

NATIONAL RIVERS AUTHORITY  
BIOLOGY  
BATHING WATER QUALITY SURVEY 1995



**NRA**

COMPILED BY  
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ENVIRONMENT AGENCY



042321

## SUMMARY

Overall the designated and non-designated beaches showed an improvement on 1994 results. All three designated beaches achieved compliance with the EC Directives coliform standards. The five non-designated beaches all achieved the compliance standard as well. Overall the results indicate a return to the high achievement of compliance seen between 1990-93. Coliform levels at the ancillary beaches, Gravesend and Grays were higher than those at the Southend beaches, but were typical results for these sites.

The number of samples containing viruses and the viral concentrations were again an improvement on 1994 values. Incidences of between 25% and 65% were recorded, the lowest was at Shoebury East and the highest at Leigh-on-Sea.

The incidence of *Salmonella* sp. was 16%; much the same as in the last two years with only Shoeburyness being clear all season.

The 1995 data shows a positive relationship between rainfall and coliform failures. This is in contrast to the 1994 and 1993 data which showed total independence between rainfall and coliform failures.

## **1. INTRODUCTION**

The National Rivers Authority, Thames Region, is responsible for monitoring the three EC designated bathing beaches which fall within the region's boundaries. This document presents the results of the 1994 Bathing Water Quality Survey for these beaches, along with the results from five non-designated beaches.

The coliform results from two ancillary beaches sampled on five occasions during the bathing season are also included in this document.

## **2. BATHING BEACH SURVEY, 1994**

### **a) Methodology**

The method of sample collection followed that reported in the Bathing Water Quality Report, 1990 (Thomas, 1991). The sites, the frequency with which they were sampled and the microbiological analysis undertaken at each site is summarised in Table 1 with their location being shown in Figure 1.

Coliform, faecal streptococci and *Salmonella* sp. analysis was carried out by the ADAS Microbiology Laboratory at Cambridge. Coliform confirmation was carried out in accordance with the procedures set out in Reports on Public Health and Medical Subjects No. 71 (HMSO, 1984). Viruses were analysed at the NRA Exeter Regional Laboratory.

### **b) Results and Discussion**

The microbiological results from all 10 beaches (three designated, five non-designated and two ancillary) are appended.

The compliance with the EC directives microbiological standards is shown in Table 2. All three designated sites complied with the EC coliform standard. This is an improvement on last year when Thorpe Bay failed this standard. The recorded levels must not exceed the I value more than once in 20 samples. Thorpe bay and Westcliff had one failing sample each, while Shoebury East did not fail a single sample. By contrast it is clear that compliance is not achieved at any of the designated beaches when the combined microbiological values are taken into consideration.

Tables 3-5 compare the presumptive results with the confirmed results. It is clear that the presumptive and confirmed results are very similar.

Table 6 summarises the compliance of the non-designated and ancillary beaches. All but one of the non-designated beaches complied with the EC coliform standards. Gravesend exceeded the coliform I values in 2 out of the 4 samples. Compliance with the combined microbiological EC I values mirrors that of the designated beaches with all of the non-designated beaches falling well below 95% compliance. These results suggest that if the suggested changes to the directive are adopted by the U.K. many more beaches will fail to comply with Bathing Beach standards.

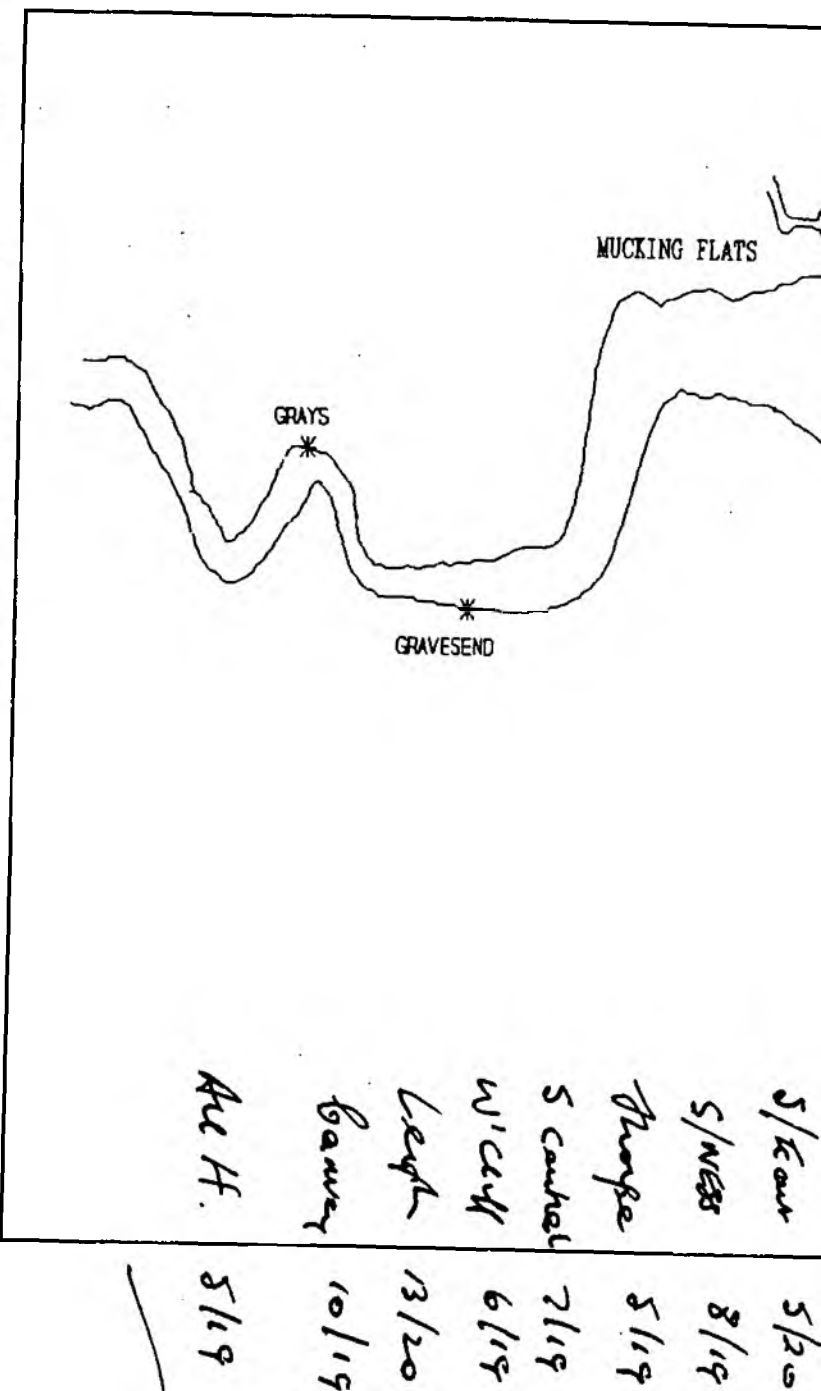
Table 7 summarises the coliform compliance since 1986 for both designated and non-designated beaches. All beaches have improved or at least retained their percentage compliance since 1994 when 3 beaches failed. A large improvement is apparent at Allhallows where a quarter of the samples failed last year.

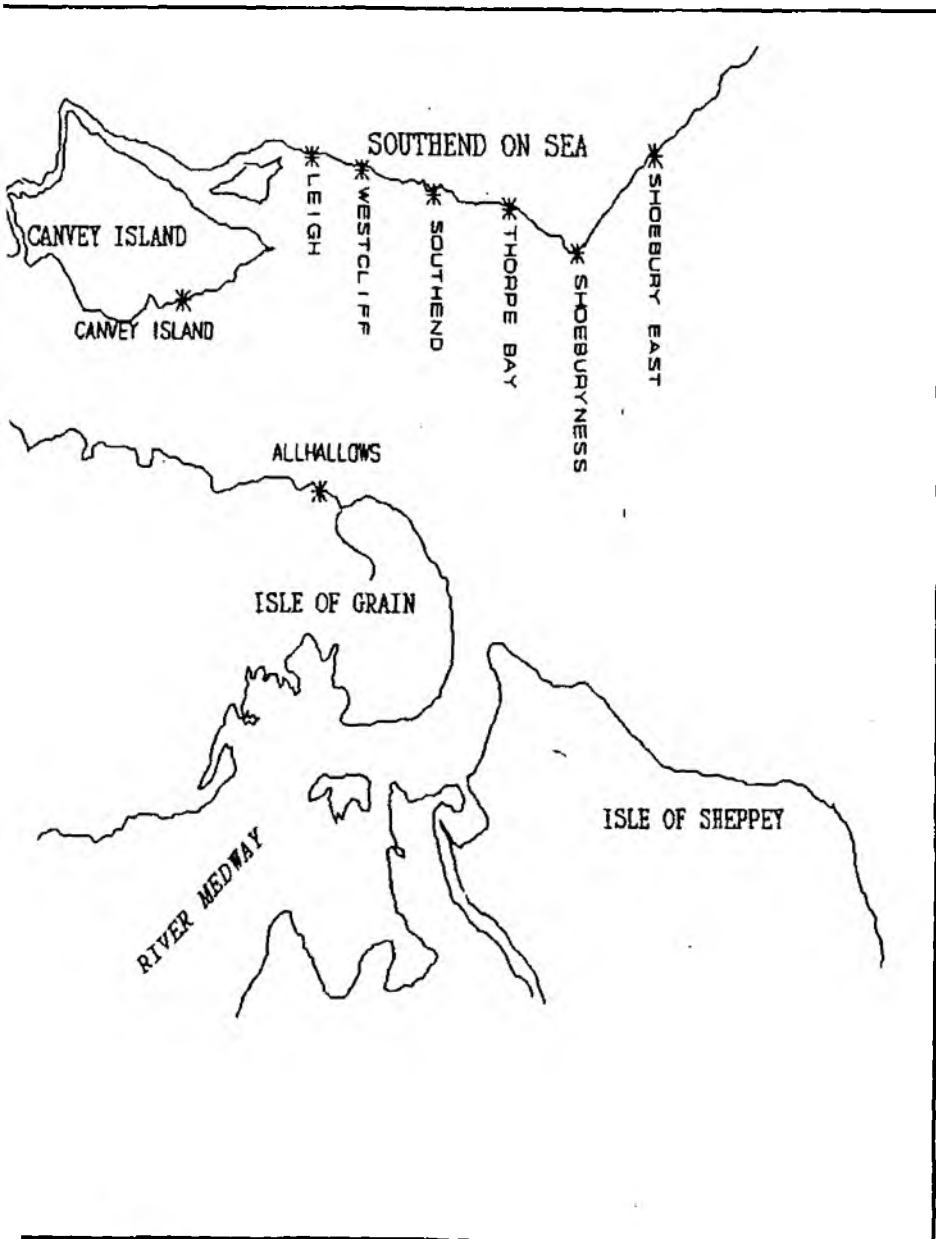
High rainfall has been linked with coliforms failures particularly in the Southend area. Table 8 summarises rainfall during the 1995 bathing beach season and the associated coliform failures. It is clear that the majority of failures follow periods of rainfall and that sample periods preceded by negligible rainfall largely complied with the standards. An exception to this pattern occurred in August when Thorpe Bay exceeded the coliform standard; there had been no rainfall for 15 days prior to this. Overall there is an indication of a relationship between rainfall and coliform failures.

The number of samples containing viruses was half that recorded in 1994 and lower than the number in 1992. The incidence of viruses at the eight Southend Beaches ranged from 25%-65%. The lowest incidence was recorded at Shoebury East and the highest at Leigh-on-Sea. This range is an improvement on 1994's 45-85% but still higher than the 16%-40% recorded in 1993. The maximum viral concentration recorded was 11/10 litres.

*Salmonella* spp. were recorded at all sites except Shoeburyness, while the number of samples containing *Salmonella* spp (16%) was in the same range as the last two years.

FIGURE 1 - BATHING BEACH SITES 1993





*Thames  
in*

TABLE 1

SAMPLING FREQUENCY

SITE	GRID REF	E.COLI	TOTAL COLIFORMS	FAECAL STREPS	SALMONELLA	VIRUSES
<b>EC DESIGNATED BEACHES</b>						
Shoebury East	TQ 945 852	20	20	20	20	20
Thorpe Bay	TQ 911 847	20	20	20	20	19 <sup>1</sup>
Westcliff	TQ 864 853	20	20	20	20	19 <sub>1</sub>
<b>NON-DESIGNATED BEACHES</b>						
Shoeburyness	TQ 925 841	20	20	20	20	19 <sup>1</sup>
Southend	TQ 887 850	20	20	20	20	19 <sup>1</sup>
Leigh-on-Sea	TQ 841 856	20	20	20	20	20
Canvey Island	TQ 805 824	20	20	20	20	19 <sup>1</sup>
Allhallows	TQ 837 789	20	20	20	20	19 <sup>1</sup>
<b>ANCILLARY BEACHES</b>						
Grays	TQ 614 775	5	5	0	0	0
Gravesend East	TQ 649 746	4 <sup>1</sup>	4 <sup>1</sup>	0	0	0

<sup>1</sup> One result lost due to sampling/analytical error.



TABLE 2

**EC DESIGNATED BEACHES - COMPLIANCE WITH EC DIRECTIVE ON MICROBIOLOGICAL STANDARDS**

<b>COMPLIANCE WITH COLIFORM I VALUES</b>	<b>Shoebury East</b>	<b>Thorpe Bay</b>	<b>Westcliff</b>
Number of Samples Taken	20	20	20
Number of Failures	0	1	1
% Compliance	100%	95%	95%
Compliance with EC Directive on Coliforms	PASS	PASS	PASS
<b>COMPLIANCE WITH ALL MICROBIOLOGICAL I VALUES</b>			
Number of Samples Taken	20	20 <sup>1</sup>	20 <sup>1</sup>
Number of Failures	6	8	11
% Compliance	70%	60%	45%
Compliance with EC Directive on E.coli, Salmonella and Enteroviruses	<b>FAIL</b>	<b>FAIL</b>	<b>FAIL</b>

<sup>1</sup> Only 19 virus samples

# SHOEBURY EAST

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TABLE 3

## PRESUMPTIVE/CONFIRMED COLIFORM RESULTS

DATE	TOTAL COLIFORMS /100ml (Presumptive)	TOTAL COLIFORMS /100ml (Confirmed)	E. COLI /100ml (Presumptive)	E. COLI /100ml (Confirmed)
14/5/95	< 10	< 10	< 10	< 10
15/5/95	< 10	< 10	< 10	< 10
26/5/95	< 10	< 10	< 10	< 10
27/5/95	< 10	< 10	< 10	< 10
12/6/95	30	30	20	20
13/6/95	50	50	40	10
26/6/95	< 10	< 10	< 10	< 10
27/6/95	150	30	10	10
10/7/95	10	10	< 10	< 10
11/7/95	270	270	100	100
25/7/95	50	20	10	< 10
26/7/95	540	540	170	170
9/8/95	1000	800	320	30
10/8/95	500	500	200	120
11/8/95	190	95	90	< 10
24/8/95	10	10	< 10	< 10
25/8/95	30	30	< 10	< 10
7/9/95	700	700	450	360
8/9/95	320	256	360	252
9/9/95	100	100	70	70

(3)

Fails "G"

(4)

# THORPE BAY



TABLE 4

## PRESUMPTIVE/CONFIRMED COLIFORMS RESULTS

DATE	TOTAL COLIFORMS /100ml (Presumptive)	TOTAL COLIFORMS /100ml (Confirmed)	E.COLI /100ml (Presumptive)	E.COLI /100ml (Confirmed)
14/5/95	< 10	< 10	< 10	< 10
15/5/95	10	10	< 10	< 10
26/5/95	40	30	60	60
27/5/95	10	10	10	10
12/6/95	370	370	300	270
13/6/95	< 10	< 10	< 10	< 10
26/6/95	< 10	< 10	< 10	< 10
27/6/95	< 10	< 10	< 10	< 10
10/7/95	180	180	170	170
11/7/95	10	10	10	10
25/7/95	40	20	10	< 10
26/7/95	80	80	20	20
9/8/95	100	100	20	20
10/8/95	300	300	290	261
11/8/95	20,000	20,000	13,000	<u>13,000</u>
24/8/95	180	180	90	90
25/8/95	1,700	1,360	490	441
7/9/95	180	180	1,200	1,200
8/9/95	3,200	2,240	1,400	980
9/9/95	530	530	470	470

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Worse end of season

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fail 5



## PRESUMPTIVE/CONFIRMED COLIFORMS RESULTS

DATE	TOTAL COLIFORMS /100ml (Presumptive)	TOTAL COLIFORMS /100ml (Confirmed)	E.COLI /100ml (Presumptive)	E.COLI /100ml (Confirmed)
14/5/95	30	10	20	10
15/5/95	130	65	40	40
26/5/95	21,000	21,000	20,000	<del>20,000</del>
27/5/95	1,600	1,600	1,900	1,900
12/6/95	830	830	590	590
13/6/95	1,600	1,440	740	740
26/6/95	<10	<10	<10	<10
27/6/95	180	162	250	200
10/7/95	40	40	10	10
11/7/95	100	100	30	30
25/7/95	50	20	130	130
26/7/95	20	20	20	20
9/8/95	80	70	100	80
10/8/95	900	900	620	620
11/8/95	180	162	80	70
24/8/95	300	300	460	460
25/8/95	2,100	1,680	1,600	1,120
7/9/95	3,000	3,000	1,000	1,000
8/9/95	2,200	1,540	1,000	900
9/9/95	3,000	3,000	400	400

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fours 9

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TABLE 6

**COMPARISON OF MICROBIOLOGICAL RESULTS FROM NON-DESIGNATED BEACHES WITH EC I VALUES**

	SHOEBURYNNESS	SOUTHEND	LEIGH- ON-SEA	CANVEY ISLAND	ALLHALLOWS	GRAVESEND EAST	GRAYS
Number of Samples Taken	20 <sup>1</sup>	20 <sup>1</sup>	20	20 <sup>1</sup>	20 <sup>1</sup>	4 <sup>2</sup>	5
Number of Samples Exceeding coliform EC I values	0	0	1	0	1	2	0
% compliance within coliform EC I values	100	100	95	100	95	50	100
Number of samples Exceeding microbiological EC I values - Salmonella, E.coli, enteroviruses.	8	12	13	14	8	-	-
% compliance within combined microbiological EC I values	60	40	35	30	60	-	-

<sup>1</sup> Only 19 virus samples

<sup>2</sup> One result lost due to sampling/analytical error

## NUMBER OF SAMPLES EXCEEDING THE COLIFORM I VALUES AND THE PERCENTAGE COMPLIANCE (IN BOLD) WHERE APPROPRIATE

## DESIGNATED BEACHES

*new outfall?*

	1986		1987		1988		1989		1990	
SHOEBURY EAST	-		-		-		0/20	100%	0/20	100%
THORPE BAY	3/16	81%	5/16	69%	7/20	65%	1/20	95%	1/20	95%
WESTCLIFF	1/16	94%	3/16	81%	2/20	90%	1/20	95%	0/20	100%
	1991		1992		1993		1994		1995	
SHOEBURY EAST	0/20	100%	0/20	100%	0/20	100%	0/20	100%	0/20	100%
THORPE BAY	0/20	100%	0/20	100%	1/20	95%	2/20	90%	1/20	95%
WESTCLIFF	2/20	90%	0/20	100%	0/20	100%	1/20	95%	1/20	95%

## NON-DESIGNATED BEACHES

	1986		1987		1988		1989		1990	
SHOEBURYNESS	5/16	69%	7/16	57%	2/20	90%	2/20	90%	0/20	100%
SOUTHEND	3/16	81%	9/16	44%	4/20	80%	1/20	95%	1/20	95%
LEIGH-ON-SEA	1/16	94%	1/16	94%	2/20	90%	1/20	95%	0/20	100%
CANVEY ISLAND	-		-		1/9	89%	2/20	90%	0/20	100%
ALLHALLOWS	-		-		-		-		-	
	1991		1992		1993		1994		1995	
SHOEBURYNESS	1/20	95%	0/19	100%	0/20	100%	0/20	100%	0/20	100%
SOUTHEND	1/20	95%	0/20	100%	1/20	95%	1/20	95%	0/20	100%
LEIGH-ON-SEA	0/20	100%	1/20	95%	1/20	95%	2/20	90%	1/20	95%
CANVEY ISLAND	0/20	100%	0/19	100%	0/20	100%	1/20	95%	0/20	100%
ALLHALLOWS	-		2/19	90%	1/20	95%	5/20	75%	1/20	95%

## DAILY RAINFALL FIGURES FOR SOUTHEND (mm)

DAY NO.	MAY	JUN	JUL	AUG	SEP
1	0.0	0.2	0.0	0.0	TR
2	0.0	0.0	8.8	0.0	0.8
3	0.0	1.4	0.0	0.0	0.0
4	0.0	14.2	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	1.0
6	0.0	2.2	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	9.4
8	0.0	3.2	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	TR
10	0.0	1.2	1.8	0.0	3.5
11	0.0	0.4	0.2	0.0	0.6
12	0.0	0.4	0.0	0.0	4.0
13	0.0	0.0	5.0	0.0	0.4
14	0.0	0.0	0.0	0.0	2.6
15	0.0	0.0	0.0	0.0	16.4
16	10.5	1.4	0.4	0.0	14.6
17	6.4	0.4	0.0	0.0	0.0
18	0.0	0.0	0.0	2.0	5.8
19	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	2.8
23	0.0	0.0	0.0	0.0	0.6
24	1.8	0.0	0.0	0.0	5.8
25	0.0	0.0	0.2	0.0	0.2
26	0.0	0.0	0.0	0.0	14.4
27	0.0	0.0	0.0	0.0	0.2
28	1.2	0.0	0.0	0.0	0.0
29	0.4	0.0	0.0	0.0	0.0
30	1.4	0.0	0.0	0.0	2.2
31	3.0		0.0	0.0	
TOTAL	24.7	25.0	16.4	2.0	85.3

Shaded block indicates sample date.

Underlined figure indicates designated beach coliform failure

Bold figure indicates non-designated beach coliform failure.

TR indicates trace levels of rainfall.

*Useful.*

*sunlight  
hours too??*

**APPENDIX**



**N.R.A. BATHING BEACH RESULTS - 1995****SHOEBURY EAST**TQ 945 852  
(EC Designated Beach)

DATE	TOTAL COLIFORMS /100ml (Confirmed)	FAECAL COLIFORMS /100ml (Confirmed)	FAECAL STREPS. /100ml (Presumptive)	SALMONELLA /l	VIRUSES /10l
14/5/95	< 10	< 10	< 10	ND	6
15/5/95	< 10	< 10	< 10	ND	1
26/5/95	< 10	< 10	20	ND	< 1
27/5/95	< 10	< 10	< 10	ND	< 1
12/6/95	30	20	50	ND	2
13/6/95	50	10	< 10	ND	< 1
26/6/95	< 10	< 10	< 10	ND	1
27/6/95	30	10	< 10	ND	< 1
10/7/95	10	< 10	< 10	ND	4
11/7/95	270	100	60	ND	< 1
25/7/95	20	< 10	< 10	ND	< 1
26/7/95	540	170	80	ND	< 1
9/8/95	800	30	< 10	ND	< 1
10/8/95	500	120	20	ND	< 1
11/8/95	95	< 10	10	PRESENT	< 1
24/8/95	10	< 10	< 10	ND	< 1
25/8/95	30	< 10	< 10	ND	< 1
7/9/95	700	360	40	ND	< 1
8/9/95	256	252	60	ND	< 1
9/9/95	100	70	20	ND	< 1

ND = Not Detected

■ = Coliform I value exceeded

**N.R.A. BATHING BEACH RESULTS - 1995**

**SHOEBURYNNESS**

TQ 925 841

DATE	TOTAL COLIFORMS /100ml (Presumptive)	E. COLI /100ml (Presumptive)	FAECAL STREPS. /100ml (Presumptive)	SALMONELLA /l	VIRUSES /10l
14/5/95	50	30	80	ND	1
15/5/95	170	30	40	ND	1
26/5/95	10	<10	10	ND	2
27/5/95	<10	<10	<10	ND	2
12/6/95	140	100	10	ND	3
13/6/95	260	110	10	ND	<1
26/6/95	10	<10	<10	ND	<1
27/6/95	10	<10	10	ND	<1
10/7/95	20	<10	<10	ND	1
11/7/95	60	30	10	ND	<1
25/7/95	30	20	<10	ND	<1
26/7/95	20	170	<10	ND	2
9/8/95	500	250	40	ND	2
10/8/95	330	10	160	ND	<1
11/8/95	270	210	10	ND	<1
24/8/95	50	10	10	ND	<1
25/8/95	520	170	570	ND	<1
7/9/95	1,000	670	1,100	ND	NOT MEASURED
8/9/95	500	400	70	ND	<1
9/9/95	300	200	10	ND	<1

ND=Not Detected

☒ = Coliform I value exceeded

**N.R.A. BATHING BEACH RESULTS - 1995**

**THORPE BAY**

TQ 911 847

(EC Designated Beach)

DATE	TOTAL COLIFORMS /100ml (Confirmed)	FAECAL COLIFORMS /100ml (Confirmed)	FAECAL STREPS. /100ml (Presumptive)	SALMONELLA /l	VIRUSES /10l
14/5/95	< 10	< 10	10	ND	1
15/5/95	10	< 10	< 10	ND	< 1
26/5/95	30	60	< 10	ND	1
27/5/95	10	10	10	ND	< 1
12/6/95	370	270	130	ND	2
13/6/95	< 10	< 10	20	ND	< 1
26/6/95	< 10	< 10	< 10	ND	< 1
27/6/95	< 10	< 10	10	ND	< 1
10/7/95	180	170	110	ND	1
11/7/95	10	10	< 10	ND	< 1
25/7/95	20	< 10	< 10	ND	< 1
26/7/95	80	20	20	ND	< 1
9/8/95	100	20	< 10	ND	< 1
10/8/95	300	261	90	ND	2
11/8/95	<del>20,000</del>	<del>13,000</del>	20	ND	< 1
24/8/95	180	90	< 10	ND	< 1
25/8/95	1,360	441	40	ND	< 1
7/9/95	180	1,200	1,700	PRESENT	NOT MEASURED
8/9/95	2,240	980	290	PRESENT	< 1
9/9/95	530	470	< 10	ND	< 1

ND = Not Detected

~~██~~ = Coliform I value exceeded

**N.R.A. BATHING BEACH RESULTS - 1995**

**SOUTHEND** *C. G. W. M. A. L.*

TQ 887 850

DATE	TOTAL COLIFORMS /100ml (Presumptive)	E. COLI /100ml (Presumptive)	FAECAL STREPS. /100ml (Presumptive)	SALMONELLA /l	VIRUSES /10l
14/5/95	20	10	< 10	ND	1
15/5/95	< 10	< 10	< 10	ND	1
26/5/95	20	< 10	20	ND	< 1
27/5/95	180	80	< 10	ND	< 1
12/6/95	870	200	90	ND	1
13/6/95	210	160	30	ND	2
26/6/95	30	10	< 10	ND	< 1
27/6/95	60	30	10	PRESENT	< 1
10/7/95	70	< 10	10	ND	3
11/7/95	170	20	10	ND	< 1
25/7/95	110	50	30	ND	< 1
26/7/95	80	30	< 10	ND	5
9/8/95	300	20	110	PRESENT	< 1
10/8/95	70	10	90	ND	1
11/8/95	310	140	10	ND	< 1
24/8/95	90	60	< 10	ND	< 1
25/8/95	900	550	50	PRESENT	< 1
7/9/95	4,000	1,900	840	ND	NOT MEASURED
8/9/95	2,600	1,500	210	PRESENT	< 1
9/9/95	900	590	30	PRESENT	< 1

ND=Not Detected

☒ = Coliform I value exceeded

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**N.R.A. BATHING BEACH RESULTS - 1995**

**WESTCLIFF**

TQ 864 853

(EC Designated Beach)

	TOTAL COLIFORMS /100ml (Confirmed)	FAECAL COLIFORMS /100ml (Confirmed)	FAECAL STREPS. /100ml (Presumptive)	SALMONELLA /l	VIRUSES /10l
14/5/95	10	10	<10	ND	<1
15/5/95	65	40	20	ND	5
26/5/95	<b>21,000</b>	<b>20,000</b>	1,400	ND	3
27/5/95	1,600	1,900	40	ND	1
12/6/95	830	590	120	PRESENT	<1
13/6/95	1,440	740	530	PRESENT	<1
26/6/95	<10	<10	<10	ND	<1
27/6/95	162	200	320	ND	<1
10/7/95	40	10	<10	ND	6
11/7/95	100	30	70	ND	<1
25/7/95	20	130	60	ND	<1
26/7/95	20	20	10	ND	2
9/8/95	70	80	20	ND	<1
10/8/95	900	620	560	PRESENT	1
11/8/95	162	70	20	ND	<1
24/8/95	300	460	<10	ND	<1
25/8/95	1,680	1,120	190	ND	<1
7/9/95	3,000	1,000	680	PRESENT	NOT MEASURED
8/9/95	1,540	900	170	PRESENT	<1
9/9/95	3,000	400	20	PRESENT	<1

ND=Not Detected

**■** = Coliform I value exceeded

**N.R.A. BATHING BEACH RESULTS - 1995**

**LEIGH-ON-SEA**

TQ 841 856

DATE	TOTAL COLIFORMS /100ml (Presumptive)	E.COLI /100ml (Presumptive)	FAECAL STREPS. /100ml (Presumptive)	SALMONELLA /l	VIRUSES /10l
14/5/95	10	10	<10	ND	1
15/5/95	90	30	80	ND	1
26/5/95	50	<10	20	ND	2
27/5/95	30	20	<10	ND	1
12/6/95	8,200	3,700	1,500	PRESENT	1
13/6/95	250	60	20	ND	6
26/6/95	<10	<10	<10	ND	<1
27/6/95	150	130	160	ND	<1
10/7/95	60	10	1,100	ND	3
11/7/95	110	40	100	ND	<1
25/7/95	320	440	570	ND	1
26/7/95	440	320	6,600	ND	1
9/8/95	900	310	90	PRESENT	1
10/8/95	330	190	20	PRESENT	2
11/8/95	120	330	290	PRESENT	11
24/8/95	50	20	10	ND	<1
25/8/95	50	40	50	ND	<1
7/9/95	600	220	310	ND	<1
8/9/95	1,200	1,100	400	ND	1
9/9/95	120	70	30	ND	<1

ND = Not Detected

☒ = Coliform I value exceeded

**N.R.A. BATHING BEACH RESULTS - 1995**

**CANVEY ISLAND**

TQ 805 824

DATE	TOTAL COLIFORMS /100ml (Presumptive)	E. COLI /100ml (Presumptive)	FAECAL STREPS. /100ml (Presumptive)	SALMONELLA /l	VIRUSES /10l
14/5/95	560	90	<10	ND	2
15/5/95	1,185	480	20	ND	5
26/5/95	90	70	10	ND	1
27/5/95	40	20	<10	ND	3
12/6/95	560	340	30	PRESENT	<1
13/6/95	740	550	50	PRESENT	3
26/6/95	230	130	10	ND	1
27/6/95	100	50	150	ND	1
10/7/95	170	170	<10	ND	5
11/7/95	450	250	60	ND	2
25/7/95	10	160	10	ND	<1
26/7/95	150	110	20	ND	<1
9/8/95	220	300	30	ND	1
10/8/95	1,000	380	40	PRESENT	<1
11/8/95	780	460	20	ND	<1
24/8/95	240	90	10	ND	<1
25/8/95	660	540	30	PRESENT	<1
7/9/95	700	420	100	ND	NOT MEASURED
8/9/95	2,900	1,200	180	PRESENT	<1
9/9/95	900	560	30	ND	<1

ND=Not Detected    ■=Coliform I value exceeded

**N.R.A. BATHING BEACH RESULTS - 1995**

**ALLHALLOWS**

TQ 837 789

DATE	TOTAL COLIFORMS /100ml (Presumptive)	E. COLI /100ml (Presumptive)	FAECAL STREPS. /100ml (Presumptive)	SALMONELLA /l	VIRUSES /10l
14/5/95	660	610	<10	ND	2
15/5/95	420	200	10	ND	1
26/5/95	<10	<10	<10	ND	1
27/5/95	<10	<10	20	ND	1
12/6/95	1,070	2,200	820	ND	<1
13/6/95	200	80	20	ND	<1
26/6/95	<10	<10	70	ND	<1
27/6/95	200	180	180	ND	<1
10/7/95	80	40	<10	ND	<1
11/7/95	700	650	50	ND	1
25/7/95	210	210	130	ND	<1
9/8/95	70	20	20	ND	<1
10/8/95	1,100	1,100	440	ND	<1
11/8/95	540	570	140	ND	<1
23/8/95	110	80	30	PRESENT	NOT MEASURED
24/8/95	400	220	40	ND	<1
25/8/95	2,000	2,000	1,300	ND	<1
7/9/95	190	180	60	ND	<1
8/9/95	400	270	40	PRESENT	<1
9/9/95	190	110	<10	ND	<1

ND=Not Detected

☒ = Coliform I value exceeded



**N.R.A. BATHING BEACH RESULTS - 1995****GRAYS**

TQ 614 775

DATE	TOTAL COLIFORMS /100ml (Presumptive)	E. COLI /100ml (Presumptive)
26/5/95	860	370
13/6/95	3,000	930
26/7/95	2,300	2,000
25/8/95	2,400	700
8/9/95	2,200	1,100

**GRAVESEND EAST**

TQ 649 746

DATE	TOTAL COLIFORMS /100ml (Presumptive)	E. COLI /100ml (Presumptive)
26/5/95	1,600	1,400
13/6/95	4,400	2,300
26/7/95	SAMPLE NOT TAKEN	SAMPLE NOT TAKEN
25/8/95	5,000	1,600
8/9/95	20,000	2,900