NEWPORT BAY FECAL COLIFORM TMDL
ANNUAL DATA REPORT

September 2002

Prepared and submitted on behalf of:

The County of Orange
and
The Cities of Costa Mesa, Irvine, Lake Forest,
Newport Beach, Orange, Santa Ana, and Tustin

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NEWPORT BAY FECAL COLIFORM TMDL ANNUAL DATA REPORT

1.0 INTRODUCTION

The fecal coliform TMDL and a January 7, 2000 letter from the Santa Ana Regional Water Quality Control Board (RWQCB) (**Appendix A**) require the County of Orange and the Cities of Costa Mesa, Irvine, Lake Forest, Newport Beach, Orange, Santa Ana and Tustin to submit an annual data report by September 1st of each year. The report is intended to summarize the bacteriological data collected in Newport Bay for the year and evaluate compliance with bacterial quality objectives established by the RWQCB. This report responds to these requirements and includes data from April 1, 2001 through March 31, 2002.

2.0 ROUTINE MONITORING PROGRAM (TMDL Section 3.a.ii.a)

2.1 Data Collection

Section 3.a.ii.a of the TMDL requires the County and watershed cities to implement a routine monitoring program to determine compliance with bacterial quality objectives in the Bay. At a minimum, routine monitoring includes the collection of five samples per 30-day period at a total of 35 stations, as identified in **Figure 1**, and analysis of the samples for total coliform, fecal coliform, and *enterococcus*. The County and watershed cities have identified the current monitoring program implemented by the Orange County Health Care Agency (HCA) as the basis for satisfying the requirements of the routine monitoring program.

The Water Quality Control Plan, Santa Ana River Basin (Basin Plan) established a fecal coliform water quality objective for REC-1 use of Bays and Estuaries as follows:

Fecal coliform concentration: log mean less than 200 MPN/100 mL, based on five or more samples/30 day period, and not more than 10% of the samples exceed 400 organisms/100mL for any 30-day period.

For the purpose of evaluating compliance with this objective, *E. coli* was used in the September 2001 Annual Data Report as a surrogate for fecal coliform. Although the relationship between *E. coli* and fecal coliform indicators is imprecisely defined, it is generally accepted that *E. coli* bacteria comprise 80-90 percent of the fecal coliform measured in a typical surface water sample. Following a request from the RWQCB, the monitoring program was revised to measure fecal coliform, rather than *E. coli* to correspond with the requirements of the TMDL. The effective date of change in bacteriological indicator was March 19, 2001. This annual report is therefore the first that provides fecal coliform data for the entire reporting year.

2.2 Data Analysis

Table 1 presents the data from the HCA's bacteriological monitoring program. Concentrations of total coliform, fecal coliform, and *enterococcus* are listed for each Bay station and tributary with the sampling date.

Table 2 presents an evaluation of the data in **Table 1** with respect to the REC-1 fecal coliform objective in the Basin Plan.

Figures 2 and **3** show the percentage of time that fecal coliform sampling at each station met REC-1 fecal coliform objectives for the dry and wet seasons, respectively.

During the dry season (April –Oct.), as depicted in **Figure 2**, twenty of twenty-nine stations met the REC-1 objective at least 75% of the time. The following seven stations met the objective 100% of the time:

- Ruby Avenue
- Bayshore Beach
- 10th Street Beach
- Sapphire Avenue
- N Street Beach
- Promontory Point
- De Anza Launch

The data show that in general most stations were in good compliance with the REC-1 fecal coliform objective during the dry season. The following stations were exceptions in meeting the objective less than 45% of the time:

- 33rd Street Channel
- Lido Isle Yacht Club
- Newport Blvd. Bridge

During the wet season (Oct.-April), as depicted in **Figure 3**, seven of twenty-nine stations met the REC-1 fecal coliform objective at least 75% of the time, with Rocky Point Beach meeting the objective 92% of the time. The following stations though, met the objective less than 45% of the time:

- Onyx Avenue
- 33rd Street Channel
- 19th Street Beach
- 10th Street Beach
- Newport Dunes East
- Newport Dunes Middle
- Newport Dunes West
- Newport Dunes North
- North Star Beach

Four stations were frequently not amenable to sampling due to either: 1) Low tide conditions (Vaughn's Launch and Ski Zone), 2) Inaccessible access roads (Vaughn's Launch, Ski Zone and Big Canyon Wash), or 3) Water diversion practices (Back Bay Drive Drain). The inability to sample at these locations on a regular basis is the primary reason for missing geomean values as depicted in **Table 2**. In particular, geomean values for the Upper Bay stations of Vaughn's Launch and the Ski Zone could not be calculated for the entire sampling period of April 1, 2001- March 31, 2002. Consequently, there is insufficient data to determine if the stations were in compliance with the fecal coliform objectives.

Figures

FIGURE 1

BACTERIOLOGICAL WATER SAMPLING STATIONS IN NEWPORT BAY

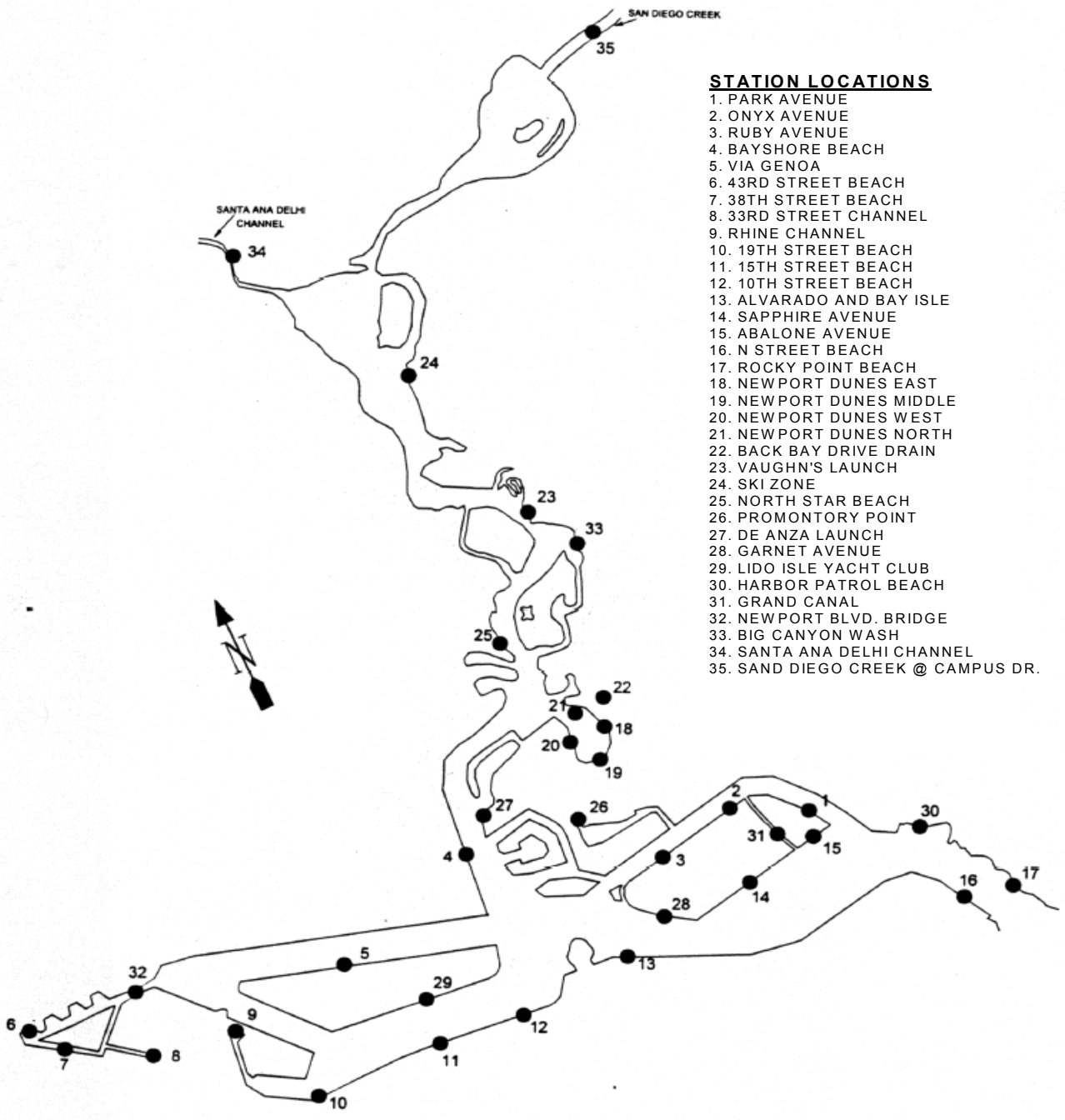
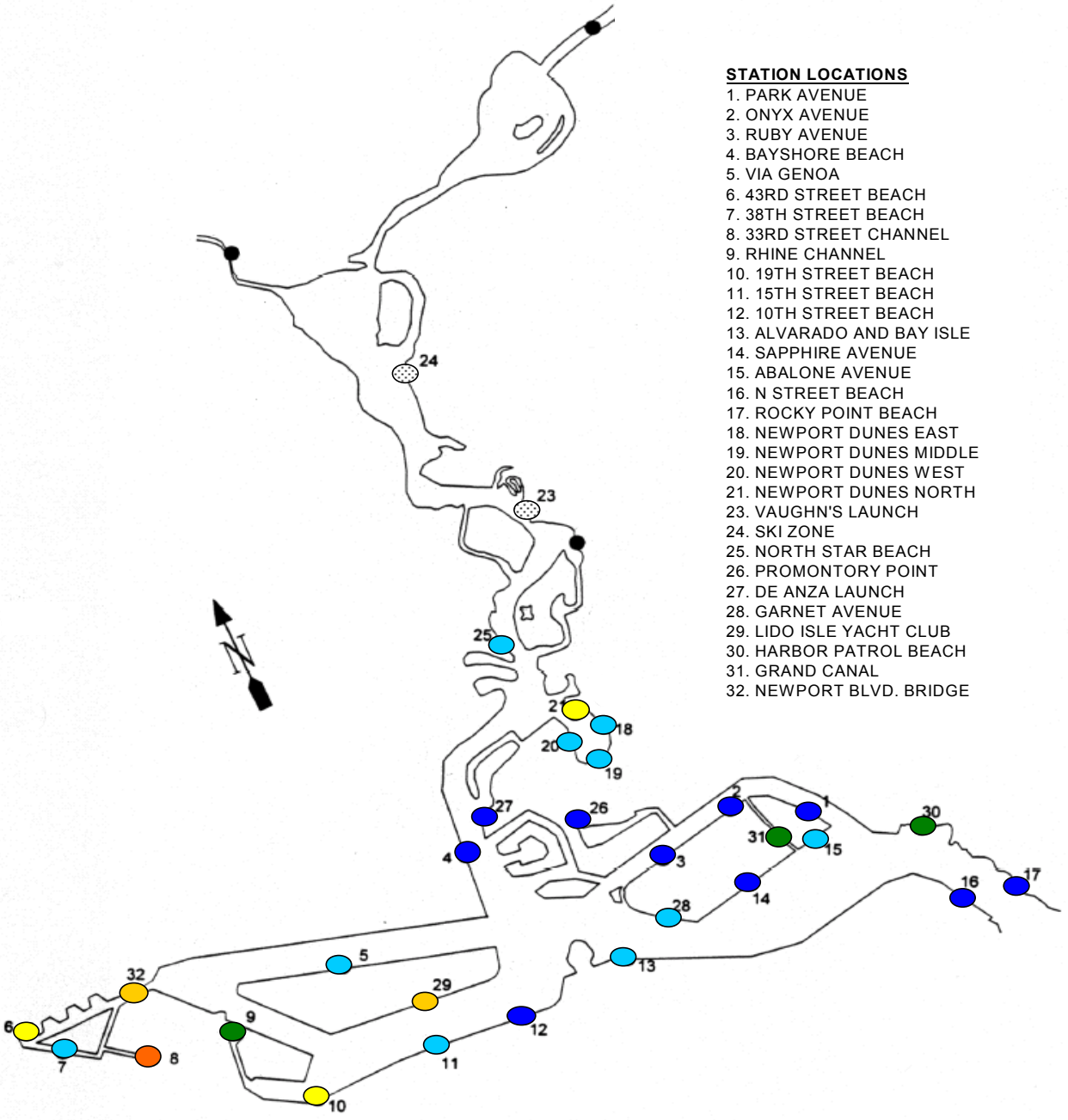


FIGURE 2

Percentage of Time Fecal Coliform Objective Met (Geomean and non-exceedance of 400 CFU/100mL) for Dry Season

(April 15-October 15)



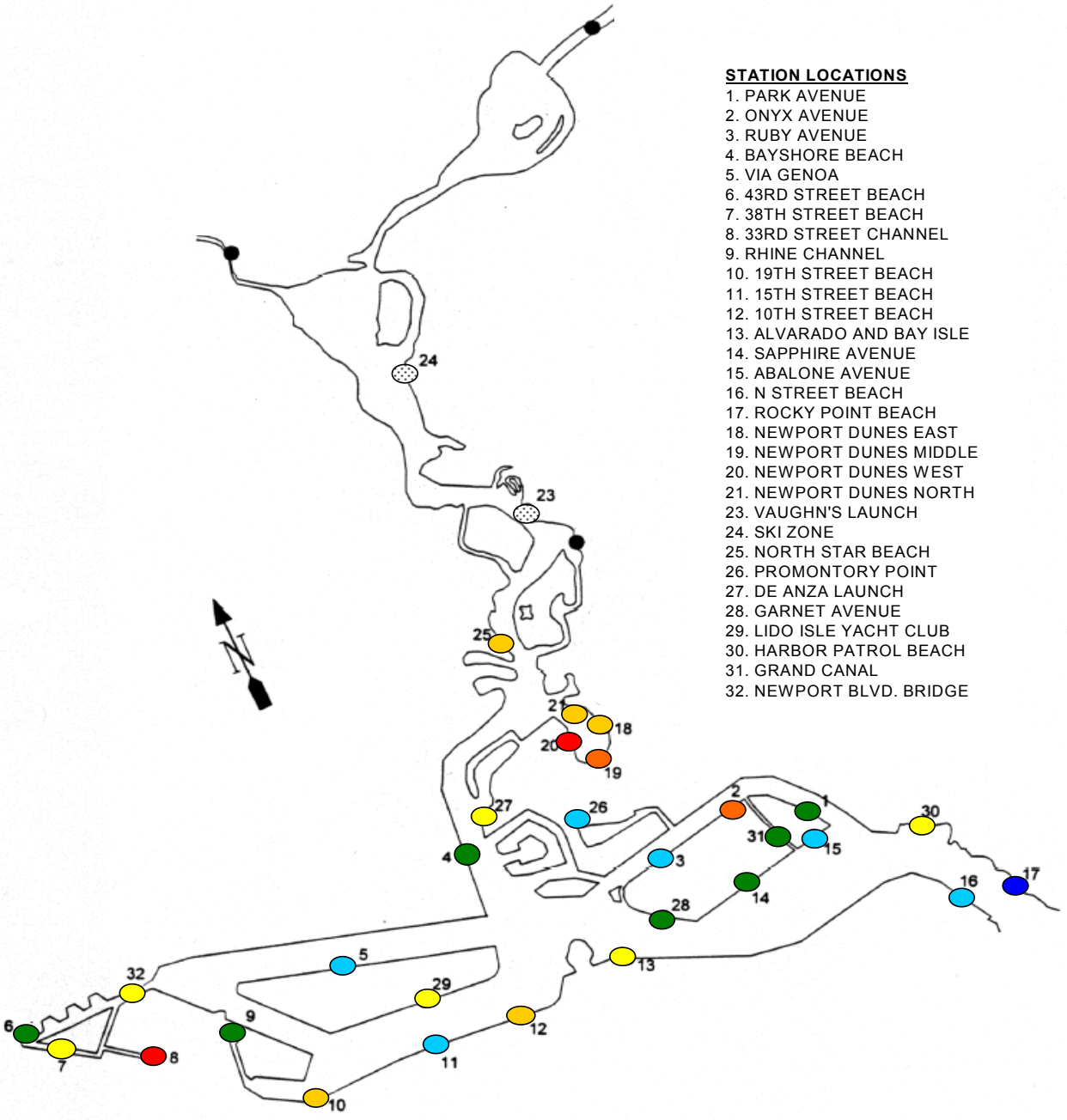
ID	0% -14%	15% - 29%	30% - 44%	45%-59%	60%-74%	75%-89%	90%+

ID = Insufficient Data to calculate a representative percentage value for site

FIGURE 3

Percentage of Time Fecal Coliform Objective Met (Geomean and non-exceedance of 400 CFU/100mL) for Wet Season

(October 16- April 14)



ID	0% -14%	15% - 29%	30% - 44%	45%-59%	60%-74%	75%-89%	90%+

ID = Insufficient Data to calculate a representative percentage value for site

Tables

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY

LOWER BAY STATIONS
(Concentrations in CFU/100mL)

	43rd Street Beach			38th Street Beach			33rd Street Channel			Lido Yacht Club Beach		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
2-Apr-01	95	20	<10	40	20	30	>2400	600	>2600	95	30	<10
9-Apr-01	550	20	30	2000	90	1000	TNTC	1910	3000	TNTC	570	130
16-Apr-01	<10	<10	<10	20	<10	20	2800	50	50	40	70	<10
23-Apr-01	90	10	10	70	30	<10	770	<10	<10	9400	100	<10
30-Apr-01	10	<10	<10	10	<10	<10	350	<10	100	10	<10	<10
9-May-01	21000	250	110	170	40	10	80	<10	20	10	10	<10
14-May-01	90	<10	<10	50	10	<10	200	20	170	430	530	<10
21-May-01	230	10	<10	130	10	50	80	30	<10	<10	20	30
31-May-01	10	<10	10	80	30	60	3600	150	290	<10	<10	<10
4-Jun-01	6200	70	30	3600	100	60	600	30	80	90	10	10
11-Jun-01	Cw/C	120	40	5800	140	70	410	60	80	50	100	10
18-Jun-01	>4600	400	40	3200	20	10	Cw/C	5200	1700	30	20	10
25-Jun-01	10	<10	<10	650	20	<10	50	10	<10	>580	940	20
2-Jul-01	620	10	<10	200	20	70	3200	220	20	>30	30	10
9-Jul-01	11200	720	100	360	50	70	TNTC	6800	8800	60	10	20
16-Jul-01	3200	950	450	2000	600	30	3400	60	90	5000	3400	20
23-Jul-01	7600	70	10	870	40	30	8400	470	250	10	10	10
30-Jul-01	>30200	400	90	240	<10	20	50	<10	<10	40	<10	<10
6-Aug-01	360	40	<10	1200	40	80	Cw/C	>40000	1480	10	<10	<10
13-Aug-01	380	10	50	1200	30	20	50	30	20	50	80	20
20-Aug-01	13200	930	260	1100	80	30	770	200	50	70	40	10
27-Aug-01	720	10	10	890	40	10	>11800	590	270	20	<10	<10
4-Sep-01	640	100	90	6200	230	40	1600	90	140	140	<10	10
10-Sep-01	390	<10	10	1000	80	40	>8200	80	30	110	100	200
17-Sep-01	10	50	<10	130	20	10	120	<10	10	130	<10	<10
24-Sep-01	50	30	<10	200	10	10	Cw/C	4000	260	10	<10	<10
1-Oct-01	270	10	<10	310	10	20	TNTC	2000	90	400	10	<10
9-Oct-01	280	20	10	60	<10	<10	980	<10	<10	20	10	<10
15-Oct-01	180	20	<10	130	10	30	>30	<10	20	20	10	<10
22-Oct-01	90	70	<10	20	<10	<10	150	<10	<10	<10	<10	<10
29-Oct-01	170	20	<10	TNTC	340	20	6800	>60	710	<10	10	<10
5-Nov-01	19200	100	<10	TNTC	360	90	Cw/C	<40000	28000	20	10	<10
13-Nov-01	29000	2400	160	TNTC	9000	1450	TNTC	7600	1610	970	110	160
20-Nov-01	560	80	130	1360	100	120	880	50	20	100	<10	<10
26-Nov-01	TNTC	6000	700	TNTC	6200	660	Cw/C	5400	904	Cw/C	21800	1900
3-Dec-01	4000	200	180	11000	770	440	>27600	800	110	160	40	30
10-Dec-01	1550	60	50	110	10	10	TNTC	3600	550	70	10	40
17-Dec-01	560	40	<10	590	80	<10	930	130	40	620	<10	<10
26-Dec-01	1300	70	<10	20	<10	<10	620	40	40	10	<10	<10
2-Jan-02	940	120	120	1000	70	20	1410	320	110	880	50	50
7-Jan-02	80	10	<10	110	10	10	6000	130	130	10	<10	10
14-Jan-02	230	110	510	120	60	<10	190	20	<10	<10	<10	<10
22-Jan-02	330	50	50	100	10	50	800	210	50	10	10	40
28-Jan-02	400	60	30	2400	340	250	TNTC	2400	810	710	30	20
4-Feb-02	270	70	30	520	240	100	8800	50	90	10	10	<10
11-Feb-02	70	<10	<10	<10	10	10	520	10	10	<10	<10	<10
19-Feb-02	3600	60	10	10	30	<10	TNTC	4000	70	Cw/C	1800	40
26-Feb-02	930	10	<10	10	10	10	50	<10	10	<10	<10	10
4-Mar-02	100	100	50	10	200	10	60	30	20	<10	<10	<10
11-Mar-02	70	60	20	230	10	50	890	40	20	100	110	<10
18-Mar-02	70	<10	60	2000	760	2600	TNTC	>38000	9800	60	<10	20
25-Mar-02	40	<10	10	1040	<10	250	6000	90	260	<10	<10	<10

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci
Cw/C = Confluent Growth with Coliforms
TNTC = Too Numerous To Count

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY

LOWER BAY STATIONS
(Concentrations in CFU/100mL)

	Via Genoa Beach			Newport Blvd. Bridge			Rhine Channel			19th Street Beach		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
2-Apr-01	10	20	<10	>10400	100	450	>4400	>3400	95	<10	<10	<10
9-Apr-01	TNTC	650	120	1800	70	60	1800	120	20	TNTC	380	<10
16-Apr-01	<10	<10	<10	5400	10	10	40	<10	<10	10	10	<10
23-Apr-01	6200	40	<10	4400	70	<10	180	200	100	9600	100	<10
30-Apr-01	10	<10	<10	6800	30	60	310	190	20	10	<10	<10
9-May-01	80	<10	<10	Cw/C	>40000	TNTC	110	40	10	30	40	10
14-May-01	40	<10	<10	Cw/C	7200	2600	6800	<10	160	<10	<10	<10
21-May-01	10	<10	<10	110	30	20	1000	40	10	<10	10	<10
31-May-01	10	10	<10	Cw/C	20000	1110	460	90	60	<10	<10	<10
4-Jun-01	30	10	<10	>20600	200	430	180	20	<10	30	20	10
11-Jun-01	20	10	10	Cw/C	260	270	1800	240	60	20	<10	<10
18-Jun-01	200	50	30	70	<10	<10	60	10	10	100	<10	<10
25-Jun-01	10	<10	<10	32600	30	10	590	180	40	<10	<10	10
2-Jul-01	>40	<10	<10	220	<10	<10	200	80	<10	400	420	810
9-Jul-01	510	10	<10	6200	400	290	530	40	10	1300	1520	900
16-Jul-01	70	20	<10	1800	120	20	330	180	10	70	10	10
23-Jul-01	30	<10	<10	850	40	<10	330	30	<10	750	10	<10
30-Jul-01	10	<10	<10	260	10	<10	3600	2600	30	90	30	<10
6-Aug-01	60	<10	<10	7400	700	230	70	10	<10	170	30	20
13-Aug-01	190	220	<10	610	110	10	60	20	20	140	<10	<10
20-Aug-01	10	<10	10	TNTC	3000	1800	800	280	<10	220	50	20
27-Aug-01	10	<10	<10	8400	50	110	770	190	10	<10	<10	<10
4-Sep-01	70	10	<10	Cw/C	22200	620	6100	160	20	190	20	10
10-Sep-01	60	<10	10	Cw/C	>2400	60	830	<10	10	1300	720	90
17-Sep-01	10	10	<10	130	120	60	250	220	30	70	60	20
24-Sep-01	10	10	<10	50	<10	<10	20	10	<10	60	10	<10
1-Oct-01	<10	<10	<10	110	<10	<10	230	<10	<10	30	10	<10
9-Oct-01	10	<10	<10	590	10	<10	1050	10	<10	50	30	<10
15-Oct-01	20	10	<10	160	10	<10	60	<10	<10	40	40	10
22-Oct-01	<10	<10	<10	100	<10	<10	110	20	<10	730	640	200
29-Oct-01	40	40	40	10	<10	<10	120	30	10	180	270	190
5-Nov-01	220	60	<10	1970	50	30	200	20	<10	740	90	30
13-Nov-01	4400	310	110	36600	2600	420	850	140	150	1170	240	70
20-Nov-01	50	10	20	470	30	10	160	<10	10	130	20	30
26-Nov-01	TNTC	6600	890	Cw/C	13600	970	Cw/C	11800	1400	Cw/C	22000	1760
3-Dec-01	3400	80	<10	>28000	700	260	13400	704	140	380	60	<10
10-Dec-01	370	70	20	Cw/C	1200	280	750	180	10	120	40	90
17-Dec-01	540	20	<10	900	30	<10	1400	30	20	700	50	10
26-Dec-01	30	<10	<10	TNTC	20	50	90	10	20	260	80	200
2-Jan-02	1000	80	20	1270	20	80	790	30	30	1440	390	100
7-Jan-02	40	60	10	Cw/C	40	100	360	50	40	860	390	160
14-Jan-02	20	<10	<10	200	10	<10	30	10	<10	130	150	110
22-Jan-02	30	20	<10	10000	10	230	60	<10	<10	900	350	50
28-Jan-02	1360	170	170	TNTC	140	760	760	80	230	2000	1200	180
4-Feb-02	20	40	<10	30400	120	50	180	90	<10	70	20	10
11-Feb-02	10	<10	<10	1190	50	<10	<10	<10	<10	20	20	<10
19-Feb-02	TNTC	230	10	>10000	120	60	TNTC	330	20	Cw/C	370	30
26-Feb-02	60	40	10	TNTC	140	90	270	60	20	50	50	70
4-Mar-02	20	<10	<10	1400	<10	10	1220	390	20	110	10	<10
11-Mar-02	30	<10	<10	60	<10	10	960	40	20	70	20	20
18-Mar-02	830	<10	40	2800	80	190	100	40	<10	1310	10	100
25-Mar-02	40	30	10	TNTC	70	70	140	<10	<10	10	10	50

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci
Cw/C = Confluent Growth with Coliforms
TNTC = Too Numerous To Count

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY

LOWER BAY STATIONS
(Concentrations in CFU/100mL)

	15th Street Beach			10th Street Beach			Alvarado/ Bay Isle Beach			N Street Beach		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
2-Apr-01	200	<10	20	<10	<10	<10	100	20	480	30	40	<10
9-Apr-01	TNTC	590	150	11400	90	20	70	<10	<10	>17000	150	10
16-Apr-01	10	10	<10	20	10	<10	30	30	90	<10	<10	<10
23-Apr-01	11600	180	<10	18400	220	20	>2040	80	<10	10	<10	<10
30-Apr-01	70	<10	10	30	<10	<10	10	<10	10	30	40	<10
9-May-01	10	20	<10	170	210	10	50	<10	<10	20	10	10
14-May-01	<10	10	<10	<10	<10	<10	50	20	60	20	20	20
21-May-01	50	20	<10	40	<10	<10	50	20	10	<10	<10	<10
31-May-01	200	20	10	30	60	<10	40	40	20	<10	10	50
4-Jun-01	70	<10	10	50	40	<10	170	130	50	<10	<10	<10
11-Jun-01	20	30	<10	50	10	<10	180	40	<10	20	<10	<10
18-Jun-01	<10	20	<10	60	30	20	80	<10	10	60	20	<10
25-Jun-01	40	<10	<10	<10	30	<10	50	20	10	10	10	<10
2-Jul-01	220	200	10	<10	<10	<10	30	10	20	400	170	<10
9-Jul-01	20	10	10	20	10	<10	29400	12400	20	90	20	10
16-Jul-01	90	10	20	400	50	10	20	30	10	30	10	10
23-Jul-01	10	20	<10	30	10	<10	50	30	20	20	20	10
30-Jul-01	10	<10	<10	40	10	<10	20	40	<10	70	50	40
6-Aug-01	60	10	<10	90	30	20	70	10	<10	10	20	<10
13-Aug-01	30	<10	<10	10	10	10	40	30	10	110	10	<10
20-Aug-01	190	10	<10	80	<10	<10	90	10	30	40	<10	<10
27-Aug-01	120	<10	<10	280	190	<10	100	10	<10	170	20	<10
4-Sep-01	110	30	<10	230	20	10	30	10	<10	70	<10	10
10-Sep-01	320	10	<10	70	<10	<10	500	50	<10	160	<10	<10
17-Sep-01	100	20	<10	30	<10	10	40	10	10	<10	<10	<10
24-Sep-01	70	10	<10	70	<10	<10	60	70	<10	20	20	<10
1-Oct-01	30	<10	<10	40	<10	<10	40	<10	10	20	60	<10
9-Oct-01	<10	<10	<10	10	10	<10	40	10	20	2200	160	<10
15-Oct-01	90	30	20	30	20	<10	30	30	<10	<10	10	<10
22-Oct-01	80	30	<10	30	30	<10	50	<10	10	30	20	30
29-Oct-01	280	80	40	<10	<10	<10	40	10	<10	200	10	<10
5-Nov-01	200	70	20	30	30	<10	160	120	60	100	<10	<10
13-Nov-01	830	110	40	3400	290	80	2600	450	210	40	10	10
20-Nov-01	230	110	<10	110	180	40	20	40	20	30	10	<10
26-Nov-01	Cw/C	13600	2400	Cw/C	18400	5200	Cw/C	11200	1900	TNTC	1160	280
3-Dec-01	430	30	10	250	30	310	260	30	40	10	10	<10
10-Dec-01	1000	<10	30	720	640	2800	10	<10	10	30	<10	<10
17-Dec-01	850	20	10	2600	80	50	680	<10	10	<10	<10	<10
26-Dec-01	100	10	20	610	410	260	500	280	2900	60	10	<10
2-Jan-02	630	10	20	11000	4200	380	700	30	80	<10	<10	<10
7-Jan-02	20	10	<10	610	370	3200	30	10	60	20	30	<10
14-Jan-02	60	<10	<10	100	10	250	20	30	10	<10	10	<10
22-Jan-02	220	<10	10	160	80	160	<10	<10	10	<10	<10	<10
28-Jan-02	540	40	20	1840	160	100	1430	90	80	<10	<10	<10
4-Feb-02	180	50	10	20	10	10	20	<10	20	20	10	10
11-Feb-02	10	10	20	70	40	20	<10	<10	<10	<10	10	<10
19-Feb-02	Cw/C	390	20	Cw/C	860	60	Cw/C	1000	50	>20000	30	10
26-Feb-02	30	10	<10	80	80	130	230	20	170	<10	<10	<10
4-Mar-02	30	20	70	20	10	20	20	<10	10	20	<10	<10
11-Mar-02	20	40	<10	10	20	<10	320	250	70	<10	<10	<10
18-Mar-02	130	<10	10	730	40	30	600	30	<10	100	20	40
25-Mar-02	170	60	<10	60	10	10	800	700	280	20	20	10

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci
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TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY

LOWER BAY STATIONS
(Concentrations in CFU/100mL)

	Garnet Avenue Beach			Ruby Avenue Beach			Sapphire Avenue Beach			Grand Canal		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
2-Apr-01	40	20	<10	20	<10	<10	10	<10	20	10	10	<10
9-Apr-01	3000	80	30	6000	70	<10	450	120	20	570	40	20
16-Apr-01	<10	<10	<10	<10	10	<10	<10	10	<10	30	20	<10
23-Apr-01	140	10	<10	200	40	<10	80	<10	<10	50	<10	<10
30-Apr-01	50	10	<10	50	<10	<10	70	10	60	20	10	20
9-May-01	30	20	<10	20	10	10	10	10	10	40	10	20
14-May-01	4000	630	20	10	<10	<10	10	10	40	60	<10	20
21-May-01	20	20	<10	50	40	<10	30	40	410	50	20	30
31-May-01	40	<10	10	<10	<10	30	60	40	10	40	<10	10
4-Jun-01	10	20	<10	30	10	<10	190	30	40	60	40	10
11-Jun-01	30	10	<10	120	<10	<10	20	<10	<10	50	20	<10
18-Jun-01	<10	<10	<10	50	10	<10	190	30	10	70	40	10
25-Jun-01	80	60	20	10	<10	<10	30	20	<10	1750	1500	20
2-Jul-01	50	30	10	40	<10	10	30	30	<10	90	20	<10
9-Jul-01	70	20	<10	<10	30	10	80	10	150	20	20	<10
16-Jul-01	50	30	<10	70	30	10	30	<10	<10	200	160	140
23-Jul-01	40	<10	10	10	20	<10	90	<10	<10	60	10	<10
30-Jul-01	60	<10	10	30	10	10	10	20	30	60	60	20
6-Aug-01	190	120	<10	400	10	<10	70	30	30	50	<10	<10
13-Aug-01	70	<10	<10	<10	<10	20	20	<10	10	500	280	60
20-Aug-01	150	60	50	280	<10	<10	60	60	100	30	10	<10
27-Aug-01	120	20	20	40	50	10	60	<10	10	580	370	30
4-Sep-01	120	90	50	30	30	<10	20	10	10	290	50	200
10-Sep-01	480	30	<10	170	<10	10	120	<10	<10	720	510	120
17-Sep-01	70	20	<10	10	20	20	200	<10	<10	90	10	<10
24-Sep-01	140	10	50	290	140	<10	20	<10	<10	220	220	10
1-Oct-01	110	50	10	70	10	<10	40	<10	30	10	<10	10
9-Oct-01	100	90	30	570	80	<10	20	<10	<10	300	140	50
15-Oct-01	<10	<10	<10	70	200	10	10	10	10	10	<10	30
22-Oct-01	30	10	20	70	<10	<10	20	<10	10	5000	1800	40
29-Oct-01	40	20	<10	50	20	<10	20	<10	10	100	70	30
5-Nov-01	200	40	10	240	<10	20	50	20	<10	90	20	20
13-Nov-01	4200	240	200	1210	110	160	370	320	10	510	60	50
20-Nov-01	80	30	90	200	40	<10	10	40	<10	20	30	20
26-Nov-01	Cw/C	4600	1110	Cw/C	5800	1100	TNTC	2200	450	>35800	590	200
3-Dec-01	270	<10	30	620	20	40	310	30	50	780	10	30
10-Dec-01	240	<10	10	50	10	10	50	10	<10	60	10	<10
17-Dec-01	1200	30	20	860	20	30	780	50	60	210	20	<10
26-Dec-01	200	50	20	40	<10	10	30	20	10	10	10	<10
2-Jan-02	320	<10	<10	420	30	<10	90	30	10	70	<10	<10
7-Jan-02	170	40	10	50	10	<10	20	<10	<10	50	10	10
14-Jan-02	10	200	<10	100	<10	<10	10	<10	<10	20	<10	<10
22-Jan-02	60	<10	10	40	40	<10	10	<10	<10	<10	<10	<10
28-Jan-02	60	40	10	80	30	30	50	20	10	60	10	10
4-Feb-02	50	<10	<10	20	10	<10	20	10	<10	10	10	<10
11-Feb-02	10	<10	<10	<10	<10	<10	10	30	<10	30	30	<10
19-Feb-02	Cw/C	640	40	2000	10	<10	7800	60	150	400	<10	100
26-Feb-02	60	<10	<10	50	10	10	600	580	950	30	10	<10
4-Mar-02	20	10	<10	120	50	<10	20	<10	<10	10	10	10
11-Mar-02	30	<10	10	30	10	<10	10	<10	10	30	10	<10
18-Mar-02	510	20	20	20	10	<10	200	10	20	270	10	10
25-Mar-02	<10	<10	<10	30	20	<10	<10	<10	<10	10	10	10

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci
Cw/C = Confluent Growth with Coliforms
TNTC = Too Numerous To Count

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY

LOWER BAY STATIONS
(Concentrations in CFU/100mL)

	Abalone Avenue Beach			Park Avenue Beach			Onyx Avenue Beach			Promontory Point Channel		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
2-Apr-01	40	30	10	40	10	<10	140	40	10	<10	<10	<10
9-Apr-01	220	<10	10	8200	280	100	4000	130	150	3800	<10	80
16-Apr-01	<10	<10	<10	10	<10	10	40	10	10	<10	<10	<10
23-Apr-01	10	<10	<10	110	<10	<10	220	<10	<10	20	<10	<10
30-Apr-01	40	<10	<10	140	10	<10	190	70	10	<10	10	<10
9-May-01	<10	10	<10	20	<10	<10	70	<10	<10	20	20	<10
14-May-01	<10	<10	<10	<10	<10	<10	50	100	170	10	10	<10
21-May-01	20	<10	20	90	20	<10	80	10	<10	10	<10	<10
31-May-01	20	10	10	130	<10	<10	>50	110	<10	<10	<10	<10
4-Jun-01	10	<10	10	30	<10	10	50	20	<10	20	<10	10
11-Jun-01	<10	<10	<10	140	20	<10	20	20	<10	<10	<10	20
18-Jun-01	90	40	<10	20	<10	<10	>20	10	<10	<10	<10	<10
25-Jun-01	10	<10	<10	30	10	<10	10	<10	10	<10	<10	<10
2-Jul-01	2200	1100	390	70	10	<10	<10	10	<10	<10	<10	<10
9-Jul-01	<10	10	<10	160	<10	10	80	70	150	<10	<10	<10
16-Jul-01	<10	<10	<10	40	<10	<10	90	<10	<10	20	10	<10
23-Jul-01	30	<10	10	40	10	20	10	10	10	<10	<10	<10
30-Jul-01	10	<10	<10	400	<10	10	110	20	<10	>10	20	10
6-Aug-01	50	<10	<10	50	10	<10	370	60	10	40	<10	<10
13-Aug-01	60	10	10	90	70	10	70	<10	10	30	<10	<10
20-Aug-01	20	<10	<10	50	<10	10	220	30	70	130	<10	<10
27-Aug-01	150	10	<10	200	<10	10	110	10	10	150	<10	<10
4-Sep-01	30	10	<10	240	30	10	130	10	<10	40	<10	<10
10-Sep-01	140	<10	20	9400	270	210	300	10	10	300	10	<10
17-Sep-01	<10	<10	10	100	10	10	100	130	10	50	<10	<10
24-Sep-01	40	30	10	80	<10	<10	30	10	<10	50	<10	<10
1-Oct-01	20	<10	<10	250	10	<10	30	10	<10	210	<10	<10
9-Oct-01	120	30	<10	Cw/C	40000	<10	4600	610	<10	10	<10	<10
15-Oct-01	10	<10	<10	20	<10	20	50	50	30	50	<10	<10
22-Oct-01	240	60	<10	1180	40	<10	70	<10	10	60	<10	<10
29-Oct-01	10	10	10	<10	<10	20	60	60	40	30	<10	<10
5-Nov-01	60	10	<10	14800	360	90	90	100	10	10	<10	<10
13-Nov-01	200	120	30	330	70	90	1610	1210	580	80	10	10
20-Nov-01	10	10	<10	450	80	30	30	<10	<10	<10	<10	<10
26-Nov-01	21600	470	290	>30200	540	140	TNTC	1370	310	26000	430	100
3-Dec-01	6600	<10	340	1200	70	40	1000	260	470	24400	9000	3000
10-Dec-01	20	<10	20	70	10	<10	120	<10	100	120	100	<10
17-Dec-01	340	10	<10	2600	170	<10	870	80	30	290	30	10
26-Dec-01	280	200	70	50	<10	<10	100	<10	20	<10	<10	<10
2-Jan-02	10	<10	<10	220	20	10	1200	920	170	200	10	10
7-Jan-02	80	10	50	80	<10	<10	100	20	50	<10	20	<10
14-Jan-02	50	10	<10	10	10	<10	70	20	<10	<10	<10	<10
22-Jan-02	20	<10	10	20	<10	<10	30	10	<10	20	10	60
28-Jan-02	120	<10	10	480	<10	40	200	40	70	<10	<10	<10
4-Feb-02	20	<10	<10	20	<10	<10	10	<10	<10	20	<10	<10
11-Feb-02	30	10	10	10	<10	<10	20	<10	30	50	<10	10
19-Feb-02	TNTC	40	10	3200	40	<10	2400	30	10	1800	<10	<10
26-Feb-02	30	10	<10	10	10	10	800	780	210	20	20	20
4-Mar-02	40	10	<10	320	20	10	100	80	20	10	10	10
11-Mar-02	40	10	<10	<10	<10	<10	40	10	<10	<10	<10	<10
18-Mar-02	40	10	30	140	10	20	10	<10	20	10	<10	<10
25-Mar-02	40	20	10	20	10	<10	40	<10	20	<10	<10	<10

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci
Cw/C = Confluent Growth with Coliforms
TNTC = Too Numerous To Count

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY

LOWER BAY STATIONS
(Concentrations in CFU/100mL)

	Harbor Patrol Beach			Rocky Point Beach		
	TC	FC	ENT	TC	FC	ENT
2-Apr-01	200	70	<10	10	20	<10
9-Apr-01	90	170	410	20	20	10
16-Apr-01	200	110	30	<10	10	<10
23-Apr-01	10	30	<10	10	<10	<10
30-Apr-01	>10	100	20	40	10	<10
9-May-01	Cw/C	250	40	<10	<10	10
14-May-01	Cw/C	30	<10	10	20	<10
21-May-01	<10	20	40	<10	<10	<10
31-May-01	>20	130	10	<10	10	<10
4-Jun-01	Cw/C	300	160	3200	30	620
11-Jun-01	200	530	130	<10	10	<10
18-Jun-01	<10	<10	10	>30	<10	<10
25-Jun-01	<10	60	<10	<10	10	<10
2-Jul-01	>30	50	30	<10	10	<10
9-Jul-01	40	10	<10	>70	<10	40
16-Jul-01	400	30	50	10	10	<10
23-Jul-01	>20	40	30	50	<10	<10
30-Jul-01	1000	310	140	20	30	<10
6-Aug-01	200	40	<10	50	<10	<10
13-Aug-01	200	110	20	120	40	<10
20-Aug-01	400	180	60	30	10	<10
27-Aug-01	200	80	70	3000	330	50
4-Sep-01	800	850	10	190	10	40
10-Sep-01	<10	<10	10	90	<10	10
17-Sep-01	400	200	100	140	<10	<10
24-Sep-01	10	30	<10	30	20	10
1-Oct-01	180	50	100	20	<10	<10
9-Oct-01	40	100	30	1350	110	10
15-Oct-01	600	30	30	<10	<10	<10
22-Oct-01	400	1100	80	10	<10	<10
29-Oct-01	<10	20	<10	170	10	<10
5-Nov-01	300	180	90	40	10	10
13-Nov-01	2200	580	110	460	40	40
20-Nov-01	20	<10	10	<10	<10	<10
26-Nov-01	11800	510	180	15200	280	80
3-Dec-01	3200	70	330	130	10	<10
10-Dec-01	40	10	90	30	30	20
17-Dec-01	510	40	50	130	<10	10
26-Dec-01	100	20	10	20	10	<10
2-Jan-02	70	10	10	50	10	100
7-Jan-02	60	10	60	50	50	<10
14-Jan-02	200	100	30	160	<10	<10
22-Jan-02	170	100	130	<10	<10	<10
28-Jan-02	390	80	170	30	<10	<10
4-Feb-02	40	<10	10	20	<10	<10
11-Feb-02	20	20	<10	10	10	<10
19-Feb-02	11000	20	10	TNTC	80	10
26-Feb-02	20	10	20	<10	<10	<10
4-Mar-02	>20	40	10	60	20	<10
11-Mar-02	<10	10	20	<10	30	<10
18-Mar-02	190	40	10	90	190	10
25-Mar-02	600	800	90	80	30	<10

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

TC = Total Coliforms
FC = Fecal Coliforms
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TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY

UPPER BAY STATIONS
(Concentrations in CFU/100ml)

	Newport Dunes - Middle			Newport Dunes - West			Newport Dunes - East			Newport Dunes - North		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
2-Apr-01	50	40	20	90	80	20	330	350	120	85	<10	<10
9-Apr-01	TNTC	710	80	TNTC	760	60	TNTC	1390	90	TNTC	1000	150
16-Apr-01	40	10	30	10	<10	20	2400	<10	10	400	70	<10
23-Apr-01	5600	120	<10	6000	80	10	3400	90	<10	12800	260	<10
30-Apr-01	60	30	10	50	10	10	400	340	30	7800	5000	20
9-May-01	20	<10	<10	40	<10	<10	30	20	10	30	<10	10
14-May-01	1000	<10	10	40	40	10	60	10	20	200	<10	<10
21-May-01	40	<10	<10	30	10	<10	31200	10	100	<10	10	20
31-May-01	10	10	20	20	10	<10	200	<10	10	20	30	<10
4-Jun-01	180	20	<10	130	30	<10	110	20	20	100	20	<10
11-Jun-01	<10	<10	<10	<10	<10	<10	<10	<10	10	10	<10	10
18-Jun-01	<10	<10	<10	20	<10	<10	200	110	10	>50	20	<10
25-Jun-01	>10	<10	<10	90	20	<10	130	130	<10	<10	<10	<10
2-Jul-01	20	<10	10	200	10	<10	100	<10	20	<10	20	<10
9-Jul-01	100	10	<10	150	110	<10	10600	50	<10	TNTC	560	70
16-Jul-01	100	10	40	60	20	20	100	<10	30	800	220	3600
23-Jul-01	60	90	<10	120	60	<10	31200	20	20	23800	80	40
30-Jul-01	790	<10	<10	100	50	<10	TNTC	110	50	600	40	10
6-Aug-01	100	<10	<10	130	<10	10	5800	200	10	400	150	10
13-Aug-01	90	<10	<10	600	<10	<10	30	10	<10	20	70	80
20-Aug-01	1000	20	<10	200	<10	<10	TNTC	>30	40	380	360	100
27-Aug-01	100	10	<10	70	<10	<10	200	60	170	50	10	10
4-Sep-01	17400	10	<10	6800	110	<10	11200	60	<10	6000	70	<10
10-Sep-01	190	10	<10	180	20	10	130	40	40	200	180	330
17-Sep-01	80	<10	<10	20	30	10	30	10	10	>20	100	50
24-Sep-01	<10	<10	<10	10	<10	<10	10	40	<10	<10	30	10
1-Oct-01	50	30	40	150	<10	10	60	20	20	60	<10	<10
9-Oct-01	60	<10	10	60	<10	<10	40	20	20	100	110	30
15-Oct-01	200	30	<10	310	80	110	160	90	<10	120	90	50
22-Oct-01	80	90	10	60	90	50	40	50	<10	110	110	10
29-Oct-01	70	<10	10	80	50	20	>50	150	50	280	110	10
5-Nov-01	>28200	3600	510	510	700	310	430	110	10	200	260	30
13-Nov-01	Cw/C	25000	7800	Cw/C	20200	10600	Cw/C	25200	11000	Cw/C	26000	9600
20-Nov-01	30	<10	10	100	30	<10	110	80	<10	240	150	20
26-Nov-01	Cw/C	6800	920	Cw/C	2800	540	Cw/C	10200	1140	Cw/C	13000	1690
3-Dec-01	1000	50	60	730	50	10	600	40	30	1600	60	80
10-Dec-01	270	20	10	210	40	30	390	40	30	280	60	<10
17-Dec-01	5600	90	60	5000	80	60	6200	110	10	8800	100	30
26-Dec-01	900	70	60	930	250	100	640	30	80	700	90	580
2-Jan-02	1190	180	80	1420	470	40	900	180	60	400	70	30
7-Jan-02	220	230	30	260	110	40	70	100	30	250	230	100
14-Jan-02	90	80	10	60	80	60	120	100	10	460	250	10
22-Jan-02	90	130	10	100	50	10	60	100	<10	270	210	70
28-Jan-02	TNTC	2600	2800	TNTC	2600	2400	TNTC	1400	1800	TNTC	1400	870
4-Feb-02	100	10	<10	100	20	10	170	130	40	1130	840	130
11-Feb-02	200	50	30	90	30	10	60	<10	10	20	20	<10
19-Feb-02	Cw/C	8600	540	Cw/C	7000	510	Cw/C	6200	420	Cw/C	5400	360
25-Feb-02	150	60	20	90	30	20	70	90	20	180	60	20
4-Mar-02	10	<10	10	30	<10	<10	510	50	<10	120	70	260
11-Mar-02	200	90	10	210	90	20	160	120	<10	1030	780	150
18-Mar-02	>19800	550	320	19600	710	270	>24400	4000	450	>24200	1140	330
25-Mar-02	1650	20	50	1290	<10	<10	890	20	10	180	<10	10

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci
NS = Not Sampled
Cw/C = Confluent Growth with Coliforms
TNTC = Too Numerous To Count

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY

UPPER BAY STATIONS
(Concentrations in CFU/100ml)

	Vaughn's Launch			Ski Zone			North Star Beach			De Anza Launch		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
2-Apr-01	NS	NS	NS	NS	NS	NS	<10	10	10	<10	<10	10
9-Apr-01	18400	500	130	1400	20	<10	Cw/C	1050	250	22200	370	110
16-Apr-01	NS	NS	NS	NS	NS	NS	160	70	<10	30	<10	<10
23-Apr-01	18800	240	10	15000	210	<10	>25600	310	10	1410	20	<10
30-Apr-01	NS	NS	NS	NS	NS	NS	60	<10	<10	60	10	<10
9-May-01	NS	NS	NS	NS	NS	NS	30	20	<10	10	<10	10
14-May-01	NS	NS	NS	NS	NS	NS	30	<10	<10	50	<10	<10
21-May-01	<10	<10	40	10	<10	<10	20	10	10	20	<10	<10
31-May-01	Cw/C	350	120	40	<10	<10	10	10	<10	<10	10	<10
4-Jun-01	<10	<10	80	<10	10	10	50	10	30	10	10	<10
11-Jun-01	NS	NS	NS	NS	NS	NS	20	10	<10	<10	<10	<10
18-Jun-01	NS	NS	NS	NS	NS	NS	>10	<10	<10	10	<10	<10
25-Jun-01	NS	NS	NS	NS	NS	NS	80	<10	<10	80	<10	<10
2-Jul-01	NS	NS	NS	NS	NS	NS	20	<10	<10	60	10	<10
9-Jul-01	NS	NS	NS	NS	NS	NS	100	10	<10	60	<10	10
16-Jul-01	NS	NS	NS	NS	NS	NS	70	50	20	20	10	<10
23-Jul-01	NS	NS	NS	NS	NS	NS	10	<10	10	40	<10	20
30-Jul-01	<10	<10	<10	7600	280	110	40	10	<10	<10	<10	10
6-Aug-01	<10	<10	70	90	<10	<10	110	<10	<10	110	<10	60
13-Aug-01	NS	NS	NS	NS	NS	NS	120	10	<10	90	<10	10
20-Aug-01	200	<10	<10	30	<10	<10	160	20	80	160	10	20
27-Aug-01	>200	<10	10	NS	NS	NS	210	<10	10	340	60	<10
4-Sep-01	70	20	270	<10	<10	<10	<10	10	10	210	10	10
10-Sep-01	NS	NS	NS	NS	NS	NS	80	10	<10	70	<10	<10
17-Sep-01	<10	10	40	>10	<10	10	70	<10	20	60	50	10
24-Sep-01	NS	NS	NS	NS	NS	NS	30	20	10	30	20	20
1-Oct-01	200	10	<10	1400	<10	10	30	<10	10	70	20	10
9-Oct-01	NS	NS	NS	NS	NS	NS	20	<10	<10	40	<10	10
15-Oct-01	NS	NS	NS	NS	NS	NS	60	200	10	10	<10	<10
22-Oct-01	NS	NS	NS	NS	NS	NS	10	<10	10	30	10	<10
29-Oct-01	NS	NS	NS	NS	NS	NS	>20	<10	<10	60	30	<10
5-Nov-01	NS	NS	NS	NS	NS	NS	510	30	50	70	<10	<10
13-Nov-01	NS	NS	NS	NS	NS	NS	21200	1030	840	1970	190	150
20-Nov-01	510	310	100	440	40	<10	600	440	30	50	50	80
26-Nov-01	Cw/C	>40000	4000	Cw/C	>40000	15200	Cw/C	>40000	7400	Cw/C	20600	5200
3-Dec-01	NS	NS	NS	NS	NS	NS	1200	40	30	510	40	40
10-Dec-01	NS	NS	NS	NS	NS	NS	190	110	10	100	10	10
17-Dec-01	NS	NS	NS	NS	NS	NS	4800	80	60	1600	20	<10
26-Dec-01	NS	NS	NS	NS	NS	NS	1210	50	30	510	10	30
2-Jan-02	NS	NS	NS	NS	NS	NS	2600	100	20	890	70	40
7-Jan-02	NS	NS	NS	NS	NS	NS	90	30	10	100	90	40
14-Jan-02	NS	NS	NS	NS	NS	NS	70	<10	10	20	20	20
22-Jan-02	NS	NS	NS	NS	NS	NS	1000	130	40	50	<10	10
28-Jan-02	NS	NS	NS	NS	NS	NS	2200	90	100	890	60	120
4-Feb-02	NS	NS	NS	NS	NS	NS	540	60	40	1040	690	10
11-Feb-02	NS	NS	NS	NS	NS	NS	20	<10	10	310	10	<10
19-Feb-02	NS	NS	NS	NS	NS	NS	Cw/C	11000	910	Cw/C	4600	580
25-Feb-02	180	10	70	940	40	10	300	30	10	40	<10	10
4-Mar-02	NS	NS	NS	NS	NS	NS	2800	310	30	100	10	<10
11-Mar-02	240	10	70	1600	<10	10	130	<10	<10	50	<10	<10
18-Mar-02	NS	NS	NS	NS	NS	NS	TNTC	3200	5000	13600	580	1170
25-Mar-02	310	30	50	5000	40	50	170	<10	<10	180	10	<10

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci
NS = Not Sampled
Cw/C = Confluent Growth with Coliforms
TNTC = Too Numerous To Count

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY

UPPER BAY STATIONS
(Concentrations in CFU/100ml)

	Bayshore Beach											
	TC	FC	ENT									
2-Apr-01	160	30	<10									
9-Apr-01	18400	230	70									
16-Apr-01	70	330	60									
23-Apr-01	>990	20	<10									
30-Apr-01	560	340	60									
9-May-01	70	<10	20									
14-May-01	100	30	250									
21-May-01	20	<10	<10									
31-May-01	40	10	10									
4-Jun-01	10	10	10									
11-Jun-01	>50	90	30									
18-Jun-01	>80	30	90									
25-Jun-01	50	20	<10									
2-Jul-01	200	50	30									
9-Jul-01	10	<10	<10									
16-Jul-01	40	<10	20									
23-Jul-01	30	10	20									
30-Jul-01	60	<10	10									
6-Aug-01	580	20	<10									
13-Aug-01	80	10	10									
20-Aug-01	140	10	10									
27-Aug-01	320	10	30									
4-Sep-01	70	10	<10									
10-Sep-01	140	10	20									
17-Sep-01	50	20	<10									
24-Sep-01	50	<10	30									
1-Oct-01	10	200	30									
9-Oct-01	20	<10	<10									
15-Oct-01	20	20	<10									
22-Oct-01	310	30	30									
29-Oct-01	20	10	<10									
5-Nov-01	90	20	<10									
13-Nov-01	590	80	90									
20-Nov-01	40	<10	50									
26-Nov-01	Cw/C	16400	4000									
3-Dec-01	990	70	40									
10-Dec-01	80	10	10									
17-Dec-01	1000	30	20									
26-Dec-01	170	70	<10									
2-Jan-02	600	30	20									
7-Jan-02	30	10	<10									
14-Jan-02	20	<10	<10									
22-Jan-02	40	<10	30									
28-Jan-02	590	20	50									
4-Feb-02	120	10	20									
11-Feb-02	20	<10	<10									
19-Feb-02	Cw/C	4800	580									
25-Feb-02	50	10	10									
4-Mar-02	70	30	30									
11-Mar-02	10	10	<10									
18-Mar-02	1200	170	140									
25-Mar-02	30	<10	<10									

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci
NS = Not Sampled
Cw/C = Confluent Growth with Coliforms
TNTC = Too Numerous To Count

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY

TRIBUTARY STATIONS
(Concentrations in CFU/100ml)

	San Diego Creek - Campus Dr.			Santa Ana Delhi Channel			Big Canyon Wash			Back Bay Dr. Drain		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
2-Apr-01	>11200	100	30	>5000	340	160	>540	95	130	>530	85	200
9-Apr-01	Cw/C	3800	2200	TNTC	1600	540	>18200	420	220	2200	520	490
16-Apr-01	5200	90	40	11200	450	110	920	180	210	4800	40	330
23-Apr-01	Cw/C	490	200	Cw/C	550	80	>7600	190	50	>690	30	50
30-Apr-01	>8800	40	30	>17400	3200	600	>700	100	40	8000	5000	130
9-May-01	>5600	60	10	2800	150	40	4000	40	950	>11200	450	800
14-May-01	>1800	110	10	1800	140	250	NS	NS	NS	1400	10	140
21-May-01	>20	220	110	440	880	750	840	60	100	5400	170	290
31-May-01	>220	110	50	>200	170	540	1800	510	130	7000	1510	570
4-Jun-01	>3400	240	70	>2600	130	240	>2800	50	90	>6200	120	240
11-Jun-01	>13000	70	10	>900	280	420	>710	30	80	3800	240	330
18-Jun-01	>9000	50	30	>19400	500	10	NS	NS	NS	NS	NS	NS
25-Jun-01	>6400	10	40	>560	>220	570	>730	150	160	NS	NS	NS
2-Jul-01	>4800	330	100	>4000	1000	80	NS	NS	NS	>13000	3200	210
9-Jul-01	>2400	>50	120	TNTC	6600	70	>1280	250	320	>13200	2400	6200
16-Jul-01	>2000	>90	50	>30000	1300	1930	>2800	430	150	>14400	1010	600
23-Jul-01	>3200	>60	50	>8800	1400	810	>5600	1600	1200	NS	NS	NS
30-Jul-01	>3400	200	10	>14400	800	1040	4800	1680	270	14200	1110	380
6-Aug-01	6800	>20	20	>4800	440	670	6400	2800	410	NS	NS	NS
13-Aug-01	>800	20	40	2400	760	1290	2200	680	240	NS	NS	NS
20-Aug-01	>3400	40	10	>10600	3200	1310	1200	140	90	NS	NS	NS
27-Aug-01	>4600	80	80	>20600	2200	180	1800	170	100	NS	NS	NS
4-Sep-01	>7200	>150	20	>13600	1000	1880	2000	210	70	NS	NS	NS
10-Sep-01	>4000	40	40	>14200	3800	3000	NS	NS	NS	NS	NS	NS
17-Sep-01	>1400	10	<10	5600	400	850	>150	180	160	NS	NS	NS
24-Sep-01	>330	80	10	TNTC	3000	1700	1600	910	300	NS	NS	NS
1-Oct-01	>120	50	50	TNTC	870	1280	>330	500	280	NS	NS	NS
9-Oct-01	1600	30	80	>18000	1200	1290	2800	270	270	NS	NS	NS
15-Oct-01	4000	230	120	TNTC	12000	1400	NS	NS	NS	NS	NS	NS
22-Oct-01	3400	140	20	>24000	2800	780	NS	NS	NS	NS	NS	NS
29-Oct-01	TNTC	8000	60	7600	2600	290	NS	NS	NS	NS	NS	NS
5-Nov-01	Cw/C	>40000	2800	Cw/C	Cw/C	TNTC	NS	NS	NS	NS	NS	NS
13-Nov-01	Cw/C	Cw/C	TNTC	Cw/C	Cw/C	TNTC	NS	NS	NS	NS	NS	NS
20-Nov-01	>21200	1400	1020	Cw/C	>40000	TNTC	3400	750	430	NS	NS	NS
26-Nov-01	TNTC	>40000	2000	Cw/C	Cw/C	18600	TNTC	8000	3600	NS	NS	NS
3-Dec-01	TNTC	1800	1020	Cw/C	>40000	25000	NS	NS	NS	5200	250	1270
10-Dec-01	>9800	240	270	>16200	714	780	NS	NS	NS	4600	<10	210
17-Dec-01	TNTC	1400	1770	>36600	800	1690	NS	NS	NS	5400	80	280
26-Dec-01	6400	240	200	>23600	640	720	NS	NS	NS	2400	130	120
2-Jan-02	13600	360	410	18400	210	780	NS	NS	NS	3400	30	100
7-Jan-02	>7000	140	80	TNTC	650	910	NS	NS	NS	>460	10	40
14-Jan-02	2400	160	10	5200	260	320	NS	NS	NS	4200	50	110
22-Jan-02	3400	110	70	>3800	180	270	NS	NS	NS	2400	460	280
28-Jan-02	Cw/C	>40000	22600	Cw/C	15400	26600	NS	NS	NS	1400	30	100
4-Feb-02	15000	350	210	TNTC	810	690	NS	NS	NS	1230	80	20
11-Feb-02	2400	140	20	8400	760	500	NS	NS	NS	20	<10	<10
19-Feb-02	Cw/C	4000	1250	Cw/C	850	740	TNTC	1000	890	NS	NS	NS
25-Feb-02	3200	270	40	TNTC	2000	1050	1000	150	120	NS	NS	NS
4-Mar-02	14000	550	10	>11000	130	460	1200	270	220	NS	NS	NS
11-Mar-02	3400	150	10	15000	390	860	3000	270	190	NS	NS	NS
18-Mar-02	TNTC	10600	18400	TNTC	18800	TNTC	TNTC	4200	3000	NS	NS	NS
25-Mar-02	10400	200	>1400	>29200	200	410	>3800	250	170	NS	NS	NS

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci
NS = Not Sampled
Cw/C = Confluent Growth with Coliforms
TNTC = Too Numerous To Count

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

LOWER BAY STATIONS

	43rd Street Beach			38th Street Beach			33rd Street Channel		
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective
2-Apr-01	20	96	no	20	35	no	600	149	no
9-Apr-01	20	47	yes	90	24	yes	1910	174	no
16-Apr-01	<10	23	yes	<10	24	yes	50	240	no
23-Apr-01	10	13	yes	30	29	yes	<10	89	no
30-Apr-01	<10	13	yes	<10	22	yes	<10	89	no
9-May-01	250	22	yes	40	26	yes	<10	39	no
14-May-01	<10	19	yes	10	16	yes	20	16	yes
21-May-01	10	19	yes	10	16	yes	30	14	yes
31-May-01	<10		ID	30		ID	150		ID
4-Jun-01	70	28	yes	100	26	yes	30	31	yes
11-Jun-01	120	24	yes	140	33	yes	60	44	yes
18-Jun-01	400	51	yes	20	38	yes	5200	133	no
25-Jun-01	<10	51	yes	20	44	yes	10	107	no
2-Jul-01	10	51	yes	20	41	yes	220	116	no
9-Jul-01	720	81	no	50	35	yes	6800	342	no
16-Jul-01	950	122	no	600	47	no	60	342	no
23-Jul-01	70	86	no	40	54	no	470	211	no
30-Jul-01	400	180	no	<10	47	no	<10	211	no
6-Aug-01	40	238	no	40	54	no	>40,000	598	no
13-Aug-01	10	101	no	30	49	no	30	202	no
20-Aug-01	930	101	no	80	33	yes	200	257	no
27-Aug-01	10	68	no	40	33	yes	590	269	no
4-Sep-01	100	52	no	230	62	yes	90	418	no
10-Sep-01	<10	39	no	80	71	yes	80	121	no
17-Sep-01	50	54	no	20	65	yes	<10	97	no
24-Sep-01	30	27	yes	10	43	yes	4000	176	no
1-Oct-01	10	27	yes	10	33	yes	2000	225	no
9-Oct-01	20	20	yes	<10	17	yes	<10	145	no
15-Oct-01	20	23	yes	10	11	yes	<10	96	no
22-Oct-01	70	24	yes	<10	10	yes	<10	96	no
29-Oct-01	20	22	yes	340	20	yes	>60	41	no
5-Nov-01	100	35	yes	360	41	yes	>40,000	75	no
13-Nov-01	2400	92	no	9000	162	no	7600	283	no
20-Nov-01	80	122	no	100	256	no	50	391	no
26-Nov-01	6000	297	no	6200	927	no	5400	1376	no
3-Dec-01	200	470	no	770	1091	no	800	2309	no
10-Dec-01	60	425	no	10	533	no	3600	1427	no
17-Dec-01	40	187	no	80	207	no	130	632	no
26-Dec-01	70	182	no	<10	131	no	40	605	no
2-Jan-02	120	83	yes	70	53	no	320	344	no
7-Jan-02	10	46	yes	10	22	yes	130	239	no
14-Jan-02	110	52	yes	60	32	yes	20	85	yes
22-Jan-02	50	54	yes	10	21	yes	210	93	yes
28-Jan-02	60	52	yes	340	43	yes	2400	211	no
4-Feb-02	70	47	yes	240	55	yes	50	146	no
11-Feb-02	<10	47	yes	10	55	yes	10	87	no
19-Feb-02	60	42	yes	30	48	yes	4000	252	no
26-Feb-02	10	30	yes	10	48	yes	<10	137	no
4-Mar-02	100	33	yes	200	43	yes	30	57	no
11-Mar-02	60	32	yes	10	23	yes	40	54	no
18-Mar-02	<10	32	yes	760	54	no	>38000	283	no
25-Mar-02	<10	23	yes	<10	43	no	90	133	no

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

LOWER BAY STATIONS

	Lido Yacht Club Beach			Via Genoa Beach			Newport Blvd. Bridge		
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective
2-Apr-01	30	28	yes	20	23	yes	100	199	no
9-Apr-01	570	37	no	650	30	no	70	76	no
16-Apr-01	70	54	no	<10	30	no	10	66	no
23-Apr-01	100	65	no	40	35	no	70	43	yes
30-Apr-01	<10	65	no	<10	35	no	30	43	yes
9-May-01	10	53	no	<10	30	no	>40,000	143	no
14-May-01	530	52	no	<10	13	yes	7200	360	no
21-May-01	20	40	no	<10	13	yes	30	448	no
31-May-01	<10		no	10		ID	20000		no
4-Jun-01	10	25	no	10	10	yes	200	2031	no
11-Jun-01	100	40	no	10	10	yes	260	742	no
18-Jun-01	20	21	yes	50	14	yes	<10	199	no
25-Jun-01	940	45	no	<10	14	yes	30	199	no
2-Jul-01	30	56	no	<10	14	yes	<10	44	yes
9-Jul-01	10	56	no	10	14	yes	400	50	yes
16-Jul-01	3400	114	no	20	16	yes	120	43	yes
23-Jul-01	10	99	no	<10	11	yes	40	57	yes
30-Jul-01	<10	40	no	<10	11	yes	10	45	yes
6-Aug-01	<10	32	no	<10	11	yes	700	106	no
13-Aug-01	80	49	no	220	21	yes	110	82	no
20-Aug-01	40	20	yes	<10	19	yes	3000	156	no
27-Aug-01	<10	20	yes	<10	19	yes	50	163	no
4-Sep-01	<10	20	yes	10	19	yes	22200	762	no
10-Sep-01	100	32	yes	<10	19	yes	>2400	975	no
17-Sep-01	<10	21	yes	10	10	yes	120	992	no
24-Sep-01	<10	16	yes	10	10	yes	<10	317	no
1-Oct-01	10	16	yes	<10	10	yes	<10	230	no
9-Oct-01	10	16	yes	<10	10	yes	10	49	no
15-Oct-01	10	10	yes	10	10	yes	10	16	yes
22-Oct-01	<10	10	yes	<10	10	yes	<10	10	yes
29-Oct-01	10	10	yes	40	13	yes	<10	10	yes
5-Nov-01	10	10	yes	60	19	yes	50	14	yes
13-Nov-01	110	16	yes	310	38	yes	2600	42	no
20-Nov-01	<10	16	yes	10	38	yes	30	52	no
26-Nov-01	21800	75	no	6600	137	no	13600	221	no
3-Dec-01	40	99	no	80	158	no	700	518	no
10-Dec-01	10	99	no	70	163	no	1200	977	no
17-Dec-01	<10	61	no	20	94	no	30	400	no
26-Dec-01	<10	61	no	<10	94	no	20	369	no
2-Jan-02	50	18	yes	80	39	yes	20	100	no
7-Jan-02	<10	14	yes	60	37	yes	40	57	no
14-Jan-02	<10	14	yes	<10	25	yes	10	22	yes
22-Jan-02	10	14	yes	20	25	yes	10	17	yes
28-Jan-02	30	17	yes	170	44	yes	140	26	yes
4-Feb-02	10	12	yes	40	38	yes	120	37	yes
11-Feb-02	<10	12	yes	<10	27	yes	50	38	yes
19-Feb-02	1800	35	no	230	50	yes	120	63	yes
26-Feb-02	<10	35	no	40	57	yes	140	107	yes
4-Mar-02	<10	28	no	<10	33	yes	<10	63	yes
11-Mar-02	110	46	no	<10	25	yes	<10	38	yes
18-Mar-02	<10	46	no	<10	25	yes	80	42	yes
25-Mar-02	<10	16	yes	30	16	yes	70	38	yes

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

LOWER BAY STATIONS

	Rhine Channel			19th Street Beach			15th Street Beach		
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective
2-Apr-01	>3400	85	no	<10	13	yes	<10	13	yes
9-Apr-01	120	70	no	380	21	yes	590	23	no
16-Apr-01	<10	70	no	10	21	yes	10	23	no
23-Apr-01	200	127	no	100	33	yes	180	40	no
30-Apr-01	190	173	no	<10	33	yes	<10	40	no
9-May-01	40	71	yes	40	43	yes	20	46	no
14-May-01	<10	43	yes	<10	21	yes	10	20	yes
21-May-01	40	57	yes	10	21	yes	20	24	yes
31-May-01	90		ID	<10		ID	20		ID
4-Jun-01	20	31	yes	20	15	yes	<10	15	yes
11-Jun-01	240	44	yes	<10	11	yes	30	16	yes
18-Jun-01	10	44	yes	<10	11	yes	20	19	yes
25-Jun-01	180	60	yes	<10	11	yes	<10	16	yes
2-Jul-01	80	59	yes	420	24	no	200	26	yes
9-Jul-01	40	67	yes	1520	58	no	10	26	yes
16-Jul-01	180	64	yes	10	58	no	10	21	yes
23-Jul-01	30	79	yes	10	58	no	20	21	yes
30-Jul-01	2600	135	no	30	72	no	<10	21	yes
6-Aug-01	10	89	no	30	42	no	10	11	yes
13-Aug-01	20	78	no	<10	16	yes	<10	11	yes
20-Aug-01	280	85	no	50	21	yes	10	11	yes
27-Aug-01	190	123	no	<10	21	yes	<10	10	yes
4-Sep-01	160	70	yes	20	20	yes	30	12	yes
10-Sep-01	<10	70	yes	720	37	no	10	12	yes
17-Sep-01	220	113	yes	60	53	no	20	14	yes
24-Sep-01	10	58	yes	10	39	no	10	14	yes
1-Oct-01	<10	32	yes	10	39	no	<10	14	yes
9-Oct-01	10	19	yes	30	42	no	<10	11	yes
15-Oct-01	<10	19	yes	40	24	yes	30	14	yes
22-Oct-01	20	11	yes	640	38	no	30	16	yes
29-Oct-01	30	14	yes	270	73	no	80	24	yes
5-Nov-01	20	16	yes	90	113	no	70	35	yes
13-Nov-01	140	28	yes	240	172	no	110	56	yes
20-Nov-01	<10	28	yes	20	149	no	110	73	yes
26-Nov-01	11800	100	no	22000	303	no	13600	247	no
3-Dec-01	704	188	no	60	224	no	30	203	no
10-Dec-01	180	291	no	40	191	no	<10	138	no
17-Dec-01	30	214	no	50	139	no	20	98	no
26-Dec-01	10	214	no	80	184	no	10	61	no
2-Jan-02	30	65	no	390	82	yes	10	14	yes
7-Jan-02	50	38	yes	390	119	yes	10	11	yes
14-Jan-02	10	21	yes	150	156	yes	<10	11	yes
22-Jan-02	<10	17	yes	350	230	no	<10	10	yes
28-Jan-02	80	26	yes	1200	395	no	40	13	yes
4-Feb-02	90	32	yes	20	218	no	50	18	yes
11-Feb-02	<10	24	yes	20	120	no	10	18	yes
19-Feb-02	330	47	yes	370	144	no	390	38	yes
26-Feb-02	60	68	yes	50	98	no	10	38	yes
4-Mar-02	390	93	yes	10	37	yes	20	33	yes
11-Mar-02	40	79	yes	20	37	yes	40	32	yes
18-Mar-02	40	104	yes	10	33	yes	<10	32	yes
25-Mar-02	<10	52	yes	10	16	yes	60	22	yes

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

LOWER BAY STATIONS

	10th Street Beach			Alvarado/ Bay Isle Beach			N Street Beach		
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective
2-Apr-01	<10	14	yes	20	15	yes	40	31	yes
9-Apr-01	90	16	yes	<10	13	yes	150	46	yes
16-Apr-01	10	16	yes	30	16	yes	<10	46	yes
23-Apr-01	220	29	yes	80	22	yes	<10	30	yes
30-Apr-01	<10	29	yes	<10	22	yes	40	30	yes
9-May-01	210	53	yes	<10	19	yes	10	23	yes
14-May-01	<10	34	yes	20	22	yes	20	15	yes
21-May-01	<10	34	yes	20	20	yes	<10	15	yes
31-May-01	60		ID	40		ID	10		ID
4-Jun-01	40	35	yes	130	29	yes	<10	11	yes
11-Jun-01	10	19	yes	40	38	yes	<10	11	yes
18-Jun-01	30	24	yes	<10	33	yes	20	11	yes
25-Jun-01	30	29	yes	20	33	yes	10	11	yes
2-Jul-01	<10	20	yes	10	25	yes	170	20	yes
9-Jul-01	10	16	yes	12400	63	no	20	23	yes
16-Jul-01	50	21	yes	30	59	no	10	23	yes
23-Jul-01	10	17	yes	30	74	no	20	23	yes
30-Jul-01	10	14	yes	40	85	no	50	32	yes
6-Aug-01	30	17	yes	10	85	no	20	21	yes
13-Aug-01	10	17	yes	30	26	yes	10	18	yes
20-Aug-01	<10	12	yes	10	20	yes	<10	18	yes
27-Aug-01	190	22	yes	10	16	yes	20	18	yes
4-Sep-01	20	26	yes	10	12	yes	<10	13	yes
10-Sep-01	<10	21	yes	50	17	yes	<10	11	yes
17-Sep-01	<10	21	yes	10	14	yes	<10	11	yes
24-Sep-01	<10	21	yes	70	20	yes	20	13	yes
1-Oct-01	<10	11	yes	<10	20	yes	60	16	yes
9-Oct-01	10	10	yes	10	20	yes	160	29	yes
15-Oct-01	20	11	yes	30	18	yes	10	29	yes
22-Oct-01	30	14	yes	<10	18	yes	20	33	yes
29-Oct-01	<10	14	yes	10	12	yes	10	29	yes
5-Nov-01	30	18	yes	120	20	yes	<10	20	yes
13-Nov-01	290	35	yes	450	44	no	10	11	yes
20-Nov-01	180	54	yes	40	46	no	10	11	yes
26-Nov-01	18400	196	no	11200	189	no	1160	26	no
3-Dec-01	30	244	no	30	236	no	10	26	no
10-Dec-01	640	450	no	<10	143	no	<10	26	no
17-Dec-01	80	348	no	<10	67	no	<10	26	no
26-Dec-01	410	410	no	280	99	no	10	26	no
2-Jan-02	4200	305	no	30	30	yes	<10	10	yes
7-Jan-02	370	504	no	10	24	yes	30	12	yes
14-Jan-02	10	220	no	30	30	yes	10	12	yes
22-Jan-02	80	220	no	<10	30	yes	<10	12	yes
28-Jan-02	160	182	no	90	24	yes	<10	12	yes
4-Feb-02	10	54	yes	<10	19	yes	10	12	yes
11-Feb-02	40	35	yes	<10	19	yes	10	10	yes
19-Feb-02	860	85	no	1000	39	no	30	12	yes
26-Feb-02	80	85	no	20	45	no	<10	12	yes
4-Mar-02	10	49	no	<10	29	no	<10	12	yes
11-Mar-02	20	56	no	250	55	no	<10	12	yes
18-Mar-02	40	56	no	30	68	no	20	14	yes
25-Mar-02	10	23	yes	700	64	no	20	13	yes

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

LOWER BAY STATIONS

	Garnet Avenue Beach			Ruby Avenue Beach			Sapphire Avenue Beach		
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective
2-Apr-01	20	23	yes	<10	11	yes	<10	13	yes
9-Apr-01	80	26	yes	70	15	yes	120	16	yes
16-Apr-01	<10	26	yes	10	15	yes	10	16	yes
23-Apr-01	10	23	yes	40	19	yes	<10	16	yes
30-Apr-01	10	17	yes	<10	19	yes	10	16	yes
9-May-01	20	17	yes	10	19	yes	10	16	yes
14-May-01	630	26	no	<10	13	yes	10	10	yes
21-May-01	20	30	no	40	17	yes	40	13	yes
31-May-01	<10		no	<10		ID	40		ID
4-Jun-01	20	35	no	10	13	yes	30	22	yes
11-Jun-01	10	30	no	<10	13	yes	<10	22	yes
18-Jun-01	<10	13	yes	10	13	yes	30	27	yes
25-Jun-01	60	16	yes	<10	10	yes	20	24	yes
2-Jul-01	30	20	yes	<10	10	yes	30	22	yes
9-Jul-01	20	20	yes	30	12	yes	10	18	yes
16-Jul-01	30	26	yes	30	16	yes	<10	18	yes
23-Jul-01	<10	26	yes	20	18	yes	<10	14	yes
30-Jul-01	<10	18	yes	10	18	yes	20	14	yes
6-Aug-01	120	24	yes	10	18	yes	30	14	yes
13-Aug-01	<10	20	yes	<10	14	yes	<10	14	yes
20-Aug-01	60	24	yes	<10	11	yes	60	20	yes
27-Aug-01	20	27	yes	50	14	yes	<10	20	yes
4-Sep-01	90	42	yes	30	17	yes	10	18	yes
10-Sep-01	30	32	yes	<10	17	yes	<10	14	yes
17-Sep-01	20	37	yes	20	20	yes	<10	14	yes
24-Sep-01	10	26	yes	140	33	yes	<10	10	yes
1-Oct-01	50	31	yes	10	24	yes	<10	10	yes
9-Oct-01	90	31	yes	80	30	yes	<10	10	yes
15-Oct-01	<10	25	yes	200	54	yes	10	10	yes
22-Oct-01	10	21	yes	<10	47	yes	<10	10	yes
29-Oct-01	20	25	yes	20	32	yes	<10	10	yes
5-Nov-01	40	24	yes	<10	32	yes	20	11	yes
13-Nov-01	240	29	yes	110	34	yes	320	23	yes
20-Nov-01	30	36	yes	40	24	yes	40	30	yes
26-Nov-01	4600	122	no	5800	87	no	2200	89	no
3-Dec-01	<10	106	no	20	87	no	30	111	no
10-Dec-01	<10	80	no	10	87	no	10	97	no
17-Dec-01	30	53	no	20	62	no	50	67	no
26-Dec-01	50	59	no	<10	47	no	20	58	no
2-Jan-02	<10	17	yes	30	16	yes	30	25	yes
7-Jan-02	40	23	yes	10	14	yes	<10	20	yes
14-Jan-02	200	41	yes	<10	14	yes	<10	20	yes
22-Jan-02	<10	33	yes	40	16	yes	<10	14	yes
28-Jan-02	40	32	yes	30	20	yes	20	14	yes
4-Feb-02	<10	32	yes	10	16	yes	10	11	yes
11-Feb-02	<10	24	yes	<10	16	yes	30	14	yes
19-Feb-02	640	30	no	10	16	yes	60	20	yes
26-Feb-02	<10	30	no	10	12	yes	580	46	no
4-Mar-02	10	23	no	50	14	yes	<10	40	no
11-Mar-02	<10	23	no	10	14	yes	<10	40	no
18-Mar-02	20	26	no	10	14	yes	10	32	no
25-Mar-02	<10	11	yes	20	16	yes	<10	23	no

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

LOWER BAY STATIONS

	Grand Canal			Abalone Avenue Beach			Park Avenue Beach		
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective
2-Apr-01	10	16	yes	30	16	yes	10	16	yes
9-Apr-01	40	13	yes	<10	14	yes	280	19	yes
16-Apr-01	20	15	yes	<10	14	yes	<10	19	yes
23-Apr-01	<10	15	yes	<10	12	yes	<10	19	yes
30-Apr-01	10	15	yes	<10	12	yes	10	19	yes
9-May-01	10	15	yes	10	10	yes	<10	19	yes
14-May-01	<10	11	yes	<10	10	yes	<10	10	yes
21-May-01	20	11	yes	<10	10	yes	20	11	yes
31-May-01	<10		ID	10		ID	<10		ID
4-Jun-01	40	15	yes	<10	10	yes	<10	11	yes
11-Jun-01	20	17	yes	<10	10	yes	20	13	yes
18-Jun-01	40	23	yes	40	13	yes	<10	13	yes
25-Jun-01	1500	54	no	<10	13	yes	10	11	yes
2-Jul-01	20	63	no	1100	34	no	10	11	yes
9-Jul-01	20	54	no	10	34	no	<10	11	yes
16-Jul-01	160	83	no	<10	34	no	<10	10	yes
23-Jul-01	10	63	no	<10	26	no	10	10	yes
30-Jul-01	60	33	yes	<10	26	no	<10	10	yes
6-Aug-01	<10	29	yes	<10	10	yes	10	10	yes
13-Aug-01	280	49	yes	10	10	yes	70	15	yes
20-Aug-01	10	28	yes	<10	10	yes	<10	15	yes
27-Aug-01	370	57	yes	10	10	yes	<10	15	yes
4-Sep-01	50	55	yes	10	10	yes	30	18	yes
10-Sep-01	510	121	no	<10	10	yes	270	36	yes
17-Sep-01	10	62	no	<10	10	yes	10	24	yes
24-Sep-01	220	116	no	30	12	yes	<10	24	yes
1-Oct-01	<10	56	no	<10	12	yes	10	24	yes
9-Oct-01	140	69	no	30	16	yes	>40,000	102	no
15-Oct-01	<10	31	yes	<10	16	yes	<10	53	no
22-Oct-01	1800	89	no	60	22	yes	40	69	no
29-Oct-01	70	71	no	10	18	yes	<10	69	no
5-Nov-01	20	81	no	10	18	yes	360	142	no
13-Nov-01	60	69	no	120	24	yes	70	40	yes
20-Nov-01	30	85	no	10	24	yes	80	60	yes
26-Nov-01	590	68	no	470	36	no	540	102	no
3-Dec-01	10	46	no	<10	36	no	70	150	no
10-Dec-01	10	40	no	<10	36	no	10	73	no
17-Dec-01	20	32	no	10	22	no	170	88	no
26-Dec-01	10	26	no	200	39	no	<10	58	no
2-Jan-02	<10	11	yes	<10	18	yes	20	30	yes
7-Jan-02	10	11	yes	10	18	yes	<10	20	yes
14-Jan-02	<10	11	yes	10	18	yes	10	20	yes
22-Jan-02	<10	10	yes	<10	18	yes	<10	11	yes
28-Jan-02	10	10	yes	<10	10	yes	<10	11	yes
4-Feb-02	10	10	yes	<10	10	yes	<10	10	yes
11-Feb-02	30	12	yes	10	10	yes	<10	10	yes
19-Feb-02	<10	12	yes	40	13	yes	40	13	yes
26-Feb-02	10	12	yes	10	13	yes	10	13	yes
4-Mar-02	10	12	yes	10	13	yes	20	15	yes
11-Mar-02	10	12	yes	10	13	yes	<10	15	yes
18-Mar-02	10	10	yes	10	13	yes	10	15	yes
25-Mar-02	10	10	yes	20	11	yes	10	11	yes

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

LOWER BAY STATIONS

	Onyx Avenue Beach			Promontory Point Channel			Harbor Patrol Beach		
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective
2-Apr-01	40	57	no	<10	10	yes	70	68	no
9-Apr-01	130	45	yes	<10	10	yes	170	56	yes
16-Apr-01	10	39	yes	<10	10	yes	110	68	yes
23-Apr-01	<10	31	yes	<10	10	yes	30	52	yes
30-Apr-01	70	33	yes	10	10	yes	100	83	yes
9-May-01	<10	25	yes	20	11	yes	250	107	yes
14-May-01	100	23	yes	10	11	yes	30	76	yes
21-May-01	10	23	yes	<10	11	yes	20	54	yes
31-May-01	110		ID	<10		ID	130		ID
4-Jun-01	20	29	yes	<10	11	yes	300	90	yes
11-Jun-01	20	34	yes	<10	10	yes	530	104	no
18-Jun-01	10	21	yes	<10	10	yes	<10	84	no
25-Jun-01	<10	21	yes	<10	10	yes	60	104	no
2-Jul-01	10	13	yes	<10	10	yes	50	86	no
9-Jul-01	70	17	yes	<10	10	yes	10	44	no
16-Jul-01	<10	15	yes	10	10	yes	30	25	yes
23-Jul-01	10	15	yes	<10	10	yes	40	32	yes
30-Jul-01	20	17	yes	20	11	yes	310	45	yes
6-Aug-01	60	24	yes	<10	11	yes	40	43	yes
13-Aug-01	<10	16	yes	<10	11	yes	110	70	yes
20-Aug-01	30	20	yes	<10	11	yes	180	100	yes
27-Aug-01	10	20	yes	<10	11	yes	80	114	yes
4-Sep-01	10	18	yes	<10	10	yes	850	140	no
10-Sep-01	10	12	yes	10	10	yes	<10	106	no
17-Sep-01	130	21	yes	<10	10	yes	200	120	no
24-Sep-01	10	17	yes	<10	10	yes	30	84	no
1-Oct-01	10	17	yes	<10	10	yes	50	76	no
9-Oct-01	610	38	no	<10	10	yes	100	50	yes
15-Oct-01	50	52	no	<10	10	yes	30	62	yes
22-Oct-01	<10	31	no	<10	10	yes	1100	87	no
29-Oct-01	60	45	no	<10	10	yes	20	80	no
5-Nov-01	100	71	no	<10	10	yes	180	104	no
13-Nov-01	1210	82	no	10	10	yes	580	147	no
20-Nov-01	<10	59	no	<10	10	yes	<10	118	no
26-Nov-01	1370	158	no	430	21	no	510	101	no
3-Dec-01	260	212	no	9000	83	no	70	130	no
10-Dec-01	<10	134	no	100	131	no	10	73	no
17-Dec-01	80	78	no	30	163	no	40	43	no
26-Dec-01	<10	78	no	<10	163	no	20	49	no
2-Jan-02	920	72	no	10	77	no	10	22	yes
7-Jan-02	20	43	no	20	23	yes	10	15	yes
14-Jan-02	20	49	no	<10	14	yes	100	24	yes
22-Jan-02	10	33	no	10	11	yes	100	29	yes
28-Jan-02	40	43	no	<10	11	yes	80	38	yes
4-Feb-02	<10	17	yes	<10	11	yes	<10	38	yes
11-Feb-02	<10	15	yes	<10	10	yes	20	44	yes
19-Feb-02	30	16	yes	<10	10	yes	20	32	yes
26-Feb-02	780	39	no	20	11	yes	10	20	yes
4-Mar-02	80	45	no	10	11	yes	40	17	yes
11-Mar-02	10	45	no	<10	11	yes	10	17	yes
18-Mar-02	<10	45	no	<10	11	yes	40	20	yes
25-Mar-02	<10	36	no	<10	11	yes	800	42	no

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

LOWER BAY STATIONS

	Rocky Point Beach											
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective									
2-Apr-01	20	25	no									
9-Apr-01	20	29	no									
16-Apr-01	10	29	no									
23-Apr-01	<10	29	no									
30-Apr-01	10	13	yes									
9-May-01	<10	11	yes									
14-May-01	20	11	yes									
21-May-01	<10	11	yes									
31-May-01	10		ID									
4-Jun-01	30	14	yes									
11-Jun-01	10	14	yes									
18-Jun-01	<10	12	yes									
25-Jun-01	10	12	yes									
2-Jul-01	10	12	yes									
9-Jul-01	<10	10	yes									
16-Jul-01	10	10	yes									
23-Jul-01	<10	10	yes									
30-Jul-01	30	12	yes									
6-Aug-01	<10	12	yes									
13-Aug-01	40	16	yes									
20-Aug-01	10	16	yes									
27-Aug-01	330	33	yes									
4-Sep-01	10	27	yes									
10-Sep-01	<10	27	yes									
17-Sep-01	<10	20	yes									
24-Sep-01	20	23	yes									
1-Oct-01	<10	11	yes									
9-Oct-01	110	19	yes									
15-Oct-01	<10	19	yes									
22-Oct-01	<10	19	yes									
29-Oct-01	10	16	yes									
5-Nov-01	10	16	yes									
13-Nov-01	40	13	yes									
20-Nov-01	<10	13	yes									
26-Nov-01	280	26	yes									
3-Dec-01	10	26	yes									
10-Dec-01	30	32	yes									
17-Dec-01	<10	24	yes									
26-Dec-01	10	24	yes									
2-Jan-02	10	12	yes									
7-Jan-02	50	17	yes									
14-Jan-02	<10	14	yes									
22-Jan-02	<10	14	yes									
28-Jan-02	<10	14	yes									
4-Feb-02	<10	14	yes									
11-Feb-02	10	10	yes									
19-Feb-02	80	15	yes									
26-Feb-02	<10	15	yes									
4-Mar-02	20	17	yes									
11-Mar-02	30	22	yes									
18-Mar-02	190	39	yes									
25-Mar-02	30	32	yes									

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

UPPER BAY STATIONS

	Bayshore Beach			De Anza Launch			Newport Dunes West		
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective
2-Apr-01	30	12	yes	<10	10	yes	80	50	yes
9-Apr-01	230	23	yes	370	21	yes	760	95	no
16-Apr-01	330	47	yes	<10	21	yes	<10	83	no
23-Apr-01	20	54	yes	20	24	yes	80	75	no
30-Apr-01	340	109	yes	10	24	yes	10	55	no
9-May-01	<10	88	yes	<10	24	yes	<10	36	no
14-May-01	30	58	yes	<10	11	yes	40	20	yes
21-May-01	<10	29	yes	<10	11	yes	10	20	yes
31-May-01	10		ID	10		ID	10		ID
4-Jun-01	10	12	yes	10	10	yes	30	16	yes
11-Jun-01	90	19	yes	<10	10	yes	<10	16	yes
18-Jun-01	30	19	yes	<10	10	yes	<10	12	yes
25-Jun-01	20	22	yes	<10	10	yes	20	14	yes
2-Jul-01	50	31	yes	10	10	yes	10	14	yes
9-Jul-01	<10	31	yes	<10	10	yes	110	19	yes
16-Jul-01	<10	20	yes	10	10	yes	20	21	yes
23-Jul-01	10	16	yes	<10	10	yes	60	31	yes
30-Jul-01	<10	14	yes	<10	10	yes	50	37	yes
6-Aug-01	20	11	yes	<10	10	yes	<10	37	yes
13-Aug-01	10	11	yes	<10	10	yes	<10	23	yes
20-Aug-01	10	11	yes	10	10	yes	<10	20	yes
27-Aug-01	10	11	yes	60	14	yes	<10	14	yes
4-Sep-01	10	11	yes	10	14	yes	110	16	yes
10-Sep-01	10	10	yes	<10	14	yes	20	19	yes
17-Sep-01	20	11	yes	50	20	yes	30	23	yes
24-Sep-01	<10	11	yes	20	23	yes	<10	23	yes
1-Oct-01	200	21	yes	20	18	yes	<10	23	yes
9-Oct-01	<10	21	yes	<10	18	yes	<10	14	yes
15-Oct-01	20	24	yes	<10	18	yes	80	19	yes
22-Oct-01	30	26	yes	10	13	yes	90	24	yes
29-Oct-01	10	26	yes	30	14	yes	50	32	yes
5-Nov-01	20	16	yes	<10	12	yes	700	76	no
13-Nov-01	80	25	yes	190	22	yes	20200	348	no
20-Nov-01	<10	22	yes	50	31	yes	30	286	no
26-Nov-01	16400	77	no	20600	142	no	2800	569	no
3-Dec-01	70	113	no	40	151	no	50	569	no
10-Dec-01	10	98	no	10	151	no	40	321	no
17-Dec-01	30	81	no	20	96	no	80	106	no
26-Dec-01	70	119	no	10	70	no	250	162	no
2-Jan-02	30	34	yes	70	22	yes	470	113	no
7-Jan-02	10	23	yes	90	26	yes	110	133	no
14-Jan-02	<10	23	yes	20	30	yes	80	153	no
22-Jan-02	<10	18	yes	<10	26	yes	50	139	no
28-Jan-02	20	14	yes	60	38	yes	2600	222	no
4-Feb-02	10	11	yes	690	59	no	20	118	no
11-Feb-02	<10	11	yes	10	38	no	30	91	no
19-Feb-02	4800	39	no	4600	114	no	7000	223	no
25-Feb-02	10	39	no	<10	114	no	30	201	no
4-Mar-02	30	43	no	10	79	no	<10	66	no
11-Mar-02	10	43	no	<10	34	no	90	89	no
18-Mar-02	170	75	no	580	77	no	710	168	no
25-Mar-02	<10	22	yes	10	23	no	<10	45	no

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

UPPER BAY STATIONS

	Newport Dunes Middle			Newport Dunes East			Newport Dunes North		
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective
2-Apr-01	40	23	yes	350	70	yes	<10	34	yes
9-Apr-01	710	53	no	1390	149	no	1000	75	no
16-Apr-01	10	53	no	<10	149	no	70	88	no
23-Apr-01	120	63	no	90	117	no	260	94	no
30-Apr-01	30	63	no	340	172	no	5000	246	no
9-May-01	<10	48	no	20	97	no	<10	246	no
14-May-01	<10	20	yes	10	36	yes	<10	98	no
21-May-01	<10	20	yes	10	36	yes	10	66	no
31-May-01	10		ID	<10		ID	30		no
4-Jun-01	20	11	yes	20	13	yes	20	14	yes
11-Jun-01	<10	11	yes	<10	11	yes	<10	14	yes
18-Jun-01	<10	11	yes	110	19	yes	20	16	yes
25-Jun-01	<10	11	yes	130	31	yes	<10	16	yes
2-Jul-01	<10	11	yes	<10	31	yes	20	15	yes
9-Jul-01	10	10	yes	50	37	yes	560	30	no
16-Jul-01	10	10	yes	<10	37	yes	220	55	no
23-Jul-01	90	16	yes	20	26	yes	80	72	no
30-Jul-01	<10	16	yes	110	26	yes	40	95	no
6-Aug-01	<10	16	yes	200	47	yes	150	143	no
13-Aug-01	<10	16	yes	10	34	yes	70	94	yes
20-Aug-01	20	18	yes	>30	42	yes	360	104	yes
27-Aug-01	10	11	yes	60	52	yes	10	69	yes
4-Sep-01	10	11	yes	60	46	yes	70	77	yes
10-Sep-01	10	11	yes	40	34	yes	180	79	yes
17-Sep-01	<10	11	yes	10	34	yes	100	85	yes
24-Sep-01	<10	10	yes	40	36	yes	30	52	yes
1-Oct-01	30	12	yes	20	29	yes	<10	52	yes
9-Oct-01	<10	12	yes	20	23	yes	110	57	yes
15-Oct-01	30	16	yes	90	27	yes	90	49	yes
22-Oct-01	90	24	yes	50	37	yes	110	50	yes
29-Oct-01	<10	24	yes	150	49	yes	110	65	yes
5-Nov-01	3600	63	no	110	68	yes	260	126	yes
13-Nov-01	25000	300	no	25200	285	no	26000	374	no
20-Nov-01	<10	241	no	80	278	no	150	415	no
26-Nov-01	6800	572	no	10200	806	no	13000	1077	no
3-Dec-01	50	789	no	40	618	no	60	954	no
10-Dec-01	20	279	no	40	505	no	60	712	no
17-Dec-01	90	91	no	110	170	no	100	234	no
26-Dec-01	70	134	no	30	140	no	90	211	no
2-Jan-02	180	65	yes	180	62	yes	70	74	yes
7-Jan-02	230	88	yes	100	75	yes	230	97	yes
14-Jan-02	80	116	yes	100	90	yes	250	129	yes
22-Jan-02	130	125	yes	100	88	yes	210	150	yes
28-Jan-02	2600	257	no	1400	191	no	1400	260	no
4-Feb-02	10	144	no	130	179	no	840	427	no
11-Feb-02	50	106	no	<10	113	no	20	262	no
19-Feb-02	8600	271	no	6200	257	no	5400	484	no
25-Feb-02	60	232	no	90	252	no	60	377	no
4-Mar-02	<10	76	no	50	129	no	70	207	no
11-Mar-02	90	118	no	120	127	no	780	204	no
18-Mar-02	550	191	no	4000	422	no	1140	458	no
25-Mar-02	20	57	no	20	134	no	<10	130	no

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

TABLE 2

RUNNING GEOMEAN* OF FECAL COLIFORM CONCENTRATIONS IN NEWPORT BAY

April 2001-March 2002

UPPER BAY STATIONS

	North Star Beach			Vaughn's Launch			Ski Zone		
	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective	Fecal Coliform (CFU/100mL)	30-day Geomean	30-day period met objective
2-Apr-01	10	33	no	NS		no	NS		ID
9-Apr-01	1050	40	no	500		no	20		ID
16-Apr-01	70	37	no	NS		no	NS		ID
23-Apr-01	310	74	no	240		no	210		ID
30-Apr-01	<10	74	no	NS		no	NS		ID
9-May-01	20	85	no	NS		no	NS		ID
14-May-01	<10	34	yes	NS		ID	NS		ID
21-May-01	10	23	yes	<10		ID	<10		ID
31-May-01	10		ID	350		ID	<10		ID
4-Jun-01	10	11	yes	<10		ID	10		ID
11-Jun-01	10	10	yes	NS		ID	NS		ID
18-Jun-01	<10	10	yes	NS		ID	NS		ID
25-Jun-01	<10	10	yes	NS		ID	NS		ID
2-Jul-01	<10	10	yes	NS		ID	NS		ID
9-Jul-01	10	10	yes	NS		ID	NS		ID
16-Jul-01	50	14	yes	NS		ID	NS		ID
23-Jul-01	<10	14	yes	NS		ID	NS		ID
30-Jul-01	10	14	yes	<10		ID	280		ID
6-Aug-01	<10	14	yes	<10		ID	<10		ID
13-Aug-01	10	14	yes	NS		ID	NS		ID
20-Aug-01	20	11	yes	<10		ID	<10		ID
27-Aug-01	<10	11	yes	<10		ID	NS		ID
4-Sep-01	10	11	yes	20		ID	<10		ID
10-Sep-01	10	11	yes	NS		ID	NS		ID
17-Sep-01	<10	11	yes	10		ID	<10		ID
24-Sep-01	20	11	yes	NS		ID	NS		ID
1-Oct-01	<10	11	yes	10		ID	<10		ID
9-Oct-01	<10	11	yes	NS		ID	NS		ID
15-Oct-01	200	21	yes	NS		ID	NS		ID
22-Oct-01	<10	21	yes	NS		ID	NS		ID
29-Oct-01	<10	18	yes	NS		ID	NS		ID
5-Nov-01	30	23	yes	NS		ID	NS		ID
13-Nov-01	1030	57	no	NS		ID	NS		ID
20-Nov-01	440	67	no	310		ID	40		ID
26-Nov-01	>40000	352	no	>40000		no	>40000		no
3-Dec-01	40	465	no	NS		no	NS		no
10-Dec-01	110	603	no	NS		no	NS		no
17-Dec-01	80	362	no	NS		no	NS		no
26-Dec-01	50	234	no	NS		no	NS		no
2-Jan-02	100	71	yes	NS		ID	NS		ID
7-Jan-02	30	67	yes	NS		ID	NS		ID
14-Jan-02	<10	41	yes	NS		ID	NS		ID
22-Jan-02	130	45	yes	NS		ID	NS		ID
28-Jan-02	90	51	yes	NS		ID	NS		ID
4-Feb-02	60	46	yes	NS		ID	NS		ID
11-Feb-02	<10	37	yes	NS		ID	NS		ID
19-Feb-02	11000	151	no	NS		ID	NS		ID
25-Feb-02	30	112	no	10		ID	40		ID
4-Mar-02	310	144	no	NS		ID	NS		ID
11-Mar-02	<10	100	no	10		ID	<10		ID
18-Mar-02	3200	318	no	NS		ID	NS		ID
25-Mar-02	<10	78	no	30		ID	40		ID

* Geometric means are based on 5 samples from the preceding 30-day period

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Fecal Coliform objective not met (Geomean >200 org/100mL or single sample >400 CFU/100mL)

Fecal Coliform objectives met

Geomean unable to be calculated since less than 5 samples taken from the preceding 30-day period

NS = Not Sampled

ID = Insufficient Data

Appendix A

Letter from the Santa Ana Regional Water Quality Control Board dated January 7, 2000 Including Attachment to Resolution No. 99-10 (Basin Plan TMDL for Fecal Coliform)

California Regional Water Quality Control Board
Santa Ana Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

COUNTY EXECUTIVE OFFICE
JAN 10 2000

January 7, 2000

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Chairman, Newport Bay Watershed Executive Comm.
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REQUEST FOR TECHNICAL REPORTS FOR THE IMPLEMENTATION OF THE TOTAL MAXIMUM DAILY LOAD FOR FECAL COLIFORM IN NEWPORT BAY

Dear Supervisor Wilson, Messrs. Roeder, Danner, Rudat, Ream, Dunek, and Huston, Ms. Mittermeier and Ms. Hall Hart, and Mr. Tamaribuchi:

On April 9, 1998, the California Regional Water Quality Control Board, Santa Ana Region, (Regional Board) adopted Resolution No. 99-10, which amended the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) to establish a Total Maximum Daily Load (TMDL) for fecal coliform in Newport Bay. The TMDL is the maximum load of fecal coliform that can be discharged to the Bay while assuring that the Bay's beneficial uses (e.g., recreation and shellfish harvesting uses) are protected. This TMDL was approved by the State Water Resources Control Board (SWRCB) on July 15, 1999, and by the Office of Administrative Law (OAL) on December 30, 1999, whence the TMDL became effective. For your information, the TMDL has also been submitted to the US EPA, which has already endorsed it; formal approval is also anticipated in the near future.

As you know, Board staff worked closely with the members of the Newport Bay Watershed Management and Executive Committees in the development of this TMDL. All parties sought to recommend a TMDL that would fulfill its legal obligations to achieve water quality objectives and protect beneficial uses, but which also recognized the significant uncertainties and difficulties associated with the fecal coliform problem. The adopted TMDL reflects consensus on a phased approach, whereby plans for further studies are to be submitted in accordance with a specific schedule, and whereby a detailed implementation plan will be developed later, based on the results of these studies. The study results may also indicate the need for revision of the TMDL; the Regional Board has committed to the review of the TMDL as warranted. A copy of the adopted TMDL is attached for your reference.

Pursuant to Water Code Section 13267, this letter is a request for technical reports that provide plans for further study and analysis, as required by the TMDL. We note that, in some cases (identified below), the plans required by the TMDL have already been or are being developed as part of the Health Risk Assessment (HRA) being conducted for the Bay. Please be aware that Regional Board approval of all the plans is required. We intend to present the proposed and, in some cases completed plans to the Regional Board at the earliest opportunity, following the submittal of your response to this request. As discussed below, we will recommend that the Regional Board accept the completed plans for modeling bacterial inputs and fate and for assessment of the recreational beneficial use of the Bay. You should be aware that Regional Board consideration of the plans will take place at a public hearing, and the Regional Board may require changes based on the input provided.

Pursuant to the Basin Plan requirements for the TMDL for fecal coliform in Newport Bay, and Section 13267 of the California Water Code, the County of Orange and the Cities of Irvine, Tustin, Newport Beach, Lake Forest, Santa Ana, Orange, and Costa Mesa, and the Irvine Company are hereby requested to submit the following, by the dates specified. These plans and schedules may be submitted together in a single report or separate reports for each task and jurisdiction.

1. Routine Monitoring Program (Section 3.a.ii.a)

"By January 30, 2000 the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for routine monitoring to determine compliance with the bacterial quality objectives in the Bay. At a minimum, the proposed plan shall include the collection of five (5) samples/30-days at the stations specified in Table 5-9h and shown in Figure 5-1 and analysis of the samples for total and fecal coliform and enterococci. Reports of the collected data shall be submitted monthly. An annual report summarizing the data collected for the year and evaluating compliance with the water quality objectives shall be submitted by September 1 of each year.

In lieu of this coordinated, regional monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group plan to conduct routine monitoring in areas solely within their jurisdiction to determine compliance with the bacterial objectives in the Bay (if appropriate). Any such individual or group plans shall also be submitted by January 30, 2000. Reports of the data collected pursuant to approved individual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with water quality objectives shall be submitted by September 1 of each year.

The monitoring plan(s) shall be implemented upon Regional Board approval."

We are aware that the Orange County Health Care Agency (OCHCA) is implementing a monitoring program that meets most of the requirements cited above and it is acceptable for this monitoring program to be continued to provide for compliance with these requirements. The one difference between what is required by the TMDL and the monitoring being conducted by the OCHCA is that the OCHCA currently monitors for E.coli bacteria instead of fecal coliform. Since the Basin Plan objectives and the TMDL specifically address fecal coliform, monitoring for fecal coliform must be conducted as specified above. However, we also realize that E.coli bacteria constitute 80-90% of the fecal coliforms measured by the fecal coliform test method, and that the E.coli test method employed by OCHCA offers substantial time and resource savings. Therefore, we are willing to consider the use of E.coli monitoring as a surrogate for fecal coliform, provided that the relationship between E.coli and fecal coliform is demonstrated by the proposed monitoring program. Therefore, if you wish to use the OCHCA's monitoring program to comply with the above cited requirements, then you are requested to include in your proposed monitoring plan a plan for demonstrating the relationship between E.coli bacteria and fecal coliform.

2. Water Quality Model for Bacterial Indicators (Section 3.a.ii.b)

"By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach and the agricultural operators in the Newport Bay watershed shall submit a plan for the development and submittal of a water quality model to be completed by 13 months after Regional Board approval of the plan. The model shall be capable of analysis of fecal coliform inputs to Newport Bay, the fate of those inputs, and the effect of those inputs on compliance with bacterial quality objectives in the Bay."

As stated above, staff will recommend that the Regional Board find that the water quality model development effort that is part of the HRA satisfies the above requirement of the TMDL, provided that the model is capable of analysis of fecal coliform inputs to Newport Bay.

3. Beneficial Use Assessment (Section 3.a.ii.c)

"By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify water contact recreation activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the water contact recreation beneficial use assessment."

By February 1, 2001, the County of Orange , the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify shellfish harvesting activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the shellfish harvesting beneficial use assessment.

The beneficial use assessment reports shall contain recommendations for prioritizing areas within Newport Bay for purposes of evaluation and implementation of cost-effective and reasonable control actions as part of the TMDL process. The Regional Board will consider these recommendations and make its determinations regarding high priority water contact recreation and shellfish harvesting areas at a duly noticed public hearing. These determinations will be considered in establishing interim WLAs and LAs and compliance dates (Task 10, Table 5-9g)."

A workplan for assessment of the body contact recreation beneficial use throughout Newport Bay has been developed as part of the HRA and work has already been conducted pursuant to it. Staff has indicated our belief that the plan to conduct the assessment is appropriate and we will recommend its approval to the Regional Board. However, a plan and schedule for assessing the shellfish harvesting beneficial uses will need to be submitted. We are aware that the development of a workplan is underway.

4. Source Identification and Characterization (Section 3.a.ii.d)

"By March 1, 2000, the County of Orange and the City of Newport Beach shall submit a proposed plan for a program, to be completed within 7 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to The Dunes Resort. In lieu of this coordinated plan, each of these parties may submit an individual plan to identify and characterize fecal coliform inputs to The Dunes Resort. Any such individual plan shall also be submitted by March 1, 2000 and completed within 7 months after Regional Board approval of the plan(s).

By March 1, 2000, the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 13 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to Newport Bay from urban runoff, including stormwater. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from urban runoff from areas within its jurisdiction. Any such individual or group plan shall also be submitted by March 1, 2000 and completed within 13 months after Regional Board approval of the plan(s).

By April 1, 2000, the agricultural operators in the Newport Bay watershed shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from agricultural runoff, including stormwater. In lieu of this coordinated plan, one or more of the agricultural operators may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from agricultural runoff from areas within their jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000 and completed within 16 months after Regional Board approval of the plan(s).

By April 1, 2000 the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from natural sources. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from natural sources from areas within its jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000 and completed within 16 months after Regional Board approval of the plan(s)."

5. Evaluation of Vessel Waste Control Program (Section 3.a.ii.e)

"By April 1, 2000, the County of Orange and the City of Newport Beach shall submit a plan to complete, by one year after Regional Board approval of the plan, an assessment of the effectiveness of the vessel waste control program implemented by those agencies in Newport Bay. The plan shall be implemented upon approval by the Regional Board. A report of the study results shall be submitted, together with recommendations for changes to the vessel waste program necessary to ensure compliance with this TMDL.

The Regional Board will consider appropriate changes to the vessel waste control program. These changes shall be implemented in accordance with a schedule to be established by the Regional Board."

6. TMDL, WLA and LA Evaluation and Source Monitoring Program Section 3.a.ii.f)

"By 3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g of the TMDL the County of Orange, the Cities of Tustin, Irvine, Costa Mesa Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for evaluation and source monitoring to determine compliance with the WLAs and LAs specified in Table 5-9f. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to conduct TMDL, WLA, LA and Source Evaluation monitoring from areas solely within their jurisdiction. Any such individual or group plan shall also be submitted by 3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g. Reports of the data collected pursuant to approved individual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with WLAs and LAs shall be submitted by September 1 of each year. The annual report shall also include an evaluation of the effectiveness of control measures implemented to control sources of fecal coliform, and recommendations for any changes to the control measures needed to ensure compliance with the TMDL, WLAs, and LAs.

The evaluation and source monitoring plan(s) shall be implemented upon Regional Board approval."

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7. Updated TMDL Report (Section 3.a.ii.g)

"By 6 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g of the TMDL the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall submit Updated TMDL Reports as specified in Table 5-9g. These updated TMDL reports shall, at a minimum, integrate and evaluate the results of the studies required in Table 5-9g (Task 1 – 7). The reports shall include recommendations for revisions to the TMDL, if appropriate and for interim WLAs, LAs and compliance schedules."

This request for monitoring and technical information applies to the County of Orange, each individual City within the Newport Bay Watershed, and the Irvine Company. The Regional Board and its staff have worked with the Newport Bay Watershed Executive Committee in the development of this TMDL and it is our assumption that this Committee will assume the responsibility for preparing a coordinated response to this request. However, the County, each City, and the Irvine Company is severally responsible for ensuring compliance with this request for monitoring and technical information, and for the implementation of the TMDL for fecal coliform in the Newport Bay Watershed within the areas of the watershed within their respective jurisdictions. We are obligated to advise you that failure to submit the requested monitoring and technical information by the specified deadline may subject the County, each City, and the Irvine Company to potential civil liability pursuant to Section 13268 of the California Water Code.

Should there be any questions, please contact me at (909) 782-3284, Joanne Schneider at (909) 782-3287, or Ken Theisen at (909) 320-2028.

Sincerely,

Gerard J. Thibeault
Executive Officer
Santa Ana Regional Water Quality Control Board

Attachment: Copy of Basin Plan TMDL for Fecal Coliform in Newport Bay Watershed

cc (w/ Attachment): Regional Board
Newport Bay Pathogen TMDL Mailing List

Attachment to Resolution No. 99-10

Amendment to the Santa Ana Region Basin Plan

Chapter 5 - Implementation Plan, Discussion of Newport Bay Watershed (page 5-39 et seq.)

3. Bacterial Contamination

Bacterial contamination of the waters of Newport Bay can directly affect two designated beneficial uses: water-contact recreation (**REC-1**) and shellfish harvesting (**SHEL**). The Orange County Health Care Agency (OCHCA) conducts routine bacteriological monitoring and more detailed sanitary surveys as necessary, and is responsible for closure of areas to recreational and shellfish harvesting uses if warranted by the results.

Because of consistently high levels of total coliform bacteria, the upper portion of Upper Newport Bay (Upper Bay) has been closed to these uses since 1974. In 1978, the shellfish harvesting prohibition area was expanded to include all of the Upper Bay, and the OCHCA generally advises against the consumption of shellfish harvested anywhere in the Bay. Bacterial objectives established to protect shellfish harvesting activities are rarely met in the Bay. (Fecal coliform objectives for the protection of shellfish harvesting and water-contact recreation are shown in Chapter 4, "Enclosed Bays and Estuaries". The OCHCA has relied on total coliform standards specified in the California Health and Safety Code. Fecal coliform are a subset of total coliform.) Certain areas in the lower parts of the Upper Bay and in Lower Newport Bay (Lower Bay) are also closed to water-contact recreation on a temporary basis, generally in response to storms. In these areas, there is generally good compliance with water-contact recreation bacterial objectives in the summer.

Data collected by the OCHCA demonstrate that tributary inflows, composed of urban and agricultural runoff, including stormwater, are the principal sources of coliform input to the Bay. As expected, there are more violations of bacterial standards in the Bay during wet weather, when tributary flows are higher, than in dry weather. There are few data on the exact sources of the coliform in this runoff. Coliform has diverse origins, including: manure fertilizers which may be applied to agricultural crops and to commercial and residential landscaping; the fecal wastes of humans, household pets and wildlife; and other sources. Special investigations by OCHCA have demonstrated that food wastes are a significant source of coliform. Many restaurants wash down equipment and floor mats into storm drains tributary to the Bay and may improperly dispose of food waste such that it eventually washes into the Bay. Such discharges likely contribute to the chronic bacterial quality problems in certain parts of the Bay.

Another source of bacterial input to the Bay is the discharge of vessel sanitary wastes. Newport Bay has been designated a no-discharge harbor for vessel sanitary wastes since 1976. Despite this prohibition, discharges of these wastes have continued to occur. Since these wastes are of human origin, they pose a potentially significant public health threat.

The Regional Board, the City of Newport Beach (City), the County of Orange, the City of Newport Beach Harbor Quality Committee, and other parties have taken or stimulated actions to enforce the vessel waste discharge prohibition. The principal focus of these efforts has been to make compliance with the prohibition convenient and therefore more likely. Vessel waste pumpouts have been installed at key locations around the Bay and are inspected routinely by the OCHCA. A City ordinance addresses people-intensive boating activities to ensure proper disposal of sanitary wastes. The ordinance requires that sailing clubs, harbor tour, and boat charter operations install pumpouts for their vessels. Another City ordinance addresses vessel waste disposal by persons living on their boats. Efforts have also been made to ensure that there are adequate public rest rooms onshore. The City also sponsors an extensive public education campaign designed to advise both residents and visitors of the discharge prohibition, the significance of violations, and of the location of pumpouts and rest room facilities. The effectiveness of these extensive vessel waste control efforts is not known.

As noted, the fecal waste of wildlife, including waterfowl that inhabit the Bay and its environs, is a source of coliform input. The fecal coliform from these natural sources may contribute to the violations of water quality objectives and the loss of beneficial uses, but it is currently unknown to what extent these natural sources contribute to, or cause, the violations of bacterial quality objectives in Newport Bay.

Reports prepared by Regional Board staff describe the bacterial quality problems in the Bay in greater detail and discuss the technical basis for the fecal coliform TMDL that follows (21, 22). Implementation of this TMDL is expected to address these bacterial quality problems and to assure attainment of water quality standards, that is, compliance with water quality objectives and protection of beneficial uses.

3.a. Fecal Coliform TMDL

A prioritized, phased approach to the control of bacterial quality in the Bay is specified in this TMDL. This approach is appropriate, given the complexity of the problem, the paucity of relevant data on bacterial sources and fate, the expected difficulties in identifying and implementing appropriate control measures, and uncertainty regarding the nature and attainability of the SHEL use in the Bay. The phased approach is intended to allow for additional monitoring and

assessment to address areas of uncertainty and for future revision and refinement of the TMDL as warranted by these studies.

Table 5-9f summarizes the TMDL, Waste Load Allocations (WLAs) for point sources of fecal coliform inputs and Load Allocations (LAs) for nonpoint source inputs. As shown, the TMDL, WLAs and LAs are established to assure compliance with water contact recreation standards no later than December 30, 2014 and with shellfish standards no later than December 30, 2019. WLAs are specified for vessel waste and urban runoff, including stormwater, the quality of which is regulated under a County-wide NPDES permit issued by the Regional Board. This runoff is thus regulated as a point source, even though it is diffuse in origin. LAs are specified for fecal coliform inputs from agricultural runoff, including stormwater, and natural sources. The TMDL is to be adjusted, as appropriate, based upon completion of the studies contained in Table 5-9g. Upon completion of these studies, an updated TMDL report will be prepared summarizing the results of the studies and making recommendations regarding implementation of the TMDL. The results of the studies may lead to recommendations for changes to the TMDL specified in Table 5-9f to assure compliance with existing Basin Plan standards (objectives and beneficial uses). The study results may also lead to recommendations for changes to the Basin Plan objectives and/or beneficial uses. If such standards changes are approved through the Basin Plan amendment process, then appropriate changes to the TMDL would be required to assure attainment of the revised standards. Revision of the TMDL, if appropriate, would also be considered through the Basin Plan amendment process.

Upon completion and consideration of the studies and any appropriate Basin Plan amendments, a plan for compliance with the TMDL specified in Table 5-9f, or with an approved amended TMDL, shall be established. It is expected that this plan will specify a phased compliance approach, based on consideration of such factors as geographic location, the priority assigned by the Regional Board to specific locations for control actions (see Section 3.a.ii, "Beneficial Use Assessment"), season, etc. Interim WLAs, LAs and compliance dates that lead to ultimate compliance with the TMDL will be established.
The TMDL and its allocations contain a significant margin of safety. The margin of safety can be either incorporated implicitly through analytical approaches and assumptions used to develop the TMDL or added explicitly as a separate component of the TMDL. A substantial margin of safety is implicitly incorporated in the TMDL in the fact that the TMDL does not apply criteria for dilution, natural die-off, and tidal flushing. The TMDL, WLAs, and LAs are established at concentrations equivalent to the water quality objectives.

Table 5-9f: **Total Maximum Daily Load, Waste Load Allocations, and Load Allocations for Fecal Coliform in Newport Bay**

Total Maximum Daily Load for Fecal Coliform In Newport Bay	Waste Load Allocations for Fecal Coliform in Urban Runoff, including stormwater, Discharges to Newport Bay	Load Allocations for Fecal Coliform in Agricultural Runoff, including stormwater, Discharges to Newport Bay	Load Allocations for Fecal Coliform from Natural Sources in all Discharges to Newport Bay	Waste Load Allocations for Vessel Waste
As soon as possible but no later than December 30, 2013			**In Effect**	**In Effect**
5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	5-Sample/30-days Geometric Mean less than 200 organisms/ 100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	0 MPN/100 mL No discharge.
As soon as possible but no later than December 30, 2019				**In Effect**
Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	0 MPN/100 mL No discharge.

Table 5-9g: Fecal Coliform Implementation Plan/Schedule Report Due Dates

Task	Description	Compliance Date-As soon As Possible but No Later Than
Task 1	Routine Monitoring Program (Section 3.a.ii.a) a) Submit Proposed Routine Monitoring Plan(s)[1] b) Implement Routine Monitoring Plan(s) c) Submit Monthly and Annual Reports (Reporting Period: April 1-March 31)	a) January 30, 2000 b) Upon Regional Board Approval of Plan(s) c) Monthly within 30 days, Annual Report by September 1
Task 2	Water Quality Model for Bacterial Indicators (Section 3.a.ii.b) a) Submit Proposed Model Development Plan b) Submit Calibrated Model and Model Documentation	a) January 30, 2000 b) 13 months after Regional Board approval of plan(s)
Task 3	Beneficial Use Assessment Plan (Section 3.a.ii.c) Submit Proposed Assessment Plan for: a) REC-1 b) SHEL	a) January 30, 2000 b) March 1, 2001
Task 4	Beneficial Use Assessment Report (3.a.ii.c) Submit Beneficial Use Assessment Report for: a) REC-1 b) SHEL	a) 13 months after Regional Board approval of plan(s) b) 13 months after Regional Board approval of plan(s)
Task 5	Source Identification and Characterization Plan(s) (Section 3.a.ii.d) Submit Proposed Source Identification Plans for: a) The Dunes Resort b) Urban Runoff (including stormwater) c) Agriculture (including stormwater) d) Natural Sources	a) March 1, 2000 b) March 1, 2000 c) April 1, 2000 d) April 1, 2000

Table 5-9g: Fecal Coliform Implementation Plan/Schedule Report Due Dates		
Task	**Description**	**Compliance Date-As Soon As Possible but No Later Than**
Task 6	Source Identification and Characterization Reports (Section 3.a.ii.d) Submit Source Identification and Characterization Reports for: a) The Dunes Resort b) Urban Runoff (including stormwater) c) Agriculture (including stormwater) d) Natural Sources	 a) 7 months after Regional Board approval of plan(s) b) 13 months after Regional Board approval of plan(s) c) 16 months after Regional Board approval of plan(s) d) 16 months after Regional Board approval of plan(s)
Task 7	Evaluation of Vessel Waste Program (Section 3.a.ii.e) a) Submit Proposed Plan for Evaluating the Current Vessel Waste Program b) Submit Report on the Evaluation of the Vessel Waste Program	 a) April 1, 2000 b) 12 months after Regional Board approval of plan
Task 8	TMDL, WLA, and LA Evaluation and Source Monitoring Program (Section 3.a.ii.f) a) Submit Proposed Evaluation and Source Monitoring Program Plan(s) b) Implement Evaluation and Source Monitoring Plan(s) c) Submit Monthly and Annual Reports (Reporting Period: April 1-March 31)	 a) 3 months after completion of Tasks 2, 4a, and 6 b) Upon Regional Board approval of plan(s) c) Monthly within 30 days, Annual Report by September 1
Task 9	Updated TMDL Report Submit updated TMDL report for: a) REC-1 b) SHEL	 a) 6 months after completion of Tasks 2, 4a, 6, and 7 b) 6 months after completion of Tasks 2, 4b, 6, and 7

Table 5-9g: Fecal Coliform Implementation Plan/Schedule Report Due Dates		
Task	**Description**	**Compliance Date-As Soon As Possible but No Later Than**
Task 10	Adjust TMDL, if necessary; adopt interim WLAs, LAs, and Compliance Dates (Section 3.a.ii.h) a) REC-1 b) SHEL	 a) 12 months after completion of Updated TMDL Report for REC-1 (Task 9.a) b) 12 months after completion of Updated TMDL Report for SHEL (Task 9.b)
[1]Note: Provided that the monitoring program plan(s) fulfills the minimum requirements specified in this TMDL, approval of the TMDL shall constitute Regional Board approval of the monitoring program plan(s).		

3.a.i. TMDL Implementation

As soon as possible but no later than the dates specified in Table 5-9g, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach and agricultural operators in the Newport Bay watershed shall submit the plans and schedules shown in Table 5-9g and described in Section 3.a.ii. Subsequent phases of TMDL implementation shall take into account the results of the monitoring and assessment efforts required by the initial study phase of the TMDL implementation plan and other relevant studies.

The following sections describe the requirements for the submittal of plans by dischargers in the Newport Bay watershed to complete specific monitoring, investigations and analyses. In each and every case, the plans submitted by the named dischargers will be considered for approval by the Regional Board at a duly noticed public hearing as specified in Chapter 1.5, Division 3, Title 23 of the California Code of Regulations (Section 647 et seq.). The plans are to be implemented upon Regional Board approval and completed as specified in Table 5-9g.

3.a.ii. Monitoring and Assessment

Routine monitoring and special investigations and analyses are an important part of this phased TMDL. Routine monitoring is necessary to assess compliance with the bacterial quality objectives in the Bay and with the WLAs and LAs specified in the TMDL. Special investigations and analyses are needed to identify and characterize sources of fecal coliform input and to determine their fate in the Bay so that appropriate control measures can be developed and implemented. The effectiveness of current and future bacterial control measures needs to be evaluated. The results of these studies may warrant future changes to this TMDL.

3.a.ii.a. Routine Monitoring

By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for routine monitoring to determine compliance with the bacterial quality objectives in the Bay. At a minimum, the proposed plan shall include the collection of five (5) samples/30-days at the stations specified in Table 5-9h and shown in Figure 5-1

and analysis of the samples for total and fecal coliform and enterococci. Reports of the collected data shall be submitted monthly. An annual report summarizing the data collected for the year and evaluating compliance with the water quality objectives shall be submitted by September 1 of each year.

In lieu of this coordinated, regional monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group plan to conduct routine monitoring in areas solely within their jurisdiction to determine compliance with the bacterial objectives in the Bay (if appropriate). Any such individual or group plans shall also be submitted by January 30, 2000. Reports of the data collected pursuant to approved individual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with water quality objectives shall be submitted by September 1 of each year.

The monitoring plan(s) shall be implemented upon Regional Board approval.

Table 5-9h

Newport Bay Sampling Stations for Routine Compliance Monitoring with Bacterial Quality Objectives (see Figure 1 for Station Locations)

Ski Zone	33rd Street	Park Avenue
Vaughns Launch	Rhine Channel	Via Genoa
Northstar Beach	De Anza	Alvarado/Bay Is.
Abalone Avenue	Promontory Pt.	10th Street
Dunes East	Bayshore Beach	15th Street
Dunes Middle	Onyx Avenue	19th Street
Dunes West	Garnet Avenue	Lido Island Yacht Club
Dunes North	Ruby Avenue	Harbor Patrol
43rd Street	Sapphire Avenue	N Street Beach
38th Street	Newport Blvd. Bridge	Rocky Point
San Diego Creek @ Campus Dr.	Santa Ana Delhi Channel	Big Canyon Wash
Backbay Dr. Drain		

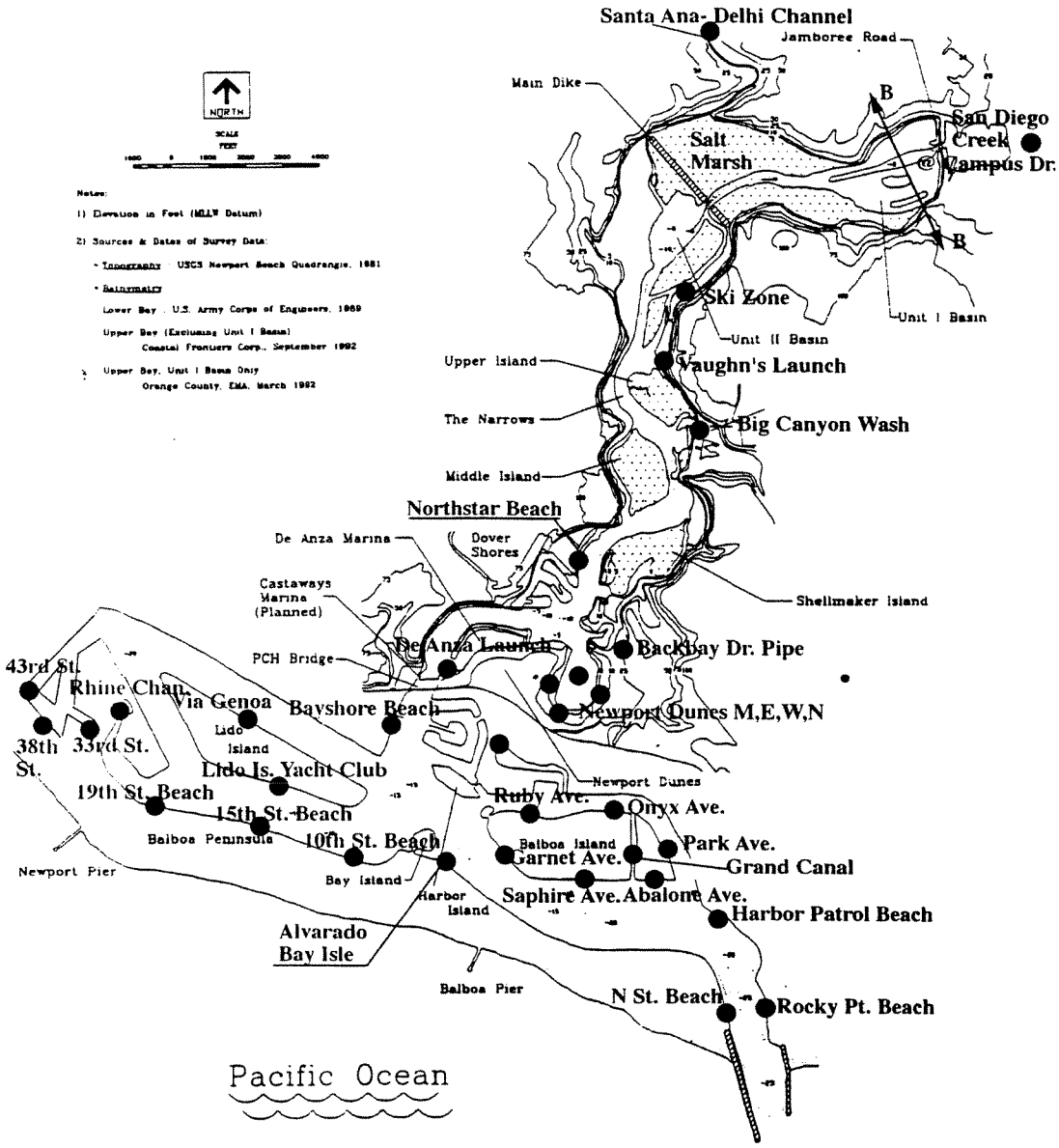


Figure 5-1: Newport Bay Bacterial Quality Monitoring Stations

3.a.ii.b. Fate of Bacterial Inputs

By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach and the agricultural operators in the Newport Bay watershed shall submit a plan for the development and submittal of a water quality model to be completed by 13 months after Regional Board approval of the plan. The model shall be capable of analysis of fecal coliform inputs to Newport Bay, the fate of those inputs, and the effect of those inputs on compliance with bacterial quality objectives in the Bay.

3.a.ii.c. Beneficial Use Assessment

By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify water contact recreation activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the water contact recreation beneficial use assessment.

By March 1, 2001, the County of Orange , the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify shellfish harvesting activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the shellfish harvesting beneficial use assessment.

The beneficial use assessment reports shall contain recommendations for prioritizing areas within Newport Bay for purposes of evaluation and implementation of cost-effective and reasonable control actions as part of the TMDL process. The Regional Board will consider these recommendations and make its determinations regarding high priority water contact recreation and shellfish harvesting areas at a duly noticed public hearing. These determinations will be considered in establishing interim WLAs and LAs and compliance dates (Task 10, Table 5-9g).

3.a.ii.d. Source Identification and Characterization

By March 1, 2000, the County of Orange and the City of Newport Beach shall submit a proposed plan for a program, to be completed within 7 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to The Dunes Resort. In lieu of this coordinated plan, each of these parties may submit an individual plan to identify and characterize fecal coliform inputs to The Dunes Resort. Any such individual plan shall also be submitted by March 1, 2000 and completed within 7 months after Regional Board approval of the plan(s).

By March 1, 2000, the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 13 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to Newport Bay from urban runoff, including stormwater. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from urban runoff from areas within its jurisdiction. Any such individual or group plan shall also be submitted by March 1, 2000 and completed within 13 months after Regional Board approval of the plan(s).

By April 1, 2000, the agricultural operators in the Newport Bay watershed shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from agricultural runoff, including stormwater. In lieu of this coordinated plan, one or more of the agricultural operators may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from agricultural runoff from areas within their jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000, and completed within 16 months after Regional Board approval of the plan(s).

By April 1, 2000, the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from natural sources. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from natural sources from areas within its jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000 and completed within 16 months after Regional Board approval of the plan(s).

3.a.ii.e. Evaluation of Vessel Waste Control Program

By April 1, 2000, the County of Orange and the City of Newport Beach shall submit a plan to complete, by one year after Regional Board approval of the plan, an assessment of the effectiveness of the vessel waste control program implemented by those agencies in Newport Bay. The plan shall be implemented upon approval by the Regional Board. A report of the study results shall be submitted, together with recommendations for changes to the vessel waste program necessary to ensure compliance with this TMDL.

The Regional Board will consider appropriate changes to the vessel waste control program. These changes shall be implemented in accordance with a schedule to be established by the Regional Board.

3.a.ii.f. TMDL, WLA and LA Evaluation and Source Monitoring Program

By 3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for evaluation and source monitoring to determine compliance with the WLAs and LAs specified in Table 5-9f. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to conduct TMDL, WLA, LA and Source Evaluation monitoring from areas solely within their jurisdiction. Any such individual or group plan shall also be submitted by 3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g. Reports of the data collected pursuant to approved individual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with WLAs and LAs shall be submitted by September 1 of each year. The annual report shall also include an evaluation of the effectiveness of control measures implemented to control sources of fecal coliform, and recommendations for any changes to the control measures needed to ensure compliance with the TMDL, WLAs, and LAs.

The evaluation and source monitoring plan(s) shall be implemented upon Regional Board approval.

3.a.ii.g. Updated TMDL Report

The County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall submit Updated TMDL Reports as specified in Table 5-9g. These updated TMDL reports shall, at a minimum, integrate and evaluate the results of the studies required in Table 5-9g (Task 1 – 7). The

reports shall include recommendations for revisions to the TMDL, if appropriate and for interim WLAs, LAs and compliance schedules

3.a.ii.h. Adjust TMDL; Adopt Interim WLA, LAs and Compliance Dates

Based on the results of the studies required by Table 5-9g and recommendations made in the Updated TMDL Reports, changes to the TMDL for fecal coliform may be warranted. Such changes would be considered through the Basin Plan Amendment process. Upon completion and consideration of the studies and any appropriate Basin Plan amendments, interim WLAs and LAs that lead to ultimate compliance with the TMDL specified in Table 5-9f, or with an approved amended TMDL, will be established with interim compliance dates. Schedules will also be established for submittal of implementation plans for control measures to achieve compliance with these WLAs, LAs, and compliance dates. These implementation plans will be considered by the Regional Board at a duly noticed public hearing.

The Regional Board is committed to the review of this TMDL every three years or more frequently if warranted by these or other studies. The County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Lake Forest, and Newport Beach, The Irvine Company and the Irvine Ranch Water District have undertaken to prepare a health risk assessment for Newport Bay for water contact recreation and shellfish harvesting beneficial uses. This study will evaluate whether exceedances of fecal coliform objectives correlates with actual impairment of beneficial uses and may recommend revisions to the Basin Plan objectives and/or beneficial use designations. Because this study is in progress, it is not required by this TMDL implementation plan, but will be considered in conjunction with the studies required by the implementation plan.