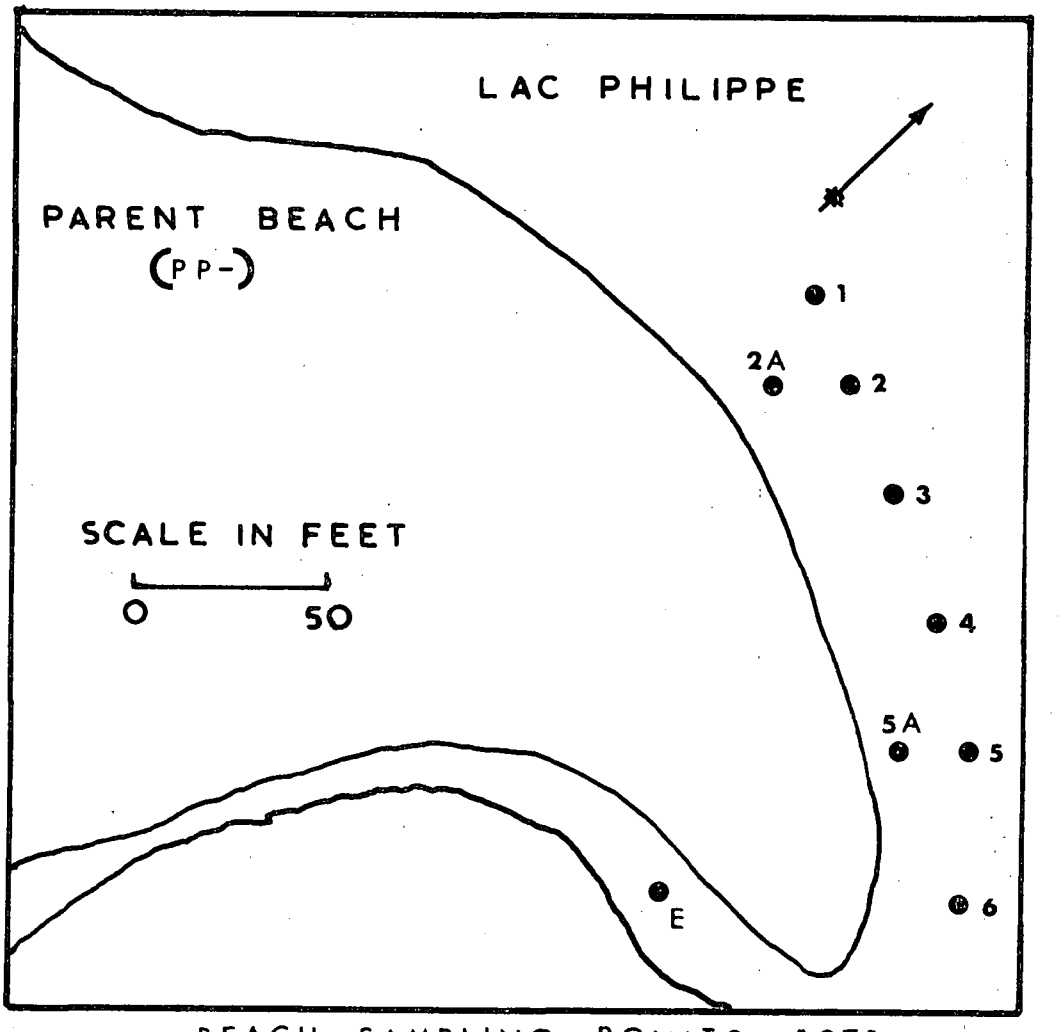
counts of more than 1,000, and all samples had <200 fecal coliforms per 100 ml.; only 54 (13 per cent) of the water samples had fecal streptococcus counts of more than 100 per 100 ml.

2. Lac Philippe Beaches--Standard Parameters

The locations of a total of 24 near-shore sampling stations at Smith, Parent and Breton Beaches are shown in Figures 6, 10 and 11, respectively. These include both waist-depth and knee-depth locations. The three beaches were normally free from direct sources of domestic wastes.

Coliform, fecal coliform and fecal streptococcus MF counts for 607 water samples collected from the 24 stations are recorded in Appendix Table B-4 (a to v, inclusive), and are summarized, at three percentile levels, in Tables 14 and 15.

Parent and Smith Beach waters were consistently of satisfactory bacteriological quality throughout the study period, and met the objectives for the three standard pollution index parameters at the 90 percentile level. Samples from Breton Beach stations met these objectives at the median (50 percentile) level, but significantly higher MF counts were recorded for samples collected in the July 25 to 28 period (as reflected in the higher 90 percentile values calculated for Breton Beach stations). These increases in



BEACH SAMPLING POINTS, 1971

FIGURE 10

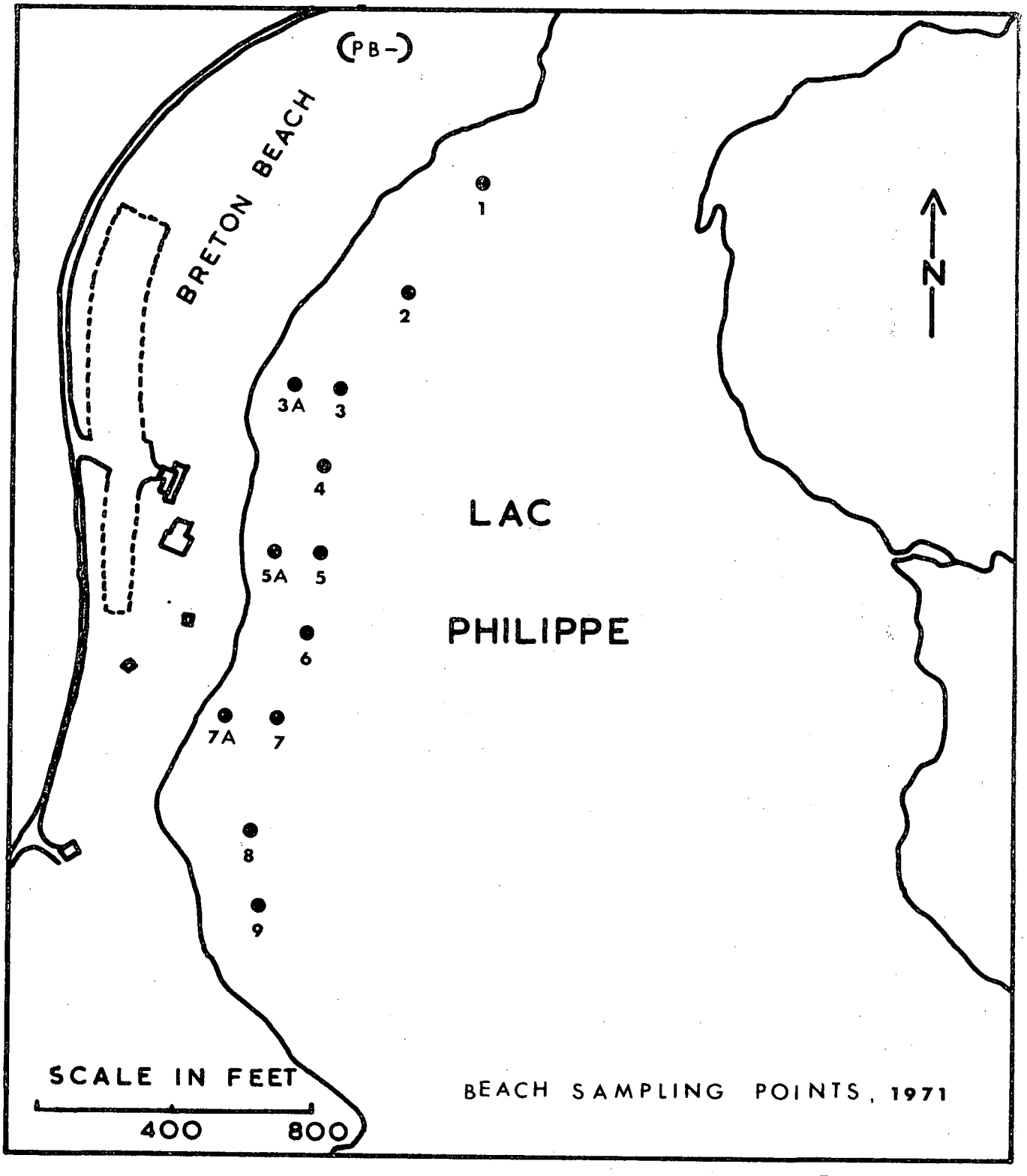

(PB-)
BRETON BEACH
1
2
3A
3
4
5A
5
6
7A
7
8
9
LAC
PHILIPPE
N
SCALE IN FEET
400
800
BEACH SAMPLING POINTS, 1971

FIGURE 11

TABLE 14. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, PARENT AND SMITH BEACHES, LAC PHILIPPE, 1971

Sta. No.	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
PP-1	8	75	1,500	<2	2	13	<2	4	20
PP-2	10	35	700	<2	2	11	<2	2	18
PP-3	5	55	530	<2	<2	8	<2	4	33
PP-4	6	36	630	<2	<2	6	<2	4	23
PP-5	5	58	670	<2	<2	8	<2	5	28
PP-6	6	66	1,400	<2	2	100	<2	6	200
Waist Depth	8	53	920	<2	<2	12	<2	4	43
PP-2A	6	95	300	<2	<2	6	2	4	100
PP-5A	11	80	120	<2	2	6	2	4	19
Parent Beach	10	59	810	<2	2	11	<2	4	44
PS-1	6	40	300	<2	2	4	<2	3	11
PS-2	5	15	48	<2	<2	<2	<2	2	8
PS-3	10	25	180	<2	<2	2	<2	2	24
PS-2A	5	60	270	<2	<2	6	<2	4	28
Smith Beach	5	30	300	<2	<2	3	<2	2	18

TABLE 15. SUMMARY, BACTERIOLOGICAL MF DENSITY DATA, 10, 50 AND 90 PERCENTILE LEVELS, BRETON BEACH, LAC PHILIPPE, 1971

Sta. No.	DENSITY PER 100 ML. OF WATER AT THREE PERCENTILE LEVELS								
	COLIFORM			FECAL COLIFORM			FECAL STREPTOCOCCUS		
	10	50	90	10	50	90	10	50	90
PB-1	14	210	2,800	<2	4	110	<2	6	140
PB-2	15	210	2,700	<2	4	110	<2	10	110
PB-3	14	170	4,200	<2	6	280	<2	8	200
PB-4	20	390	3,500	<2	6	93	<2	10	95
PB-5	20	160	4,900	<2	3	68	<2	8	60
PB-6	32	200	4,300	<2	4	120	<2	8	130
PB-7	10	110	2,800	<2	2	76	<2	6	68
PB-8	10	160	7,700	<2	4	150	2	6	190
PB-9	9	220	4,600	<2	4	180	<2	6	180
Waist Depth	15	200	4,500	<2	4	120	<2	8	120
PB-3A	19	220	4,700	<2	8	240	2	12	170
PB-5A	46	290	2,200	<2	6	120	<2	10	100
PB-7A	36	200	7,700	<2	2	200	<2	6	180
Knee Depth	29	220	6,400	<2	6	190	<2	10	180
All Stations	18	220	4,700	<2	4	140	<2	8	160

bacterial numbers were directly attributable to the overflow on July 23 of raw sewage from a sewage wet well located about 75 feet from the shore.

Prior to the reopening of Gatineau Park for the 1971 summer season, a collector sewer system was installed to pump domestic wastes, from the sanitary facilities at the camping area, and at Parent and Breton Beaches, to a new waste treatment lagoon constructed at a point beyond the Lac Philippe watershed. The main Breton Beach pumping station was equipped with two sewage pumps phased to operate alternately or simultaneously depending on the load. The pumps are activated automatically by means of a pressure differential in an air bubbler tube immersed in the sewage wet well which forms an integral part of the pumping station.

The sewage overflow to Breton Beach occurred as a result of an air leak in the bubbler tube; the subsequent loss of pressure failed to activate the pump switch. The National Capital Commission has since installed an alarm system connected to each of the three pumping stations on the collector system; an alarm sounds as soon as the level of sewage in the wet well passes the level at which the pumps normally cut in, so that a Park attendant can switch on the pump manually. If possible, the alarm system circuitry will be modified so that it will also activate the pumps automatically;

this would provide a standby pump control system should the normal air pressure switch fail to function.

Since the sewage overflow of July 23 coincided with a severe storm, with heavy rainfall, it was initially reported as storm drainage. Unsatisfactory coliform densities were recorded at all Breton Beach Stations for five days, but returned to normal thereafter.

3. Pseudomonas aeruginosa MPNs--Beach Samples

Most Probable Numbers of *Pseudomonas aeruginosa* recorded for water samples from selected Meach Lake and Lac Philippe beach sampling stations are cited in Appendix Tables B-2 and B-5, respectively.

Very few confirmed *Ps. aeruginosa* were isolated during the study. Positive results were obtained for only 42 (18 per cent) of 234 water samples from Meach Lake beach stations; of these, 31 had *Ps. aeruginosa* MPNs of 2 or less, and only 3 samples had MPNs of more than 10 per 100 ml. Similarly, only 67 (28 per cent) of 234 water samples from Lac Philippe beach stations contained *Ps. aeruginosa*; of these, 42 samples had MPNs of 2 or less, and only 6 samples had MPNs of more than 10. The highest *Ps. aeruginosa* density recorded during the study was 110 (Parent Beach, July 25); this was the only sample with an MPN of more than 100.

Only 13.3 per cent of 1,630 positive presumptive test cultures encountered during the study produced a fully-confirmed positive test for Ps. aeruginosa; 73.3 per cent were capable of growth on Acetamide Medium, but not on the Kings A confirmation agar (see Table 16).

TABLE 16. PRESUMPTIVE TEST, ACETAMIDE, AND CONFIRMED POSITIVITY, PS. AERUGINOSA MPNS, BEACH WATERS, 1971

Source of Water Samples	Presumptive Test Positive Cultures	Acetamide Positive Cultures	Confirmed Ps. aeruginosa (Kings A +)
Meach Lake (234 Samples)	748	593 (79.3%)	61 (8.2%)
Lac Philippe (263 Samples)	882	602 (68.3%)	155 (17.6%)
All Sources	1,630	1,195 (73.3%)	216 (13.3%)

It is thus evident that the application of this MPN test to recreational waters with very low Ps. aeruginosa densities will be relatively unproductive, unrewarding and time-consuming, and the value of Ps. aeruginosa as a water pollution test parameter in such situations is open to question.

No attempts were made to identify the organisms responsible for the unconfirmed positive presumptive and acetamide tests; presumably they were pseudomonads, other than *Ps. aeruginosa*, commonly found in lake water.

4. Silt Samples, Beach Areas

Bacteriological data obtained for sand - water interface samples (herein referred to as silt samples), and for standard knee-depth water samples from the same sampling sites, are reported in Appendix Tables B-3 and B-6; the median bacterial densities are given in Table 17. A total of 66 silt samples were collected from single sampling points on each of four beaches.

As expected, bacterial numbers were higher in silt samples than in the overlying water, presumably as a result of sedimentation and the deposition of bacteria associated with detritus on the sandy bottom. Silt : water ratios were inconsistent for all parameters, but were generally highest at Meach Lake Beach Area No. 1. Ratios based on total viable bacteria counts (SPCs) at 35° and 20°C. ranged from 2 : 1 to 38 : 1.

5. General Discussion--Beach Area Data

Median MF counts for the three standard bacteriological parameters for in-shore water samples from the five previously-cited beach areas are presentd graphically in Figures 12 to 16,

TABLE 17. MEDIAN BACTERIOLOGICAL DATA, BEACH STATIONS, WATER AND SILT SPECIMENS, 1971

Specimen	MEDIAN MF COUNT PER 100 ML.			*Ps. aeruginosa*	MEDIAN STANDARD PLATE COUNT per ml.	
	Coliform	Fecal Coliform	Fecal Strep.	Median Confirmed MPN per 100 ml.	35°C.	20°C.
Meach Lake						
M1-4A (Water)	90	10	38	<2	220	520
(Silt)	200	13	40	<2	440	1,400
*S:W Ratio	2.2:1	1.3:1	1.1:1		2:1	2.7:1
M3-6A (Water)	35	<2	4	<2	92	310
(Silt)	400	58	45	3	3,200	4,700
*S:W Ratio	11:1	>29:1	11:1		35:1	15:1
Lac Philippe						
PP-5A (Water)	78	2	3	<2	82	130
(Silt)	820	10	10	<2	360	5,000
*S:W Ratio	11:1	5:1	3.3:1		4.4:1	38:1
PB-5A (Water)	240	8	8	<2	130	290
(Silt)	2,200	50	30	<2	1,200	4,000
*S:W Ratio	9:1	6:1	3.8:1		9:1	14:1

* Silt : Water Ratio, based on median densities for each parameter

inclusive. The graphs illustrate the wide variations in index bacteria densities which occurred during the study within these unpolluted beach waters. Coliform numbers were particularly subject to change with time, within a range of more than two orders of magnitude. Peak bacterial levels generally were recorded in late July or early August, but there was also an unexplained density increase at all beaches during the June 22 - 24 period. Numerous difficult-to-measure factors may interact in the environment to produce variations in bacterial populations. Day to day shifts in index organism numbers in Gatineau Park beach waters probably depend on a number of weather factors, including temperature, and their interaction with bather load.

One of the objectives of the 1971 beach study was to evaluate, if possible, the impact of large numbers of bathers on the bacteriological quality of beach area waters. The accurate, continuous estimate of beach use proved, however, to be beyond the scope of the study. While "head-counts" were estimated at two beaches at the time of sample collection (Tables 18 and 19), sampling was normally restricted to the mid-morning period to accommodate laboratory work schedules; estimates of bather populations thus predominantly represent non-peak bathing periods. Precise, reasonably-complete hour-to-hour data relating bacterial densities

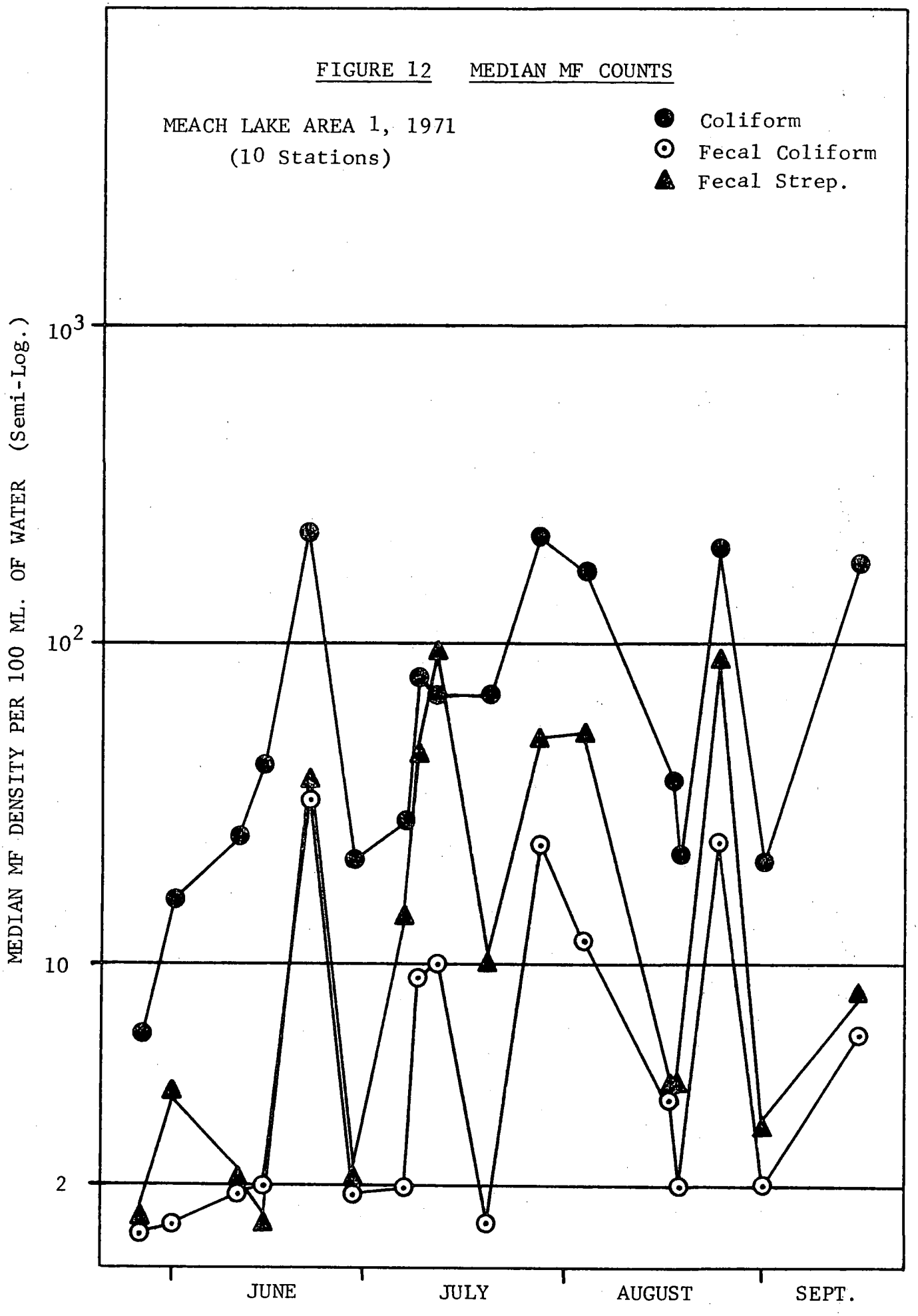


FIGURE 12 MEDIAN MF COUNTS
MEACH LAKE AREA 1, 1971
(10 Stations)
Coliform
Fecal Coliform
Fecal Strep.
MEDIAN MF DENSITY PER 100 ML. OF WATER (Semi-Log.)
10^3
10^2
10
2
JUNE
JULY
AUGUST
SEPT.

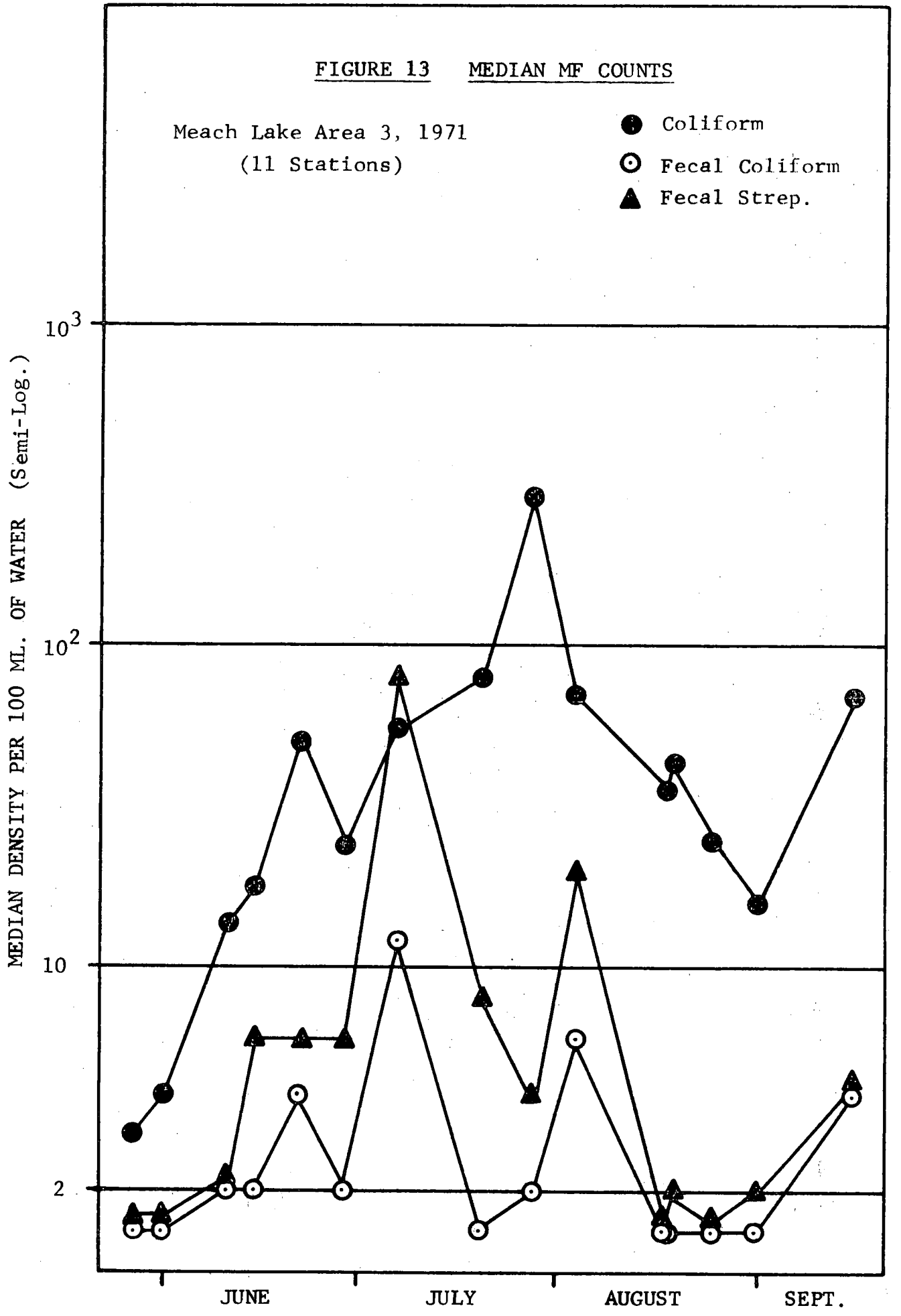


FIGURE 13 MEDIAN MF COUNTS
Meach Lake Area 3, 1971
(11 Stations)
Coliform
Fecal Coliform
Fecal Strep.
MEDIAN DENSITY PER 100 ML. OF WATER (Semi-Log.)
10^3
10^2
10
2
JUNE
JULY
AUGUST
SEPT.

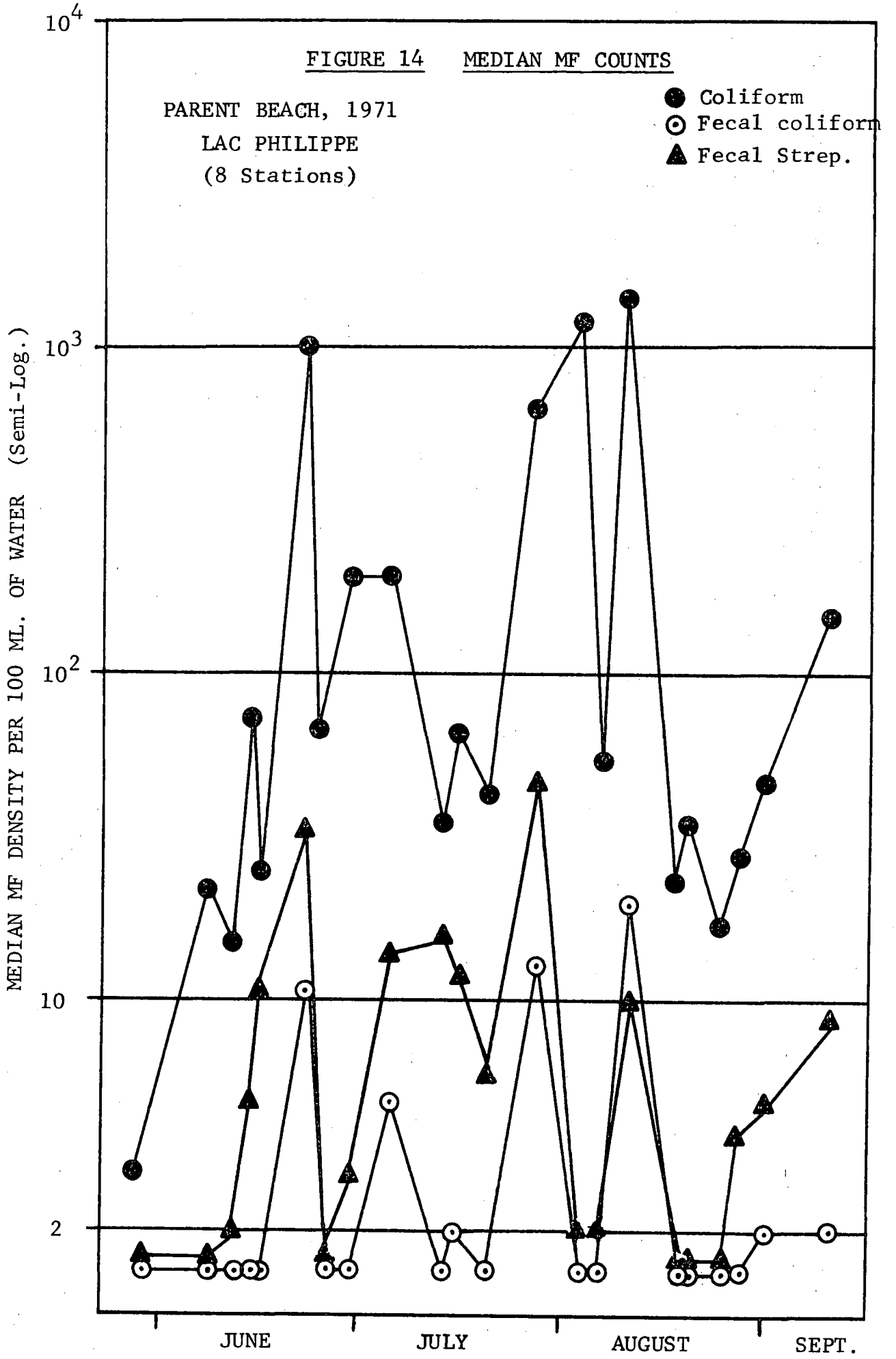


FIGURE 14 MEDIAN MF COUNTS
PARENT BEACH, 1971
LAC PHILIPPE
(8 Stations)
Coliform
Fecal coliform
Fecal Strep.
MEDIAN MF DENSITY PER 100 ML. OF WATER (Semi-Log.)
10^4
10^3
10^2
10
2
JUNE
JULY
AUGUST
SEPT.

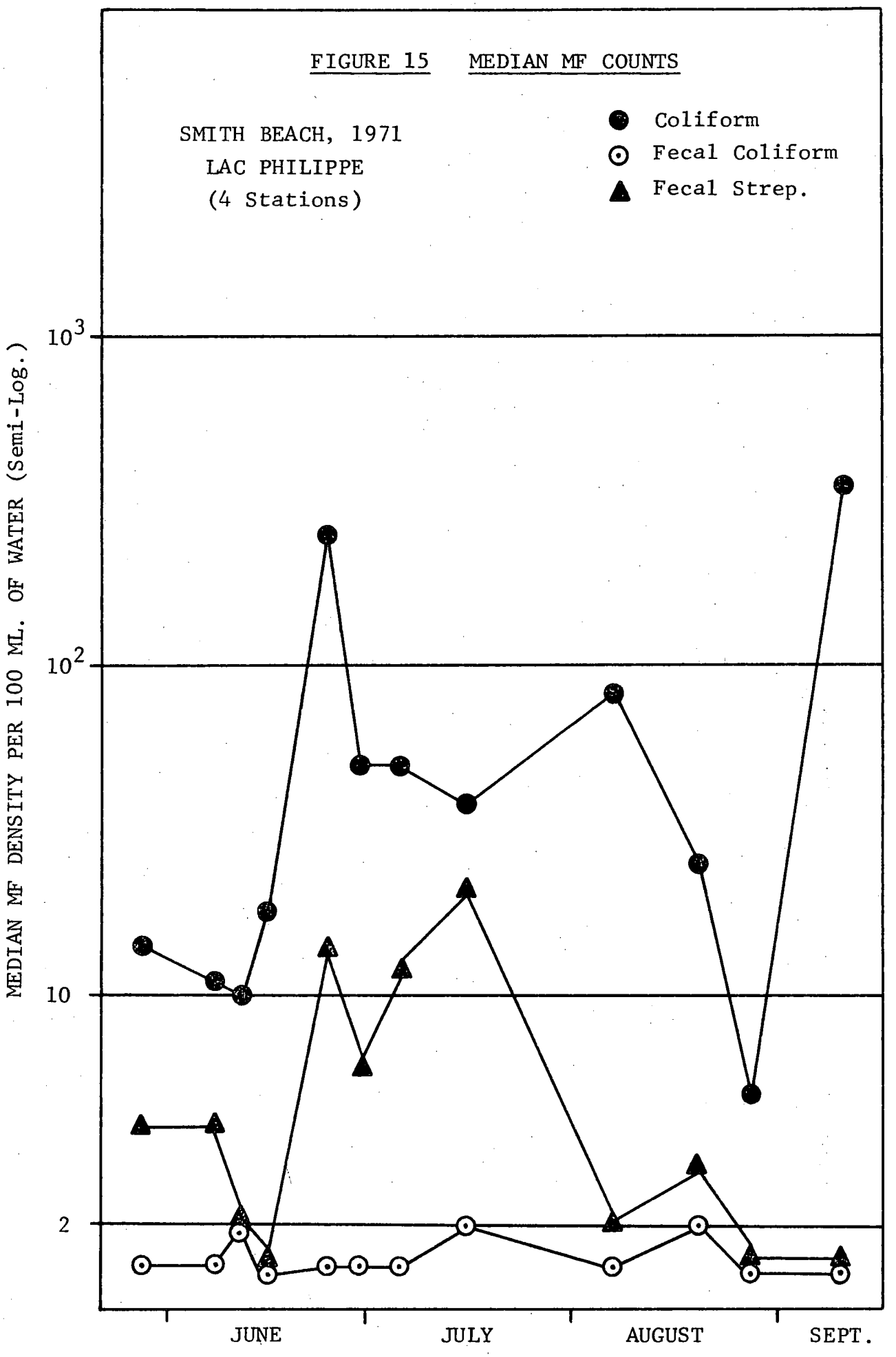


FIGURE 15 MEDIAN MF COUNTS
SMITH BEACH, 1971
LAC PHILIPPE
(4 Stations)
Coliform
Fecal Coliform
Fecal Strep.
MEDIAN MF DENSITY PER 100 ML. OF WATER (Semi-Log.)
10^3
10^2
10
2
JUNE
JULY
AUGUST
SEPT.

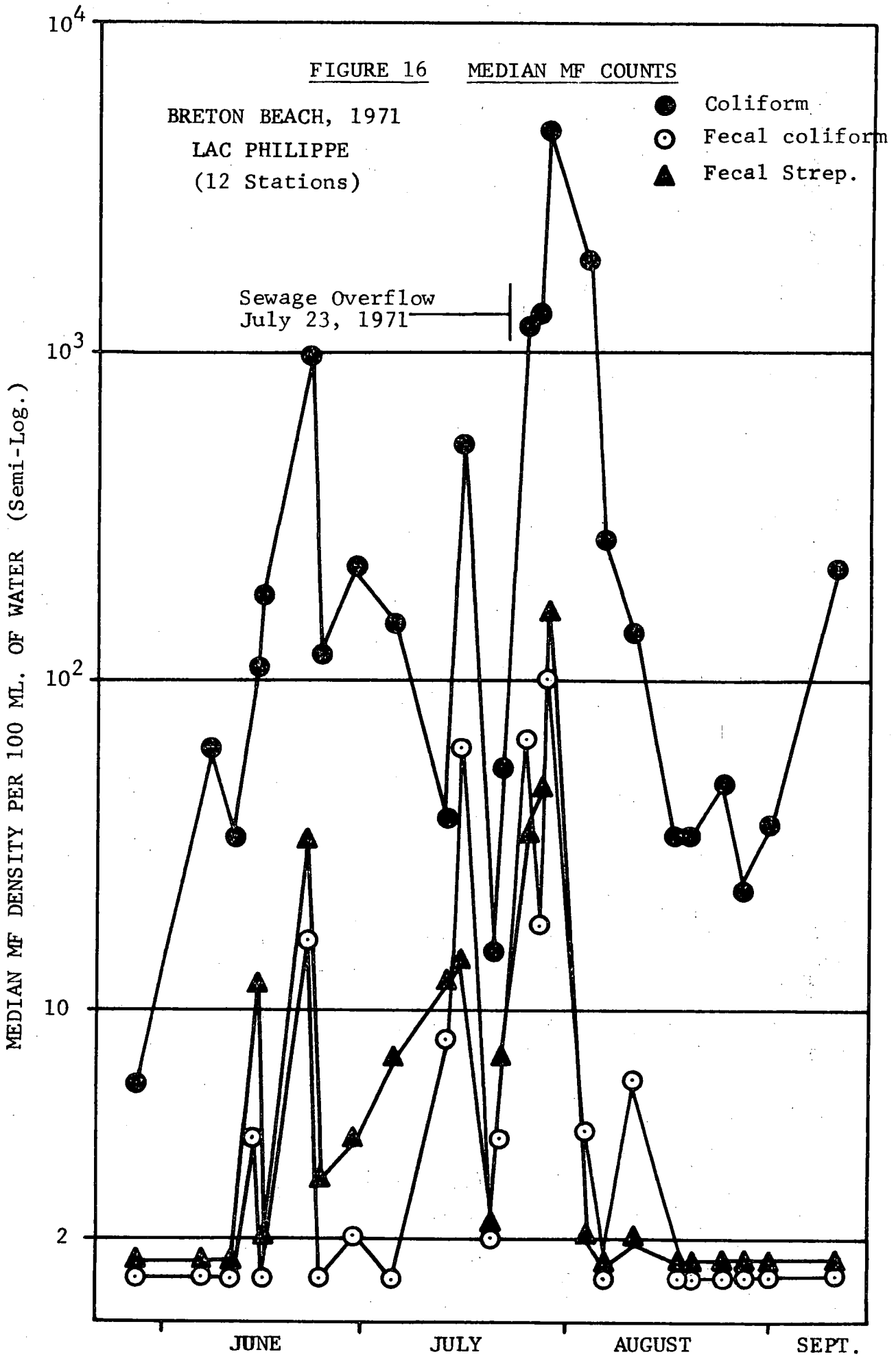


FIGURE 16 MEDIAN MF COUNTS
BRETON BEACH, 1971
LAC PHILIPPE
(12 Stations)
Coliform
Fecal coliform
Fecal Strep.
Sewage Overflow
July 23, 1971
10^4
10^3
10^2
10
2
MEDIAN MF DENSITY PER 100 ML. OF WATER (Semi-Log.)
JUNE
JULY
AUGUST
SEPT.

TABLE 18. ESTIMATED NUMBERS OF BATHERS, AND MEAN WATER TEMPERATURE, AT TIME OF SAMPLING, MEACH LAKE BEACH AREA NO. 1, 1971

Date, 1971	Time, hrs.	Mean Temp., °C.	NUMBERS OF BATHERS	
			In Water	On Beach
26-5	1000	12	0	0
31-5	1000	14.5	0	0
10-6	1000	17	2	0
14-6	1000	18	0	0
28-6	1000	21	0	0
8-7	0900	20	0	0
8-7	1000	20	0	1
8-7	1100	20	7	15
8-7	1200	20	25	35
8-7	1300	20	10	40
8-7	1400	22	8	40
8-7	1500	22	75	80
11-7	0900	20	2	7
11-7	1000	20	6	10
11-7	1100	20	11	50
11-7	1200	20	25	80
11-7	1300	20	30	125
11-7	1400	20	20	150
11-7	1500	21	50	125
19-7	1000	22	0	20
18-8	1000	21	10	20

TABLE 19. ESTIMATED NUMBERS OF BATHERS, AND MEAN WATER TEMPERATURES, AT TIME OF SAMPLING, BRETON BEACH

Date, 1971	Time, Hours	Mean Temp. °C.	NUMBERS OF BATHERS	
			In Water	On Beach
27-5	1030	12	0	0
7-6	1030	15	3	12
11-6	1030	17	13	3
15-6	1030	17	0	3
24-6	1030	24	12	25
29-6	1030	24	0	5
5-7	1030	24	20	0
21-7	0900	20	0	0
21-7	1030	20	55	250
21-7	1200	20	20	250
21-7	1330	20	120	1,000
21-7	1500	20	200	2,000
25-7	0900	20	0	2
25-7	1000	21	27	157
25-7	1100	21	43	290
25-7	1200	21	160	630
25-7	1300	21	200	940
25-7	1400	21	320	1,290
25-7	1500	21	450	1,500
28-7	0900	21	0	0
28-7	1030	21	5	50
28-7	1200	22	20	150
28-7	1330	22	20	200
28-7	1500	22	15	225
6-8	1030	21	0	15
8-8	1030	21	20	10
19-8	1030	21	5	20

to bather populations were obtained for Meach Lake Area 1 on two dates (Thursday, July 8, and Sunday, July 11) and for Breton Beach on three dates (Wednesday, July 21, Sunday, July 25, and Wednesday, July 28). The results are shown graphically in Figures 17 to 21, inclusive.

The reasonably-consistent increase in index bacteria numbers which occurred at both beaches in the 9:00 a.m. to 3:00 p.m. periods studied was probably attributable to increasing bather populations. The value of the July 25 and 28 intensive study of Breton Beach stations was virtually negated, for this purpose, by the sewage overflow which occurred on July 23, and which significantly increased bacterial densities recorded on the two subsequent study dates.

Under normal conditions, the increased bacterial densities caused by bather activity did not significantly change the pollution status of the beach areas; numerical objectives were not exceeded for any of the parameters applied. A major increase in bather populations at these beaches could, however, be expected to result in unsatisfactory bacteriological water quality and increased public health hazard.

Various opinions have recently been expressed about the selection of an optimum water depth for the collection of monitor water samples from a beach area. It has been

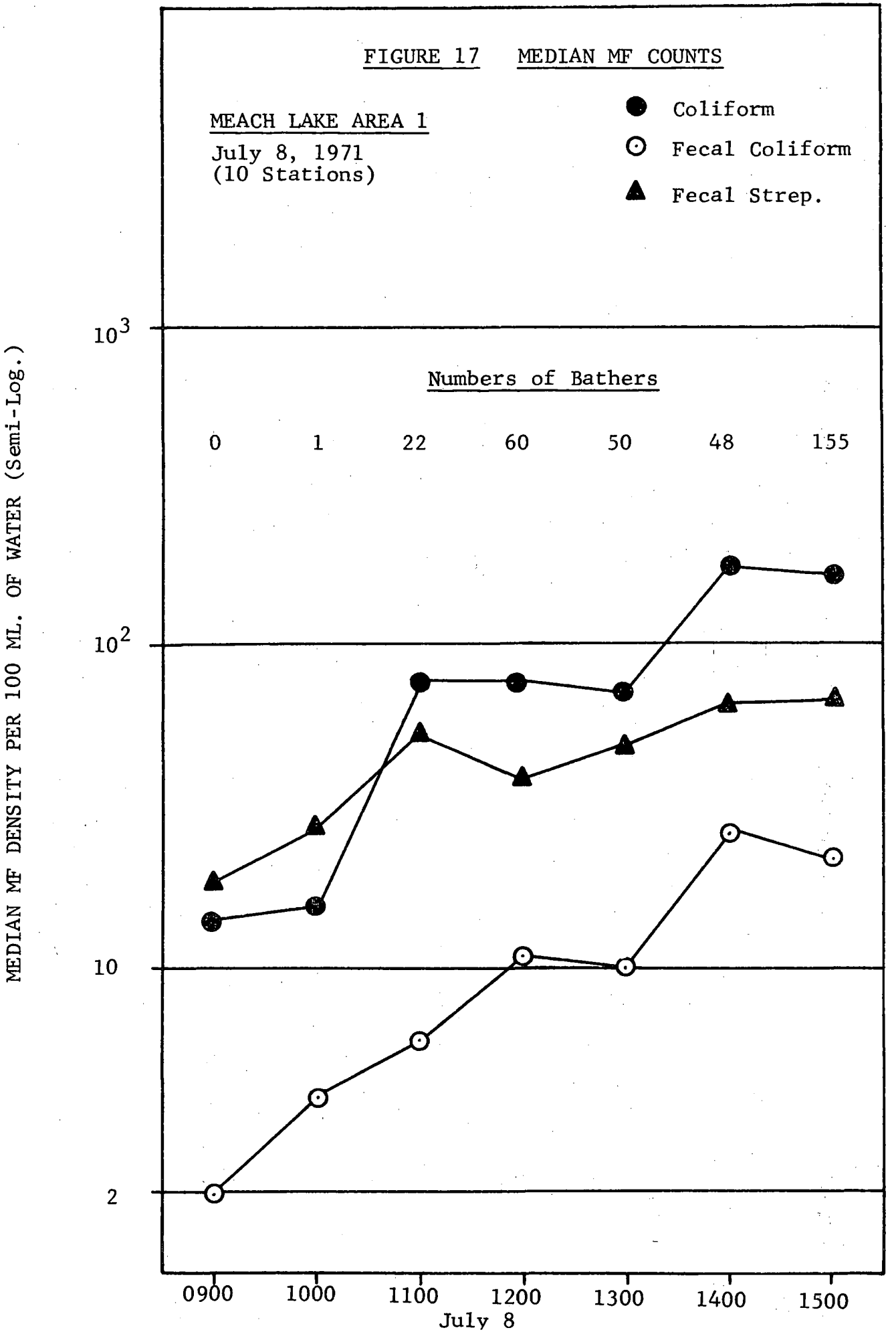


FIGURE 17 MEDIAN MF COUNTS
MEACH LAKE AREA 1
July 8, 1971
(10 Stations)
Coliform
Fecal Coliform
Fecal Strep.
Numbers of Bathers
0
1
22
60
50
48
155
10^3
10^2
10
2
MEDIAN MF DENSITY PER 100 ML. OF WATER (Semi-Log.)
0900
1000
1100
1200
1300
1400
1500
July 8

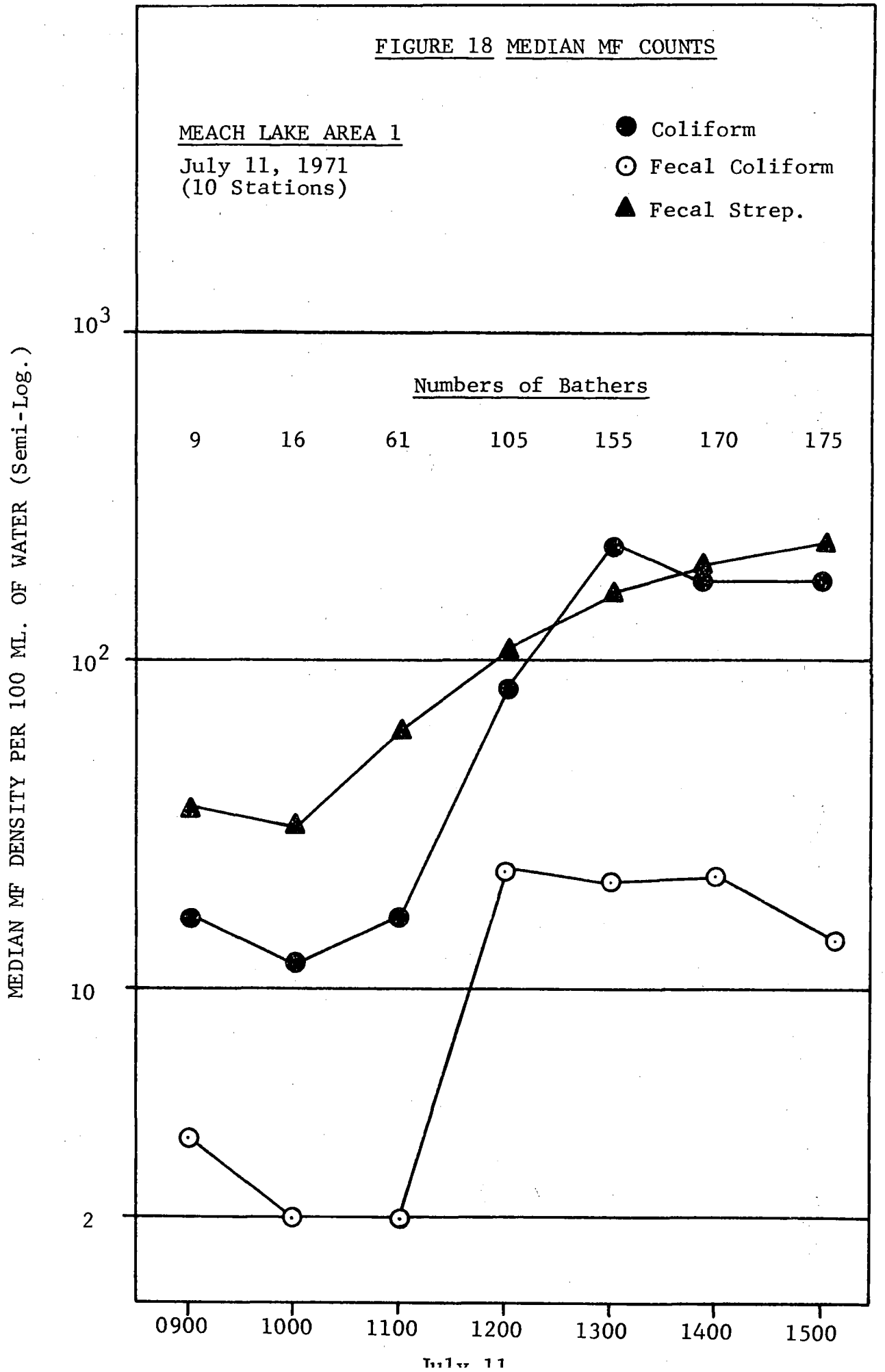


FIGURE 18 MEDIAN MF COUNTS
MEACH LAKE AREA 1
July 11, 1971
(10 Stations)
Coliform
Fecal Coliform
Fecal Strep.
Numbers of Bathers
9
16
61
105
155
170
175
10^3
10^2
10
2
MEDIAN MF DENSITY PER 100 ML. OF WATER (Semi-Log.)
0900
1000
1100
1200
1300
1400
1500
July 11

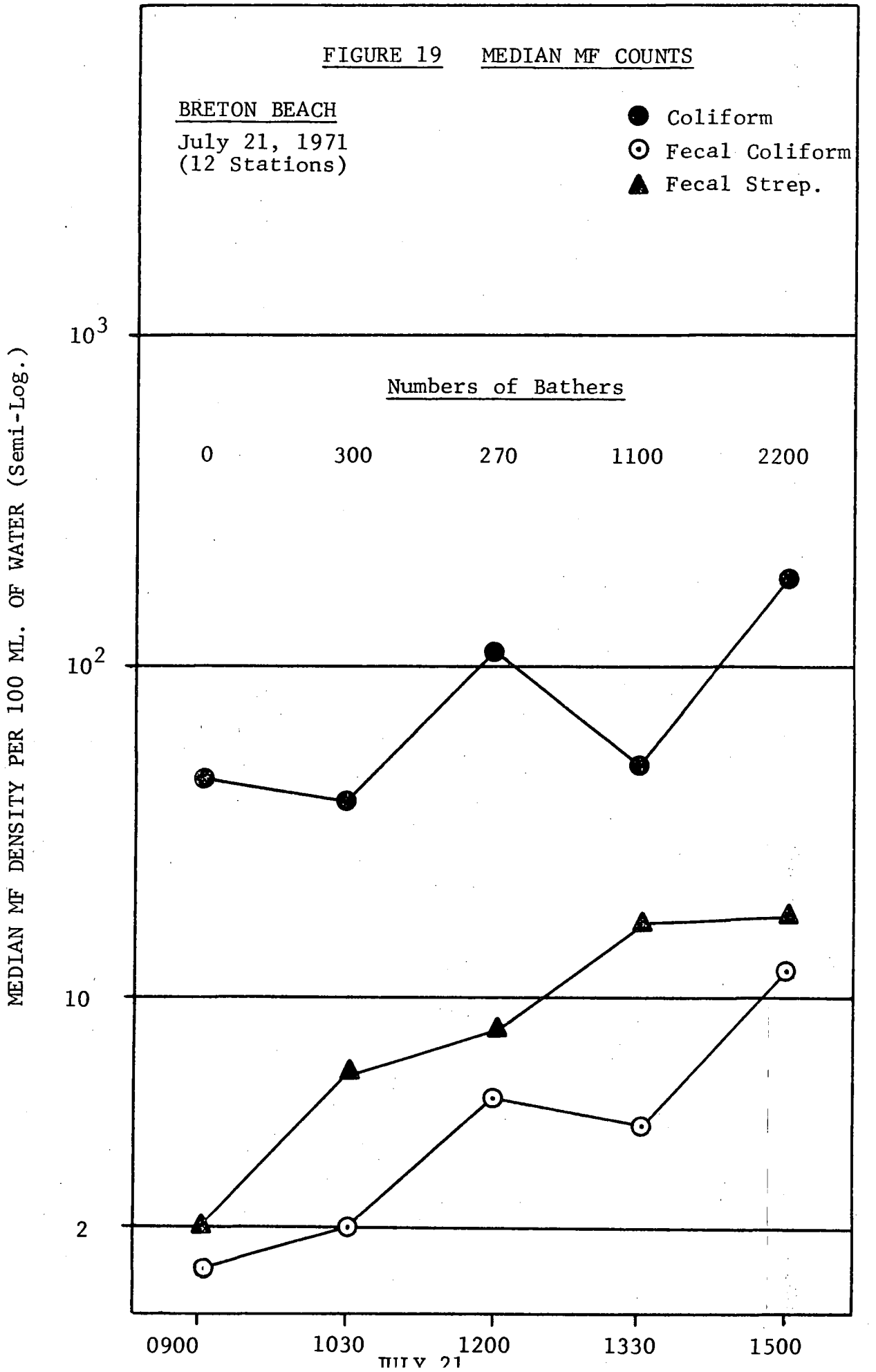


FIGURE 19 MEDIAN MF COUNTS
BRETON BEACH
July 21, 1971
(12 Stations)
Coliform
Fecal Coliform
Fecal Strep.
Numbers of Bathers
0
300
270
1100
2200
10^3
10^2
10
2
MEDIAN MF DENSITY PER 100 ML. OF WATER (Semi-Log.)
0900
1030
1200
1330
1500
JULY 21

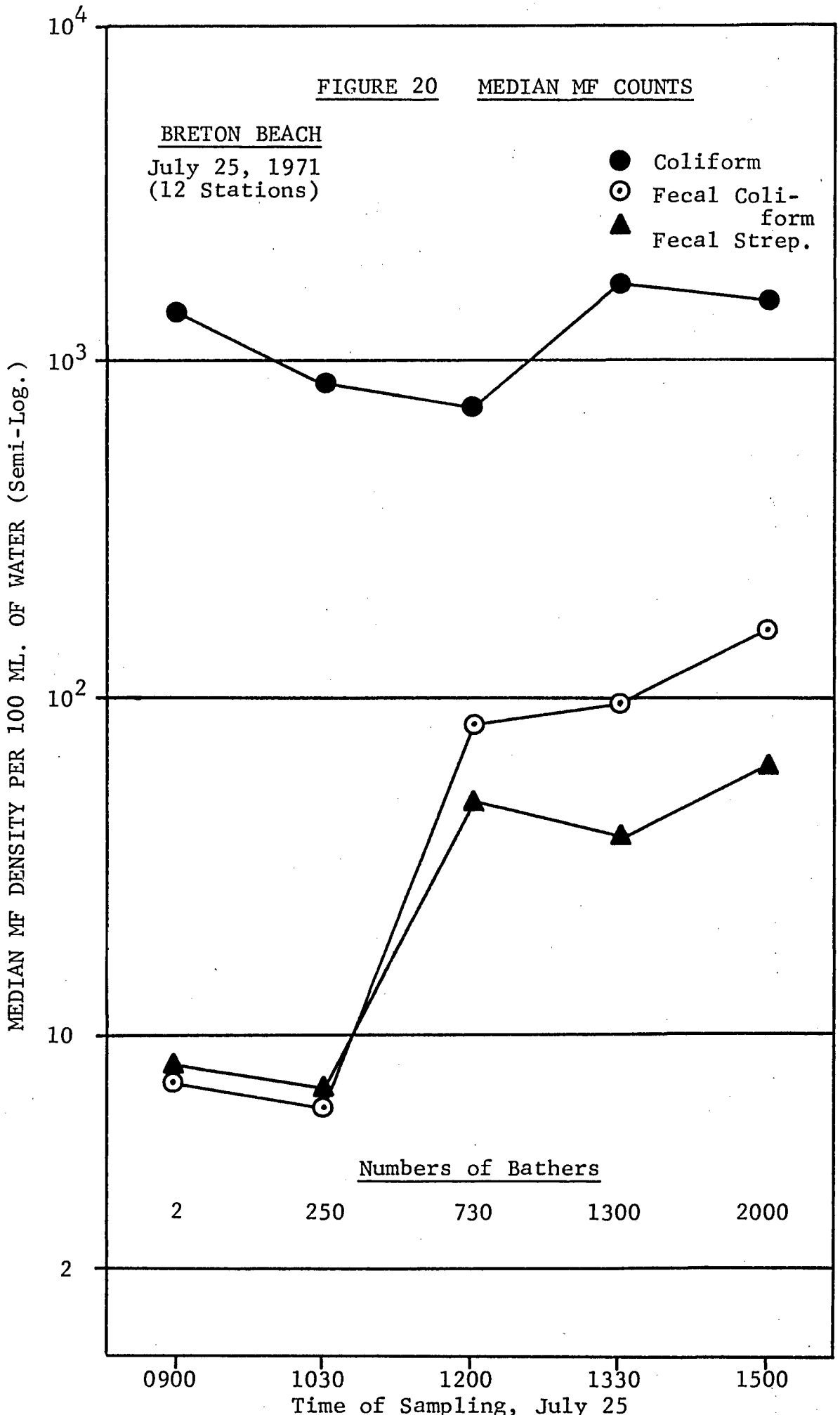


FIGURE 20 MEDIAN MF COUNTS
BRETON BEACH
July 25, 1971
(12 Stations)
Coliform
Fecal Coli-form
Fecal Strep.
MEDIAN MF DENSITY PER 100 ML. OF WATER (Semi-Log.)
10^4
10^3
10^2
10
2
Numbers of Bathers
2
250
730
1300
2000
0900
1030
1200
1330
1500
Time of Sampling, July 25

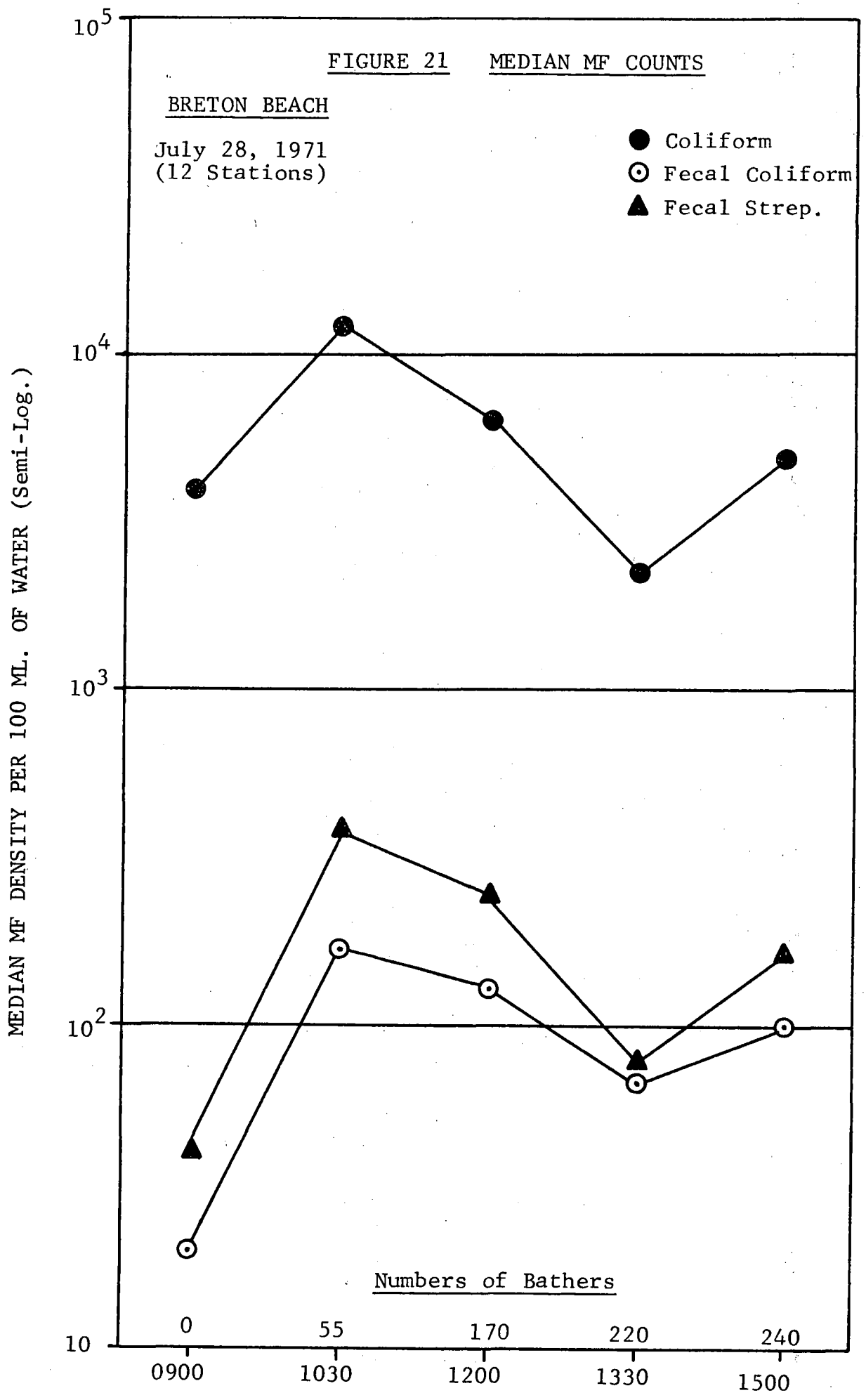


FIGURE 21 MEDIAN MF COUNTS
BRETON BEACH
July 28, 1971
(12 Stations)
Coliform
Fecal Coliform
Fecal Strep.
MEDIAN MF DENSITY PER 100 ML. OF WATER (Semi-Log.)
10^5
10^4
10^3
10^2
10
Numbers of Bathers
0
55
170
220
240
0900
1030
1200
1330
1500

suggested that major variations in the evaluation of the pollution status of an area may depend on where and how the control agency chooses to collect samples. In an attempt to evaluate this point, water samples were collected at points where the water was 1.5 feet deep (knee depth) as opposed to 3 to 4 feet deep (waist depth). Median MF counts (three parameters) for water samples from the two depths are compared, for the five beaches studied, in log.-log. scatter diagrams (Figures 22 to 28, inclusive).

Significantly larger numbers of all three index organisms were found at the shallower sampling depth. For the 82 median values compared, 58 (71 per cent) of the coliform and fecal streptococcus densities, and 65 (79 per cent) of the fecal coliform counts, for knee-depth samples were equal to or higher than those for the comparable waist-depth samples. This finding may be attributed to a concentration of younger bathers in the shallower waters, or to the resuspension of silt by bather or wave action. Examination of the data indicates, however, that depth-related variations in bacterial numbers were minor, and that selection of one sampling depth would not have materially affected the evaluation of pollution levels at any of the beaches studied.

FIGURE 22 MEDIAN MF COUNTS, KNEE AND WAIST SAMPLING DEPTHS, 1971 MEACH LAKE, BEACH NO. 1

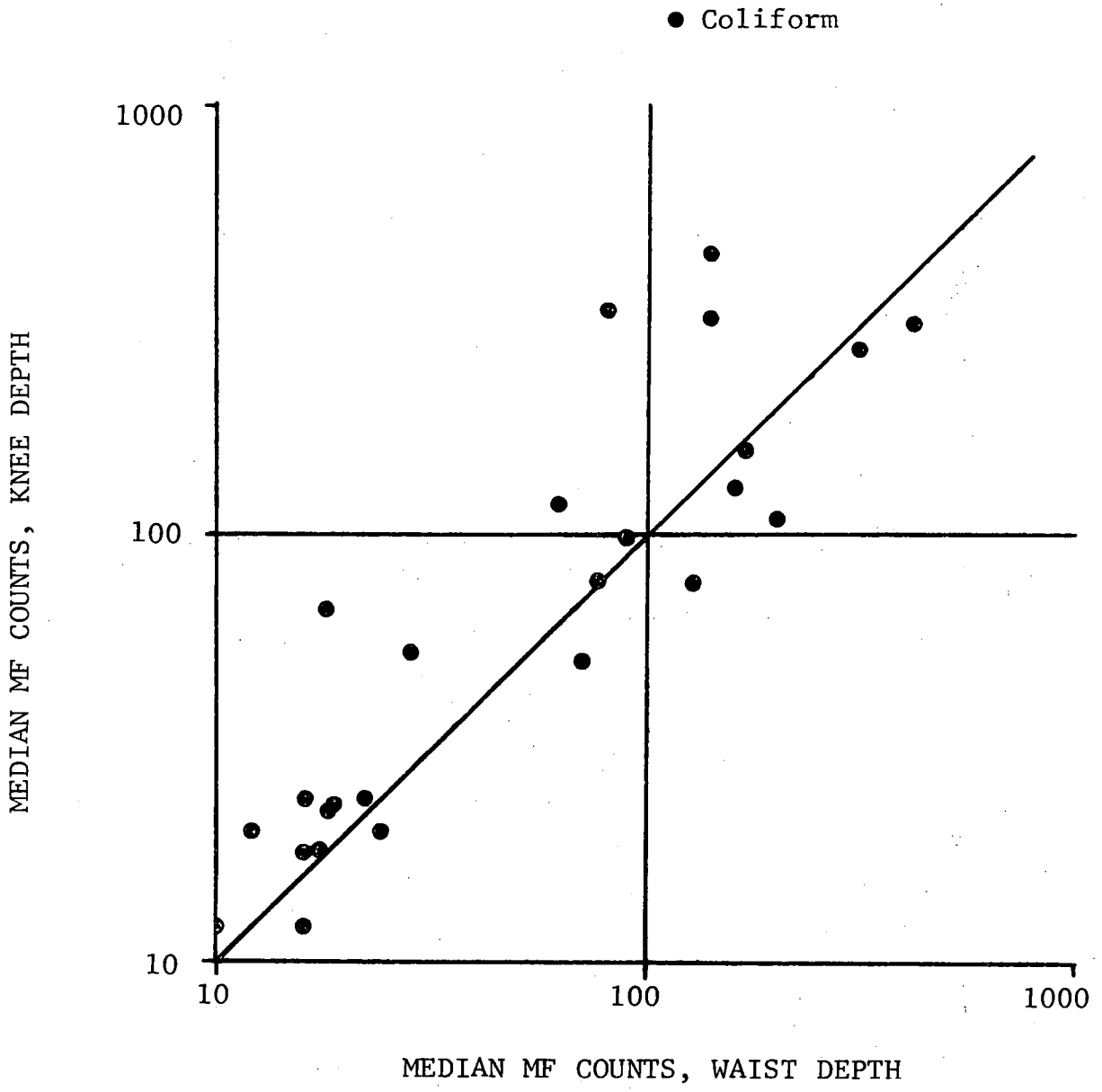


FIGURE 23 MEDIAN MF COUNTS, KNEE AND WAIST SAMPLING DEPTHS, 1971
MEACH LAKE,
BEACH NO. 3

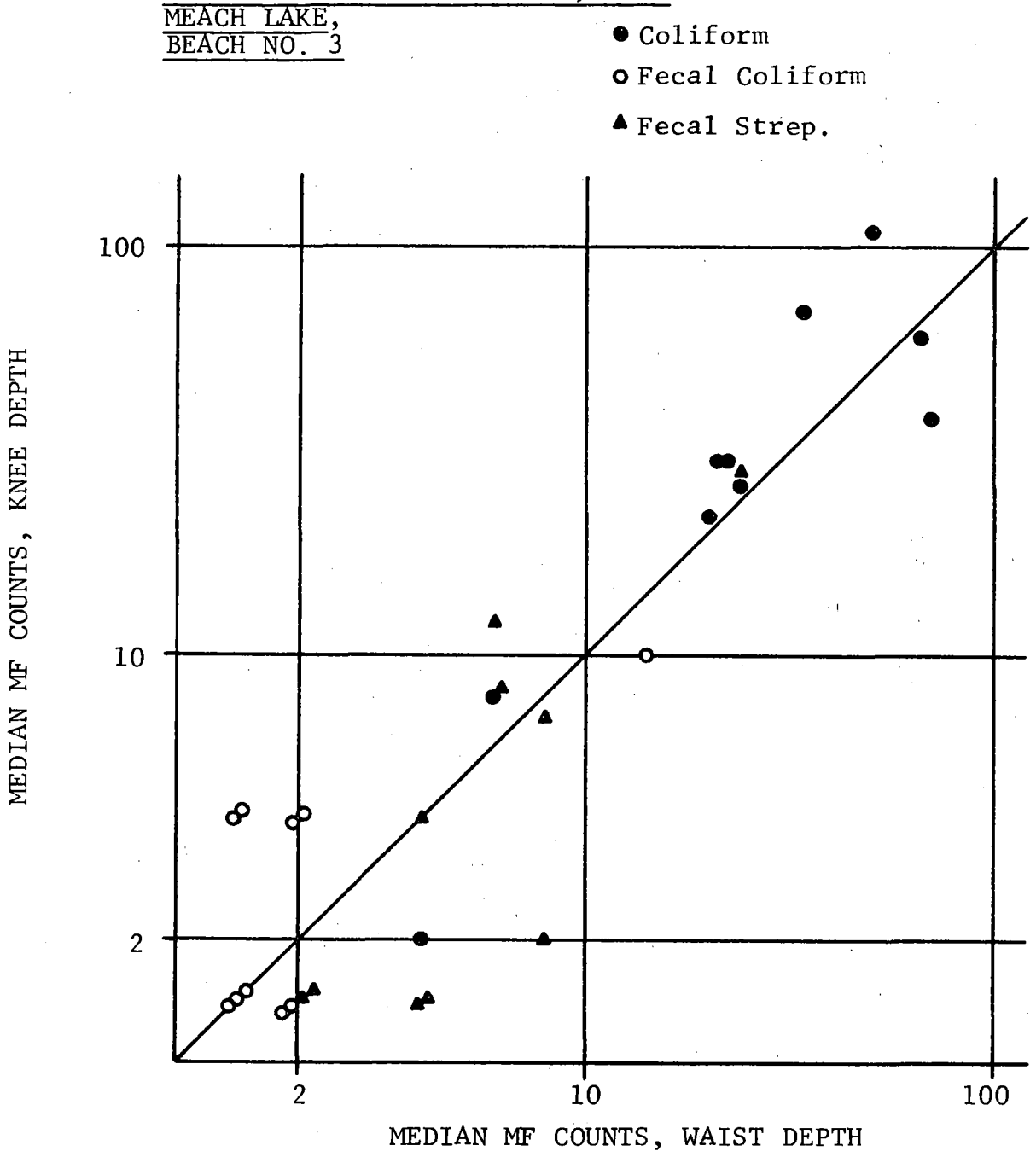


FIGURE 24 MEDIAN MF COUNTS, KNEE AND WAIST SAMPLING DEPTHS, 1971
MEACH LAKE,
BEACH NO. 1

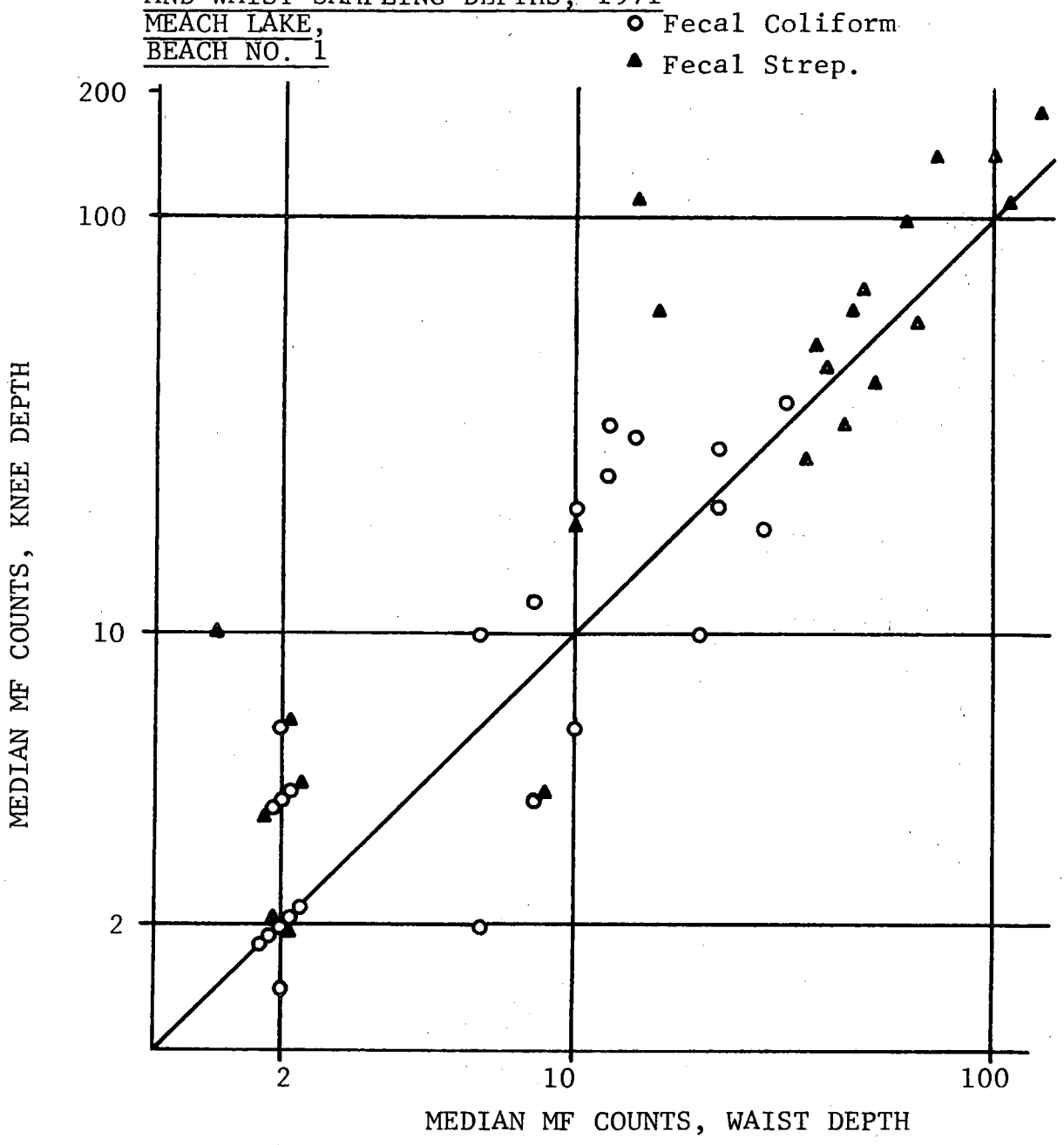


FIGURE 25 MEDIAN MF COUNTS, KNEE AND WAIST SAMPLING DEPTHS, 1971 PARENT BEACH

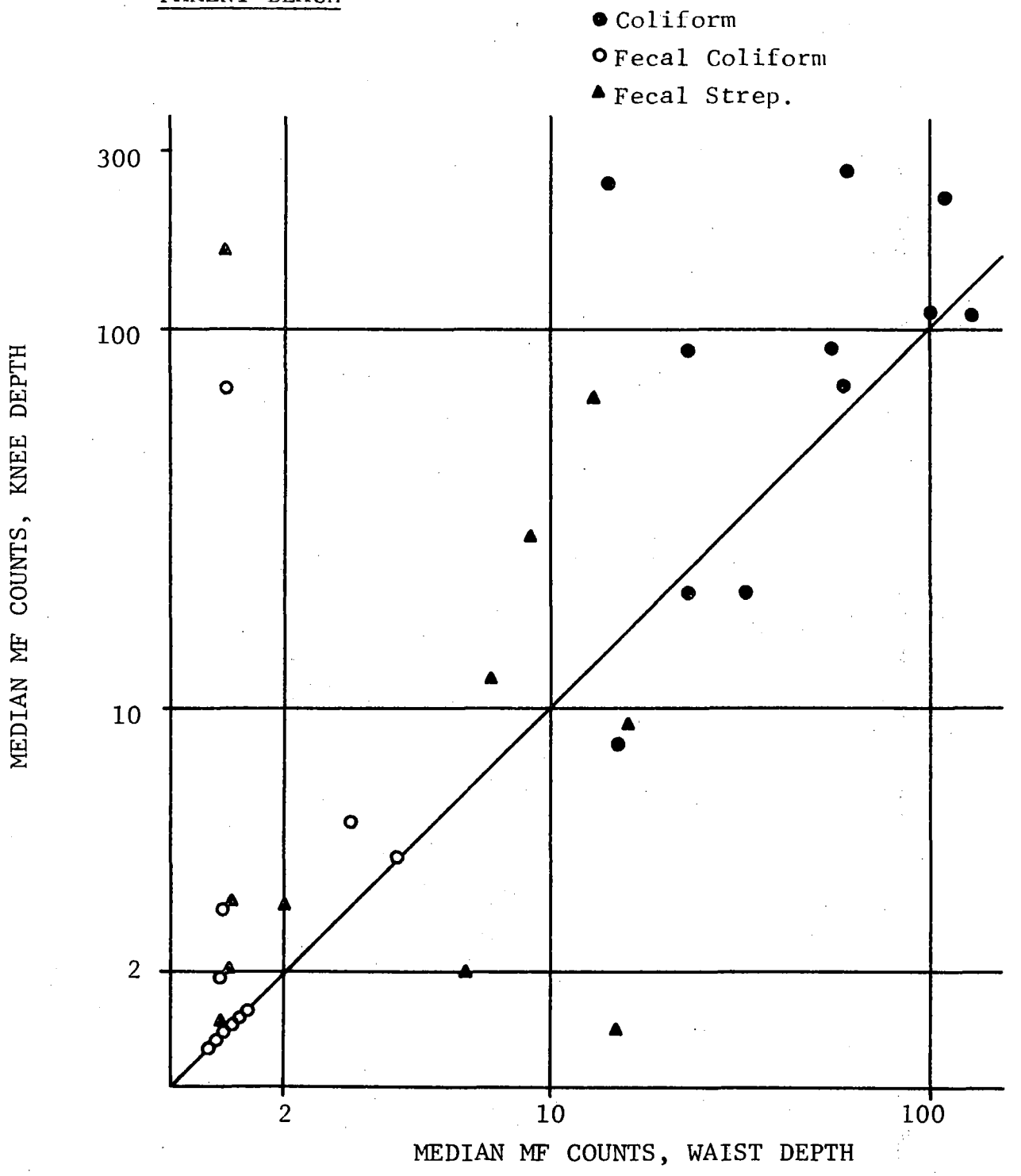


FIGURE 26 MEDIAN MF COUNTS, KNEE AND WAIST SAMPLING DEPTHS, 1971 SMITH BEACH

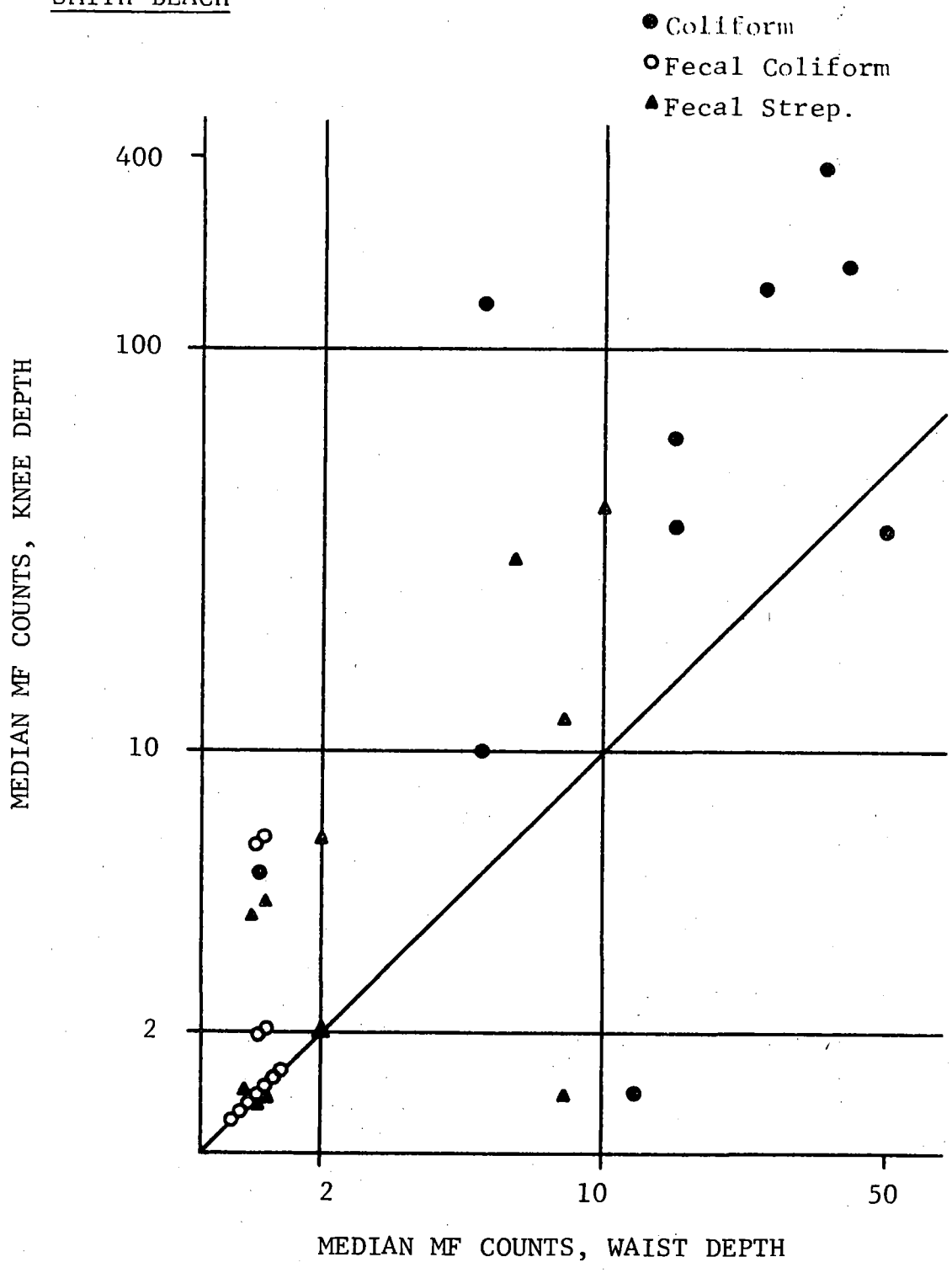


FIGURE 27 MEDIAN MF COUNTS, KNEE AND WAIST SAMPLING DEPTHS, 1971 BRETON BEACH

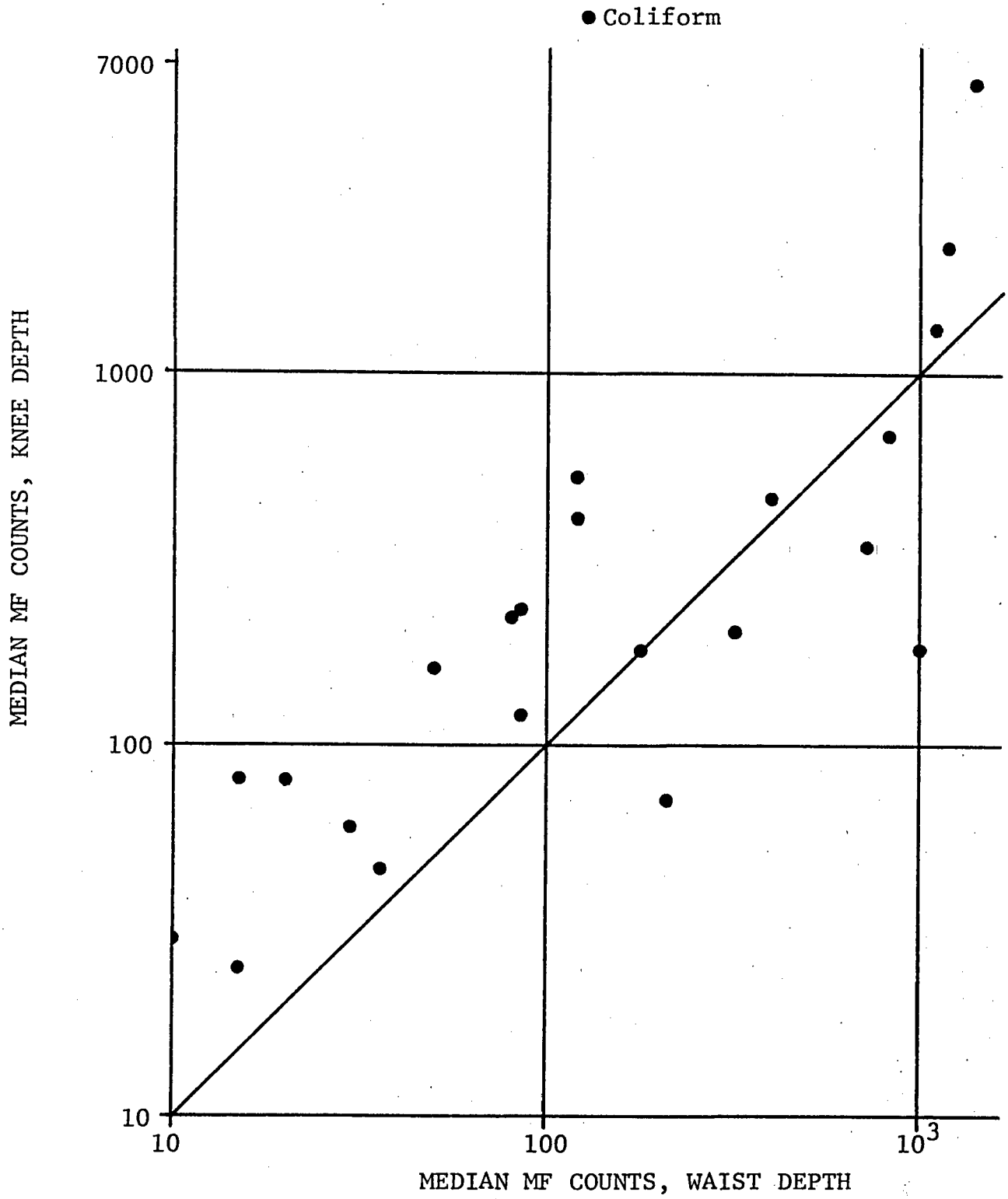
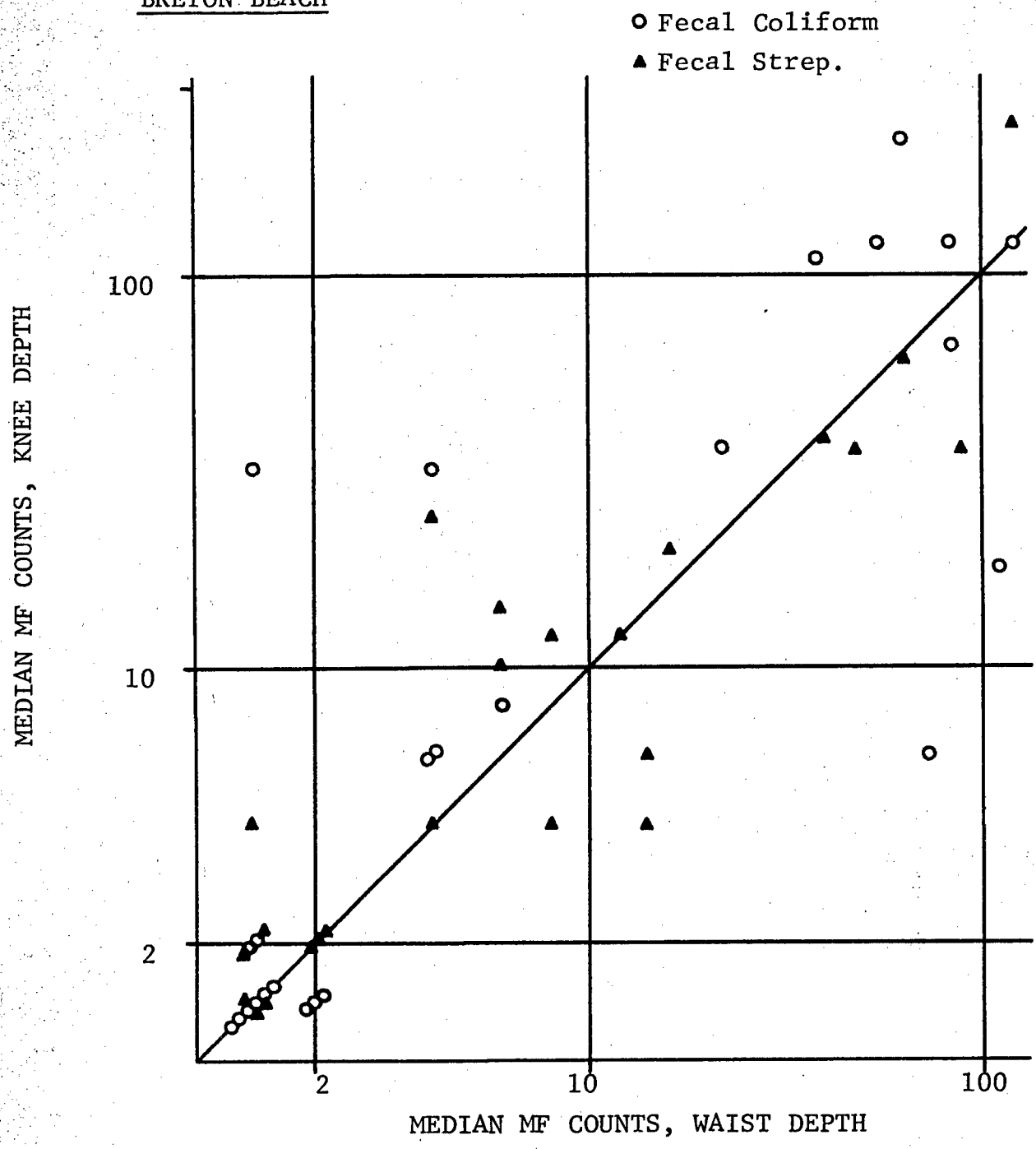


FIGURE 28 MEDIAN MF COUNTS, KNEE AND WAIST SAMPLING DEPTHS, 1971 BRETON BEACH



Stream Water Bacteriological Data

MF counts for the three standard bacteriological parameters, obtained for 5 water samples from each of 20 stream sampling points in Gatineau Park, are recorded in Appendix Table C-1. Median data are cited in Table 20. There was a wide variation in bacterial numbers at these stations during the study period. Samples collected in September generally had higher MF counts than those recorded in the June - August period, probably because of rainfall-induced landwash. For this reason, only 3 stations consistently met all 3 bacteriological objectives on all sampling dates. Median coliform and fecal coliform densities for 18 of the 20 stations met their respective objectives (1,000 and 200 per 100 ml.), while only 9 of 20 median fecal streptococcus counts were less than 100. The demonstrated tendency for fecal streptococcus counts to be considerably higher than fecal coliform counts recorded for the same samples indicates a probable animal origin for many of the pollution index bacteria isolated from these samples.

Only two stations (No. 16, stream at Lac Racine; No. 19, Riviere Lapeche) consistently had unsatisfactory counts for the 3 test parameters; investigation of probable pollution sources on their watersheds would seem to be warranted. All available evidence, however, indicates that

TABLE 20 MEDIAN BACTERIOLOGICAL DATA, STREAM WATER SAMPLES, GATINEAU PARK, 1971

Station No.	MF COUNT PER 100 ML. OF WATER		
	Coliform	Fecal Coliform	Fecal Streptococcus
2	540	18	48
3	970	88	330
4	1,000	130	210
5	1,000	94	220
6	520	48	120
7	470	40	100
8	64	4	64
9	110	14	36
10	940	90	300
11	530	70	100
12	400	60	280
13	120	4	26
14	700	46	70
15	560	16	110
16	4,000	430	1,500
17	540	80	90
18	800	100	270
19	4,400	300	800
20	350	10	180
21	280	6	44

minor pollution from low-volume stream flows represented by these 20 sampling stations has no significant effect on the bacteriological quality of the lakes into which these streams discharge.

Conclusions

Bacteriological data obtained during the 1971 Gatineau Park lake study support the following conclusions:

1. Four lakes (Lac Lapeche, Meach Lake, Lac Philippe and Pinks Lake) subjected to surveillance during the summer of 1971 were of consistently excellent bacteriological quality under all weather conditions. The 1971 results for the three pollution index parameters applied met established objectives for recreational water quality, and were virtually identical to the 1970 data for the same lakes.

2. An intensive bacteriological study of five public beaches on two lakes (Meach and Philippe), using standard and experimental parameters, showed that all beach area recreational waters were of good bacteriological quality and, under normal conditions, were free from significant amounts of pollution.

3. Potentially-hazardous pollution levels prevailed in the waters of Breton Beach, Lac Philippe, during a five-

day period following a major sewage overflow caused by a pump failure on July 23. The beach should have been closed to the public during this period. Through a combination of unfortunate circumstances, no action was taken, and the beach remained open for public bathing.

4. Presumptive evidence was obtained that increased bather activity at all beaches was consistently paralelled by an increase in the numbers of pollution index bacteria. Bathers may directly introduce bacteria; their activities also result in a resuspension of sedimented bacteria concentrated in bottom silt. It is probable that a major increase in beach use by bathers would result in significant degredation of water quality.

5. Water samples collected from shallow beach water sampling points had marginally-higher fecal bacterial counts than corresponding samples taken in deeper water. This was not a major factor in assessing the pollution status of a beach, but the need for careful standardization of sampling locations in future beach monitor studies is evident.

6. *Pseudomonas aeruginosa* densities in beach area water were consistently low; a majority of the tests were negative for this potential pathogen. Since the test procedure was cumbersome and unrewarding, its application

in the control of such high-quality recreational waters appears to be of doubtful value.

7. The study has demonstrated that fecal bacteria are concentrated in sediment (silt) deposited at the sand - water interface in beach areas.

8. Water samples from 20 stream sampling points in the Park varied widely with time in their bacteriological quality, but most were reasonably acceptable on the basis of median bacterial densities.

Recommendations

It is recommended that:

1. The present National Capital Commission policy of excluding the discharge of all domestic wastes to Gatineau Park lake and stream waters be maintained, so that no degradation of the excellent bacteriological quality will occur.

2. Provision be made by the National Capital Commission for effective control procedures which will immediately close beach areas to public bathing if the malfunction of pumps or other equipment results in the entry of sewage to lake waters.

3. A routine bacteriological water testing program be established to monitor water quality at each bathing

area in use by the public during the 1972 Park season, using sampling protocols to determined through consultation between the National Capital Commission and the Water Pollution Control Directorate, Environmental Protection Service.

References Cited

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3. Hoadley, A.W., 1967

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4. Drake, C.H., 1966

   Evaluation of culture media for the isolation and enumeration of Pseudomonas aeruginosa. Health Laboratory Science 3 : 1, 10 - 19.

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Contributors to the field and laboratory aspects of the study included:

Miss M. Beauchamp	Mr. J.P. Hayes
Mr. M.A. DeBellefeuille	Mr. R.M. Marion
Mr. J.L. Dixon, B.Sc.	Mr. J.E. Reid, M.Sc.
Mr. S.C. Fry	

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Appendix A. Tables A-1 to A-7.

Appendix B. Tables B-1 to B-6.

Appendix C. Tables C-1 and C-2.

TABLE A-1.1 (a). COLIFORM MF COUNTS, WATER SAMPLES, LAC LAPECHE, 1971

Sta. No.	COLIFORM MF COUNT PER 100 ML. OF WATER								
	4-6	16-6	30-6	13-7	26-7	12-8	23-8	9-9	Medians
7-14	58	32	8	750	60	6	490	390	59
7-15	28	110	30	22	30	2	900	18	29
7-16	8	60	40	48	30	14	220	10	35
7-17	14	58	20	86	120	14	430	22	40
7-18	12	<2	18	8	20	6	480	90	15
7-19	16	2	18	18	50	6	520	18	18
7-20	12	18	30	18	40	6	620	8	18
7-21	<2	62	18	34	40	34	760	6	34
7-22	2	10	6	30	16	32	360	12	14
7-23	10	4	16	24	8	68	620	10	13
7-24	10	8	4	30	14	36	260	22	18
7-25	4	2	4	48	18	22	740	18	18
7-26	2	2	6	4	40	44	680	14	10
7-27	18	<2	46	32	24	54	540	10	28
7-28	20	<2	26	34	50	62	380	16	30
7-29	12	4	8	38	18	62	520	10	15
7-30	4	10	12	48	14	24	360	10	13
7-31	4	4	12	58	34	18	230	10	15
7-32	8	2	34	44	130	62	70	10	39

TABLE A-1.1 (b). COLIFORM MF COUNTS, WATER SAMPLES, LAC LAPECHE, 1971

Sta. No.	COLIFORM MF COUNT PER 100 ML. OF WATER								
	4-6	16-6	30-6	13-7	26-7	12-8	23-8	9-9	Medians
7-33	8	4	6	32	28	52	640	10	19
7-34	2	24	18	34	20	66	280	8	22
7-35	2	2	6	24	12	32	110	12	12
7-36	4	4	12	30	4	60	240	10	11
7-37	10	2	26	8	40	54	300	6	18
7-38	4	<2	130	8	10	38	140	14	12
7-39	4	2	30	24	12	52	320	10	18
7-40	36	<2	54	30	12	44	240	8	33
7-41	160	2	52	70	8	34	180	10	43
7-42	20	<2	22	20	8	26	140	12	23
7-43	10	4	40	2	16	22	4	6	8
7-44	2	<2	12	20	12	32	24	8	12
7-45	2	6	28	18	30	52	12	<2	15
7-46	4	<2	20	12	20	28	50	8	16
7-47	<2	<2	12	18	12	38	2	6	9
7-48	<2	<2	10	8	14	34	26	8	9
7-49	30	<2	8	38	22	34	26	4	24
7-50	14	6	44	10	20	44	14	14	14
7-51	16	<2	34	2	32	48	12	14	15
Med.	9	2	19	27	20	34	270	10	18

TABLE A-1.2 (a). FECAL COLIFORM MF COUNTS, WATER SAMPLES, LAC LAPECHE, 1971

Sta. No.	FECAL COLIFORM MF COUNT PER 100 ML. OF WATER								
	4-6	16-6	30-6	13-7	26-7	12-8	23-8	9-9	Medians
7-14	<2	2	<2	<2	<2	<2	4	<2	<2
7-15	<2	2	<2	<2	<2	<2	<2	2	<2
7-16	<2	<2	<2	6	<2	<2	<2	2	<2
7-17	<2	<2	<2	4	<2	<2	2	4	<2
7-18	<2	<2	<2	<2	<2	<2	<2	<2	<2
7-19	<2	<2	<2	<2	<2	<2	2	<2	<2
7-20	<2	<2	<2	<2	<2	<2	<2	<2	<2
7-21	<2	<2	<2	<2	<2	<2	4	2	<2
7-22	<2	<2	<2	<2	<2	<2	<2	<2	<2
7-23	<2	<2	<2	<2	<2	<2	<2	<2	<2
7-24	2	<2	<2	2	2	<2	<2	2	<2
7-25	<2	<2	<2	<2	<2	<2	<2	<2	<2
7-26	<2	<2	<2	<2	<2	<2	<2	<2	<2
7-27	<2	<2	<2	<2	2	<2	<2	4	<2
7-28	<2	<2	<2	<2	2	<2	<2	<2	<2
7-29	<2	<2	<2	<2	2	<2	<2	<2	<2
7-30	<2	<2	<2	<2	<2	<2	<2	2	<2
7-31	<2	<2	<2	<2	<2	2	<2	2	<2
7-32	<2	<2	<2	<2	<2	2	<2	<2	<2

TABLE A-1.2(b). FECAL COLIFORM MF COUNTS, WATER SAMPLES, LAC LAPECHE, 1971

Sta. No.	FECAL COLIFORM MF COUNT PER 100 ML. OF WATER								
	4-6	16-6	30-6	13-7	26-7	12-8	23-8	9-9	Medians
7-33	<2	<2	<2	<2	<2	2	2	<2	<2
7-34	<2	<2	<2	<2	<2	<2	2	2	<2
7-35	<2	<2	<2	<2	<2	<2	<2	2	<2
7-36	<2	<2	<2	2	2	<2	2	2	<2
7-37	<2	<2	2	<2	<2	<2	<2	4	<2
7-38	<2	<2	<2	<2	<2	<2	<2	4	<2
7-39	4	2	<2	<2	<2	2	<2	2	<2
7-40	<2	<2	<2	<2	2	<2	<2	2	<2
7-41	70	<2	<2	<2	2	2	2	10	2
7-42	<2	<2	<2	<2	<2	2	2	8	<2
7-43	<2	<2	<2	2	<2	<2	<2	4	<2
7-44	2	<2	<2	<2	<2	<2	<2	8	<2
7-45	2	<2	<2	2	2	2	<2	<2	<2
7-46	<2	<2	<2	<2	4	<2	<2	4	<2
7-47	<2	<2	<2	<2	2	<2	<2	2	<2
7-48	<2	<2	<2	<2	<2	<2	4	8	<2
7-49	<2	<2	2	<2	2	2	2	<2	<2
7-50	<2	<2	<2	<2	<2	<2	<2	4	<2
7-51	<2	<2	<2	<2	2	<2	<2	6	<2
Med.	<2	<2	<2	<2	<2	<2	2	<2	<2

TABLE A-1.3(a). FECAL STREPTOCOCCUS MF COUNTS, WATER SAMPLES, LAC LAPECHE, 1971.

Sta. No.	FECAL STREP. MF COUNT PER 100 ML. OF WATER								
	4-6	16-6	30-6	13-7	26-7	12-8	23-8	9-9	Medians
7-14	<2	<2	6	40	2	2	<2	<2	<2
7-15	2	<2	18	46	8	<2	4	2	3
7-16	<2	2	6	110	<2	<2	2	<2	<2
7-17	2	<2	8	170	4	<2	<2	<2	<2
7-18	<2	<2	8	22	4	<2	4	<2	2
7-19	<2	<2	14	22	6	<2	<2	2	<2
7-20	<2	<2	28	24	4	<2	<2	<2	<2
7-21	<2	<2	4	4	8	<2	<2	4	2
7-22	<2	<2	4	2	<2	<2	<2	4	<2
7-23	<2	<2	<2	10	4	<2	<2	<2	<2
7-24	2	<2	2	4	<2	<2	<2	2	<2
7-25	2	<2	4	6	<2	<2	<2	<2	<2
7-26	<2	<2	6	4	2	<2	<2	<2	<2
7-27	<2	<2	4	6	<2	<2	2	<2	<2
7-28	<2	<2	8	<2	<2	<2	<2	2	<2
7-29	<2	<2	2	4	2	<2	<2	2	<2
7-30	<2	<2	6	8	<2	<2	<2	2	<2
7-31	2	<2	<2	16	2	<2	6	6	2
7-32	<2	<2	8	22	<2	6	2	2	2

TABLE A-1.3(b). FECAL STREPTOCOCCUS MF COUNTS, WATER SAMPLES, LAC LAPECHE, 1971

Sta. No.	FECAL STREP. MF COUNT PER 100 ML. OF WATER								
	4-6	16-6	30-6	13-7	26-7	12-8	23-8	9-9	Medians
7-33	<2	<2	4	4	4	2	4	<2	3
7-34	<2	<2	4	6	2	2	12	<2	2
7-35	<2	<2	2	2	<2	<2	2	<2	<2
7-36	<2	<2	<2	10	<2	6	4	4	2
7-37	2	<2	4	10	<2	<2	4	<2	<2
7-38	<2	<2	12	2	<2	<2	<2	<2	<2
7-39	<2	2	2	8	<2	<2	<2	2	<2
7-40	<2	<2	4	10	2	<2	<2	2	<2
7-41	<2	<2	10	700	<2	<2	2	4	<2
7-42	<2	<2	2	4	2	<2	2	<2	<2
7-43	<2	<2	8	8	<2	<2	<2	4	<2
7-44	<2	<2	2	18	<2	<2	<2	4	<2
7-45	<2	<2	2	4	2	<2	2	<2	<2
7-46	<2	<2	4	4	<2	<2	<2	2	<2
7-47	<2	<2	<2	8	<2	<2	<2	2	<2
7-48	<2	2	2	22	2	<2	6	<2	2
7-49	<2	<2	<2	2	2	<2	4	8	<2
7-50	<2	<2	<2	6	<2	<2	2	6	<2
7-51	<2	18	8	4	110	2	<2	8	6
Med.	<2	<2	2	8	<2	<2	<2	2	<2

TABLE A-2(a). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC LAPECHE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER Coliform	Fecal Coliform	Fecal Streptococcus
L-1	14-6	32	<2	<2
	21-6	52	2	2
	29-6	58	<2	2
	6-7	210	<2	8
	13-7	6	<2	4
	20-7	4	<2	<2
	26-7	12	<2	<2
	3-8	30	2	2
	10-8	80	<2	<2
	17-8	92	2	<2
	24-8	4	<2	<2
	31-8	<2	<2	<2
	Medians	31	<2	<2
L-2	14-6	24	<2	<2
	21-6	30	<2	<2
	29-6	64	<2	<2
	6-7	90	<2	12
	13-7	6	<2	4
	20-7	14	<2	2
	26-7	8	<2	<2
	3-8	68	2	2
	10-8	230	12	<2
	17-8	34	<2	<2
	24-8	4	<2	<2
	31-8	<2	<2	<2
	Medians	29	<2	<2

TABLE A-2(b). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC LAPECHE, 1971

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
L-3	14-6	18	<2	<2
	21-6	30	<2	2
	29-6	100	<2	2
	6-7	180	2	12
	13-7	14	<2	6
	20-7	10	<2	<2
	26-7	14	<2	<2
	3-8	54	14	2
	10-8	120	<2	4
	17-8	52	<2	<2
	24-8	2	<2	2
	31-8	<2	<2	2
	Medians	24	<2	2
L-4	14-6	8	<2	2
	21-6	16	<2	6
	29-6	22	<2	<2
	6-7	130	<2	22
	13-7	2	<2	4
	20-7	8	2	4
	26-7	4	<2	<2
	3-8	42	<2	<2
	10-8	380	4	8
	17-8	76	<2	<2
	24-8	<2	<2	<2
	31-8	<2	<2	<2
	Medians	12	<2	<2

TABLE A-2(c). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC LAPECHE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
L-5	14-6	4	<2	4
	21-6	22	<2	<2
	29-6	40	<2	<2
	6-7	50	<2	6
	13-7	4	<2	2
	20-7	8	<2	6
	26-7	30	<2	<2
	3-8	10	<2	<2
	10-8	250	4	4
	17-8	50	<2	<2
	24-8	2	<2	2
	31-8	2	<2	<2
	Medians	16	<2	<2
L-6	14-6	6	<2	<2
	21-6	16	<2	<2
	29-6	90	<2	<2
	6-7	110	<2	36
	13-7	8	<2	12
	20-7	4	<2	4
	26-7	34	<2	<2
	3-8	18	<2	<2
	10-8	240	10	2
	17-8	68	<2	2
	24-8	2	2	<2
	31-8	2	2	<2
	Medians	17	<2	<2
All Stations	Medians	20	<2	<2

TABLE A-3.1(a). COLIFORM MF COUNTS, WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	COLIFORM MF COUNT PER 10 ML. OF WATER								
	26-5	10-6	21-6	16-7	3-8	18-8	2-9	15-9	Medians
10-1	24	74	190	18	30	22	16	30	27
10-2	8	120	54	34	40	16	<2	12	25
10-3	4	28	16	12	20	4	4	20	14
10-4	2	18	20	16	20	14	8	18	17
10-5	2	6	10	16	26	8	10	18	10
10-6	<2	4	16	8	24	18	4	8	8
10-7	6	8	24	10	16	26	6	20	13
10-8	2	12	34	6	14	42	16	22	15
10-9	2	8	32	4	50	14	<2	24	11
10-10	6	16	24	8	12	8	8	14	10
10-11	6	16	28	16	20	30	12	26	18
10-12	<2	46	32	28	110	24	22	24	26
10-13	140	72	110	12	2	26	28	22	27
10-14	150	30	56	14	18	12	4	20	19
10-15	76	26	52	16	6	14	2	14	15
10-16	2	22	42	8	16	20	4	28	18
10-17	<2	10	36	16	8	30	6	8	9
10-18	<2	18	48	20	36	18	2	16	19
10-19	<2	18	50	12	60	56	6	20	19
10-20	2	12	66	20	30	48	8	16	18
10-21	2	26	74	4	14	10	26	14	14
10-22	<2	10	12	14	20	38	14	26	14
10-23	<2	4	8	6	8	-	8	20	8
10-24	<2	4	6	8	14	16	6	10	7
10-25	2	2	2	2	30	8	6	6	4

TABLE A-3.1(b). COLIFORM MF COUNTS, WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	COLIFORM MF COUNT PER 100 ML. OF WATER								
	26-5	10-6	21-6	16-7	3-8	18-8	2-9	15-9	Medians
10-26	<2	2	12	8	40	24	2	22	10
10-27	<2	4	8	4	20	12	2	28	6
10-28	2	6	16	10	18	30	6	28	13
10-29	<2	20	24	20	10	20	24	32	22
10-30	<2	12	6	16	12	8	8	24	10
10-31	<2	6	18	14	6	14	4	32	10
10-32	2	2	30	18	26	16	14	26	17
10-33	2	16	10	8	12	32	8	48	11
10-34	<2	10	140	14	30	42	8	28	21
10-35	<2	4	88	<2	40	64	18	26	22
10-36	4	2	-	10	56	56	20	30	20
10-37	2	20	46	26	28	70	36	36	32
10-38	2	6	42	22	24	20	52	22	22
10-39	2	10	30	12	8	20	14	490	13
10-40	<2	<2	20	8	4	22	8	18	8
10-41	<2	2	10	2	6	14	6	12	6
10-42	<2	<2	8	8	20	10	6	10	8
10-43	2	6	12	8	8	16	<2	20	8
10-44	<2	4	10	20	6	14	10	46	10
10-45	2	2	140	18	8	20	12	16	14
10-46	<2	26	280	84	170	10	6	24	25
10-47	12	8	140	24	12	24	2	20	16
Med.	2	10	29	12	20	20	8	22	14

TABLE A-3.2(a). FECAL COLIFORM MF COUNTS, WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	FECAL COLIFORM MF COUNT PER 100 ML. OF WATER								
	26-5	10-6	21-6	16-7	3-8	18-8	2-9	15-9	Medians
10-1	2	12	26	4	<2	4	<2	2	3
10-2	<2	8	20	4	<2	<2	<2	6	2
10-3	2	10	4	<2	<2	<2	<2	<2	<2
10-4	<2	4	<2	<2	<2	2	<2	<2	<2
10-5	2	2	4	<2	<2	<2	<2	2	<2
10-6	<2	4	2	<2	<2	<2	<2	<2	<2
10-7	2	2	2	<2	<2	<2	<2	2	<2
10-8	<2	2	4	<2	<2	<2	<2	<2	<2
10-9	4	<2	<2	<2	<2	2	<2	2	<2
10-10	2	<2	8	<2	<2	4	<2	<2	<2
10-11	<2	4	<2	<2	<2	<2	<2	2	<2
10-12	<2	2	2	<2	<2	<2	<2	<2	<2
10-13	22	6	18	2	2	2	28	<2	4
10-14	8	2	2	2	<2	<2	<2	<2	<2
10-15	2	2	<2	<2	2	<2	<2	<2	<2
10-16	2	<2	<2	<2	2	<2	4	<2	<2
10-17	<2	2	6	<2	<2	<2	<2	<2	<2
10-18	<2	2	6	<2	<2	<2	2	2	<2
10-19	<2	2	4	2	<2	<2	<2	<2	<2
10-20	<2	2	6	4	2	<2	2	<2	2
10-21	<2	4	8	<2	2	<2	<2	<2	<2
10-22	<2	2	<2	<2	<2	<2	<2	2	<2
10-23	2	4	4	<2	<2	-	<2	<2	<2
10-24	<2	4	<2	<2	<2	<2	<2	<2	<2
10-25	<2	2	<2	<2	<2	<2	2	<2	<2

TABLE A-3.2(b). FECAL COLIFORM MF COUNTS, WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	FECAL COLIFORM MF COUNT PER 100 ML. OF WATER								
	26-5	10-6	21-6	16-7	3-8	18-8	2-9	15-9	Medians
10-26	<2	2	<2	<2	<2	<2	<2	2	<2
10-27	<2	2	4	<2	<2	<2	<2	<2	<2
10-28	<2	4	<2	<2	2	<2	<2	2	<2
10-29	<2	2	<2	<2	<2	<2	<2	<2	<2
10-30	<2	2	<2	<2	<2	<2	<2	2	<2
10-31	<2	6	<2	<2	<2	<2	<2	2	<2
10-32	<2	2	4	<2	2	<2	<2	<2	<2
10-33	<2	<2	6	<2	<2	<2	<2	6	<2
10-34	<2	<2	36	4	2	2	<2	4	2
10-35	<2	4	30	2	2	<2	<2	2	2
10-36	2	<2	-	<2	2	8	<2	4	2
10-37	<2	2	10	<2	6	<2	<2	<2	<2
10-38	<2	<2	4	<2	<2	<2	2	<2	<2
10-39	<2	2	2	<2	<2	<2	<2	2	<2
10-40	2	<2	4	<2	4	4	<2	<2	<2
10-41	<2	2	4	<2	<2	<2	<2	2	<2
10-42	<2	<2	2	<2	<2	2	<2	<2	<2
10-43	<2	<2	8	<2	<2	<2	<2	2	<2
10-44	<2	4	<2	<2	<2	<2	<2	2	<2
10-45	<2	2	40	<2	<2	<2	<2	2	<2
10-46	<2	4	30	<2	<2	<2	<2	2	<2
10-47	<2	2	34	<2	2	<2	<2	<2	<2
Med.	<2	2	4	<2	<2	<2	<2	<2	<2

TABLE A-3.3(a). FECAL STREPTOCOCCUS MF COUNTS, WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	FECAL STREP. MF COUNT PER 100 ML. OF WATER								
	26-5	10-6	21-6	16-7	3-8	18-8	2-9	15-9	Medians
10-1	6	18	42	2	6	2	2	<2	4
10-2	<2	8	18	8	<2	4	<2	<2	2
10-3	<2	<2	2	4	<2	<2	2	<2	<2
10-4	<2	2	2	2	2	<2	<2	<2	<2
10-5	<2	<2	<2	<2	<2	<2	<2	<2	<2
10-6	<2	2	2	2	<2	<2	<2	<2	<2
10-7	<2	<2	4	<2	<2	<2	<2	2	<2
10-8	<2	<2	2	8	4	<2	2	<2	<2
10-9	<2	<2	6	14	4	2	<2	4	3
10-10	<2	<2	2	10	<2	<2	<2	2	<2
10-11	2	<2	<2	2	<2	<2	<2	<2	<2
10-12	<2	<2	2	<2	<2	<2	2	<2	<2
10-13	44	2	26	4	2	<2	<2	<2	2
10-14	58	<2	6	4	<2	<2	<2	<2	<2
10-15	14	<2	6	4	<2	<2	<2	2	<2
10-16	<2	2	<2	4	<2	<2	<2	2	<2
10-17	<2	<2	6	2	6	4	<2	2	2
10-18	<2	<2	2	2	2	<2	<2	<2	<2
10-19	<2	<2	4	<2	<2	<2	8	<2	<2
10-20	<2	<2	22	26	2	<2	<2	<2	<2
10-21	2	<2	26	2	4	<2	4	6	3
10-22	<2	2	10	2	<2	2	4	4	2
10-23	<2	<2	4	2	<2	-	<2	<2	<2
10-24	<2	<2	2	2	<2	<2	<2	2	<2
10-25	<2	<2	<2	<2	<2	<2	<2	<2	<2

TABLE A-3.3(b). FECAL STREPTOCOCCUS MF COUNTS, WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	FECAL STREP. MF COUNT PER 100 ML. OF WATER								
	26-5	10-6	21-6	16-7	3-8	18-8	2-9	15-9	Medians
10-26	<2	<2	2	<2	<2	<2	<2	2	<2
10-27	<2	<2	4	<2	<2	<2	<2	<2	<2
10-28	<2	2	4	<2	<2	4	<2	<2	<2
10-29	<2	<2	<2	<2	<2	2	<2	4	<2
10-30	<2	<2	2	2	<2	2	<2	<2	<2
10-31	<2	<2	2	2	<2	<2	<2	<2	<2
10-32	<2	<2	8	4	<2	<2	<2	2	<2
10-33	<2	<2	<2	6	2	<2	<2	<2	<2
10-34	<2	<2	22	6	<2	<2	<2	<2	<2
10-35	<2	2	16	6	<2	2	2	2	2
10-36	2	2	-	6	<2	6	<2	<2	2
10-37	<2	<2	8	8	4	2	<2	<2	<2
10-38	<2	<2	4	10	<2	<2	<2	<2	<2
10-39	<2	2	4	2	<2	<2	<2	<2	<2
10-40	<2	2	<2	2	<2	<2	2	<2	<2
10-41	<2	<2	<2	<2	<2	4	<2	<2	<2
10-42	<2	<2	2	<2	<2	<2	<2	4	<2
10-43	2	<2	4	4	2	<2	<2	6	2
10-44	<2	2	<2	4	<2	<2	<2	<2	<2
10-45	2	<2	58	6	<2	<2	<2	2	<2
10-46	<2	2	120	2	<2	<2	<2	2	<2
10-47	<2	<2	38	16	6	2	<2	4	3
Med.	<2	<2	4	2	<2	<2	<2	<2	<2

TABLE A-4. BACTERIOLOGICAL DATA, STREAM WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
R-1	26-5	100	4	50
	10-6	80	24	64
	21-6	970	42	180
	16-7	660	20	180
	3-8	360	2	70
	18-8	260	6	110
	2-9	510	6	86
	15-9	1,200	64	130
	Medians	440	13	98
R-2	26-5	4	2	24
	31-5	4	<2	2
	10-6	22	2	8
	14-6	8	4	<2
	21-6	100	12	50
	28-6	10	<2	8
	16-7	40	8	50
	19-7	90	2	32
	3-8	100	<2	28
	18-8	100	<2	32
	2-9	250	<2	4
	15-9	130	4	6
	Medians	65	2	16
R-3	26-5	300	100	26
	10-6	150	58	54
	21-6	580	220	240
	16-7	460	160	150
	3-8	3,100	850	90
	18-8	2,100	140	310
	2-9	140	62	90
	15-9	270	8	44
	Medians	380	120	90
R-4	26-5	100	14	36
	10-6	11,000	360	50
	21-6	1,100	82	240
	16-7	7,500	690	150
	3-8	470	<2	90
	18-8	900	4	310
	2-9	5,500	4	90
	15-9	610	4	130
	Medians	1,000	9	110

TABLE A-5.1(a). COLIFORM MF COUNTS, WATER SAMPLES LAC PHILIPPE, 1971

Sta. No.	COLIFORM MF COUNT PER 100 ML. OF WATER								
	27-5	7-6	24-6	5-7	20-7	6-8	19-8	7-9	Medians
12-1	28	44	110	24	38	16	48	110	41
12-2	16	300	120	28	20	20	44	110	36
12-3	6	10	200	80	72	10	100	360	76
12-4	14	20	140	46	22	-	36	66	36
12-5	6	290	90	52	14	6	52	200	52
12-6	16	78	170	180	14	8	12	110	47
12-7	<2	6	100	10	22	4	52	62	16
12-8	<2	8	76	20	16	10	30	20	18
12-9	8	130	40	46	32	16	4	36	34
12-10	2	46	40	26	40	6	14	20	23
12-11	4	42	30	22	50	4	34	42	32
12-12	2	42	24	960	40	48	54	26	41
12-13	<2	68	36	60	34	18	20	18	27
12-14	4	18	20	12	10	24	6	36	15
12-15	2	4	40	28	22	4	8	40	15
12-16	8	16	44	18	20	10	6	44	17
12-17	2	32	42	100	38	22	10	28	30
12-18	2	14	44	100	130	20	-	40	40
12-19	8	24	40	100	44	10	12	82	32
12-20	4	16	46	70	60	28	16	38	33
12-21	2	<2	38	70	32	12	8	60	22
12-22	4	4	34	18	30	22	18	38	20
12-23	<2	2	50	26	18	20	6	46	19
12-24	<2	26	110	42	34	46	58	120	44
12-25	52	35	62	56	130	58	14	140	57

TABLE A-5.1(b). COLIFORM MF COUNTS, WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	COLIFORM MF COUNT PER 100 ML. OF WATER								
	27-5	7-6	24-6	5-7	20-7	6-8	19-8	7-9	Medians
12-26	20	10	170	22	44	30	220	28	29
12-27	2	6	48	20	34	10	82	26	27
12-28	6	2	46	30	20	16	34	64	25
12-29	8	4	68	18	20	2	20	48	19
12-30	2	<2	92	6	16	<2	10	26	8
12-31	<2	<2	44	6	16	6	18	42	11
12-32	<2	<2	12	12	14	6	18	20	12
12-33	4	24	56	20	8	2	32	130	22
12-34	4	20	74	26	14	4	14	160	16
12-35	2	2	40	12	14	<2	36	140	13
12-36	2	4	44	14	46	2	6	48	10
12-37	2	<2	26	8	8	10	18	12	10
12-38	<2	2	28	6	12	4	24	12	9
12-39	<2	2	22	4	10	2	4	4	4
12-40	<2	<2	28	14	8	6	10	24	9
12-41	2	<2	22	18	10	4	14	12	11
12-42	2	<2	26	12	8	<2	6	4	5
12-43	<2	8	16	10	16	4	10	2	9
12-44	<2	2	22	22	6	2	6	14	6
12-45	2	<2	24	2	<2	8	4	20	5
12-46	6	10	44	14	20	2	8	56	12
12-47	8	2	54	36	20	<2	8	26	14
Med.	2	8	44	22	20	10	15	40	20

TABLE A-5.2(a). FECAL COLIFORM MF COUNTS, WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	FECAL COLIFORM MF COUNT PER 100 ML. OF WATER								
	27-5	7-6	24-6	5-7	20-7	6-8	19-8	7-9	Medians
12-1	2	2	<2	<2	<2	<2	<2	<2	<2
12-2	2	84	<2	<2	<2	<2	2	<2	<2
12-3	2	2	2	<2	<2	<2	<2	<2	<2
12-4	2	2	<2	2	<2	-	<2	<2	<2
12-5	<2	2	<2	<2	2	<2	<2	24	<2
12-6	<2	<2	2	<2	2	2	2	4	2
12-7	<2	<2	2	<2	<2	<2	<2	<2	<2
12-8	<2	2	2	<2	<2	<2	2	<2	<2
12-9	4	<2	<2	<2	4	<2	<2	<2	<2
12-10	<2	<2	2	<2	<2	<2	<2	<2	<2
12-11	2	<2	<2	<2	<2	2	<2	<2	<2
12-12	2	2	<2	250	<2	16	<2	2	2
12-13	<2	<2	<2	36	<2	2	<2	<2	<2
12-14	2	<2	2	<2	<2	<2	<2	<2	<2
12-15	<2	2	<2	<2	<2	<2	<2	2	<2
12-16	<2	<2	<2	<2	<2	<2	<2	<2	<2
12-17	<2	<2	2	40	<2	<2	<2	<2	<2
12-18	<2	<2	<2	48	<2	<2	-	2	<2
12-19	2	<2	2	4	<2	<2	<2	4	2
12-20	<2	<2	<2	2	<2	<2	<2	2	<2
12-21	<2	<2	2	6	2	<2	<2	<2	<2
12-22	<2	2	<2	2	<2	<2	<2	2	<2
12-23	<2	<2	<2	2	<2	<2	<2	4	<2
12-24	<2	<2	2	2	2	14	2	6	2
12-25	6	<2	<2	<2	<2	8	<2	8	<2

TABLE A-5.2(b) FECAL COLIFORM MF COUNTS, WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	FECAL COLIFORM MF COUNT PER 100 ML. OF WATER								
	27-5	7-6	24-6	5-7	20-7	6-8	19-8	7-9	Medians
12-26	14	2	<2	<2	<2	2	2	<2	2
12-27	<2	<2	<2	<2	<2	<2	<2	<2	<2
12-28	4	<2	<2	<2	<2	<2	<2	<2	<2
12-29	4	<2	<2	2	2	<2	<2	6	2
12-30	<2	<2	<2	<2	<2	<2	<2	<2	<2
12-31	<2	<2	<2	<2	<2	<2	<2	<2	<2
12-32	<2	<2	2	2	<2	<2	<2	<2	<2
12-33	<2	<2	<2	<2	<2	<2	<2	16	<2
12-34	2	<2	2	<2	2	<2	2	16	2
12-35	<2	<2	2	<2	<2	<2	<2	8	<2
12-36	2	<2	<2	<2	2	<2	<2	4	<2
12-37	<2	<2	<2	<2	<2	<2	<2	<2	<2
12-38	<2	<2	<2	<2	<2	2	<2	<2	<2
12-39	<2	2	<2	<2	<2	<2	<2	<2	<2
12-40	<2	<2	<2	<2	<2	<2	<2	<2	<2
12-41	<2	<2	<2	<2	<2	<2	<2	<2	<2
12-42	<2	<2	2	<2	<2	<2	<2	<2	<2
12-43	<2	<2	2	<2	<2	<2	<2	<2	<2
12-44	<2	<2	<2	<2	<2	<2	<2	2	<2
12-45	2	<2	<2	<2	<2	<2	<2	<2	<2
12-46	<2	<2	<2	<2	2	<2	<2	6	<2
12-47	<2	<2	6	<2	2	<2	<2	4	<2
Med.	<2	<2	<2	<2	<2	<2	<2	<2	<2

TABLE A-5.3(a). FECAL STREPTOCOCCUS MF COUNTS, WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	FECAL STREP. MF COUNT PER 100 ML. OF WATER								
	27-5	7-6	24-6	5-7	20-7	6-8	19-8	7-9	Medians
12-1	<2	<2	6	2	4	<2	<2	12	2
12-2	2	4	2	22	<2	<2	2	4	2
12-3	<2	<2	2	16	<2	<2	6	22	2
12-4	<2	<2	2	24	4	-	<2	20	2
12-5	<2	10	4	2	<2	2	<2	150	2
12-6	<2	4	12	34	<2	<2	<2	64	2
12-7	<2	<2	16	6	2	<2	<2	2	2
12-8	<2	<2	4	<2	<2	<2	<2	<2	<2
12-9	<2	2	<2	14	4	<2	<2	<2	<2
12-10	<2	<2	<2	2	2	<2	<2	2	<2
12-11	<2	<2	<2	6	2	<2	<2	2	<2
12-12	<2	2	<2	24	<2	10	<2	2	2
12-13	6	<2	4	4	6	<2	<2	<2	2
12-14	<2	<2	<2	6	<2	<2	<2	2	<2
12-15	2	<2	4	2	4	<2	<2	<2	2
12-16	6	<2	2	2	4	<2	<2	6	2
12-17	<2	<2	2	<2	<2	<2	<2	<2	<2
12-18	<2	<2	<2	6	2	2	-	8	2
12-19	<2	2	8	24	<2	<2	<2	8	2
12-20	2	<2	<2	4	<2	<2	<2	8	<2
12-21	<2	<2	<2	4	4	4	<2	10	2
12-22	<2	<2	4	4	2	<2	<2	2	2
12-23	<2	<2	<2	8	<2	2	<2	<2	<2
12-24	2	<2	6	32	<2	<2	<2	52	2
12-25	18	6	2	16	4	4	<2	14	5

TABLE A-5.3(b). FECAL STREPTOCOCCI MF COUNTS, WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	FECAL STREP. MF COUNT PER 100 ML. OF WATER								
	27-5	7-6	24-6	5-7	20-7	6-8	19-8	7-9	Medians
12-26	6	<2	10	8	4	2	<2	4	4
12-27	<2	2	2	6	2	<2	<2	<2	2
12-28	<2	<2	4	8	<2	<2	2	<2	<2
12-29	4	<2	<2	<2	<2	<2	2	6	<2
12-30	2	<2	<2	6	6	<2	<2	<2	<2
12-31	<2	<2	6	<2	2	2	<2	2	2
12-32	<2	<2	<2	<2	2	<2	<2	<2	<2
12-33	6	2	<2	2	2	<2	2	14	2
12-34	2	16	2	18	6	<2	<2	14	4
12-35	<2	2	4	2	4	<2	2	12	3
12-36	<2	2	<2	4	4	<2	<2	4	2
12-37	<2	<2	<2	<2	<2	2	2	<2	<2
12-38	<2	<2	2	2	<2	<2	<2	<2	<2
12-39	<2	<2	<2	2	<2	<2	<2	<2	<2
12-40	<2	<2	<2	<2	2	<2	<2	2	<2
12-41	<2	<2	4	6	2	2	<2	4	2
12-42	<2	2	2	4	<2	<2	<2	<2	<2
12-43	<2	<2	<2	10	4	<2	2	<2	<2
12-44	<2	<2	<2	14	<2	<2	<2	2	<2
12-45	<2	<2	2	4	<2	<2	<2	2	<2
12-46	<2	<2	<2	4	4	2	<2	4	2
12-47	2	<2	2	12	2	4	<2	<2	2
Med.	<2	<2	2	6	2	<2	<2	2	<2

TABLE A-6. BACTERIOLOGICAL DATA STREAM WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER Coliform	Fecal Coliform	Fecal Streptococcus
E	27-5	280	30	58
	7-6	2,400	32	58
	11-6	2,500	40	50
	15-6	4,800	12	90
	24-6	8,100	36	240
	29-6	3,900	14	310
	5-7	2,800	36	4,400
	15-7	2,900	130	920
	20-7	2,100	44	120
	6-8	4,400	32	460
	19-8	490	28	640
	27-8	370	14	350
	7-9	160	6	8
	10-9	360	32	730
	Medians	2,500	32	280
H	27-5	10	2	12
	7-6	<2	<2	2
	11-6	30	8	16
	15-6	38	4	8
	24-6	120	4	62
	29-6	14	14	18
	5-7	64	8	16
	15-7	1,000	22	600
	20-7	810	6	80
	6-8	1,300	26	86
	19-8	770	2	46
	27-8	220	4	130
	7-9	610	22	96
	Medians	220	6	46

TABLE A-7.1. COLIFORM MF COUNTS, WATER SAMPLES, PINKS LAKE, 1971

Sta. No.	COLIFORM MF COUNT PER 100 ML. OF WATER								
	2-6	17-6	2-7	12-7	27-7	10-8	24-8	8-9	Medians
13-1	110	510	210	80	1400	860	890	350	430
13-2	120	320	460	6	200	190	130	2	160
13-3	40	460	350	14	160	390	110	24	140
13-4	18	250	86	10	250	64	90	10	75
13-5	22	190	150	8	210	26	160	8	88
13-6	32	54	70	8	190	40	64	22	47
13-7	10	34	94	32	180	54	58	22	44
13-8	6	270	88	12	96	34	120	36	62
13-9	42	38	68	2	94	130	70	28	55
13-10	12	64	70	<2	160	160	56	38	60
13-11	46	78	92	8	170	36	52	38	49
13-12	8	68	100	<2	190	20	38	32	35
13-13	4	64	130	<2	300	14	46	28	37
13-14	22	44	88	<2	170	24	38	40	39
13-15	14	130	72	<2	88	66	84	28	69
13-16	6	170	150	24	150	50	88	38	69
13-17	12	220	140	30	170	64	100	46	82
13-18	8	150	110	18	190	50	190	64	87
13-19	2	94	140	<2	220	34	92	22	63
13-20	6	190	180	36	200	110	170	24	140
Med.	13	140	110	8	190	52	89	28	64

TABLE A-7.2. FECAL COLIFORM MF COUNTS, WATER SAMPLES, PINKS LAKE, 1971.

Sta. No.	FECAL COLIFORM MF COUNT PER 100 ML. OF WATER								
	2-6	17-6	2-7	12-7	27-7	10-8	24-8	8-9	Medians
13-1	<2	<2	8	<2	140	64	6	18	7
13-2	<2	<2	6	<2	10	14	2	<2	2
13-3	<2	<2	8	<2	10	62	6	<2	3
13-4	<2	<2	2	<2	6	2	<2	<2	<2
13-5	<2	<2	6	<2	24	2	8	<2	2
13-6	<2	<2	4	<2	24	2	<2	<2	<2
13-7	<2	<2	6	<2	24	<2	<2	<2	<2
13-8	<2	<2	4	<2	12	2	<2	<2	<2
13-9	<2	2	4	<2	4	18	4	2	3
13-10	<2	<2	2	<2	32	6	6	<2	2
13-11	<2	<2	<2	<2	28	2	<2	<2	2
13-12	<2	<2	2	<2	60	2	2	<2	2
13-13	<2	<2	4	<2	48	2	4	<2	2
13-14	<2	<2	2	<2	28	2	2	2	2
13-15	<2	<2	<2	<2	16	8	2	<2	2
13-16	<2	<2	8	<2	<2	10	2	<2	<2
13-17	<2	36	2	2	24	<2	2	<2	2
13-18	<2	<2	4	<2	40	4	<2	<2	<2
13-19	<2	<2	2	<2	40	2	12	2	2
13-20	<2	2	2	2	30	2	4	2	2
Med.	<2	<2	4	<2	24	2	2	<2	<2

TABLE A-7.3. FECAL STREPTOCOCCUS MF COUNTS, WATER SAMPLES, PINKS LAKE, 1971.

Sta. No.	FECAL STREP. MF COUNT PER 100 ML. OF WATER								
	2-6	17-6	2-7	12-7	27-7	10-8	24-8	8-9	Medians
13-1	<2	<2	18	30	110	68	20	92	25
13-2	<2	2	14	6	10	12	<2	<2	4
13-3	2	<2	22	<2	6	86	<2	<2	2
13-4	<2	<2	24	2	14	2	<2	<2	2
13-5	<2	<2	8	<2	18	6	<2	<2	<2
13-6	<2	<2	6	2	26	2	<2	<2	2
13-7	<2	<2	2	4	52	<2	<2	4	2
13-8	<2	<2	10	2	6	2	<2	2	2
13-9	<2	<2	2	2	16	6	<2	2	2
13-10	<2	<2	4	2	28	12	<2	<2	2
13-11	<2	<2	2	2	36	4	2	<2	2
13-12	<2	<2	<2	2	46	<2	<2	2	<2
13-13	<2	<2	2	2	66	<2	6	<2	2
13-14	<2	<2	8	<2	42	2	2	4	2
13-15	<2	<2	2	2	14	4	<2	2	2
13-16	<2	<2	10	4	18	8	2	2	3
13-17	<2	2	8	14	40	16	2	4	6
13-18	<2	<2	6	12	46	8	4	<2	5
13-19	<2	<2	2	2	72	8	2	<2	2
13-20	<2	4	4	14	64	32	4	<2	4
Med.	<2	<2	6	2	32	6	<2	<2	2

TABLE B-1(a). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M1-1	26-5	8	2	<2
	31-5	8	<2	<2
	10-6	12	6	2
	14-6	58	4	<2
	21-6	100	6	36
	28-6	16	<2	<2
	*6-7	16	<2	8
	8-7 (0900)	10	2	14
	8-7 (1000)	34	10	22
	8-7 (1100)	32	6	38
	8-7 (1200)	80	8	40
	8-7 (1300)	140	16	24
	8-7 (1400)	780	80	210
	8-7 (1500)	170	30	100
	11-7 (0900)	24	2	30
	11-7 (1000)	14	2	20
	11-7 (1100)	14	<2	20
	11-7 (1200)	18	<2	26
	11-7 (1300)	330	30	170
	11-7 (1400)	320	22	200
	11-7 (1500)	180	40	390
	19-7	80	2	12
	*27-7	220	30	78
	3-8	610	100	54
	*17-8	24	<2	6
	18-8	24	2	4
	*24-8	300	48	90
	1-9	14	<2	<2
	15-9	32	<2	<2
	Medians	32	4	22

* Samples Collected by NCC Staff

TABLE B-1(b). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M1-2	26-5	10	<2	<2
	31-5	18	<2	<2
	10-6	4	2	<2
	14-6	18	6	<2
	21-6	140	32	38
	28-6	24	6	2
	*6-7	36	<2	18
	8-7 (0900)	12	2	12
	8-7 (1000)	10	2	36
	8-7 (1100)	90	18	300
	8-7 (1200)	150	8	40
	8-7 (1300)	110	10	32
	8-7 (1400)	460	64	190
	8-7 (1500)	380	38	72
	11-7 (0900)	18	8	52
	11-7 (1000)	16	2	24
	11-7 (1100)	18	<2	48
	11-7 (1200)	62	12	370
	11-7 (1300)	1,500	100	420
	11-7 (1400)	170	14	230
	11-7 (1500)	210	20	140
	19-7	70	2	16
	*27-7	200	24	44
	3-8	170	8	16
	*17-8	32	4	4
	18-8	14	2	4
	*24-8	240	44	170
	1-9	12	<2	2
	15-9	1,000	56	20
	Medians	62	8	32

* Samples Collected by NCC Staff

TABLE B-1(c). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M1-3	26-5	<2	<2	<2
	31-5	6	2	<2
	10-6	26	<2	<2
	14-6	30	2	<2
	21-6	120	20	24
	28-6	12	<2	6
	*6-7	36	2	160
	8-7 (0900)	6	2	8
	8-7 (1000)	4	<2	18
	8-7 (1100)	10	4	14
	8-7 (1200)	32	8	30
	8-7 (1300)	60	24	22
	8-7 (1400)	190	24	30
	8-7 (1500)	170	36	120
	11-7 (0900)	18	8	22
	11-7 (1000)	12	<2	20
	11-7 (1100)	20	2	92
	11-7 (1200)	78	32	180
	11-7 (1300)	80	12	92
	11-7 (1400)	220	18	290
	11-7 (1500)	36	18	100
	19-7	26	<2	8
	*27-7	140	14	70
	3-8	150	16	8
	*17-8	52	8	4
	18-8	32	4	4
	*24-8	200	24	160
	1-9	4	<2	8
	15-9	290	72	8
	Medians	36	8	20

* Samples Collected by NCC Staff

TABLE B-1(d). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M1-4	26-5	6	<2	<2
	31-5	4	2	<2
	10-6	18	2	2
	14-6	64	2	2
	21-6	110	38	12
	28-6	4	<2	2
	*6-7	28	2	420
	8-7 (0900)	12	2	20
	8-7 (1000)	36	14	40
	8-7 (1100)	12	2	34
	8-7 (1200)	60	14	36
	8-7 (1300)	52	4	98
	8-7 (1400)	80	28	62
	8-7 (1500)	170	8	44
	11-7 (0900)	8	8	44
	11-7 (1000)	18	10	56
	11-7 (1100)	18	2	44
	11-7 (1200)	110	56	110
	11-7 (1300)	130	10	100
	11-7 (1400)	140	22	120
	11-7 (1500)	200	10	250
	19-7	58	<2	2
	*27-7	300	30	66
	3-8	40	6	4
	*17-8	42	<2	<2
	18-8	18	2	2
	*24-8	260	24	50
	1-9	22	4	2
	15-9	70	10	8
	Medians	42	6	36

* Samples Collected by NCC Staff

TABLE B-1(e). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M1-5	26-5	18	<2	<2
	31-5	44	<2	66
	10-6	24	2	2
	14-6	52	2	2
	21-6	200	34	36
	28-6	22	2	<2
	*6-7	28	4	8
	8-7 (0900)	14	8	24
	8-7 (1000)	20	2	30
	8-7 (1100)	22	8	28
	8-7 (1200)	140	42	130
	8-7 (1300)	52	2	76
	8-7 (1400)	220	30	72
	8-7 (1500)	120	6	44
	11-7 (0900)	14	6	54
	11-7 (1000)	12	2	44
	11-7 (1100)	16	2	56
	11-7 (1200)	14	6	84
	11-7 (1300)	120	20	170
	11-7 (1400)	190	22	150
	11-7 (1500)	160	2	110
	19-7	80	<2	8
	*27-7	260	20	24
	3-8	210	22	50
	*17-8	56	4	2
	18-8	20	<2	<2
	*24-8	170	20	100
	1-9	20	2	4
	15-9	52	2	8
	Medians	52	4	36

* Samples Collected by NCC Staff

TABLE B-1(f). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M1-6	26-5	<2	<2	2
	31-5	18	4	18
	10-6	56	6	4
	14-6	28	<2	2
	21-6	920	22	50
	28-6	30	6	<2
	*6-7	16	2	8
	8-7 (0900)	14	2	14
	8-7 (1000)	8	2	26
	8-7 (1100)	150	10	72
	8-7 (1200)	130	30	120
	8-7 (1300)	78	8	46
	8-7 (1400)	160	16	54
	8-7 (1500)	310	12	66
	11-7 (0900)	16	2	20
	11-7 (1000)	12	<2	44
	11-7 (1100)	8	6	68
	11-7 (1200)	42	10	100
	11-7 (1300)	140	22	90
	11-7 (1400)	170	22	130
	11-7 (1500)	200	24	480
	19-7	90	2	10
	*27-7	220	30	46
	3-8	80	2	64
	*17-8	34	2	2
	18-8	16	<2	2
	*24-8	90	<2	32
	1-9	26	2	<2
	15-9	410	<2	4
	Medians	56	4	32

* Samples Collected by NCC Staff

TABLE B-1(g). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M1-7	26-5	6	<2	<2
	31-5	14	<2	6
	10-6	18	4	<2
	14-6	32	2	<2
	21-6	300	40	40
	28-6	140	6	12
	*6-7	30	10	14
	8-7 (0900)	14	2	82
	8-7 (1000)	2,100	74	820
	8-7 (1100)	140	<2	120
	8-7 (1200)	80	<2	40
	8-7 (1300)	70	8	54
	8-7 (1400)	120	12	52
	8-7 (1500)	100	8	80
	11-7 (0900)	12	6	32
	11-7 (1000)	8	2	24
	11-7 (1100)	6	2	72
	11-7 (1200)	98	30	270
	11-7 (1300)	900	110	900
	11-7 (1400)	480	44	370
	11-7 (1500)	140	10	300
	19-7	100	<2	10
	*27-7	320	12	50
	3-8	170	2	60
	*17-8	38	6	8
	18-8	38	10	6
	*24-8	180	2	56
	1-9	40	4	800
	15-9	8	<2	8
	Medians	80	6	50

* Samples Collected by NCC Staff

TABLE B-1(h). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M1-2A	31-5	10	<2	2
	10-6	48	2	2
	14-6	16	4	<2
	21-6	250	28	28
	28-6	14	2	4
	8-7 (0900)	46	12	110
	8-7 (1000)	26	4	38
	8-7 (1100)	70	6	34
	8-7 (1200)	80	4	44
	8-7 (1300)	80	12	60
	8-7 (1400)	490	110	340
	8-7 (1500)	330	24	90
	11-7 (0900)	22	4	40
	11-7 (1000)	12	<2	32
	11-7 (1100)	22	<2	80
	11-7 (1200)	120	32	68
	11-7 (1300)	340	54	760
	11-7 (1400)	1,000	98	1,200
	11-7 (1500)	110	10	180
	19-7	70	2	28
	3-8	600	78	60
	18-8	26	2	6
	1-9	8	<2	2
	15-9	370	20	18
	Medians	70	5	39
M1-4A	31-5	130	4	96
	10-6	210	12	6
	14-6	52	6	2
	21-6	450	64	60
	28-6	20	2	2

TABLE B-1(i). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M1-4A	8-7 (0900)	14	4	18
	8-7 (1000)	10	6	26
	8-7 (1100)	110	12	140
	8-7 (1200)	140	30	38
	8-7 (1300)	54	10	46
	8-7 (1400)	90	18	42
	8-7 (1500)	130	20	56
	11-7 (0900)	18	4	44
	11-7 (1000)	20	4	32
	11-7 (1100)	12	2	68
	11-7 (1200)	140	120	110
	11-7 (1300)	320	16	140
	11-7 (1400)	150	28	110
	11-7 (1500)	90	10	150
	19-7	40	2	4
	3-8	330	10	26
	18-8	24	<2	4
	1-9	60	2	22
	15-9	310	24	<2
	Medians	90	10	40
M1-6A	31-5	22	10	10
	10-6	66	<2	<2
	14-6	72	2	8
	21-6	450	36	50
	28-6	76	24	8
	8-7 (0900)	20	6	190
	8-7 (1000)	12	4	16
	8-7 (1100)	100	6	210
	8-7 (1200)	70	32	96
	8-7 (1300)	150	12	650
	8-7 (1400)	130	14	98
	8-7 (1500)	270	24	54

TABLE B-1(j). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M1-6A	11-7 (0900)	12	2	28
	11-7 (1000)	8	2	44
	11-7 (1100)	24	4	38
	11-7 (1200)	82	16	360
	11-7 (1300)	110	20	130
	11-7 (1400)	160	24	180
	11-7 (1500)	260	34	610
	19-7	50	<2	18
	3-8	110	2	70
	18-8	16	<2	2
	1-9	24	2	6
	15-9	32	<2	4
	Medians	74	6	47
M3-1	26-5	6	2	<2
	31-5	10	4	<2
	10-6	14	10	4
	14-6	14	<2	<2
	21-6	36	4	6
	*6-7	40	6	400
	19-7	100	<2	6
	*27-7	340	2	10
	3-8	80	8	16
	*17-8	34	<2	4
	18-8	46	<2	<2
	*24-8	26	4	2
	1-9	14	<2	<2
	15-9	34	2	6
	Medians	34	2	5

* Samples Collected by NCC Staff

TABLE B-1(k). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M3-2	26-5	2	<2	<2
	31-5	4	<2	<2
	10-6	6	2	2
	14-6	14	<2	6
	21-6	50	5	6
	28-6	24	2	<2
	*6-7	32	4	110
	19-7	90	<2	8
	*27-7	460	<2	<2
	3-8	30	<2	2
	*17-8	32	<2	<2
	18-8	44	2	10
	*24-8	8	4	<2
	1-9	18	2	<2
	15-9	70	2	4
	Medians	32	2	2
M3-3	26-5	2	<2	<2
	31-5	<2	<2	2
	10-6	24	<2	8
	14-6	10	<2	6
	21-6	38	4	6
	28-6	16	4	2
	*6-7	24	6	130
	19-7	42	2	6
	*27-7	500	4	<2
	3-8	70	2	2
	*17-8	50	<2	<2
	18-8	42	<2	2
	*24-8	26	<2	2
	1-9	18	<2	4
	15-9	150	<2	8
	Medians	26	<2	2

* Samples Collected by NCC Staff

TABLE B-1(1). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M3-4	26-5	<2	<2	<2
	31-5	2	<2	<2
	10-6	28	2	2
	14-6	14	2	2
	21-6	48	4	2
	28-6	26	<2	8
	*6-7	32	8	22
	19-7	140	<2	12
	*27-7	420	<2	<2
	3-8	68	6	20
	*17-8	38	<2	2
	18-8	46	<2	2
	*24-8	16	<2	<2
	1-9	4	<2	<2
	15-9	180	2	32
	Medians	32	<2	2
M3-5	26-5	2	<2	<2
	31-5	10	2	2
	10-6	12	2	2
	14-6	18	<2	4
	21-6	42	<2	8
	28-6	26	4	4
	*6-7	70	20	110
	19-7	80	<2	12
	*27-7	240	10	2
	3-8	14	2	20

* Samples Collected by NCC Staff

TABLE B-1(m). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M3-5	*17-8	32	<2	<2
	18-8	56	<2	<2
	*24-8	16	<2	<2
	1-9	16	4	2
	15-9	250	2	26
	Medians	26	2	2
M3-6	26-5	4	<2	<2
	31-5	6	2	2
	10-6	18	2	2
	14-6	20	2	8
	21-6	16	<2	6
	28-6	18	<2	8
	*6-7	100	16	60
	19-7	44	2	4
	*26-7	180	2	6
	3-8	34	14	24
	*17-8	20	<2	<2
	18-8	22	<2	4
	*24-8	20	<2	4
	1-9	12	<2	4
	15-9	190	<2	4
	Medians	20	<2	4
M3-7	26-5	6	2	2
	31-5	6	2	2
	10-6	34	2	2
	14-6	38	4	8
	21-6	82	<2	12

*Samples Collected by NCC Staff

TABLE B-1(n). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
M3-7	28-6	20	<2	<2
	*6-7	130	20	68
	19-7	110	4	12
	*27-7	80	<2	12
	3-8	80	6	30
	*17-8	88	<2	6
	18-8	52	<2	2
	*24-8	34	2	<2
	1-9	4	<2	<2
	15-9	36	<2	4
	Medians	38	2	4
M3-8	26-5	6	2	<2
	31-5	4	<2	4
	10-6	2	2	<2
	14-6	28	4	10
	21-6	60	<2	26
	28-6	22	2	8
	*6-7	80	20	62
	19-7	66	4	6
	*27-7	74	2	18
	3-8	60	28	54
	*17-8	48	<2	<2
	18-8	18	<2	<2
	*24-8	24	2	2
	1-9	24	<2	4
	15-9	32	2	2
	Medians	28	2	6

* Samples Collected by NCC Staff

TABLE B-1(o). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, MEACH LAKE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER Coliform	Fecal Coliform	Fecal Streptococcus
M3-2A	31-5	<2	<2	<2
	10-6	2	2	<2
	14-6	16	<2	2
	21-6	68	4	6
	28-6	28	8	8
	19-7	60	4	14
	3-8	70	<2	68
	18-8	30	<2	<2
	1-9	34	2	4
	15-9	38	<2	<2
	Medians	32	2	3
M3-6A	31-5	2	<2	<2
	10-6	8	4	<2
	14-6	32	4	2
	21-6	110	<2	12
	28-6	32	<2	6
	19-7	92	<2	2
	3-8	70	10	28
	18-8	22	<2	2
	1-9	26	<2	10
	15-9	38	<2	<2
	Medians	32	<2	2
M3-8A	31-5	8	<2	<2
	10-6	42	6	2
	14-6	22	4	6
	21-6	320	16	48
	19-7	24	<2	8
	3-8	110	24	20
	18-8	44	2	<2
	1-9	10	<2	<2
	15-9	360	<2	8
	Medians	42	2	6

TABLE B-2.(a). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER, MEACH LAKE BEACHES, 1971.

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
M1-2	31-5	1.4	0.2	<0.2
	10-6	0.8	0.8	<0.2
	14-6	0.2	0.2	<0.2
	21-6	9	6	<2
	28-6	<2	<2	<2
	8-7 (0900)	4	4	<2
	8-7 (1000)	4	2	2
	8-7 (1100)	4	4	<2
	8-7 (1200)	4	4	<2
	8-7 (1300)	2	<2	<2
	8-7 (1400)	14	7	2
	8-7 (1500)	2	2	<2
	11-7 (0900)	2	<2	<2
	11-7 (1000)	2	<2	<2
	11-7 (1100)	<2	<2	<2
	11-7 (1200)	17	17	<2
	11-7 (1300)	17	17	<2
	11-7 (1400)	8	8	5
	11-7 (1500)	11	7	<2
	19-7	5	2	<2
	3-8	<2	<2	<2
	18-8	<2	<2	<2
	1-9	2	2	<2
	15-9	170	70	<2
M1-4	31-5	6.4	1.3	<0.2
	10-6	0.5	0.5	<0.2
	14-6	0.5	0.5	<0.2
	21-6	14	11	<2
	28-6	<2	<2	<2
	8-7 (0900)	2	2	2
	8-7 (1000)	4	4	<2
	8-7 (1100)	8	8	<2
	8-7 (1200)	5	5	2
	8-7 (1300)	4	2	<2
	8-7 (1400)	5	2	<2
	8-7 (1500)	8	8	<2

TABLE B-2.(b). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER, MEACH LAKE BEACHES, 1971.

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
M1-4	11-7 (0900)	5	2	<2
	11-7 (1000)	5	5	2
	11-7 (1100)	2	2	<2
	11-7 (1200)	8	8	<2
	11-7 (1300)	2	2	<2
	11-7 (1400)	2	2	<2
	11-7 (1500)	11	11	5
	19-7	2	<2	<2
	3-8	2	<2	<2
	18-8	2	<2	<2
	1-9	13	5	<2
	15-9	17	<2	<2
M1-6	31-5	1.7	1.7	<0.2
	10-6	0.5	0.5	<0.2
	14-6	<0.2	<0.2	<0.2
	21-6	33	33	<2
	28-6	<2	<2	<2
	8-7 (0900)	5	5	<2
	8-7 (1000)	<2	<2	<2
	8-7 (1100)	12	12	2
	8-7 (1200)	17	17	2
	8-7 (1300)	5	5	<2
	8-7 (1400)	5	5	<2
	8-7 (1500)	8	8	2
	11-7 (0900)	5	5	<2
	11-7 (1000)	7	4	<2
	11-7 (1100)	2	2	<2
	11-7 (1200)	9	6	<2
	11-7 (1300)	2	2	<2
	11-7 (1400)	79	79	2
	11-7 (1500)	22	22	22
	19-7	11	2	<2
	3-8	4	2	<2
	18-8	<2	<2	<2
	1-9	2	2	<2
	15-9	7	2	<2

TABLE B-2.(c). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER, MEACH LAKE BEACHES, 1971.

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
M1-2A	31-5	2.4	0.7	<0.2
	10-6	0.5	0.5	<0.2
	14-6	0.7	0.2	<0.2
	21-6	49	49	<2
	28-6	<2	<2	<2
	8-7 (0900)	5	5	<2
	8-7 (1000)	2	2	<2
	8-7 (1100)	5	5	<2
	8-7 (1200)	2	2	<2
	8-7 (1300)	8	5	<2
	8-7 (1400)	11	11	<2
	8-7 (1500)	2	2	<2
	11-7 (0900)	2	2	<2
	11-7 (1000)	2	2	<2
	11-7 (1100)	<2	<2	<2
	11-7 (1200)	7	7	<2
	11-7 (1300)	21	11	<2
	11-7 (1400)	170	170	5
	11-7 (1500)	49	49	<2
	19-7	2	2	<2
	3-8	11	8	2
	18-8	5	<2	<2
	1-9	5	<2	<2
	15-9	17	14	<2
M1-4A	31-5	11	11	<0.2
	10-6	3.3	3.3	0.2
	14-6	0.2	0.2	<0.2
	21-6	7	4	<2
	28-6	2	<2	<2
	8-7 (0900)	2	2	<2
	8-7 (1000)	<2	<2	<2
	8-7 (1100)	8	8	<2
	8-7 (1200)	5	5	2
	8-7 (1300)	2	2	<2
	8-7 (1400)	<2	<2	<2
	8-7 (1500)	2	2	<2

TABLE B-2.(d). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER, MEACH LAKE BEACHES, 1971.

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
M1-4A	11-7 (0900)	5	<2	<2
	11-7 (1000)	2	2	<2
	11-7 (1100)	<2	<2	<2
	11-7 (1200)	64	64	<2
	11-7 (1300)	17	17	<2
	11-7 (1400)	4	4	2
	11-7 (1500)	17	17	13
	19-7	5	5	<2
	3-8	4	<2	<2
	18-8	5	<2	<2
	1-9	8	2	<2
	15-9	33	33	<2
M1-6A	31-5	11	7.9	<0.2
	10-6	0.7	0.7	<0.2
	14-6	1.7	1.7	<0.2
	21-6	15	12	<2
	28-6	<2	<2	<2
	8-7 (0900)	<2	<2	<2
	8-7 (1000)	2	2	<2
	8-7 (1100)	11	11	2
	8-7 (1200)	5	5	<2
	8-7 (1300)	5	5	<2
	8-7 (1400)	7	7	<2
	8-7 (1500)	7	7	<2
	11-7 (0900)	<2	<2	<2
	11-7 (1000)	5	5	<2
	11-7 (1100)	2	<2	<2
	11-7 (1200)	14	14	<2
	11-7 (1300)	7	7	<2
	11-7 (1400)	17	17	2
	11-7 (1500)	40	40	2
	19-7	5	2	2
	3-8	8	5	5
	18-8	4	<2	<2
	1-9	4	4	<2
	15-9	4	<2	<2

TABLE B-2.(e). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER, MEACH LAKE BEACHES, 1971.

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
M1-4A (Silt)	10-6	120	120	<2
	14-6	8	8	0.5
	21-6	140	110	<2
	28-6	11	11	<2
	8-7 (0900)	5	5	2
	8-7 (1000)	9	9	2
	8-7 (1100)	7	7	<2
	8-7 (1200)	5	5	<2
	8-7 (1300)	130	130	<2
	8-7 (1400)	5	2	<2
	8-7 (1500)	7	4	<2
	11-7 (0900)	11	11	2
	11-7 (1000)	4	2	<2
	11-7 (1100)	8	8	<2
	11-7 (1200)	27	27	2
	11-7 (1300)	17	17	<2
	11-7 (1400)	14	14	<2
	11-7 (1500)	70	33	2
	19-7	9	9	<2
	3-8	9	9	4
	18-8	11	4	2
	1-9	33	33	2
	15-9	220	220	<2
M3-2	31-5	0.5	0.5	<0.2
	10-6	<0.2	<0.2	<0.2
	14-6	1.2	1.2	<0.2
	21-6	4	4	<2
	28-6	10	<2	<2
	19-7	540	540	<2
	3-8	2	<2	<2
	18-8	2	<2	<2
	1-9	2	<2	<2
	15-9	17	5	<2

TABLE B-2.(f). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER, MEACH LAKE BEACHES, 1971.

Sta. No.	Date	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
M3-6	31-5	0.9	0.2	<0.2
	10-6	0.8	0.5	<0.2
	14-6	0.2	0.2	<0.2
	21-6	5	5	<2
	28-6	<2	<2	<2
	19-7	2	<2	<2
	3-8	2	<2	<2
	18-8	5	2	2
	1-9	4	<2	<2
	15-9	79	8	<2
M3-8	31-5	0.4	0.2	<0.2
	10-6	0.2	0.2	<0.2
	14-6	0.8	0.5	<0.2
	21-6	2	<2	<2
	28-6	<2	<2	<2
	19-7	<2	<2	<2
	3-8	2	2	<2
	18-8	4	<2	<2
	1-9	2	2	<2
	15-9	5	<2	<2
M3-2A	31-5	0.4	0.2	<0.2
	10-6	0.5	0.5	<0.2
	14-6	0.2	0.2	<0.2
	21-6	4	2	<2
	28-6	5	2	<2
	19-7	11	11	<2
	3-8	5	5	<2
	18-8	5	<2	<2
	1-9	<2	<2	<2
	15-9	5	<2	<2

TABLE B-2.(g). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER, MEACH LAKE BEACHES, 1971.

Sta. No.	Date	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
M3-6A	31-5	0.8	0.5	<0.2
	10-6	0.7	0.2	<0.2
	14-6	0.2	0.2	<0.2
	21-6	8	8	2
	28-6	2	2	<2
	19-7	2	<2	<2
	3-8	5	<2	<2
	18-8	2	<2	<2
	1-9	11	5	2
	15-9	4	<2	<2
M-3-8A	31-5	<0.2	<0.2	<0.2
	10-6	0.8	0.8	<0.2
	14-6	1.4	0.5	<0.2
	21-6	26	22	11
	19-7	<2	<2	<2
	3-8	7	5	2
	18-8	4	<2	<2
	1-9	2	<2	<2
	15-9	9	5	<2
M3-6A	10-6	33	33	<2
	21-6	49	22	8
	28-6	350	140	14
	19-7	8	8	<2
	3-8	39	39	4
	18-8	280	54	2
	1-9	920	920	6
	15-9	1,600	1,600	<2

TABLE B-3(a). BACTERIOLOGICAL DATA, MEACH LAKE BEACH STATIONS M1-4A AND M3-6A, WATER AND SILT SPECIMENS, 1971.

Specimen	Date (time)	MF COUNT PER 100 ML. Coliform	Fecal Coliform	Fecal Strep.	*Ps. aeruginosa* Confirmed MPN per 100 ml.	STANDARD PLATE COUNT per ml. 35°C.	20°C.
M1-4A (Water)	10-6	210	12	6	0.2	-	-
(Silt)		640	46	50	<2	-	-
(Water)	14-6	52	6	2	<0.2	240	1,200
(Silt)		180	13	10	0.5	360	6,100
(Water)	21-6	450	64	60	<2	260	680
(Silt)		400	10	40	<2	370	1,700
(Water)	28-6	20	2	2	<2	54	100
(Silt)		60	10	10	<2	120	450
(Water)	8-7	14	4	18	<2	87	120
(Silt)	(0900)	160	10	60	2	530	770
(Water)	8-7	10	6	26	<2	140	180
(Silt)	(1000)	1,700	20	40	2	600	1,400
(Water)	8-7	110	12	140	<2	490	550
(Silt)	(1100)	200	<2	100	<2	100	1,700
(Water)	8-7	140	30	38	2	200	350
(Silt)	(1200)	160	30	30	<2	450	870
(Water)	8-7	54	10	46	<2	150	290
(Silt)	(1300)	200	<10	40	<2	420	2,200

TABLE B-3(b). BACTERIOLOGICAL DATA, MEACH LAKE BEACH STATIONS M1-4A AND M3-6A, WATER AND SILT SPECIMENS, 1971.

Specimen		Date (time)	MF COUNT PER 100 ML. Coliform	Fecal Coliform	Fecal Strep.	*Ps. aeruginosa* Confirmed MPN per 100 ml.	STANDARD PLATE COUNT per ml. 35°C.	20°C.
M1-4A	(Water)	8-7	90	18	42	<2	210	480
	(Silt)	(1400)	200	10	<10	<2	380	350
	(Water)	8-7	130	20	56	<2	470	1,300
	(Silt)	(1500)	180	20	100	<2	480	1,400
	(Water)	11-7	18	4	44	<2	150	430
	(Silt)	(0900)	80	20	60	2	1,600	3,300
	(Water)	11-7	20	4	32	<2	110	600
	(Silt)	(1000)	100	<10	30	<2	160	500
	(Water)	11-7	12	2	68	<2	140	500
	(Silt)	(1100)	80	<10	30	<2	110	590
	(Water)	11-7	140	120	110	<2	320	1,500
	(Silt)	(1200)	260	30	70	2	430	1,300
	(Water)	11-7	320	16	140	<2	390	1,300
	(Silt)	(1300)	260	20	150	<2	910	2,100
	(Water)	11-7	150	28	110	2	270	960
	(Silt)	(1400)	200	30	120	<2	270	1,100
	(Water)	11-7	90	10	150	13	260	630
	(Silt)	(1500)	220	<10	120	2	290	580

TABLE B-3(c). BACTERIOLOGICAL DATA, MEACH LAKE BEACH STATIONS M1-4A AND M3-6A, WATER AND SILT SPECIMENS, 1971.

Specimen	Date (time)	MF COUNT PER 100 ML. Coliform	Fecal Coliform	Fecal Strep.	*Ps. aeruginosa* Confirmed MPN per 100 ml.	STANDARD PLATE COUNT per ml. 35°C.	20°C.
M1-4A (Water)	19-7	40	2	4	<2	33	130
(Silt)		100	40	120	<2	730	3,900
(Water)	3-8	230	10	26	<2	340	610
(Silt)		260	20	20	4	600	1,500
(Water)	18-8	24	<2	4	<2	91	180
(Silt)		260	<2	<2	2	340	1,300
(Water)	1-9	60	2	22	<2	230	82
(Silt)		40	<10	10	2	460	970
(Water)	15-9	310	24	<2	<2	490	320
(Silt)		320	30	60	<2	9,800	9,100
M1-4A (Water)	Medians	90	10	38	<2	220	520
(Silt)	Medians	200	13	40	<2	440	1,400
M3-6A (Water)	10-6	8	4	<2	<0.2	-	-
(Silt)		2,900	200	600	<2	-	-
(Water)	21-6	110	<2	12	2	92	430
(Silt)		300	20	180	8	1,400	3,500

TABLE B-3(d). BACTERIOLOGICAL DATA, MEACH LAKE BEACH STATIONS
M3-6A, WATER AND SILT SPECIMENS, 1971

Specimen	Date (time)	MF COUNT PER 100 ML. Coliform	Fecal Coliform	Fecal Strep.	*Ps. aeruginosa* Confirmed MPN per 100 ml.	STANDARD PLATE COUNT per ml. 35°C.	20°C.
M3-6A (Water)	28-6	32	<2	<2	<2	55	270
(Silt)		1,700	80	<10	14	3,200	7,900
(Water)	19-7	92	<2	2	<2	97	140
(Silt)		60	36	50	<2	1,100	4,700
(Water)	3-8	70	10	28	<2	250	360
(Silt)		500	140	80	4	5,500	12,000
(Water)	18-8	32	<2	2	<2	120	200
(Silt)		300	80	4	2	8,900	14,000
(Water)	1-9	26	<2	10	2	40	720
(Silt)		30	<10	10	6	850	2,400
(Water)	15-9	38	<2	<2	<2	92	310
(Silt)		800	10	40	<2	3,400	1,700
M3-6A (Water)	Medians	35	<2	4	<2	92	310
(Silt)	Medians	400	58	45	3	3,200	4,700

TABLE B-4 (a). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PP-1 (Parent Beach)	27-5	8	<2	2
	7-6	8	2	<2
	11-6	25	<2	6
	*14-6	180	<2	4
	15-6	15	6	10
	*22-6	3,000	130	680
	24-6	80	2	4
	29-6	70	<2	<2
	5-7	140	18	8
	*13-7	46	<2	20
	15-7	180	8	10
	*20-7	190	8	20
	*27-7	3,500	14	68
	* 3-8	370	<2	2
	6-8	6	<2	<2
	*10-8	1,800	6	16
	*17-8	100	<2	<2
	19-8	25	<2	2
	*24-8	20	<2	<2
	27-8	50	<2	4
	*31-8	70	2	2
	10-9	340	4	6
	Medians	75	2	4
PP-2 (Parent Beach)	27-5	6	<2	<2
	7-6	12	<2	<2
	11-6	10	<2	<2
	*14-6	28	2	4
	15-6	35	<2	6
	*22-6	770	16	34
	24-6	110	2	<2
	29-6	110	<2	2
	5-7	100	6	18
	*13-7	20	<2	2

* Samples Collected by NCC Staff

TABLE B-4(b). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Streptococcus
PP-2 (Parent Beach)	15-7	60	2	18
	*20-7	30	2	4
	*27-7	400	12	<2
	*3-8	1,400	<2	<2
	6-8	38	<2	2
	*10-8	2,600	32	16
	*17-8	34	2	<2
	19-8	20	<2	<2
	*24-8	18	<2	4
	27-8	35	2	4
	*31-8	24	<2	<2
	10-9	140	2	10
	Medians	35	2	2
PP-3 (Parent Beach)	27-5	4	<2	<2
	7-6	28	<2	<2
	11-6	10	8	2
	*14-6	56	<2	6
	15-6	60	<2	26
	*22-6	570	6	34
	24-6	55	<2	<2
	29-6	130	<2	6
	5-7	180	6	58
	*13-7	38	6	30
	15-7	130	2	16
	*20-7	25	<2	6
	*27-7	350	18	44
	*3-8	1,000	<2	2
	6-8	20	<2	<2

* Samples Collected by NCC Staff

TABLE B-4(c). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PP-3 (Parent Beach)	*10-8	1,000	10	4
	*17-8	10	<2	2
	19-8	45	2	<2
	*24-8	58	<2	<2
	27-8	<5	<2	2
	*31-8	12	2	8
	10-9	55	<2	10
	Medians	55	<2	4
PP-4 (Parent Beach)	27-5	<2	<2	<2
	7-6	16	<2	<2
	11-6	30	<2	4
	*14-6	50	2	6
	15-6	15	<2	60
	*22-6	900	6	26
	24-6	40	<2	<2
	29-6	85	<2	6
	5-7	120	4	10
	*13-7	32	4	12
	15-7	30	2	12
	*20-7	55	<2	6
	*27-7	800	10	50
	*3-8	700	4	4
	6-8	32	<2	2
	*10-8	370	20	2
	*17-8	12	<2	2
	19-8	70	<2	<2
	*24-8	14	<2	<2
	27-8	30	<2	6

* Samples Collected by NCC Staff

TABLE B-4(d). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PP-4 (Parent Beach)	*31-8	4	<2	2
	10-9	55	2	4
	Medians	36	<2	4
PP-5 (Parent Beach)	27-5	<2	<2	<2
	7-6	16	<2	<2
	11-6	20	<2	2
	*14-6	92	<2	6
	15-6	10	<2	12
	*22-6	1,100	6	28
	24-6	10	<2	<2
	29-6	140	2	2
	5-7	110	<2	8
	*13-7	24	2	12
	15-7	50	2	14
	*20-7	70	<2	6
	*27-7	490	12	44
	*3-8	3,800	2	<2
	6-8	80	2	28
	*10-8	720	20	<2
	*17-8	4	2	<2
	19-8	45	<2	<2
	*24-8	16	<2	<2
	27-8	10	<2	8
	*31-8	100	8	76
	10-9	65	<2	4
	Medians	58	<2	5
PP-6 (Parent Beach)	27-5	2	<2	<2
	7-6	160	<2	<2
	11-6	25	2	2
	*14-6	810	110	82
	15-6	5	<2	2

* Samples Collected by NCC Staff

TABLE B-4(e). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PP-6 (Parent Beach)	*22-6	5,300	230	1,300
	24-6	45	4	2
	29-6	920	2	86
	5-7	50	2	4
	*13-7	46	<2	38
	15-7	60	2	12
	*20-7	15	2	2
	*27-7	1,200	58	210
	*3-8	1,400	4	4
	6-8	72	<2	2
	*10-8	2,800	580	140
	*17-8	82	2	20
	19-8	50	2	8
	*24-8	8	<2	<2
	27-8	40	<2	4
	*31-8	400	36	340
	10-9	190	2	8
	Medians	66	2	6
PP-2A (Parent Beach)	7-6	370	140	300
	11-6	5	<2	4
	15-6	95	<2	10
	24-6	80	<2	2
	29-6	130	4	2
	5-7	320	4	110
	15-7	100	6	10
	6-8	70	<2	<2
	19-8	20	<2	2
	27-8	15	<2	2
	10-9	130	2	10
	Medians	95	<2	4

* Samples Collected by NCC Staff

TABLE B-4(f). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PP-5A (Parent Beach)	7-6	110	<2	10
	11-6	10	2	2
	15-6	80	<2	46
	24-6	440	2	2
	29-6	85	<2	4
	5-7	120	6	20
	15-7	75	8	8
	6-8	70	2	2
	19-8	20	2	<2
	27-8	25	<2	2
	10-9	80	<2	14
	Medians	80	2	4
PS-1 (Smith Beach)	27-5	10	<2	4
	7-6	58	2	8
	11-6	15	2	<2
	15-6	10	4	2
	24-6	340	2	28
	29-6	60	<2	<2
	5-7	50	<2	12
	15-7	30	4	4
	6-8	140	<2	6
	19-8	20	2	2
	27-8	5	<2	<2
	10-9	440	<2	<2
	Medians	40	2	3
PS-2 (Smith Beach)	27-5	14	2	<2
	7-6	12	<2	8
	11-6	<2	<2	2
	15-6	15	<2	<2
	24-6	40	<2	2

TABLE B-4(g). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER Coliform	Fecal Coliform	Fecal Streptococcus
PS-2 (Smith Beach)	29-6	15	<2	8
	5-7	35	<2	6
	15-7	50	<2	10
	6-8	25	<2	<2
	19-8	5	<2	<2
	27-8	5	<2	<2
	10-9	340	<2	<2
	Medians	15	<2	2
PS-3 (Smith Beach)	27-5	18	<2	4
	7-6	10	<2	<2
	11-6	25	2	2
	15-6	20	<2	<2
	24-6	400	6	26
	29-6	40	2	4
	5-7	L.A.	L.A.	L.A.
	15-7	40	<2	32
	6-8	15	<2	2
	19-8	30	2	10
	27-8	<5	<2	<2
	10-9	200	<2	<2
	Medians	25	<2	2
PS-2A (Smith Beach)	7-6	<2	<2	<2
	11-6	5	2	6
	15-6	36	<2	<2
	24-6	160	<2	2
	29-6	60	<2	12

TABLE B-4 (h). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PS-2A (Smith Beach)	5-7	280	2	30
	15-7	35	6	40
	6-8	140	<2	4
	19-8	130	6	4
	27-8	10	<2	<2
	10-9	360	<2	<2
	Medians	60	<2	4
PB-1 (Breton Beach)	27-5	6	<2	<2
	7-6	140	<2	<2
	11-6	170	2	4
	*14-6	280	22	48
	15-6	1,000	6	2
	*22-6	1,600	24	12
	24-6	210	2	10
	29-6	220	2	4
	5-7	120	<2	4
	*13-7	32	<2	6
	15-7	580	32	18
	*20-7	65	38	<2
	21-7 (0900)	40	2	2
	21-7 (1030)	10	<2	4
	21-7 (1200)	10	<2	6
	21-7 (1330)	40	4	6
	21-7 (1500)	20	12	34
	25-7 (0900)	1,600	6	<2
	25-7 (1030)	640	110	2
	25-7 (1200)	200	24	18
	25-7 (1330)	280	34	12
	25-7 (1500)	460	66	10
	*27-7	2,200	46	120
	28-7 (0900)	1,000	6	6
	28-7 (1030)	16,000	260	660
	28-7 (1200)	9,000	200	480
	28-7 (1330)	4,200	120	260
	28-7 (1500)	6,000	160	200

*Samples Collected by NCC Staff

TABLE B-4 (i). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-1 (Breton Beach)	* 3-8	1,900	<2	2
	6-8	220	<2	<2
	*10-8	200	8	12
	*17-8	34	<2	<2
	19-8	15	<2	<2
	*24-8	26	2	<2
	27-8	70	2	6
	*31-8	34	2	<2
	10-9	340	<2	<2
	Medians	210	4	6
PB-2 (Breton Beach)	27-5	8	2	<2
	7-6	250	<2	<2
	11-6	200	<2	<2
	*14-6	220	13	36
	15-6	340	4	2
	*22-6	160	20	42
	24-6	180	4	10
	29-6	440	2	12
	5-7	95	2	16
	*13-7	34	<2	12
	15-7	240	18	14
	*20-7	15	2	<2
	21-7 (0900)	50	<2	4
	21-7 (1030)	10	<2	16
	21-7 (1200)	20	2	2
	21-7 (1330)	100	4	10
	21-7 (1500)	210	70	24

*Samples Collected by NCC Staff

TABLE B-4(j). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	FECAL Streptococcus
PB-2 (Breton Beach)	25-7 (0900)	2,400	2	8
	25-7 (1030)	660	6	38
	25-7 (1200)	340	84	66
	25-7 (1330)	280	72	18
	25-7 (1500)	1,100	160	38
	*27-7	1,500	28	100
	28-7 (0900)	300	18	22
	28-7 (1030)	15,000	320	360
	28-7 (1200)	3,500	260	180
	28-7 (1330)	4,100	120	120
	28-7 (1500)	4,300	100	240
	*3-8	2,000	4	2
	6-8	210	<2	<2
	*10-8	80	4	2
	*17-8	20	<2	4
	19-8	45	<2	<2
	*24-8	68	<2	<2
	27-8	15	2	2
	*31-8	38	24	6
	10-9	280	<2	<2
	Medians	210	4	10
PB-3 (Breton Beach)	27-5	8	<2	<2
	7-6	20	<2	<2
	11-6	80	<2	<2
	*14-6	190	14	14
	15-6	360	2	2

* Samples Collected by NCC Staff

TABLE B-4(k). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-3 (Breton Beach)	*22-6	760	24	14
	24-6	25	2	8
	29-6	140	<2	4
	5-7	170	<2	6
	*13-7	18	<2	8
	15-7	200	38	14
	*20-7	30	6	24
	21-7 (0900)	130	2	<2
	21-7 (1030)	10	<2	4
	21-7 (1200)	160	12	6
	21-7 (1330)	30	8	28
	21-7 (1500)	1,300	1,300	28
	25-7 (0900)	540	6	6
	25-7 (1030)	1,000	6	14
	25-7 (1200)	160	18	16
	25-7 (1330)	280	72	40
	25-7 (1500)	1,100	260	64
	*27-7	1,000	22	130
	28-7 (0900)	3,900	160	460
	28-7 (1030)	10,000	1,100	660
	28-7 (1200)	6,100	150	460
	28-7 (1330)	7,300	340	260
	28-7 (1500)	4,900	400	180
	*3-8	3,000	36	2
	6-8	320	<2	16
	*10-8	210	14	2
	*17-8	18	<2	2
	19-8	15	<2	<2
	*24-8	50	<2	<2
	27-8	5	<2	<2
	*31-8	36	<2	2
	10-9	120	<2	<2
	Medians	170	6	8

* Samples Collected by NCC Staff

TABLE B-4(1). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-4 (Breton Beach	27-5	16	<2	<2
	7-6	390	<2	<2
	11-6	55	2	4
	*14-6	78	10	18
	15-6	190	<2	<2
	*22-6	1,000	18	26
	24-6	80	2	10
	29-6	540	4	10
	5-7	85	<2	10
	*13-7	74	14	42
	15-7	400	32	10
	*20-7	20	4	2
	21-7 (0900)	50	<2	12
	21-7 (1030)	30	2	6
	21-7 (1200)	360	36	30
	21-7 (1330)	70	8	32
	21-7 (1500)	2,300	1,600	32
	25-7 (0900)	1,400	8	8
	25-7 (1030)	3,600	10	76
	25-7 (1200)	440	18	32
	25-7 (1330)	460	40	10
	25-7 (1500)	900	120	50
	*27-7	800	20	34
	28-7 (0900)	3,400	2	28
	28-7 (1030)	15,000	100	220
	28-7 (1200)	3,000	90	320
	28-7 (1330)	7,600	110	140
	28-7 (1500)	4,900	60	220
	*3-8	1,400	50	14
	6-8	310	<2	<2
	*10-8	400	6	4
	*17-8	22	2	2
	19-8	20	<2	<2

* Samples collected by NCC Staff

TABLE B-4(m). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-4 (Breton Beach)	*24-8	62	<2	<2
	27-8	20	<2	<2
	*31-8	54	<2	<2
	10-9	720	<2	4
	Medians	390	6	10
PB-5 (Breton Beach)	27-5	2	2	<2
	7-6	58	<2	16
	11-6	15	2	<2
	*14-6	160	3	8
	15-6	85	2	2
	*22-6	960	12	8
	24-6	120	2	<2
	29-6	320	<2	2
	5-7	45	<2	10
	*13-7	82	30	30
	15-7	400	22	24
	*20-7	25	<2	2
	21-7 (0900)	10	<2	2
	21-7 (1030)	50	<2	6
	21-7 (1200)	80	4	10
	21-7 (1330)	40	4	4
	21-7 (1500)	210	72	8
	25-7 (0900)	720	2	14
	25-7 (1030)	4,700	4	8
	25-7 (1200)	820	82	16
	25-7 (1330)	1,200	46	28
	25-7 (1500)	700	66	56
	*27-7	2,100	18	68

* Samples Collected by NCC Staff

TABLE B-4(n). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-5 (Breton Beach)	28-7 (0900)	4,300	22	48
	28-7 (1030)	20,000	34	380
	28-7 (1200)	6,400	54	56
	28-7 (1330)	5,500	110	88
	28-7 (1500)	1,400	82	120
	*3-8	8,300	4	<2
	6-8	160	<2	<2
	*10-8	230	4	2
	*17-8	38	<2	<2
	19-8	25	<2	<2
	*24-8	22	<2	2
	27-8	30	<2	<2
	*31-8	28	<2	2
	10-9	180	<2	<2
	Medians	160	3	8
PB-6 (Breton Beach)	27-5	4	4	<2
	7-6	110	2	<2
	11-6	35	<2	<2
	*14-6	110	4	12
	15-6	60	<2	<2
	*22-6	520	16	42
	24-6	50	<2	<2
	29-6	500	2	2
	5-7	70	<2	4
	*13-7	64	42	22
	15-7	1,700	94	26
	*20-7	10	2	8

* Samples Collected by NCC Staff

TABLE B-4(o). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-6 (Breton Beach)	21-7 (0900)	140	8	2
	21-7 (1030)	80	2	<2
	21-7 (1200)	270	20	160
	21-7 (1330)	100	24	36
	21-7 (1500)	160	12	30
	25-7 (0900)	1,300	2	8
	25-7 (1030)	1,500	8	2
	25-7 (1200)	800	220	70
	25-7 (1330)	22,000	660	240
	25-7 (1500)	2,500	250	64
	*27-7	2,400	8	34
	28-7 (0900)	3,800	54	120
	28-7 (1030)	15,000	100	420
	28-7 (1200)	8,100	180	400
	28-7 (1330)	2,500	56	66
	28-7 (1500)	5,300	100	80
	*3-8	2,000	10	22
	6-8	360	4	<2
	*10-8	54	4	<2
	*17-8	38	2	4
	19-8	120	<2	4
	*24-8	36	<2	2
	27-8	25	<2	<2
	*31-8	270	<2	<2
	10-9	200	2	2
	Medians	200	4	8

* Samples Collected by NCC Staff

TABLE B-4(p). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-7 (Breton Beach)	27-5	2	<2	<2
	7-6	36	<2	<2
	11-6	5	2	<2
	*14-6	110	2	10
	15-6	65	<2	<2
	*22-6	140	12	36
	24-6	85	<2	2
	29-6	180	2	8
	5-7	120	2	4
	*13-7	26	8	12
	15-7	900	110	14
	*20-7	10	2	6
	21-7 (0900)	20	<2	2
	21-7 (1030)	360	28	6
	21-7 (1200)	10	4	8
	21-7 (1330)	30	<2	4
	21-7 (1500)	30	<2	12
	25-7 (0900)	2,400	20	16
	25-7 (1030)	720	2	4
	25-7 (1200)	8,700	140	120
	25-7 (1330)	4,500	400	78
	25-7 (1500)	3,100	220	64
	*27-7	500	16	46
	28-7 (0900)	1,400	8	6
	28-7 (1030)	3,700	62	120
	28-7 (1200)	2,700	18	900
	28-7 (1330)	1,900	18	62
	28-7 (1500)	1,200	26	34

* Samples Collected by NCC Staff

TABLE B-4(q). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971.

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-7 (Breton Beach)	*3-8	800	<2	4
	6-8	620	2	<2
	*10-8	72	8	8
	*17-8	98	2	<2
	19-8	15	2	<2
	*24-8	48	<2	<2
	27-8	10	<2	<2
	*31-8	28	<2	<2
	10-9	80	<2	4
	Medians	110	2	6
PB-8 (Breton Beach)	27-5	6	<2	2
	7-6	66	2	<2
	11-6	30	<2	4
	*14-6	80	<2	8
	15-6	85	<2	2
	*22-6	80	14	32
	24-6	30	<2	<2
	29-6	560	2	4
	5-7	200	<2	8
	*13-7	38	8	6
	15-7	1,400	88	30
	*20-7	4	4	24
	21-7 (0900)	10	6	2
	21-7 (1030)	160	2	4
	21-7 (1200)	30	2	8
	21-7 (1330)	10	2	4
	21-7 (1500)	200	4	14

* Samples Collected by NCC Staff

TABLE B-4(r). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-8 (Breton Beach)	25-7 (0900)	35,000	1,300	200
	25-7 (1030)	4,500	86	36
	25-7 (1200)	30,000	380	240
	25-7 (1330)	5,400	160	60
	25-7 (1500)	2,600	160	68
	*27-7	500	8	42
	28-7 (0900)	7,900	44	180
	28-7 (1030)	7,600	120	400
	28-7 (1200)	11,000	100	440
	28-7 (1330)	1,000	20	34
	28-7 (1500)	4,900	140	160
	*3-8	800	<2	2
	6-8	1,300	2	4
	*10-8	50	6	2
	*17-8	36	4	2
	19-8	50	2	4
	*24-8	30	<2	2
	27-8	15	4	2
	*31-8	28	<2	<2
	10-9	180	<2	2
	Medians	160	4	6
PB-9 (Breton Beach)	27-5	4	<2	2
	7-6	12	<2	<2
	11-6	25	<2	<2
	*14-6	60	2	2
	15-6	160	<2	2

* Samples Collected by NCC Staff

TABLE B-4(s). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-9 (Breton Beach)	*22-6	290	4	44
	24-6	380	4	4
	29-6	220	4	4
	5-7	210	<2	6
	*13-7	28	8	10
	15-7	1,700	140	18
	*20-7	8	2	<2
	21-7 (0900)	10	<2	<2
	21-7 (1030)	10	2	6
	21-7 (1200)	130	6	6
	21-7 (1330)	40	4	36
	21-7 (1550)	30	4	14
	25-7 (0900)	19,000	900	340
	25-7 (1030)	58,000	1,300	600
	25-7 (1200)	20,000	640	200
	25-7 (1330)	3,900	220	120
	25-7 (1500)	4,700	160	28
	*27-7	1,300	6	30
	28-7 (0900)	4,500	12	92
	28-7 (1030)	3,600	28	110
	28-7 (1200)	2,600	130	120
	28-7 (1330)	960	20	36
	28-7 (1500)	1,800	52	160
	*3-8	900	4	2
	6-8	580	4	<2
	*17-8	22	<2	<2

* Samples Collected by NCC Staff

TABLE B-4(t). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-9 (Breton Beach)	19-8	80	2	2
	*24-8	1,200	10	360
	27-8	15	<2	2
	*31-8	6	2	<2
	10-9	150	<2	4
	Medians	220	4	6
PB-3A (Breton Beach)	7-6	18	<2	2
	11-6	180	<2	2
	15-6	230	<2	6
	24-6	180	<2	2
	29-6	200	<2	10
	5-7	400	40	40
	15-7	200	6	12
	21-7 (0900)	10	<2	2
	21-7 (1030)	20	<2	6
	21-7 (1200)	280	52	26
	21-7 (1330)	200	10	36
	21-7 (1500)	1,100	470	12
	25-7 (0900)	340	6	2
	25-7 (1030)	120	6	<2
	25-7 (1200)	210	10	20
	25-7 (1330)	100	64	14
	25-7 (1500)	1,300	260	140
	28-7 (0900)	9,100	140	460
	28-7 (1030)	3,800	100	160
	28-7 (1200)	12,000	220	180
	28-7 (1330)	1,100	80	90
	28-7 (1500)	6,000	400	260

* Samples Collected by NCC Staff

TABLE B-4(u). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-3A (Breton Beach)	6-8	220	10	14
	19-8	25	<2	<2
	27-8	55	<2	4
	10-9	520	<2	2
	Medians	220	8	12
PB-5A (Breton Beach)	7-6	210	<2	26
	11-6	25	<2	<2
	15-6	340	<2	2
	24-6	120	<2	10
	29-6	180	<2	4
	5-7	560	4	14
	15-7	460	150	6
	21-7 (0900)	720	34	2
	21-7 (1030)	380	2	10
	21-7 (1200)	220	32	12
	21-7 (1330)	60	6	24
	21-7 (1500)	70	6	22
	25-7 (0900)	120	8	4
	25-7 (1030)	180	6	6
	25-7 (1200)	670	66	14
	25-7 (1330)	2,200	120	38
	25-7 (1500)	1,600	62	50
	28-7 (0900)	2,300	20	8
	28-7 (1030)	13,000	220	400
	28-7 (1200)	7,700	120	180
	28-7 (1330)	1,200	18	34
	28-7 (1500)	1,200	20	240

TABLE B-4(v). BACTERIOLOGICAL DATA, BEACH WATER SAMPLES, LAC PHILIPPE, 1971

Sta. No.	Date (time)	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
PB-5A (Breton Beach)	6-8	200	<2	<2
	19-8	80	<2	<2
	27-8	25	<2	6
	10-9	240	<2	<2
	Medians	290	6	10
PB-7A (Breton Beach)	7-6	46	<2	<2
	11-6	5	<2	<2
	15-6	140	<2	2
	24-6	120	<2	2
	29-6	180	2	4
	5-7	400	32	4
	15-7	1,900	110	6
	21-7 (0900)	80	2	4
	21-7 (1030)	160	6	18
	21-7 (1200)	40	2	6
	21-7 (1330)	60	2	10
	21-7 (1500)	40	2	12
	25-7 (0900)	480	10	6
	25-7 (1030)	220	2	4
	25-7 (1200)	14,000	220	300
	25-7 (1330)	17,000	660	200
	25-7 (1500)	5,300	180	60
	28-7 (0900)	7,000	36	36
	28-7 (1030)	8,700	220	400
	28-7 (1200)	3,100	79	160
	28-7 (1330)	780	12	36
	28-7 (1500)	6,300	120	140
	6-8	130	<2	2
	19-8	120	<2	6
	27-9	30	<2	<2
	10-9	540	<2	<2
	Medians	200	2	6

TABLE B-5 (a). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER, LAC PHILIPPE BEACHES, 1971

Sta. No.	Date	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
PP-2	27-5	1.4	0.2	<0.2
	7-6	2.3	1.3	<0.2
	11-6	1.7	0.5	<0.2
	15-6	0.7	0.5	<0.2
	24-6	8	8	2
	29-6	5	5	<2
	5-7	2	<2	<2
	15-7	7	2	<2
	6-8	8	<2	<2
	19-8	5	2	<2
	27-8	<2	<2	<2
	10-9	22	<2	<2
PP-5	27-5	7.9	3.3	<0.2
	7-6	0.7	0.2	<0.2
	11-6	0.4	0.4	<0.2
	15-6	0.7	0.7	<0.2
	24-6	9	9	<2
	29-6	2	<2	<2
	5-7	5	2	<2
	15-7	7	2	<2
	6-8	5	2	2
	19-8	2	<2	<2
	27-8	2	<2	<2
	10-9	9	2	<2
PP-2A	7-6	4.6	3.1	0.2
	11-6	2.3	2.3	<0.2
	15-6	0.5	0.5	<0.2
	24-6	13	13	<2
	29-6	<2	<2	<2
	5-7	8	8	<2
	15-7	8	5	<2
	6-8	4	2	2
	19-8	5	2	2
	27-8	8	5	2
	10-9	17	2	<2

TABLE B-5(b). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER, LAC PHILIPPE BEACHES, 1971.

Sta. No.	Date	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
PP-5A	7-6	0.7	0.7	<0.2
	11-6	0.2	<0.2	<0.2
	15-6	0.8	0.8	<0.2
	24-6	5	5	<2
	29-6	2	2	<2
	5-7	7	<2	<2
	15-7	95	4	<2
	6-8	5	5	5
	19-8	2	<2	<2
	27-8	<2	<2	<2
	10-9	22	<2	<2
PP-5A (Silt)	11-6	3.3	3.3	33
	15-6	0.5	0.5	<2
	24-6	5	5	<2
	29-6	70	70	<2
	5-7	5	5	2
	15-7	4	<2	<2
	6-8	33	13	2
	19-8	8	5	2
	27-8	4	2	<2
	10-9	12	<2	<2
PS-2	27-5	1.7	1.0	<0.2
	7-6	0.9	0.2	<0.2
	11-6	0.8	0.5	<0.2
	15-6	1.1	1.1	<0.2
	24-6	11	11	<2
	29-6	5	5	<2
	5-7	2	<2	<2
	15-7	2	2	2
	6-8	5	5	5
	19-8	2	<2	<2
	27-8	<2	<2	<2
	10-9	<2	<2	<2

TABLE B-5 (c). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER, LAC PHILIPPE BEACHES, 1971

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
PS-2A	7-6	<0.2	<0.2	<0.2
	11-6	2.2	0.7	0.2
	15-6	<0.2	<0.2	<0.2
	24-6	11	11	<2
	29-6	<2	<2	<2
	5-7	17	7	2
	15-7	8	8	8
	6-8	5	2	<2
	19-8	2	2	<2
	27-8	<2	<2	<2
	10-9	<2	<2	<2
PB-3	27-5	1.2	0.2	<0.2
	7-6	0.5	0.5	<0.2
	11-6	<0.2	<0.2	<0.2
	15-6	0.7	0.4	<0.2
	24-6	5	5	<2
	29-6	<2	<2	<2
	5-7	<2	<2	<2
	15-7	13	5	<2
	21-7 (0900)	4	<2	<2
	21-7 (1030)	2	<2	<2
	21-7 (1200)	2	<2	<2
	21-7 (1330)	4	<2	<2
	21-7 (1500)	<2	<2	<2
	25-7 (0900)	7	7	2
	25-7 (1030)	8	5	<2
	25-7 (1200)	14	8	2
	25-7 (1330)	110	110	46
	25-7 (1500)	350	170	21
	28-7 (0900)	14	14	5
	28-7 (1030)	17	11	7
	28-7 (1200)	17	6	4
	28-7 (1330)	14	9	2
	28-7 (1500)	17	12	2

TABLE B-5.(d). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER LAC PHILIPPE BEACHES, 1971.

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
PB-3	6-8	4	4	2
	19-8	<2	<2	<2
	27-8	5	2	2
	10-9	<2	<2	<2
PB-5	27-5	4.3	1.7	<0.2
	7-6	0.7	0.2	<0.2
	11-6	2.1	0.8	<0.2
	15-6	0.7	0.4	<0.2
	24-6	8	8	<2
	29-6	<2	<2	<2
	5-7	2	<2	<2
	15-7	49	2	<2
	21-7 (0900)	<2	<2	<2
	21-7 (1030)	<2	<2	<2
	21-7 (1200)	2	<2	<2
	21-7 (1330)	2	2	<2
	21-7 (1500)	4	2	<2
	25-7 (0900)	2	2	<2
	25-7 (1030)	2	2	<2
	25-7 (1200)	6	2	<2
	25-7 (1330)	46	17	5
	25-7 (1500)	280	24	2
	28-7 (0900)	8	2	<2
	28-7 (1030)	27	9	6
	28-7 (1200)	4	4	<2
	28-7 (1330)	9	9	<2
	28-7 (1500)	26	17	7
	6-8	2	2	2
	19-8	5	2	2
	27-8	<2	<2	<2
	10-9	2	<2	<2

TABLE B-5.(e). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER LAC PHILIPPE BEACHES, 1971.

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
PB-7	27-5	4.6	0.8	<0.2
	7-6	0.8	0.8	<0.2
	11-6	0.8	0.5	<0.2
	15-6	0.4	0.2	<0.2
	24-6	4	4	<2
	29-6	4	2	<2
	5-7	4	<2	<2
	15-7	180	2	<2
	21-7 (0900)	<2	<2	<2
	21-7 (1030)	4	<2	<2
	21-7 (1200)	2	2	<2
	21-7 (1330)	2	2	<2
	21-7 (1500)	2	<2	<2
	25-7 (0900)	6	6	<2
	25-7 (1030)	9	9	2
	25-7 (1200)	540	79	11
	25-7 (1330)	920	350	10
	25-7 (1500)	350	280	2
	28-7 (0900)	14	6	2
	28-7 (1030)	8	5	2
	28-7 (1200)	4	4	2
	28-7 (1330)	12	4	2
	28-7 (1500)	26	5	2
	6-8	8	8	8
	19-8	<2	<2	<2
	27-8	<2	<2	<2
	10-9	<2	<2	<2
PB-3A	7-6	3.3	1.7	<0.2
	11-6	2.1	1.3	<0.2
	15-6	0.2	0.2	<0.2
	24-6	7	7	<2
	29-6	2	<2	<2
	5-7	7	7	<2
	15-7	14	9	<2

TABLE B-5.(f). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER LAC PHILIPPE BEACHES, 1971.

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
PB-3A	21-7 (0900)	7	<2	<2
	21-7 (1030)	2	<2	<2
	21-7 (1200)	5	5	<2
	21-7 (1330)	7	2	<2
	21-7 (1500)	5	2	<2
	25-7 (0900)	14	14	<2
	25-7 (1030)	5	5	5
	25-7 (1200)	23	23	2
	25-7 (1330)	110	110	110
	25-7 (1500)	350	130	2
	28-7 (0900)	26	15	9
	28-7 (1030)	14	14	<2
	28-7 (1200)	21	11	5
	28-7 (1330)	2	2	<2
	28-7 (1500)	46	11	<2
	6-8	5	<2	<2
	19-8	<2	<2	<2
	27-8	4	<2	<2
	10-9	4	4	2
PB-5A	7-6	0.6	0.6	<0.2
	11-6	0.9	0.9	<0.2
	15-6	0.4	0.4	<0.2
	24-6	<2	<2	<2
	29-6	2	2	<2
	5-7	2	<2	<2
	15-7	<2	<2	<2
	21-7 (0900)	2	<2	<2
	21-7 (1030)	2	<2	<2
	21-7 (1200)	9	4	<2
	21-7 (1330)	5	2	<2
	21-7 (1500)	7	2	<2

TABLE B-5.(g). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER LAC PHILIPPE BEACHES, 1971.

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
PB-5A	25-7 (0900)	7	7	2
	25-7 (1030)	2	<2	<2
	25-7 (1200)	14	5	<2
	25-7 (1330)	240	240	7
	25-7 (1500)	920	79	2
	28-7 (0900)	6	4	2
	28-7 (1030)	27	12	9
	28-7 (1200)	9	4	2
	28-7 (1330)	9	2	<2
	28-7 (1500)	2	2	2
	6-8	2	2	2
	19-8	<2	<2	<2
	27-8	2	2	<2
	10-9	<2	<2	<2
PB-5A (Silt)	11-6	79	79	<2
	15-6	12	12	<2
	24-6	4	4	<2
	29-6	14	11	2
	5-7	5	5	<2
	15-7	14	7	<2
	21-7 (0900)	4	4	<2
	21-7 (1030)	2	2	<2
	21-7 (1200)	33	33	<2
	21-7 (1330)			
	21-7 (1500)	4	4	<2
	25-7 (0900)	21	21	2
	25-7 (1030)	17	9	<2
	25-7 (1200)	34	12	4
	25-7 (1330)	150	21	4
	25-7 (1500)	490	22	7

TABLE B-5.(h). PSEUDOMONAS AERUGINOSA MPNS PER 100 ML. OF WATER LAC PHILIPPE BEACHES, 1971.

Sta. No.	Date (Time)	PRESUMPTIVE (48 - HOUR) MPN	ACETAMIDE POSITIVE MPN	PS. AERUGINOSA CONFIRMED MPN
PB-5A (Silt)	28-7 (0900)	14	5	5
	28-7 (1030)	8	4	4
	28-7 (1200)	12	6	2
	28-7 (1330)	17	9	2
	28-7 (1500)	7	7	4
	6-8	7	7	<2
	19-8	7	7	2
	27-8	32	21	4
	10-9	5	2	2
PB-7A	7-6	0.9	0.9	<0.2
	11-6	0.4	0.2	<0.2
	15-6	<0.2	<0.2	<0.2
	24-6	<2	<2	<2
	29-6	23	8	<2
	5-7	<2	<2	<2
	15-7	33	2	<2
	21-7 (0930)	<2	<2	<2
	21-7 (1030)	2	2	2
	21-7 (1200)	2	2	<2
	21-7 (1330)	6	2	<2
	21-7 (1500)	2	<2	<2
	25-7 (0900)	70	14	<2
	25-7 (1030)	9	7	2
	25-7 (1200)	>1,600	56	9
	25-7 (1330)	920	170	6
	25-7 (1500)	1,600	180	11
	28-7 (0900)	5	<2	<2
	28-7 (1030)	14	9	2
	28-7 (1200)	95	11	2
	28-7 (1330)	4	2	2
	28-7 (1500)	24	12	4
	6-8	2	<2	<2
	19-8	<2	<2	<2
	27-8	2	2	2
	10-9	<2	<2	<2

TABLE B-6 (a). BACTERIOLOGICAL DATA, LAC PHILIPPE BEACH STATIONS PP-5A AND PB-5A, WATER AND SILT SPECIMENS, 1971

Specimen	Date	MF COUNT PER 100 ML.			*Ps. aeruginosa*	Standard Plate Count per ml.	
		Coliform	Fecal Coliform	Fecal Strep.	Confirmed MPN per 100 ml.	35°C.	20°C.
PP-5A (Water)	11-6	10	2	2	<0.2	82	8
(Silt)		210	<2	10	33	180	10,000
(Water)	15-6	80	<2	46	<0.2	23	38
(Silt)		6,100	<2	42	<2	110	680
(Water)	24-6	440	2	2	<2	270	-
(Silt)		28,000	90	<10	<2	-	-
(Water)	29-6	85	<2	4	<2	170	100
(Silt)		1,400	14	<10	<2	360	5,000
(Water)	5-7	120	6	20	<2	180	170
(Silt)		4,500	10	20	2	3,800	8,400
(Water)	15-7	75	8	8	<2	47	110
(Silt)		80	<10	<10	<2	210	780
(Water)	6-8	70	2	2	5	53	130
(Silt)		250	10	<10	2	460	690
(Water)	19-8	20	2	<2	<2	130	460
(Silt)		24,000	10	10	2	1,300	5,400
(Water)	27-8	25	<2	2	<2	41	300
(Silt)		80	<10	<10	<2	330	940

TABLE B-6 (b). BACTERIOLOGICAL DATA, LAC PHILIPPE BEACH STATIONS PP-5A AND PB-5A, WATER AND SILT SPECIMENS, 1971

Specimen	Date	MF COUNT PER 100 ML.			*Ps. aeruginosa*	Standard Plate Count per ml.	
		Coliform	Fecal Coliform	Fecal Strep.	Confirmed MPN per 100 ml.	35°C.	20°C.
PP-5A (Water)	10-9	25	<2	2	<2	110	660
(Silt)		120	<10	30	<2	1,000	5,900
PP-5A (Water)	Medians	78	2	3	<2	82	130
(Silt)	Medians	820	10	10	<2	360	5,000
PB-5A (Water)	11-6	25	<2	<2	<0.2	100	84
(Silt)		14,000	<10	<10	<2	2,400	25,000
(Water)	15-6	340	<2	2	<0.2	39	140
(Silt)		6,900	4	14	<2	1,200	5,100
(Water)	24-6	120	<2	10	<2	210	-
(Silt)		27,000	1,300	60	<2	-	-
(Water)	29-6	180	<2	4	<2	170	100
(Silt)		83,000	360	220	2	360	5,000
(Water)	5-7	560	4	14	<2	70	230
(Silt)		6,500	14	30	<2	730	3,100
(Water)	15-7	460	150	6	<2	72	220
(Silt)		1,000	80	40	<2	320	1,700
(Water)	21-7	720	34	2	<2	67	150
(Silt)	(0900)	2,000	44	10	<2	480	1,900
(Water)	21-7	160	10	4	<2	77	180
(Silt)	(1030)	380	2	10	<2	550	1,700

TABLE B-6(c) BACTERIOLOGICAL DATA, LAC PHILIPPE BEACH STATIONS PP-5A AND PB-5A, WATER AND SILT SPECIMENS, 1971.

Specimen	Date (time)	MF COUNT PER 100 ML. Coliform	Fecal Coliform	Fecal Strep.	*Ps. aeruginosa* Confirmed MPN per 100 ml.	Standard Plate Count per ml. 35°C.	20°C.
PB-5A (Water)	21-7	220	32	12	<2	260	410
(Silt)	(1230)	320	100	60	<2	2,500	4,200
(Water)	21-7	60	6	24	<2	120	260
(Silt)	(1330)	220	10	20	<2	570	2,900
(Water)	21-7	70	6	22	<2	150	320
(Silt)	(1500)	160	40	40	<2	1,300	3,500
(Water)	25-7	120	8	4	2	92	160
(Silt)	(0900)	1,300	50	28	2	960	1,400
(Water)	25-7	180	6	6	<2	190	340
(Silt)	(1030)	1,400	48	6	<2	620	1,200
(Water)	25-7	670	66	14	<2	330	700
(Silt)	(1200)	1,300	210	28	4	1,500	5,600
(Water)	25-7	2,200	120	38	7	2,600	3,100
(Silt)	(1330)	6,200	160	62	4	2,600	5,600
(Water)	25-7	1,600	62	50	2	1,200	3,100
(Silt)	(1500)	2,200	180	58	7	3,500	9,200
(Water)	28-7	2,300	20	8	2	96	240
(Silt)	(0900)	3,000	58	68	5	770	2,600

TABLE B-6(d). BACTERIOLOGICAL DATA, LAC PHILIPPE BEACH STATIONS PP-5A AND PB-5A, WATER AND SILT SPECIMENS, 1971.

Specimen	Date (time)	MF COUNT PER 100 ML. Coliform	Fecal Coliform	Fecal Strep.	*Ps. aeruginosa* Confirmed MPN per 100 ml.	Standard Plate Count per ml. 35°C.	20°C.
PB-5A (Water)	28-7	13,000	220	400	9	3,300	13,000
(Silt)	(1030)	4,300	250	180	4	5,400	5,300
(Water)	28-7	7,700	120	180	2	1,100	7,500
(Silt)	(1200)	10,000	160	110	2	2,100	17,000
(Water)	28-7	1,200	18	34	<2	170	1,100
(Silt)	(1330)	6,000	80	50	2	920	3,400
(Water)	28-7	1,200	20	240	2	170	960
(Silt)	(1500)	27,000	220	140	4	4,200	18,000
(Water)	6-8	200	<2	<2	2	130	220
(Silt)		1,000	30	<10	<2	690	3,800
(Water)	19-8	80	<2	<2	<2	88	380
(Silt)		2,100	30	<2	2	510	4,300
(Water)	27-8	25	<2	6	<2	93	420
(Silt)		120	<10	<10	4	3,300	20,000
(Water)	10-9	240	<2	<2	<2	25	150
(Silt)		3,900	<10	<10	2	310	1,600
PB-5A (Water)	Medians	240	8	8	<2	130	290
(Silt)	Medians	2,200	50	30	<2	1,200	4,000

TABLE C-1 (a). BACTERIOLOGICAL DATA, STREAM WATER SAMPLES, GATINEAU PARK, 1971

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER		
		Coliform	Fecal Coliform	Fecal Streptococcus
2 (below Mulvihill Lake)	9-6	130	22	20
	23-6	680	18	48
	14-7	540	<2	120
	25-8	150	2	38
	13-9	1,200	690	310
	Medians	540	18	48
3 (below Pinks Lake)	9-6	360	88	140
	23-6	310	28	190
	14-7	970	160	450
	25-8	1,300	70	330
	13-9	10,000	2,100	4,400
	Medians	970	88	330
4 (Chelsea Brook)	9-6	590	160	210
	23-6	1,000	40	92
	14-7	1,200	110	720
	25-8	320	130	130
	13-9	7,600	4,500	2,300
	Medians	1,000	130	210
5 (Chelsea Brook)	9-6	520	130	220
	23-6	1,000	30	120
	14-7	1,500	94	490
	25-8	130	18	84
	13-9	21,000	3,400	7,100
	Medians	1,000	94	220
6 (Fortune Creek)	9-6	340	48	66
	23-6	520	26	92
	14-7	700	84	670
	25-8	310	24	120
	13-9	42,000	3,900	11,000
	Medians	520	48	120

TABLE C-1(b). BACTERIOLOGICAL DATA, STREAM WATER SAMPLES, GATINEAU PARK, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER Coliform	Fecal Coliform	Fecal Streptococcus
7 (Fortune Creek)	9-6	190	54	52
	23-6	1,200	16	56
	14-7	470	40	4,200
	25-8	370	10	100
	13-9	40,000	5,000	16,000
	Medians	470	40	100
8 (Meach Brook)	9-6	36	14	8
	23-6	80	<2	12
	14-7	16	2	64
	25-8	80	4	330
	13-9	64	12	110
	Medians	64	4	64
9 (between Mousseau and Meach)	9-6	48	40	36
	23-6	160	20	24
	14-7	460	14	490
	25-8	110	2	14
	13-9	96	<2	38
	Medians	110	14	36
10 (Flynn Creek)	9-6	590	120	210
	23-6	1,000	90	300
	14-7	1,300	50	1,300
	25-8	140	8	98
	13-9	940	140	760
	Medians	940	90	300
11 (Meach Brook)	9-6	260	32	66
	23-6	530	40	56
	14-7	1,500	120	220
	26-8	440	70	100
	13-9	6,800	1,100	3,200
	Medians	530	70	100

TABLE C-1(c). BACTERIOLOGICAL DATA, STREAM WATER SAMPLES, GATINEAU PARK, 1971

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER Coliform	Fecal Coliform	Fecal Streptococcus
12 (below Carman Lake)	9-6	380	60	76
	23-6	340	14	76
	14-7	800	130	1,100
	26-8	400	52	280
	13-9	520	160	720
	Medians	400	60	280
13 (between Philippe and Mousseau)	10-6	390	110	26
	24-6	120	14	28
	15-7	130	4	34
	26-8	20	2	<2
	14-9	76	4	4
	Medians	120	4	26
14 (below Lusk Lake)	10-6	270	8	40
	24-6	700	46	110
	15-7	1,400	120	840
	26-8	64	<2	58
	14-9	2,400	46	70
	Medians	700	46	70
15 (below Lac Renaud)	10-6	350	68	20
	24-6	17,000	32	110
	15-7	1,200	16	920
	26-8	510	6	110
	14-9	560	8	490
	Medians	560	16	110
16 (Lac Racine)	10-6	1,000	400	350
	24-6	8,200	430	1,500
	15-7	4,000	1,500	1,200
	26-8	910	190	210
	14-9	4,100	500	1,900
	Medians	4,000	430	1,500

TABLE C-1(d). BACTERIOLOGICAL DATA, STREAM WATER SAMPLES, GATINEAU PARK, 1971.

Sta. No.	Date	MF COUNT PER 100 ML. OF WATER Coliform	Fecal Coliform	Fecal Streptococcus
17 (Riv. Lapeche)	10-6	330	80	16
	24-6	270	100	180
	15-7	1,700	88	530
	26-8	540	8	56
	14-9	1,400	36	90
	Medians	540	80	90
18 (Riv. Lapeche)	10-6	350	40	48
	24-6	800	210	650
	15-7	900	100	790
	26-8	330	8	100
	14-9	1,000	110	270
	Medians	800	100	270
19 (Riv. Lapeche)	10-6	2,200	140	230
	24-6	6,600	1,300	1,100
	15-7	3,200	550	800
	26-8	4,400	94	200
	14-9	17,000	300	950
	Medians	4,400	300	800
20 (Riv. Lapeche)	10-6	400	6	20
	24-6	150	16	180
	15-7	700	16	410
	26-8	52	10	50
	14-9	350	10	190
	Medians	350	10	180
21 (Riv. Lapeche)	10-6	280	4	8
	24-6	160	14	44
	15-7	900	14	310
	26-8	32	<2	140
	14-9	370	6	34
	Medians	280	6	44

TABLE C-2 (a). DAILY RAINFALL IN INCHES, GATINEAU PARK, 1971

Date, 1971		DAILY RAINFALL IN INCHES Kingsmere	Grandview	Mousseau
June	2	.36	.30	-
	3	-	-	.60
	7	2.43	2.29	*4.50 (RF)
	8	-	.08	-
	20	-	.79	.93
	21	-	.40	.28
	24	.03	.07	.08
	25	.39	.53	.51
	26	.01	-	.02
June Totals		3.22	4.46	6.92
July	1	-	.03	.02
	3	.01	.05	-
	5	.21	.19	.30
	6	.77	.87	.57
	8	-	.06	.03
	13	.47	.49	.57
	14	.17	.08	.25
	15	.09	.18	-
	16	.12	.17	.22
	17	.71	.55	.61
	19	.01	-	-
	20	.08	.25	.19
	21	.01	.01	.01
	23	.57	.46	.63
	24	.01	-	-
	26	.83	1.73	.84
	27	.01	.01	-
	28	RF	-	RF
	29	RF	.15	RF
July Totals		4.07	5.28	4.24

RF = Recorder Failure

* = Standard Gauge Reading

TABLE C-2(b). DAILY RAINFALL IN INCHES, GATINEAU PARK, 1971

Date, 1971		DAILY RAINFALL IN INCHES Kingsmere	Grandview	Mousseau
August	6	-	.05	RF
	7	M.D.	.01	RF
	10	.13	.32	RF
	11	.06	.11	*.62 (RF)
	12	.27	-	.02
	13	.02	.05	.06
	14	.59	1.16	.91
	17	.01		-
	20	.02	.04	.01
	21	.04	.18	.04
	22	.41	.26	.35
	23	.05	.10	.04
	26	-	-	.03
	27	.16	.19	.22
	28	.01	.99	1.03
	29	.88	-	.01
	30	.08	.12	M.D.
August Totals		2.73	3.58	3.34
Sept.	4	.30	-	M.D.
	5	.08	-	M.D.
	8	.01	M.D.	M.D.

RF = Recorder Failure

MD = Missing Data

* = Standard Gauge Reading