

143

MissionBayBinomBal.txt

==== BinomBal 1.4, Balanced Error Binomial Program Output ===== Apr 20, 2006
16:21:36

Comment Letter ID 187

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San Diego WQCB

Comment: Do Not Delist Mission Bay For Bacterial Indicators During Wet Weather Events

Null Hypothesis: $r \geq r1 = 0.25$

Alt. Hypothesis: $r < r2 = 0.1$

Effect Size : $es. = 0.15$

ssize	k	alpha	beta	min a-b	b/a
882,	146,	0.00000,	0.00000,	0.00000,	0.76272

Results of Analysis (Wet Weather Events)

Per San Diego WQCB's definition

(comment letter and, conversation with Julie Chan - 20April06)

a wet weather event is "A rainfall event as a storm of 0.2 inches of precipitation and the 72 hours following the rainfall event".

For clarification - A Dry Weather Condition can exist during the wet weather season; \ example, two qualifying storms hit Mission Bay, after the first storms 72 hour period it takes 5 days before the next storm hits, that 5 day period is a Dry Weather Condition.

The sample size is comprised of 882 samples which were all collected during numerous wet weather events. According to The Binomial Test up to 146 samples (out of 882) can exceed the WQS and still qualify for Delisting.

The number of samples in exceedance was 366.

If we accept the Regional Boards assessment and their definition of "wet weather event" then our recommendation would be as follows:

Recommendation

Delist Mission Bay for Bacterial Indicators but only for dry weather conditions.

The Bay is being treated as one major water-body; we will not break it out into individual water-body segments as requested by the Regional Board.

unless

The Regional Board can demonstrate that it has in place a policy

or Basin Plan Amendment that defines a "wet weather event" which will support our use of the definition when we apply it to listing a water body on the 303(d) List.

(187) Reg. 9 STORM
FROM ATTACHMENT 1 Tot/EXCEED.

TOT	EXCEEDED.
44	17
145	94
42	23
109	40
89	27
36	6
99	22
48	16
94	42
51	29
78	26
47	24
<hr/> 882	<hr/> 366

Minimum sample size is 26.

TABLE 4.2: MAXIMUM NUMBER OF MEASURED EXCEEDANCES ALLOWED TO REMOVE A WATER SEGMENT FROM THE SECTION 303(D) LIST FOR CONVENTIONAL OR OTHER POLLUTANTS.

Null Hypothesis: Actual exceedance proportion ≥ 25 percent.

Alternate Hypothesis: Actual exceedance proportion < 10 percent.

The minimum effect size is 15 percent.

Sample Size	Delist if the number of exceedances equal or is less than
26 – 30	4
31 – 36	5
37 – 42	6
43 – 48	7
49 – 54	8
55 – 60	9
61 – 66	10
67 – 72	11
73 – 78	12
79 – 84	13
85 – 91	14
92 – 97	15
98 – 103	16
104 – 109	17
110 – 115	18
116 – 121	19

For sample sizes greater than 121, the maximum number of exceedances allowed is established at α and $\beta \leq 0.2$ and where $|\alpha - \beta|$ is minimized.

α = Excel® Function BINOMDIST(k, n, 0.25, TRUE)

β = Excel® Function BINOMDIST(n-k-1, n, 1 - 0.1, TRUE)

where n = the number of samples,

k = maximum number of measured exceedances allowed,

0.10 = acceptable exceedance proportion, and

0.25 = unacceptable exceedance proportion.

~~Region 9~~ REGION 9

187

1

DATA FROM

ATTACHMENT 1

SHELLFISH DATA NOT INCLUDED IN THE EVALUATION

Bahia Point, MB-160					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	26	38	36	100	
Number of exceedances (REC-1)	6	5	2	13	13.0%
Fecal Coli	26	38	36	100	
Number of exceedances (REC-1)	2	3	0	5	5.0%
Total Coli	26	38	36	100	
Number of exceedances (REC-1)	2	2	2	6	6.0%
Number of exceedances (SHEL)	2	4	2	8	8.0%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	2	4	1	1	12	
Number of exceedances (REC-1)	1	2	3	0	0	6	50.0%
Fecal Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	1	2	2	0	0	5	38.5%
Total Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	1	1	2	0	1	5	38.5%
Number of exceedances (SHEL)	2	3	3	0	1	9	69.2%

Recommendation
Do not delist

STORM
38 Tot
16 Exc.

Balboa Court, MB-225					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	22	32	29	83	
Number of exceedances (REC-1)	2	3	4	9	10.8%
Fecal Coli	23	32	29	84	
Number of exceedances (REC-1)	1	0	3	4	4.8%
Total Coli	23	32	34	89	
Number of exceedances (REC-1)	0	0	6	6	6.7%
Number of exceedances (SHEL)	1	1	8	10	11.2%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

3/10 Tot/Exc
STORM

Boat Launch, MB-193							
Indicator/Bacteria	Number of Samples					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enteroc	0	0	0	0	3	3	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	3	3	
Number of exceedances (REC-1)	0	0	0	0	2	2	66.7%
Number of exceedances (SHEL)	0	0	0	0	2	2	66.7%

Recommendation
Do not de-list; not enough sample

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	1	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	1	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	1	1	
Number of exceedances (REC-1)	0	0	0	0	1	1	100.0%
Number of exceedances (SHEL)	0	0	0	0	1	1	100.0%

Recommendation
Do not de-list; not enough sample

3/1 Tot/Exc
STORM.

note: not necessary to filter out pre-May 15th 2001 data

44/17

Reg. 9 (187) STORM TOTAL/EXCEED

2

Bonita Cove, MB-170					
Indicator/Bacteria	Number of Samples			Total	% Exceedance
	2001	2002	2003		
Enterococcus	41	48	55	144	
Number of exceedances (REC-1)	18	21	13	52	36.1%
Fecal Coli	41	48	54	143	
Number of exceedances (REC-1)	3	6	5	14	9.8%
Total Coli	39	48	55	142	
Number of exceedances (REC-1)	3	4	3	10	7.0%
Number of exceedances (SHEL)	14	14	11	39	27.5%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Total	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	6	1	1	15	
Number of exceedances (REC-1)	3	1	5	0	0	9	60.0%
Fecal Coli	4	3	6	1	1	15	
Number of exceedances (REC-1)	0	0	2	0	0	2	13.3%
Total Coli	4	3	6	1	1	15	
Number of exceedances (REC-1)	0	0	3	0	0	3	20.0%
Number of exceedances (SHEL)	2	1	5	0	1	9	60.0%

Recommendation
Do not delist

45/14

Campland, MB-080					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	34	60	58	152	
Number of exceedances (REC-1)	19	38	33	90	59.2%
Fecal Coli	35	60	59	154	
Number of exceedances (REC-1)	3	16	8	27	17.5%
Total Coli	34	60	59	153	
Number of exceedances (REC-1)	2	11	5	18	11.8%
Number of exceedances (SHEL)	8	30	23	61	39.9%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	6	2	1	16	
Number of exceedances (REC-1)	2	3	5	1	1	12	75.0%
Fecal Coli	3	5	6	2	1	17	
Number of exceedances (REC-1)	2	3	3	1	0	9	52.9%
Total Coli	3	5	6	2	1	17	
Number of exceedances (REC-1)	1	4	4	1	1	11	64.7%
Number of exceedances (SHEL)	2	5	5	2	1	15	88.2%

Recommendation
Do not delist

50/32

Crown Point, near storm drain MB-100					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	22	33	25	80	
Number of exceedances (REC-1)	6	4	3	13	16.3%
Fecal Coli	22	33	25	80	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	22	33	25	80	
Number of exceedances (REC-1)	0	0	1	1	1.3%
Number of exceedances (SHEL)	2	2	1	5	6.3%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	7	1	1	16	
Number of exceedances (REC-1)	1	4	2	0	1	8	50.0%
Fecal Coli	3	5	7	1	1	17	
Number of exceedances (REC-1)	1	1	1	0	0	3	17.6%
Total Coli	3	5	7	1	1	17	
Number of exceedances (REC-1)	1	1	1	0	1	4	23.5%
Number of exceedances (SHEL)	2	3	3	0	1	9	52.9%

Recommendation
Do not delist

50/15

145/9A

Reg. 9 (187)

STORM TOP/EXCEED.

3

Crown Point, watercraft area MB-101							
Indicator/Bacteria	1999	2000	2001	2002	2003	Totals	% Exceedance
Enterococcus	0	0	6	0	0	6	
Number of exceedances (REC-1)	0	0	2	0	0	2	33.3%
Fecal Coli	0	0	5	0	0	5	
Number of exceedances (REC-1)	0	0	1	0	0	1	20.0%
Total Coli	0	0	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	1	0	0	1	16.7%

Recommendation
Do not delist

Indicator/Bacteria	1999	2000	2001	2002	2003	Totals	% Exceedance
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

0%

note: no need to break out pre-May 15 data

DeAnza Cove, swim area MB-070					
Indicator/Bacteria	2001	2002	2003	Totals	% Exceedance
Enterococcus	35	42	45	122	
Number of exceedances (REC-1)	18	17	10	45	36.9%
Fecal Coli	35	42	45	122	
Number of exceedances (REC-1)	8	6	3	17	13.9%
Total Coli	35	42	45	122	
Number of exceedances (REC-1)	4	3	5	12	9.8%
Number of exceedances (SHEL)	14	11	7	32	26.2%

Recommendation
Do not delist

Indicator/Bacteria	1999	2000	2001	2002	2003	Totals	% Exceedance
Enterococcus	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	5	3	0	1	10	71.4%
Fecal Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	2	2	1	1	7	50.0%
Total Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	3	1	0	1	6	42.9%
Number of exceedances (SHEL)	1	4	3	1	1	10	71.4%

Recommendation
Do not delist

42/23

DeAnza Cove, swim area MB-071					
Indicator/Bacteria	2001	2002	2003	Totals	% Exceedance
Enterococcus	5	0	0	5	
Number of exceedances (REC-1)	1	0	0	1	20.0%
Fecal Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	1	0	0	1	20.0%

Recommendation
Delist

Indicator/Bacteria	1999	2000	2001	2002	2003	Totals	% Exceedance
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

0%

42/23

Reg 9 (187) Storm Tot/Exceed

4

Fanuel Park, MB-120					
Indicator/Bacteria	Number of samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	27	36	47	110	
Number of exceedances (REC-1)	6	10	11	27	24.5%
Fecal Coli	27	36	47	110	
Number of exceedances (REC-1)	2	1	6	9	8.2%
Total Coli	27	36	47	110	
Number of exceedances (REC-1)	1	2	2	5	4.5%
Number of exceedances (SHEL)	4	8	9	21	19.1%

Recommendation
Do not delist

Indicator/Bacteria	Number of samples during Storm events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	2	0	13	
Number of exceedances (REC-1)	4	1	3	1	0	9	69.2%
Fecal Coli	4	3	4	2	0	13	
Number of exceedances (REC-1)	0	0	2	0	0	2	15.4%
Total Coli	4	3	4	2	0	13	
Number of exceedances (REC-1)	0	0	3	0	0	3	23.1%
Number of exceedances (SHEL)	2	1	3	0	0	6	46.2%

Recommendation
Do not delist

39/114

Fiesta Island Bridge, MB-010					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	7	0	0	7	
Number of exceedances (REC-1)	1	0	0	1	14.3%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of samples during Storm events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	4	5	0	0	11	
Number of exceedances (REC-1)	1	3	1	0	0	5	45.5%
Fecal Coli	3	4	5	0	0	12	
Number of exceedances (REC-1)	0	1	0	0	0	1	8.3%
Total Coli	3	4	5	0	0	12	
Number of exceedances (REC-1)	0	1	0	0	0	1	8.3%
Number of exceedances (SHEL)	0	1	0	0	0	1	8.3%

Recommendation
Delist SHEL

35/7

Hidden Anchorage, MB-020					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	9	3	14	26	
Number of exceedances (REC-1)	2	1	3	6	23.1%
Fecal Coli	9	3	14	26	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	9	3	14	26	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	1	0	1	2	7.7%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of samples during Storm events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	4	5	0	0	11	
Number of exceedances (REC-1)	1	3	2	0	0	6	54.5%
Fecal Coli	3	4	5	0	0	12	
Number of exceedances (REC-1)	0	1	0	0	0	1	8.3%
Total Coli	3	4	5	0	0	12	
Number of exceedances (REC-1)	1	1	0	0	0	2	16.7%
Number of exceedances (SHEL)	1	1	1	0	0	3	25.0%

Recommendation
Do not delist

35/9

109/40

Reg 9 STORM TOTAL/EXCEED

5

La Cima Beach, MB-111					
Indicator/Bacteria	2001	2002	2003	Totals	% Exceedance
Enterococcus	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	1999	2000	2001	2002	2003	Totals	% Exceedance
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist

0%

La Cima, storm drain, MB-110					
Indicator/Bacteria	2001	2002	2003	Totals	% Exceedance
Enterococcus	28	37	36	101	
Number of exceedances (REC-1)	12	5	2	19	18.8%
Fecal Coli	29	38	36	103	
Number of exceedances (REC-1)	2	2	0	4	3.9%
Total Coli	28	38	36	102	
Number of exceedances (REC-1)	1	0	0	1	1.0%
Number of exceedances (SHEL)	1	3	1	5	4.9%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	1999	2000	2001	2002	2003	Totals	% Exceedance
Enterococcus	4	3	4	1	1	13	
Number of exceedances (REC-1)	1	1	2	1	0	5	38.5%
Fecal Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	0	1	1	0	0	2	15.4%
Total Coli	4	1	4	1	1	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Number of exceedances (SHEL)	0	0	2	0	1	3	27.3%

Recommendation
Do not delist

37/8

Leisure Lagoon, MB-050					
Indicator/Bacteria	2001	2002	2003	Totals	% Exceedance
Enterococcus	24	39	44	107	
Number of exceedances (REC-1)	4	6	6	16	15.0%
Fecal Coli	24	39	44	107	
Number of exceedances (REC-1)	0	2	1	3	2.8%
Total Coli	24	39	44	107	
Number of exceedances (REC-1)	0	0	1	1	0.9%
Number of exceedances (SHEL)	3	8	2	13	12.1%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	1999	2000	2001	2002	2003	Totals	% Exceedance
Enterococcus	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	5	1	1	1	9	64.3%
Fecal Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	1	1	0	1	4	28.6%
Total Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	3	1	0	1	6	42.9%
Number of exceedances (SHEL)	1	3	2	0	1	7	50.0%

Recommendation
Do not delist

52/29

89/27

REG 9 (187) STORM TOT/EXCEED.

6

Leisure Lagoon, swim area MB-051					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

0%

North Pacific Passage, MB-042					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	22	32	36	90	
Number of exceedances (REC-1)	2	2	0	4	4.4%
Fecal Coli	22	32	36	90	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	22	32	36	90	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	1	1	2	4	4.4%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

3/0

Perez Cove, MB-190					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	7	0	0	7	
Number of exceedances (REC-1)	1	0	0	1	14.3%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	1	0	0	1	14.3%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	3	0	0	3	27.3%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	2	0	0	2	18.2%
Number of exceedances (SHEL)	0	1	2	0	0	3	27.3%

Recommendation
Do not delist

33/6

36/6

REG 9 (187) ~~For~~ STORM Tot/EXCEED

7

Quivera Basin, MB-180					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	3	0	0	4	36.4%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	0	0	0	1	9.1%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	0	0	0	1	9.1%
Number of exceedances (SHEL)	1	0	3	0	0	4	36.4%

Recommendation
Do not delist

33/16

Sail Bay, MB-130					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	9	0	1	10	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	9	0	1	10	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	9	0	1	10	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	1	0	0	1	10.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	3	0	0	4	36.4%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	1	0	0	2	18.2%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Number of exceedances (SHEL)	1	1	2	0	0	4	36.4%

Recommendation
Do not delist

33/17

San Juan Cove, MB-140					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	1	3	0	0	5	45.5%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	1	0	0	2	18.2%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	1	1	0	0	2	18.2%
Number of exceedances (SHEL)	2	1	3	0	0	6	54.5%

Recommendation
Do not delist

33/19

99/22

Reg 9 (187) Storm Tot/Exc

8

Santa Barbara, near storm drain, MB-150					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	24	31	24	79	
Number of exceedances (REC-1)	7	3	2	12	15.2%
Fecal Coli	24	31	24	79	
Number of exceedances (REC-1)	2	0	0	2	2.5%
Total Coli	24	31	24	79	
Number of exceedances (REC-1)	6	0	0	6	7.6%
Number of exceedances (SHEL)	7	0	4	11	13.9%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	1	1	13	
Number of exceedances (REC-1)	2	1	2	0	1	6	46.2%
Fecal Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	0	1	1	0	0	2	15.4%
Total Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	2	0	1	0	0	3	23.1%
Number of exceedances (SHEL)	2	0	2	0	1	5	38.5%

Recommendation
Do not delist

39/11

Santa Clara Cove, MB-132					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	32	0	37	
Number of exceedances (REC-1)	1	2	0	3	8.1%
Fecal Coli	5	32	0	37	
Number of exceedances (REC-1)	1	0	0	1	2.7%
Total Coli	5	32	0	37	
Number of exceedances (REC-1)	2	0	0	2	5.4%
Number of exceedances (SHEL)	3	1	0	4	10.8%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

3/0

Santa Clara Place, MB-131					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	4	39	28	71	
Number of exceedances (REC-1)	0	13	6	19	26.8%
Fecal Coli	4	39	27	70	
Number of exceedances (REC-1)	0	5	3	8	11.4%
Total Coli	4	39	27	70	
Number of exceedances (REC-1)	0	3	6	9	12.9%
Number of exceedances (SHEL)	0	8	11	19	27.1%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	1	0	0	1	0	2	
Number of exceedances (REC-1)	1	0	0	1	0	2	100.0%
Fecal Coli	1	0	0	1	0	2	
Number of exceedances (REC-1)	0	0	0	1	0	1	50.0%
Total Coli	1	0	0	1	0	2	
Number of exceedances (REC-1)	1	0	0	1	0	2	100.0%
Number of exceedances (SHEL)	1	0	0	1	0	2	100.0%

Recommendation
Do not delist; not enough samples

6/5

48/16

Reg. 9 (187) Storm Tot/Exceed.

9

Seaworld Marina, west outfall, MB-191					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	20	38	13	71	
Number of exceedances (REC-1)	5	7	3	15	21.1%
Fecal Coli	15	37	13	65	
Number of exceedances (REC-1)	1	1	1	3	4.6%
Total Coli	20	38	13	71	
Number of exceedances (REC-1)	3	1	0	4	5.6%
Number of exceedances (SHEL)	7	5	2	14	19.7%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events				Totals	% Exceedance
	1999	2000	2001	2002	2003	
Enterococcus	0	0	1	3	2	
Number of exceedances (REC-1)	0	0	0	0	2	33.3%
Fecal Coli	0	0	1	3	2	
Number of exceedances (REC-1)	0	0	0	0	1	16.7%
Total Coli	0	0	1	3	2	
Number of exceedances (REC-1)	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	1	2	50.0%

Recommendation
Do not delist

18/3

South Pacific Passage, east outfall, MB-192					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	20	38	13	71	
Number of exceedances (REC-1)	2	0	1	3	4.2%
Fecal Coli	15	37	13	65	
Number of exceedances (REC-1)	1	0	1	2	3.1%
Total Coli	20	38	13	71	
Number of exceedances (REC-1)	2	0	2	4	5.6%
Number of exceedances (SHEL)	4	2	2	8	11.3%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events				Totals	% Exceedance
	1999	2000	2001	2002	2003	
Enterococcus	0	0	1	3	2	
Number of exceedances (REC-1)	0	0	1	0	1	33.3%
Fecal Coli	0	0	1	3	2	
Number of exceedances (REC-1)	0	0	1	0	1	33.3%
Total Coli	0	0	1	3	2	
Number of exceedances (REC-1)	0	0	0	0	2	33.3%
Number of exceedances (SHEL)	0	0	1	1	2	66.7%

Recommendation
Do not delist

18/6

Tecolote Creek Outlet, MB-030					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	26	41	18	85	
Number of exceedances (REC-1)	5	18	13	36	42.4%
Fecal Coli	26	40	15	81	
Number of exceedances (REC-1)	2	6	1	9	11.1%
Total Coli	23	38	18	79	
Number of exceedances (REC-1)	1	4	7	12	15.2%
Number of exceedances (SHEL)	2	11	10	23	29.1%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events				Totals	% Exceedance
	1999	2000	2001	2002	2003	
Enterococcus	2	5	7	3	0	
Number of exceedances (REC-1)	2	5	7	2	0	94.1%
Fecal Coli	2	5	7	3	0	
Number of exceedances (REC-1)	1	3	3	1	0	47.1%
Total Coli	2	4	6	2	0	
Number of exceedances (REC-1)	1	3	5	0	0	64.3%
Number of exceedances (SHEL)	2	4	6	0	0	85.7%

Recommendation
Do not delist

48/33

94/42

Reg. 9

187

STORM TOT/EXCEED,

10

Tecolote Playground, MB-031					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	12	30	47	
Number of exceedances (REC-1)	0	2	6	8	17.0%
Fecal Coli	5	12	30	47	
Number of exceedances (REC-1)	0	0	2	2	4.3%
Total Coli	5	12	30	47	
Number of exceedances (REC-1)	0	0	1	1	2.1%
Number of exceedances (SHEL)	0	0	3	3	6.4%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	1	1	2	100.0%
Fecal Coli	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	0	1	1	50.0%
Total Coli	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	0	1	1	50.0%
Number of exceedances (SHEL)	0	0	0	0	1	1	50.0%

Recommendation
Do not delist; not enough samples

6/4

Tecolote Shores, MB-041					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	1	0	6	
Number of exceedances (REC-1)	0	1	0	1	16.7%
Fecal Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

0/0

Tecolote Shores, near storm drain, MB-040					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	25	31	31	87	
Number of exceedances (REC-1)	3	5	3	11	12.6%
Fecal Coli	24	32	31	87	
Number of exceedances (REC-1)	0	1	1	2	2.3%
Total Coli	24	32	31	87	
Number of exceedances (REC-1)	0	0	1	1	1.1%
Number of exceedances (SHEL)	0	2	1	3	3.4%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	6	1	0	14	
Number of exceedances (REC-1)	2	4	2	0	0	8	57.1%
Fecal Coli	4	5	6	1	0	16	
Number of exceedances (REC-1)	2	3	2	0	0	7	43.8%
Total Coli	4	4	6	1	0	15	
Number of exceedances (REC-1)	2	2	2	0	0	6	40.0%
Number of exceedances (SHEL)	3	3	4	0	0	10	66.7%

Recommendation
Do not delist

45/25

51/29

Vacation Isle, MB-200					
Indicator/Bacteria	2001	2002	2003	Totals	%Exceedance
Enterococcus	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	1999	2000	2001	2002	2003	Totals	%Exceedance
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	2	0	0	2	18.2%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Number of exceedances (SHEL)	1	2	2	0	0	5	45.5%

Recommendation
Delist REC-1

22/4

Ventura Cove, MB-223					
Indicator/Bacteria	2001	2002	2003	Totals	%Exceedance
Enterococcus	6	25	27	58	
Number of exceedances (REC-1)	2	1	1	4	6.9%
Fecal Coli	6	25	27	58	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	6	25	27	58	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	1999	2000	2001	2002	2003	Totals	%Exceedance
Enterococcus	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

6/0

Visitor's Center, near storm drain, MB-060					
Indicator/Bacteria	2001	2002	2003	Totals	%Exceedance
Enterococcus	35	55	56	146	
Number of exceedances (REC-1)	21	38	26	85	58.2%
Fecal Coli	36	58	56	150	
Number of exceedances (REC-1)	6	17	11	34	22.7%
Total Coli	35	58	56	149	
Number of exceedances (REC-1)	2	18	9	29	19.5%
Number of exceedances (SHEL)	12	33	23	68	45.6%

Recommendation
Do not delist

Indicator/Bacteria	1999	2000	2001	2002	2003	Totals	%Exceedance
Enterococcus	2	5	6	2	0	15	
Number of exceedances (REC-1)	1	3	3	1	0	8	53.3%
Fecal Coli	3	5	6	3	0	17	
Number of exceedances (REC-1)	1	3	1	2	0	7	41.2%
Total Coli	4	5	6	3	0	18	
Number of exceedances (REC-1)	2	2	1	2	0	7	38.9%
Number of exceedances (SHEL)	4	3	3	2	0	12	66.7%

Recommendation
Do not delist

50/22

18/26

REGION 9 (187)

12-12

Wildlife Refuge, MB-090					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	22	43	46	111	
Number of exceedances (REC-1)	3	15	13	31	27.9%
Fecal Coli	22	43	46	111	
Number of exceedances (REC-1)	1	4	2	7	6.3%
Total Coli	22	43	46	111	
Number of exceedances (REC-1)	0	4	1	5	4.5%
Number of exceedances (SHEL)	2	10	4	16	14.4%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	2	5	7	1	1	16		
Number of exceedances (REC-1)	1	4	5	0	1	11	68.8%	
Fecal Coli	2	5	7	1	1	16		
Number of exceedances (REC-1)	1	3	2	0	1	7	43.8%	
Total Coli	2	4	7	1	1	15		
Number of exceedances (REC-1)	1	2	2	0	1	6	40.0%	
Number of exceedances (SHEL)	1	3	6	1	1	12	80.0%	

Recommendation
Do not delist

47/24

143

~~187~~

1063

**Attachment 6:
18 fact sheets regarding new proposed beach delistings for Orange and San
Diego Counties**



Region 9

Water Segment: Aliso Creek (C1), Aliso HSA

Pollutant: Bacteria Indicators

Decision: Remain on the 303(d) List

DO NOT DELIST

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There were 818 exceedances of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of keeping this water segment-pollutant combination on the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used the data quality requirements of section 6.1.4 of the Policy.
2. The data used does not satisfy the data quantity requirements of section 6.1.5 of the Policy.
3. 818 out of the 1,949 samples exceeded the Bacteriological standards for all three indicators and these do exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SHOULD ALSO INCLUDE
MONTHLY GEO-MEANS.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should remain on the section 303(d) list because applicable bacteriological water quality standards are not met.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

DEANIE
COUNTY

Data Used to Assess Water Quality:

A total of 1,949 analyses were performed from 1999 through 2004. Of these, there were 818 exceedances of the bacterial standards for all three indicators (408 for enterococci, 188 for fecal coliform, and 222 for total coliform). All of the 2,136 rolling geometric means calculated exceeded the bacterial standards for all three indicators. For the 72 monthly geometric means calculated, there were 69 exceedances.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Laguna Main Beach (OLB00), Laguna HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Thirty-seven out of 942 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35 "per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 942 analyses were performed from 1999 through 2004. Of these, there were 37 exceedances of the bacterial standards for all three indicators with the majority for the enterococci indicator, which was exceeded 21 times during period. There were nine exceedances for fecal coliform and seven exceedances for total coliform.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Heisler Park North (OLB05), San Joaquin Hills HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Seven out of 917 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 917 analyses were performed from 1999 through 2004. Of these, there were only seven exceedances of the bacterial standards for the fecal coliform and enterococci indicators. There were five exceedances for enterococcus and two for fecal coliform.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for his assessment from January 1999 through 2004.

Region 9

Water Segment: Aliso Beach – North (S10), Aliso HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Forty- three of the 2,038 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation; R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 2,038 analyses were performed from 1999 through 2004. Of these, there were 43 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci indicator, which was exceeded 24 times during this period. The fecal coliform standard was exceeded ten times and the total coliform standard was exceeded nine times during this period.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Blue Lagoon (S13), Aliso HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Forty-nine out of 1937 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35 "per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 1,937 analyses were performed from 1999 through 2004. Of these, there were 49 exceedances of bacterial standards for all three indicators with the majority occurring for the enterococci indicator, which was exceeded 41 times. There were four exceedances each for total and fecal coliform. The majority of exceedances occurred from 1999 through the beginning of 2001.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Lagunita Place (S14), Laguna Beach HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Forty-one out of 1,858 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35 "per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 1,858 analyses were performed from January 1999 through 2004. Of these, there were only 41 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci indicator, which was exceeded 33 times during this period. There were only three exceedances for fecal coliform and five exceedances for total coliform.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Bluebird Canyon Road (S15), Laguna Beach HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. 110 out of 1,940 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 1,940 analyses were performed from 1999 through 2004. Of these, there were 110 exceedances of the bacterial standards for all three indicators with the majority of exceedances for the enterococci indicator, which was exceeded a total of 83 times. There were 11 exceedances for fecal coliform and 16 exceedances for total coliform. The majority of exceedances occurred from 1999 through the beginning of 2001.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Hotel Laguna (S16), Laguna Beach HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Seventy-two out of 1,875 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 1,875 analyses were performed from 1999 through 2004. Of these, there were 72 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci indicator, which was exceeded a total of 58 times during this period. There were nine exceedances for total coliform and five fecal coliform exceedances.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: 1000 Steps Beach (S4), Dana Point HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Nineteen of the 1,918 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use:

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 1,918 analyses were performed from 1999 through 2004. Of these, there were 19 exceedances of the bacterial standards for all there indicators. There were 17 exceedances of enterococcus, two exceedances for total coliform and no exceedances for fecal coliform. In addition, there were no exceedances based on the rolling geometric mean and monthly geometric mean criteria.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Laguna Lido (S5), Dana Point HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Seventy-four of the 1,921 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 1,921 analyses were performed from 1999 through 2004. Of these, there were 74 exceedances of the bacterial standards based on single sample criteria. The enterococci standard was exceeded 60 times, total coliform exceeded five times, and the fecal coliform standard was exceeded nine times. The majority of the exceedances occurred from 1999 through the beginning of 2001.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Table Rock (S6), Dana Point HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Twenty-three of the 1,920 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 1,920 analyses were performed from 1999 through 2004. Of these, there were 23 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci criterion, which was exceeded 19 times. There were only three exceedances for total coliform and one exceedance for fecal coliform.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Camel Point (S7), Dana Point HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Seventy-five of the 2,066 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 2,066 analyses were performed, of which there were 75 exceedances of the bacterial standards for all three indicators. Of these, the enterococci criterion exceeded 53 times, fecal coliform exceeded 13 times, and total coliform exceeded only 9 times.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Aliso Beach – South (S8), Dana Point HSA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There was only one exceedance of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Fifty-nine of the 2,033 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 2,033 analyses were performed from 1999 through 2004. Of these, there were 59 exceedances of the bacterial standards for all three indicators (39 for enterococci, 6 for fecal coliform , and 14 for total coliform).

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Aliso Beach – Middle (S9), Dana Point HSA

Pollutant: Bacteria Indicators

Decision: Remain on the 303(d) List

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There were 475 rolling geometric mean exceedances of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of keeping this water segment-pollutant combination on the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used the data quality requirements of section 6.1.4 of the Policy.
2. The data used does not satisfy the data quantity requirements of section 6.1.5 of the Policy.
3. 169 of the 2,150 rolling geometric means and 16 of the 72 monthly geometric means calculated exceeded the Bacteriological standards for all three indicators and these do exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should remain on the section 303(d) list because applicable bacteriological water quality standards are not met.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 2,097 analyses were performed from 1999 through 2004. Of these, there were 169 exceedances of the bacterial standards for all three indicators (97 for enterococci, 36 for both fecal coliform and for total coliform). There were 2,150 rolling geometric means calculated, of which 475 exceedances were counted. For the 72 monthly geometric means calculated, there were 16 exceedances.

Spatial Representation:

The Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline.

Temporal Representation:

Data were available for this assessment from January 1999 through 2004.

Region 9

Water Segment: Tamarack Avenue at Carlsbad State Beach (EH-460), Buena Vista Creek HA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There were only two exceedances of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Two out of the 191 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.



Data Used to Assess Water Quality:

A total of 191 analyses were performed from 1999 through 2004. Of these, there were only two exceedances of the bacterial standards for all three indicators: There was only one exceedance for Enterococci and one for fecal coliform.

Spatial Representation:

The San Diego County Department of Environmental Health and City of Carlsbad Public Works routinely monitor the ocean water quality at numerous ocean locations along the City of Carlsbad's coastline.

Temporal Representation:

Data were available for this assessment from April 1999 through October 2004.

Region 9

Water Segment: Pine Avenue at Carlsbad State Beach (EH-470), Buena Vista Creek HA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There were no exceedances of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. None of the 91 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 91 analyses were performed from 1999 through 2004. Of these, there were no exceedances of the bacterial standards for all three indicators.

Spatial Representation:

The San Diego County Department of Environmental Health and City of Carlsbad Public Works routinely monitor the ocean water quality at numerous ocean locations along the City of Carlsbad's coastline.

Temporal Representation:

Data were available for this assessment from April 1999 through October 2004.

Region 9

Water Segment: Buena Vista Lagoon outlet at Carlsbad Municipal Beach (EH-480), Buena Vista Creek HA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There were twenty exceedances of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Twenty of the 232 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Pollutant-Water

Beneficial Use

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

Evaluation Guideline:

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 232 analyses were performed from 1999 through 2004. Of these, there were 20 exceedances of the bacterial standards for all three indicators. There were 14 exceedances for Enterococci, 5 for fecal coliform, and only one for total coliform.

Spatial Representation:

The San Diego County Department of Environmental Health and City of Carlsbad Public Works routinely monitor the ocean water quality at numerous ocean locations along the City of Carlsbad's coastline.

Temporal Representation:

Data were available for this assessment from April 1999 through October 2004.

Region 9

Water Segment: Carlsbad Village Drive at Carlsbad Municipal Beach (EH-475), Buena Vista Creek HA

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

One line of evidence is available in the administrative record to assess this pollutant. There were no exceedances of total coliform, fecal coliform and enterococcus bacteriological standards recorded.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. None of the 179 samples exceeded the Bacteriological standards for all three indicators and these do not exceed the allowable frequency listed in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list during dry weather because applicable bacteriological water quality standards are not exceeded.

Lines of Evidence:

Line of Evidence

Beneficial Use

Evaluation Guideline:

Pollutant-Water

R1 - Water Contact Recreation, R2 - Non-Contact Recreation

From AB411: Enterococcus: 35"per 100 ml for 30-day average", single sample: 104 per 100 ml. Fecal coliform: 30-day average- 200 colonies/100 mL. Single sample- 400 colonies/100mL. Total coliform: 30-day average: 1,000 colonies/100 mL, single sample: If FC/TC ratio is < 0.1, 10,000 colonies/100 mL, if FC/TC ratio is > 0.1, 1,000 colonies/100mL.

Data Used to Assess Water Quality:

A total of 179 analyses were performed from 1999 through 2004. Of these, there were no exceedances of the bacterial standards for all three indicators.

Spatial Representation:

The San Diego County Department of Environmental Health and City of Carlsbad Public Works routinely monitor the ocean water quality at numerous ocean locations along the City of Carlsbad's coastline.

Temporal Representation:

Data were available for this assessment from April 1999 through October 2004.

MEC ANALYTICAL SYSTEMS.

Shoreline Bacterial Data Evaluation – Final Report

1999 - 2003

Used on
Comments Letter 187
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Applicable Water Quality Standards

All of the beach shoreline sites assessed in this document are considered contact recreational waters with a beneficial use designation of REC-1. The most applicable criteria for REC-1 waters are those designated under Assembly Bill 411 (AB411) for three bacterial indicators: total coliform, fecal coliform, and Enterococcus. The AB411 criteria are summarized in Table 2.

Table 2. Assembly Bill 411 (AB411) bacteriological standards.

	30-Day Limit ¹	Single Sample Limit
Total Coliform	1,000 MPN/ 100 ml ²	1,000 MPN/ 100 ml if Fecal > 10% of Total, or 10,000 MPN/100 ml ³
Fecal Coliform	200 MPN/ 100 ml	400 MPN/ 100 ml
Enterococcus	35 MPN/ 100 ml	104 MPN/ 100 ml

1 = 30 day limit is based on the geometric mean of at least five weekly samples

2 = MPN is Most Probable Number

3 = Total coliform single sample limit of 10,000 MPN decreases to 1,000 when the fecal coliform value is greater than 10% of total coliform value

The AB411 single sample limits were used in this document to determine the number of exceedances for a given sample size. Typically, a single sample is collected on a given day from a site and analyzed for three indicators: total coliform, fecal coliform, and Enterococcus. Thus, a single sample usually produces three different analyses. To assess the number of exceedances at a site, first, the data were assessed to determine the total number of analyses for each indicator that exceeded the single sample limits at each site. The number of exceedances for each of the three indicators over the five year period (January 1999 through October 2003) were then summed for each site. The total number of exceedances was then compared to the number allowable by SWRCB (2003) for the sample size (Table 1) at that site.

The SWRCB delisting criteria presented in Table 1 are based on a nonparametric procedure using a binomial distribution (Lin et al. 2000). In this case, the number of exceedances are based on independent, single samples taken from a water body. Since the 30-day limit criteria in Table 2 apply to a mean of at least 5 analyses, the geometric mean criteria were not included with the single sample exceedances used for comparison to values in Table 1.

In addition to the comparisons made to the 10% exceedance frequency in Table 1, each site assessment contains a table with the actual percentage of exceedances per number of samples taken at that site. In this way, if another exceedance frequency (e.g. 4%) is adopted by the SWRCB, the data is available for review.



Region 9

inland surface, enclosed bay and estuaries, coastal lagoons, and ground waters). Within each water body type, the water quality objectives are alphabetized by constituent.

In most cases the water quality objective is preceded by a general description of the constituent limited by the objective. The objectives vary in applicability and scope, reflecting the variety of beneficial uses of water which have been identified. Where numerical limits are specified, they represent the maximum levels of constituents that will allow the beneficial use to continue unimpaired. In other cases, an objective may tolerate natural or "background" levels of certain substances or characteristics but no increases over those values, or may express a limit in terms of not adversely affecting beneficial uses. An adverse effect or impact on a beneficial use occurs where there is an actual or threatened loss or impairment of that beneficial use.

GENERAL ANTIDEGRADATION OBJECTIVE

The following objective shall apply to all waters of the State within the Region.

General Antidegradation Water Quality Objective:

Wherever the existing quality of water is better than the quality of water established herein as objectives, such existing quality shall be maintained unless otherwise provided by the provisions of the State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California", including any revisions thereto, or the federal Antidegradation Policy, 40 CFR 131.12 (for surface waters only).

OCEAN WATERS



The following objectives shall apply to all ocean waters of the State within the Region:

OCEAN PLAN AND THERMAL PLAN

Ocean Plan and Thermal Plan Water Quality Objective:

The terms and conditions of the State Board's "Water Quality Control Plan for Ocean Waters of California" (Ocean Plan), "Water Quality Control Plan for Control of Temperature in the Coastal and

Interstate Waters and Enclosed Bays and Estuaries of California" (Thermal Plan), and any revisions thereto are incorporated into this Basin Plan by reference. The terms and conditions of the Ocean Plan and Thermal Plan apply to the ocean waters within this Region.

DISSOLVED OXYGEN

Adequate dissolved oxygen is vital for aquatic life. Depression of dissolved oxygen levels can lead to fish kills and odors resulting from anaerobic decomposition. Dissolved oxygen content in water is a function of water temperature and salinity.

Water Quality Objective for Dissolved Oxygen:

The dissolved oxygen concentration in ocean waters shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.

HYDROGEN ION CONCENTRATION (pH)

The hydrogen ion concentration of water is called "pH". The acidity or alkalinity of water is measured by the pH factor. The pH scale ranges from 1 to 14, with 1 to 6.9 being acid, 7.1 to 14 being alkaline, and 7.0 being neutral. Ranges (pH) of 6.5 to 9.0 are considered harmless. A change of one point on this scale represents a ten-fold increase in acidity or alkalinity. Many pollutants can alter the pH, raising or lowering it excessively. In some cases even small changes in pH can harm aquatic biota. The pH changes can alter the chemical form of certain constituents, thereby increasing their bioavailability and toxicity. For example a decrease in pH can result in an increase in dissolved metal concentrations. Ammonia, which is a major component of sewage discharges, can be completely safe at pH 7.0 and extremely toxic to fish at pH 8.5 for the same total ammonia concentration.

Water Quality Objective for pH:

The pH value shall not be changed at any time more than 0.2 pH units from that which occurs naturally.

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Region 9

Water Segment: Mission Bay Shoreline

Pollutant: Bacteria Indicators

Decision: Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.3 of the Listing Policy. Under section 4.3 a single line of evidence is necessary to assess delisting status.

Two lines of evidence are available in the administrative record to assess this pollutant. One line of evidence is testimonial, the other is the combined total numeric bacterial indicator results from 45 stations sampled along the Mission Bay shoreline during 1999 to 2003. An insufficient number of total samples taken from stations along Mission Bay shoreline exceed the AB 411 bacteria indicator criteria.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification for removing this entire water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Two thousand sixteen (2,016) of 17,847 samples taken from 37 stations along the Mission Bay shoreline from 1999 through 2003 exceeded the bacterial indicator criteria and these exceedances do not surpass the allowable frequency listed in Table 4.2 of the Listing Policy. A total of 45 sites were originally monitored along the Mission Bay shoreline. Eight of the 45 sites did not record any exceedances of bacterial indicators.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be removed from the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

<i>Numeric Line of Evidence</i>	Pollutant-Water
<i>Beneficial Use:</i>	R1 - Water Contact Recreation
<i>Matrix:</i>	Water
<i>Water Quality Objective/ Water Quality Criterion:</i>	From AB411: Enterococcus: 35 MPN/100 ml for 30-day average, single sample: 104MPN/100 ml. Fecal coliform: 200 MPN/100 ml 30-day average, single sample- 400 MPN/100mL. Total coliform: 1,000 MPN/100 ml 30-day average, single sample 1000 MPN/100 ml If the fecal is more than 10% of the total coliform MPNs or 10,000 MPN/100ml if the fecal coliform is less than 1% of the total coliform.
<i>Data Used to Assess Water Quality:</i>	Two thousand sixteen (2,016) of 17,847 taken at 37 stations along the Mission Bay shoreline from 1999 to 2003 exceeded the three bacterial indicators for enterococcus, fecal coliform and total coliform. The AB 411 single sample limits were used to determine the number of exceedances for a given sample size. A single sample was collected on a given day from a site and analyzed for the three indicators producing three different analyses. To assess the number of exceedances at a site, first the data were assessed to determine the total number of analyses for each indicator that exceeded the single sample limit at each site. The number of exceedances for each of the three indicators over the five year period were then summed for each site (City of San Diego, 2004).
<i>Spatial Representation:</i>	Thirty seven sample sites.
<i>Temporal Representation:</i>	Samples were taken from 1999 to 2003.
<i>Environmental Conditions:</i>	<p>The shoreline of Mission Bay is listed on the 2002 303(d) list in its entirety. A total of 45 sites were monitored along the Mission Bay shoreline. Eight of the 45 sites sampled did not record any exceedances of the bacterial indicators.</p> <p>Southern California has three distinct weather/hydrological conditions: summer dry weather, winter dry weather, and storm events. The data set used in this analysis includes summer and winter season data. Whether or not storm event samples are included in the data set are not known. For future water quality assessments, the RWQCB may classify bacteria samples as summer dry, winter dry, or storm event samples to ensure adequate representation of all three weather/hydrological conditions.</p>
<i>QA/QC Equivalent:</i>	City of San Diego or the County Department of Environmental Health QA/QC procedures

<i>Line of Evidence</i>	Testimonial Evidence
<i>Beneficial Use</i>	R1 - Water Contact Recreation

Non-Numeric Objective:

From the Basin Plan: For Bays and estuaries and all beneficial uses, the WQO for coliform organisms states that MPN in the upper 60 ft. of water column shall be less than 1,000 per 100 mL (10 per mL); provided that not more than 20% of the samples at any sampling station, in any 30-day period, may exceed 1,000 per 100 mL (10 per mL), and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 mL (100 per mL).

Evaluation Guideline:

REC1- Fecal coliform objective is 200 colonies per 100 mL based on the log mean of no less than 5 samples over 30-day period or no more than 10% of total samples during any 30-day period to exceed 400 colonies per 100 mL.

REC1 -Enterococci steady state in all areas is 35 colonies per 100 mL. Enterococci maximum in designated beaches is 104 colonies per 100 mL. Enterococci maximum in moderately or lightly used areas is 276 colonies per 100 mL. Enterococci maximum in infrequently used areas is 500 colonies per 100 mL.

Data Used to Assess Water Quality:

From the letter from the San Diego Baykeeper written on 06/14/2004: We recommend continued listing of Mission Bay for eutrophication, lead, and bacterial indicators (San Diego Baykeeper, 2004).

Spatial Representation:

The area is described as Mission Bay. Exact location was not given.

Temporal Representation:

The letter regarding possible impairments was written on 06/14/2004. No other dates were provided.

Region 9

Water Segment: Mission Bay Shoreline

Pollutant: None

Decision: Accept Area Change

Weight of Evidence: The data and information in the administrative record supports this change in estimated size affected.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the estimated size affected should be changed as presented.

Lines of Evidence:

Line of Evidence -N/A

Beneficial Use CM - Commercial and Sport Fishing (CA), ES - Estuarine Habitat, IN - Industrial Service Supply, MA - Marine Habitat, MI - Fish Migration, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, RA - Rare & Endangered Species, SH - Shellfish Harvesting, SP - Fish Spawning, WI - Wildlife Habitat

Non-Numeric Objective: Map changes- no objective.

Data Used to Assess Water Quality: From email from James Smith at RWQCB9: Mission Bay should have just the shoreline listed for Bacterial Impairments and just the areas near the mouths of Rose and Tecolote Creek listed for eutrophic and lead. I understand that this may not be possible due to the constraints of 'one area represented for one water body' in the system.

Spatial Representation: This map change request affects Mission Bay and the areas of Mission Bay at the mouths of Rose and Tecolote Creeks.

Temporal Representation: Email from Jim Smith was dated 06/03/2004.

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Factsheet Details

Factsheet ID:	2291	Listing Year:	2004
Board:	Region 9	Status:	In Progress
Waterbody:	Mission Bay Shoreline		
WBID:	CAC9065000020050104183747		
Pollutant Exceeding:	Y	Designated Beneficial Use:	R1 - Water Contact Recreation
Secondary Uses:	R1 - Water Contact Recreation;		
Pollutant Category:	Pathogens	Pollutant:	Bacteria Indicators
Source Category:	-N/A	Source:	-N/A
Remedial Programs:			

Non-Numeric Description

Subgroup	Testimonial Evidence
Non-Numeric Objective	From the Basin Plan: For Bays and estuaries and all beneficial uses, the WQO for coliform organisms states that MPN in the upper 60 ft. of water column shall be less than 1,000 per 100 mL (10 per mL); provided that not more than 20% of the samples at any sampling station, in any 30-day period, may exceed 1,000 per 100 mL (10 per mL), and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 mL (100 per mL).
Antidegradation Consideration	
Evaluation Guideline	REC1- Fecal coliform objective is 200 colonies per 100 mL based on the log mean of no less than 5 samples over 30-day period or no more than 10% of total samples during any 30-day period to exceed 400 colonies per 100 mL. REC1 -Enterococci steady state in all areas is 35 colonies per 100 mL. Enterococci maximum in designated beaches is 104 colonies per 100 mL. Enterococci maximum in moderately or lightly used areas is 276 colonies per 100 mL. Enterococci maximum in infrequently used areas is 500 colonies per 100 mL.
Number of Samples	0
Number of Exceedences	0
Spatial Representation	The area is described as Mission Bay. Exact location was not given.
Temporal Representation	The letter regarding possible impairments was written on 06/14/2004. No other dates were provided.
Data Used to Assess Water Quality	From the letter from the San Diego Baykeeper written on 06/14/2004: We recommend continued listing of Mission Bay for eutrophication, lead, and bacterial indicators (San Diego Baykeeper, 2004).
Environmental Conditions	Southern California has three distinct weather/hydrological conditions: summer dry weather, winter dry weather, and storm events. The data set used in this analysis includes summer and winter season data. Whether or not storm event samples are included in the data set are not known. For future water quality assessments, the RWQCB may classify bacteria samples as summer dry, winter dry, or storm event samples to ensure adequate representation of all three weather/hydrological conditions.
Information Used to Assess Water Quality	
Quality Assurance	Unknown
QAPP Information	
QA/QC Equivalent	

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Factsheet Details

Factsheet ID:	2792	Listing Year:	2004
Board:	Region 9	Status:	In Progress
Waterbody:	Mission Bay Shoreline	Designated Beneficial Use:	R1 - Water Contact Recreation
WBID:	CAC9065000020050104183747	Pollutant:	Bacteria Indicators
Pollutant Exceeding:	Y	Source:	-N/A
Secondary Uses:	R1 - Water Contact Recreation;		
Pollutant Category:	Pathogens		
Source Category:	-N/A		
Remedial Programs:	The information in the LOEs was taken from the report (due to time constraints). All raw data was submitted with the report. Information in the report appeared to be correct according to the data submitted.		

Numeric Description

Subgroup	Pollutant-Water
Fraction	None
Matrix	Water
Number of Samples	17847
Number of Exceedences	2016
Standard/Criteria/Objective	From AB411: Enterococcus: 35 MPN/100 ml for 30-day average, single sample: 104MPN/100 ml. Fecal coliform: 200 MPN/100 ml 30-day average, single sample- 400 MPN/100mL. Total coliform: 1,000 MPN/100 ml 30-day average, single sample 1000 MPN/100 ml If the fecal is more than 10% of the total coliform MPNs or 10,000 MPN/100ml if the fecal coliform is less than 1% of the total coliform.
Evaluation Guideline	
Data Used to Assess Water Quality	Two thousand sixteen (2,016) of 17,847 taken at 37 stations along the Mission Bay shoreline from 1999 to 2003 exceeded the three bacterial indicators for enterococcus, fecal coliform and total coliform. The AB 411 single sample limits were used to determine the number of exceedences for a given sample size. A single sample was collected on a given day from a site and analyzed for the three indicators producing three different analyses. To assess the number of exceedences at a site, first the data were assessed to determine the total number of analyses for each indicator that exceeded the single sample limit at each site. The number of exceedences for each of the three indicators over the five year period were then summed for each site (City of San Diego, 2004).
Spatial Representation	Thirty seven sample sites.
Temporal Representation	Samples were taken from 1999 to 2003.
Environmental Conditions	The shoreline of Mission Bay is listed on the 2002 303(d) list in its entirety. A total of 45 sites were monitored along the Mission Bay shoreline. Eight of the 45 sites sampled did not record any exceedences of the bacterial indicators. Southern California has three distinct weather/hydrological conditions: summer dry weather, winter dry weather, and storm events. The data set used in this analysis includes summer and winter season data. Whether or not storm event samples are included in the data set are not known. For future water quality assessments, the RWQCB may classify bacteria samples as summer dry, winter dry, or storm event samples to ensure adequate representation of all three weather/hydrological conditions.
Quality Assurance	Fair
QAPP Information	
QA/QC Equivalent	City of San Diego or the County Department of Environmental Health QA/QC procedures

REGION 9 BASIN PLAN.

INLAND SURFACE WATERS, ENCLOSED BAYS AND ESTUARIES, COASTAL LAGOONS AND GROUND WATERS

The following objectives apply to all inland surface waters, enclosed bays and estuaries, coastal lagoons, and ground waters of the Region as specified below.

THERMAL PLAN

Thermal Plan Water Quality Objective:

The terms and conditions of the State Board's "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" (Thermal Plan) and any revisions thereto are incorporated into this Basin Plan by reference. The terms and conditions of the Thermal Plan apply to the Inland Surface Waters, Enclosed Bays and Estuaries, and Coastal Lagoons within this Region.

AGRICULTURAL SUPPLY BENEFICIAL USE

Water Quality Objective for Agricultural Supply:

Waters designated for use as agricultural supply (AGR) shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use.

AMMONIA, UN-IONIZED

Ammonia is a pungent, colorless, gaseous alkaline compound of nitrogen and hydrogen that is highly soluble in water. Un-ionized ammonia (NH_3) is toxic to fish and other aquatic organisms. In water, NH_3 exists in equilibrium with ammonium (NH_4^+) and hydroxide (OH^-) ions. The proportions of each change as the temperature, pH, and salinity of the water change.

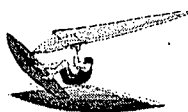
Water Quality Objective for Un-ionized Ammonia:

The discharge of wastes shall not cause concentrations of un-ionized ammonia (NH_3) to exceed 0.025 mg/l (as N) in inland surface waters, enclosed bays and estuaries and coastal lagoons.

BACTERIA - TOTAL AND FECAL COLIFORM

Fecal bacteria are part of the intestinal flora of warm-blooded animals. Their presence in surface waters is an indicator of pollution. Total coliform numbers can include non-fecal bacteria, so additional testing is often done to confirm the presence and numbers of fecal coliform bacteria. Water quality objectives for numbers of total and fecal coliform vary with the uses of the water, as shown below.

- (1) Waters Designated for Contact Recreation (REC-1) Beneficial Use



Water Quality Objective for Contact Recreation:

In waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100 ml, nor shall more than 10 percent of total samples during any 30-day period exceed 400/100 ml.

- (2) Waters Designated for Non-Contact Recreation (REC-2) Beneficial Use

Water Quality Objective for Non-contact Recreation:

In waters designated for non-contact recreation (REC-2) and not designated for contact recreation (REC-1), the average fecal coliform concentrations for any 30-day period, shall not exceed 2,000/100 ml nor shall more than 10 percent of samples collected during any 30-day period, exceed 4,000/100 ml.

- (3) Waters Where Shellfish May Be Harvested for Human Consumption (SHELL) Beneficial Use

Water Quality Objective for Shellfish Harvesting:

In waters where shellfish harvesting for human consumption, commercial or sports purposes is designated (SHELL), the median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100 ml nor shall more than 10 percent of the samples collected during any 30-day period exceed 230/100 ml for a five-tube decimal dilution test or 330/100 ml when a three-tube decimal dilution test is used.

(4) Bays and Estuaries

Water Quality Objective for Bays and Estuaries:

In bays and estuaries, the most probable number of coliform organisms in the upper 60 feet of the water column shall be less than 1,000 per 100 ml (10 per ml); provided that not more than 20 percent of the samples at any sampling station, in any 30-day period, may exceed 1,000 per 100 ml (10 per ml), and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 (100 per ml).

BACTERIA - E. COLI AND ENTEROCOCCI

(1) San Diego Bay

Water Quality Objective for E. Coli:

In San Diego Bay where bay waters are used for whole fish handling, the density of E. coli shall not exceed 7 per ml in more than 20 percent of any 20 daily consecutive samples of bay water.

(2) Waters Designated for Contact Recreation (REC-1) Beneficial Use

The US EPA published E. coli and enterococci bacteriological criteria applicable to waters designated for contact recreation (REC-1) in the Federal Register, Vol. 51, No. 45, Friday, March 7, 1986, 8012-8016.

Water Quality Objective for Enterococci and E. Coli:

US EPA BACTERIOLOGICAL CRITERIA FOR WATER CONTACT RECREATION^{1,2} (in colonies per 100 ml)

	Freshwater entero- cocci	E. Coli	Saltwater entero- cocci
Steady State (all areas)	33	126	35
Maximum (designated beach)	61	235	104
(moderately or lightly used area)	108	406	276
(infrequently used area)	151	576	500

¹The criteria were published in the Federal Register, Vol. 51, No. 45/Friday, March 7, 1986/ 8012-8016. The criteria are based on:

Cabelli, V. J. 1983. Health Effects Criteria for Marine Recreational Waters. U. S. Environmental Protection Agency, EPA 600/1-80-031, Cincinnati, Ohio.

Dufour, A. P. 1984. Health Effects Criteria for Fresh Recreational Waters. U. S. Environmental Protection Agency, EPA 600/1-84-004, Cincinnati, Ohio.

²The EPA criteria apply to water contact recreation only. The criteria provide for a level of protection based on the frequency of usage of a given water contact recreation area. The criteria may be employed in special studies within this Region to differentiate between pollution sources or to supplement the current coliform objectives for water contact recreation.

BIOSTIMULATORY SUBSTANCES

Excessive growth of algae and/or other aquatic plants can degrade water quality. Algal blooms sometimes occur naturally; however, they are often the result of waste discharges or nonpoint source pollutants. Algal blooms depress the dissolved oxygen content of water and can result in fish kills. Algal blooms can also lead to problems with taste, odors, color, and increased turbidity. Floating algal scum and algal mats are also an aesthetically unpleasant nuisance. This general condition is known as eutrophication.

Water Quality Objectives for Biostimulatory Substances:

Inland surface waters, bays and estuaries and coastal lagoon waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growths cause nuisance or adversely affect beneficial uses.

Concentrations of nitrogen and phosphorus, by themselves or in combination with other nutrients, shall be maintained at levels below those which stimulate algae and emergent plant growth. Threshold total phosphorus (P) concentrations shall not exceed 0.05 mg/l in any stream at the point where it enters any standing body of water, nor 0.025 mg/l in any standing body of water. A desired goal in order to prevent plant nuisance in streams and other flowing waters appears to be 0.1 mg/l total P. These values are not to be exceeded more than 10% of the time unless studies of the

24 April 06
R. Murial

REGION 9 COMMENT LETTER

Comment Letter ID
184

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN DIEGO REGION

143

NOTICE OF WORKSHOP AND CALIFORNIA ENVIRONMENTAL QUALITY ACT SCOPING MEETING

FOR AN AMENDMENT TO THE *WATER QUALITY CONTROL PLAN FOR THE SAN DIEGO BASIN (9)*
TO INCORPORATE IMPLEMENTATION PROVISIONS FOR A 'REFERENCE SYSTEM/
ANTIDegradation APPROACH' AND A 'NATURAL SOURCES EXCLUSION
APPROACH' FOR BACTERIA INDICATOR WATER QUALITY OBJECTIVES
(BASIN PLAN ISSUE NO. 7)

WORKSHOP and CEQA SCOPING MEETING

March 13, 2006, at 10:00 a.m.

Metropolitan Wastewater Department, Auditorium
9192 Topaz Way, San Diego, California 92123

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) is considering an amendment to the *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan) described below. The Basin Plan amendment process is authorized under section 13240 of the Water Code. The proposed amendment constitutes a project subject to the California Environmental Quality Act (CEQA) for which the San Diego Water Board will be the lead agency.

The San Diego Water Board wishes to obtain public input on this matter. A public workshop and CEQA scoping meeting will be held on March 13, 2006, beginning at 10:00 am in the City of San Diego's Metropolitan Wastewater Department, Auditorium (see address above). The purpose of the workshop and CEQA scoping meeting is to provide an overview of the proposed amendment, answer questions and receive comments from the public on the proposed amendment and on the potential environmental impacts associated with implementation of the proposed amendment.

BACKGROUND

The proposed amendment is the result of an investigation of Issue No. 7 on the *Prioritized List of Basin Plan Issues for Investigation from September 2004 to September 2007* (Resolution No. R9-2004-0156, the 2004 Triennial Review). This amendment proposes to incorporate new implementation provisions for the Basin Plan's indicator bacteria objectives for water contact recreation. The San Diego Water Board proposes to authorize implementation of single sample maximum bacteria water quality objectives using either a 'reference system/ antidegradation approach' or a 'natural sources exclusion approach.' The implementation provisions will not replace water quality objectives but rather establish provisions

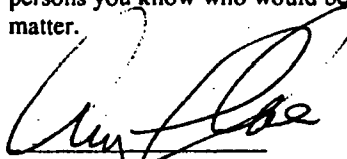
under which exceedances of water quality objectives would be allowed during storm flow conditions. These approaches recognize that there are natural sources of bacteria that may cause or contribute to exceedances of single sample objectives during storm flow events.

Both approaches are designed to ensure bacteriological water quality at least as good as that of a reference site, and to permit no degradation of existing bacteria water quality where existing water quality is better than that of a reference site. A reference site is defined as a beach and/or upstream watershed that are minimally impacted by anthropogenic activities. The 'natural sources exclusion approach' is planned to be designed to ensure that all anthropogenic sources of bacteria are controlled.

For additional information please contact
Ms. Linda Pardy, at:

California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340
Phone: (858) 627-3932
FAX: (858) 571-6972
Email: LPardy@waterboards.ca.gov

Please bring the foregoing to the attention of any persons you know who would be interested in this matter.



John H. Robertus
EXECUTIVE OFFICER

January 23, 2006

Reg. 9 (S.D.) Comment Letter 187 April 24, 2006

(c) All treatment control BMPs for a single Priority Development Project shall collectively be sized to comply with the following numeric sizing criteria:

- i. Volume-based treatment control BMPs shall be designed to mitigate (infiltrate, filter, or treat) the volume of runoff produced from a 24-hour 85th percentile storm event, as determined from the County of San Diego's 85th Percentile Precipitation Isopluvial Map; or
- ii. Flow-based treatment control BMPs shall be designed to mitigate (infiltrate, filter, or treat) either: a) the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour, for each hour of a storm event; or b) the maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity (for each hour of a storm event), as determined from the local historical rainfall record, multiplied by a factor of two.

Tentative San Diego Municipal
Stormwater permit. R9-2006-0011



California Regional Water Quality Control Board

San Diego Region



Alan C. Lloyd, Ph.D.
Agency Secretary

Over 50 Years Serving San Diego, Orange, and Riverside Counties
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

Arnold Schwarzenegger
Governor

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<http://www.waterboards.ca.gov/sandiego>

TO: State Water Resources Control Board
Executive Office
1001 I Street, 24th Floor
Sacramento, CA 95814
Attn: Selica Potter, Acting Clerk to the Board
Email: commentletters@waterboards.ca.gov

In reply refer to:
WQS:77-0118.02:jchan
2004 Water Quality Assessment

303 (d) Deadline:
1/31/06

FROM: John H. Robertus
Executive Officer

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

DATE: January 31, 2006

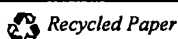
**SUBJECT: COMMENTS ON PROPOSED CHANGES TO THE CLEAN WATER ACT
SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS**

Thank you for the opportunity to submit comments on the proposed 2004 Clean Water Act Section 303(d) List of Water Quality Limited Segments (List). The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) appreciates the efforts of the State Water Resources Control Board (State Water Board) to establish a comprehensive list of impaired waters. A comprehensive and consistent list is an important step in achieving our common goal of improving water quality throughout the San Diego Region and the State. Please consider the following comments in your final analysis.

1. Separate dry weather and storm weather listings for indicator bacteria

The 2004 List should include separate listings and delistings for indicator bacteria for storm weather conditions and dry weather conditions. Most of the beach segments in the Miramar Reservoir Hydrologic Area, Scripps Hydrologic Area, and in Mission Bay proposed for delisting are meeting water quality objectives during dry weather conditions because low-flow diversion structures are in place to prevent dry weather flows from reaching the beaches. However, these controls are not adequate to prevent storm flows from reaching and impairing the beach segments. Delisting these beach segments for all weather conditions before responsible stormwater agencies have addressed storm flow bacteria loads is not protective of water quality, and will hamper the San Diego Water Board's efforts to compel dischargers to address the storm flow problem. Delisting the proposed beach segments for dry weather conditions will appropriately recognize the attainment of water quality objectives during periods of low flow.

California Environmental Protection Agency



shoreline segments. The extent of impairment for each of these segments is 400 yards in both directions from the monitoring point. Attachment 2 shows location maps of the sampling points and the recommended extent of impairment for dry weather and storm weather.

Table 1. Recommendations for Listing and Delisting Mission Bay Shoreline Segments

Location	Dry Weather Recommendation	Storm Event Recommendation
Bahia Point MB-160	Delist REC-1, SHELL	Do not delist
Balboa Court MB-225	Delist REC-1, SHELL	Do not delist; not enough samples
Boat launch MB-193	Do not delist; not enough samples	Do not delist; not enough samples
Bonita Cove MB-170	Do not delist	Do not delist
Campland MB-080	Do not delist	Do not delist
Crown Point, s.d. MB-100	Do not delist	Do not delist
Crown Point, watercraft area MB-101	Do not delist	Do not delist; not enough samples
DeAnza Cove, storm drain MB-070	Do not delist	Do not delist
DeAnza Cove, swim area MB-071	Do not delist	Do not delist; not enough samples
Fanuel Park MB-120	Do not delist	Do not delist
Fiesta Island bridge MB-010	Delist REC-1, SHELL	Do not delist
Hidden Anchorage MB-020	Delist REC-1, SHELL	Do not delist
La Cima, beach MB-111	Delist REC-1, SHELL	Do not delist
La Cima, storm drain MB-110	Delist REC-1, SHELL	Do not delist
Leisure Lagoon MB-050	Delist REC-1, SHELL	Do not delist
Leisure Lagoon, s.a. MB-051	Delist REC-1, SHELL	Do not delist; not enough samples
North Pacific Passage MB-042	Delist REC-1, SHELL	Do not delist; not enough samples
Perez Cove MB-190	Delist REC-1, SHELL	Do not delist
Quivera Basin MB-180	Delist REC-1, SHELL	Do not delist
Sail Bay MB-130	Delist REC-1, SHELL	Do not delist
San Juan Cove MB-140	Delist REC-1, SHELL	Do not delist
Santa Barbara, near storm drain MB-150	Delist REC-1, SHELL	Do not delist
Santa Clara Cove MB-132	Delist REC-1, SHELL	Do not delist; not enough samples
Santa Clara Place MB-131	Do not delist	Do not delist; not enough samples
Seaworld Marina, west outfall MB-191	Do not delist	Do not delist
South Pacific Passage, east outfall MB-192	Delist REC-1, SHELL	Do not delist
Tecolote Creek outlet MB-030	Do not delist	Do not delist
Tecolote playground MB-031	Delist REC-1, SHELL	Do not delist; not enough samples
Tecolote shores MB-041	Delist REC-1, SHELL	Do not delist; not enough samples
Tecolote shores, near storm drain MB-040	Delist REC-1, SHELL	Do not delist
Vacation Isle MB-200	Delist REC-1, SHELL	Delist REC-1

Location	Dry Weather Recommendation	Storm Event Recommendation
Ventura Cove MB-223	Delist REC-1, SHELL	Do not delist; not enough samples
Visitor's Center, near storm drain MB-060	Do not delist	Do not delist
Wildlife Refuge MB-090	Do not delist	Do not delist

3. List La Jolla Children's Pool for indicator bacteria

The site specific data collected at the La Jolla Children's Pool in the Scripps Hydrologic Area show indicates that this distinct beach segment should be listed due to its high number of exceedances of bacteria water quality objectives. The La Jolla Children's Pool is the only beach along the Scripps Hydrologic Area shoreline not meeting water quality standards for dry weather conditions. During the data collection period, of 1999 to 2003, 99 of 344 analyses exceeded the water quality objective objectives for all three indicator bacteria. The exceedances were mostly due to total coliform and fecal coliform, which likely result from the large marine mammal population at this site.

4. Aliso Creek listings

The San Diego Water Board recommends that the Aliso Creek bacteria and other listings be extended to include the tributaries of Aliso Creek. Aliso Creek's tributaries were inadvertently omitted from the 2002 list, even though the 2002 data indicated that the tributaries were impaired. The available data for this listing cycle confirms that these tributaries are impaired and should be included on the 2004 list. Please refer to Attachment 3 for the Aliso Creek data analysis.

5. Additional Beach delistings in San Diego and Orange Counties

The San Diego Water Board supports the proposed delisting of several additional beach segments in the San Diego Region, but only for dry weather conditions. This recommendation is based on application of the Policy to monitoring data for 6 watersheds: 5 in Orange County and 1 in San Diego County. For Orange County, the data were submitted by the City of Laguna Beach and span the period January 1999 through December 2004 (Attachment 4). For San Diego County, the data were submitted by the City of Carlsbad and span the period April 1999 through October 2004 (Attachment 5). These data sets were not included in the State Water Board's data set for Region 9.

Specifically, beach segments listed in Table 2 should be delisted for dry weather conditions. The rationale for these recommendations is presented in the fact sheets in Attachment 6. The San Diego Water Board supports the delisting of these areas for dry weather, but maintains that these areas should remain listed for storm events as discussed in our first comment.

Attachment 6 contains 18 fact sheets with specifics about the data, number of exceedances, and recommendation to delist or not to delist. Two fact sheets in the Aliso Beach area in Orange

County recommend that these areas not be delisted, however, they are included here for completeness since these stations were included in the original data sets.

Table 2. Additional Beach Segments to Delist for Dry Weather Conditions

Watershed	Waterbody	Beach Segment
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	Pacific Ocean Shoreline	at Heisler Park – North
Laguna Beach HSA (901.12)	Pacific Ocean Shoreline	at Main Laguna Beach
		Laguna Beach at Ocean Avenue
		Laguna Beach at Laguna Avenue
		Arch Cove at Bluebird Canyon Road
Aliso HSA (901.13)	Pacific Ocean Shoreline	Laguna Beach at Lagunita Place/Blue Lagoon Place
Dana Point HSA (901.14)	Pacific Ocean Shoreline	Aliso Beach at Table Rock Drive
		1000 Steps Beach at Pacific Coast Hwy at Hospital (9th Ave)
Buena Vista Creek HA (904.21)	Pacific Ocean Shoreline	Tamarack Avenue
		Pine Avenue
		Carlsbad Village Drive
		Buena Vista Lagoon Outlet

Additionally, the San Diego Water Board supports delisting the following beach segments in Orange County for dry weather conditions:¹

- Laguna Beach at Cleo Street
- Laguna Beach at Dumond Drive
- Laguna Beach at Ocean Avenue
- Aliso Beach at West Street

¹ Fact sheets for these proposed beach delistings were not prepared.

Although these locations do not have monitoring stations associated with them, the City of Laguna Beach has submitted other evidence that indicates that these sites are not impaired (Attachment 7). The San Diego Water Board recommends applying the weight of evidence approach and delisting Cleo Street, Dumond Drive, and West Street beach segments based on the evidence in Attachment 7. The San Diego Water Board recommends delisting Laguna Beach at Ocean Avenue because there is no storm drain outlet at this location, and no water quality data for this location both now and when it was listed in 2002. Additionally, this location is within 100 feet of the monitoring station at Main Laguna Beach, where monitoring has shown that water quality objectives are being met and the data meet the criteria for delisting as shown in Attachment 4.

6. Tidelands Park in San Diego Bay

The fact sheet for Tidelands Park in San Diego Bay recommends "Do Not List" for indicator bacteria on the proposed 2004 list. However, Tidelands Park was previously placed on the 2002 list for indicator bacteria. Therefore, the only possible actions on this waterbody are "Do Nothing" or "Delist." Please check the data to see if an error was made in preparing a "Do Not List" fact sheet instead of a "Delist" or "Do Nothing" fact sheet for Tidelands Park.

7. San Diego Bay listing for PCBs in fish tissue

The San Diego Water Board does not agree with the proposed listing of San Diego Bay for PCBs in fish tissue. The proposed listing is inappropriate because it addresses receptors rather than sources of PCBs in the Bay, is based on out-of-date fish tissue data, and uses an inappropriate screening value as an indicator of impairment of the "fishable" beneficial use.

Listing the Bay for fish tissue is not a productive strategy since it focuses on receptors, not sources. The San Diego Water Board has identified all of the major PCB impaired sediment sites in the Bay. All of these source sites are either cleaned up or on the 2002 List. Since the PCB source sites have been identified and listed, listing the Bay for PCBs in fish tissue is unnecessary because the action needed to reduce PCB levels in fish tissue is to cleanup the identified sediment source sites. Listing the Bay for fish tissue will not result in the identification of new sites or change our strategy of cleaning up the already listed contaminated sediment sites in the Bay.

In addition, the fish tissue data, collected in 1999, are out of date. The data set consists of 11 fish filet composite samples collected at four piers in San Diego Bay: at 5th Avenue Marina Pier, Coronado Pier, Shelter Island Pier, and J Street Pier (in Chula Vista). All 11 fish filet composite samples exceeded the 20 ng/g threshold level used by the State Water Board to indicate an impairment. Several Bay sediment/storm drain cleanup projects have been completed, or started since the samples were taken. Listing the entire Bay for PCBs in fish tissue is premature until confirmatory samples are taken to assess the effect of the completed cleanups on lowering fish tissue PCB levels. Table 3 shows the sediment and storm drain cleanups that have been

completed, are underway, or proposed for San Diego Bay. All of these sites contain PCBs along with other contaminants.

Table 3. San Diego Bay Sediment/Storm Drain Cleanups

Site	Regulatory Action	Year Action Taken	Remedial Actions	Status	Completion Year or Estimated Completion Year	Dredged or Capped PCB Marine Sediment Volume (Cubic Yards)
Teledyne Ryan (Convair Lagoon)	Issued CAO No. 86-92	1991	Sand cap	Completed	1998	112, 900
Teledyne Ryan (Convair Lagoon)	Issued CAO No. R9-2004-0258	2004	Storm drain cleanup	Site Investigation Currently Underway	2007 (Projected)	Not known at this time.
Campbell Industries	Issued CAO No. 95-21	1995	Sand cap	Construction Currently Underway	2007 (Projected)	135,000
San Diego Bay Shoreline, Between Sampson and 28 th Streets	Issued Tentative CAO No. R9-2005-0126	2005	Dredging (proposed)	Regional Board proceedings to consider CAO Issuance in FY 2005-06 underway	2008 (Projected)	886,000 (proposed)
San Diego Bay Shoreline, Downtown Anchorage	Undertake TMDL Development Project	2003	TMDL and sediment cleanup (proposed)	Site Investigation Currently Underway	2008 (Projected)	Not known at this time
San Diego Bay Shoreline, Vicinity of B Street and Broadway Piers.	Undertake TMDL Development Project	2003	TMDL and sediment cleanup (proposed)	Site Investigation Currently Underway	2008 (Projected)	Not known at this time
San Diego Bay Shoreline, Near Switzer Creek	Undertake TMDL Development Project	2003	TMDL and sediment cleanup (proposed)	Site Investigation Currently Underway	2008 (Projected)	Not known at this time
San Diego Bay Shoreline, Near Chollas Creek	Undertake TMDL Development Project	2000	TMDL and sediment cleanup (proposed)	Site Investigation Currently Underway	2007 (Projected)	Not known at this time
San Diego Bay Shoreline, Seventh Street Channel	Undertake TMDL Development Project	2000	TMDL and Sediment Cleanup (Proposed)	Site Investigation Currently Underway	2007 (Projected)	Not known at this time
San Diego Bay Shoreline, Near Sub Base	Undertake TMDL Development Project	2003	TMDL and sediment cleanup (proposed)	Site Investigation Currently Underway	2007 (Projected)	Not known at this time

Site	Regulatory Action	Year Action Taken	Remedial Actions	Status	Completion Year or Estimated Completion Year	Dredged or Capped PCB Marine Sediment Volume (Cubic Yards)
San Diego Bay Shoreline, 32 nd Street Naval Station	Undertake TMDL Development Project	2007	TMDL and sediment cleanup (proposed)	Site Investigation Currently Underway	2009 (Projected)	Not known at this time
Solar Turbines	NA – DTSC Lead	NA	Storm drain cleanup	Remedial Investigation/Feasibility Study Underway		Not known at this time.
Goodrich Aerostructures	Issued CAO No. 98-08	1998	Storm drain mitigation & dredging of tidal marsh sediment	Completed	2004	531 tons from tidal marsh

Finally, we have concerns about using the 20 ng/g screening value from the Brodberg and Pollack study (1999)² as a threshold value for listing the Bay for non-attainment of the Clean Water Act section 101(a) fishable use. The 20 ng/g screening level is inappropriate to use as an indicator of impairment because the screening level is overly conservative and does not demonstrate the existence of a human health risk from fish consumption. Such a risk can only be determined through a more complete assessment.

Brodberg and Pollack (1999) measured the levels of selected target chemicals in fish from two California Lakes to provide an initial database to determine whether additional sampling and health evaluation of the data were warranted in either lake. The report stated that:

“The Screening Value (SV) approach is recommended by the USEPA (1995) to identify chemical contaminants in fish tissue at concentrations which may be of human health concern for frequent consumers of sport fish. The SVs are not intended as levels at which consumption advisories should be issued but are useful as a guide to identify fish species and chemicals from a limited data set, such as this one, for which more intensive sampling, analysis or health evaluation are to be recommended.”

Since the authors of the report did not recommend the screening levels be used to trigger consumption advisories, using the screening levels to place San Diego Bay on the 303(d) list for PCBs in fish tissue is premature. The fish tissue data from San Diego Bay indicate that more detailed studies are needed to determine if PCB levels in Bay fish present a significant human health risk.

² Brodberg, Robert K., and Gerald A. Pollock. 1999. Prevalence of selected target chemical contaminants in sport fish from two California lakes: Public Health Designed Screening Study. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment. 21 pp. plus Appendices.

Further, in its 2004 Report on Environmental Protection Indicators for California (EPIC)³ the State Water Board did not report an EPIC Indicator for Fish Consumption Advisories. The stated reason in the report was that 2001 and 2002 data were not complete enough for the Office of Environmental Health Hazard Evaluation to conduct a full assessment. San Diego Bay should not be listed for PCB impairment in fish tissue until data are sufficient to conduct a full assessment, and a fish consumption advisory is issued.

This approach is consistent with the U.S. Environmental Protection Agency's (USEPA) recommendations⁴ on the use of fish consumption advisories in determining attainment of water quality standards and listing impaired waterbodies under Clean Water Act section 303(d). For the purposes of determining whether a waterbody is impaired and should be included on the List, USEPA considers a fish consumption advisory, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a Clean Water Act section 101(a) fishable use when:

1. the advisory is based on fish tissue data;
2. the data are collected from the specific waterbody in question; and
3. the risk assessment parameters of the advisory are cumulatively equal to or less protective than those in the State water quality standards.

The USEPA is silent on the use of a fish tissue screening values as indicators of impairment.

8. General Comments

Regarding water quality objectives for bacteria listings, the Ocean Plan and the Basin Plan should be cited as the source of the bacteria water quality objectives. The draft currently cites Assembly Bill 411 as the source of the bacteria water quality objectives. Assembly Bill 411 was codified in the Health and Safety Code and is discussed in the Ocean Plan, but is not, in and of itself, a water quality objective in the Ocean Plan. The Health and Safety Code Beach Monitoring requirements are not part of the Region 9 Basin Plan and are not appropriate to site as water quality objectives for inland surface water, enclosed bays, and estuaries such as Mission Bay.

The San Diego Water Board agrees that chronic toxicity can affect aquatic life beneficial uses, but the rationale for applying it to RARE or WILD beneficial uses has not been described in adequate detail for the purposes of these listings. Without additional information, this is not sufficient to support the impairment to RARE or WILD beneficial uses.

³ State Water Board. January 2004. 2003 Update of water-related EPIC indicator trends relevant to the work of the State Water Resources Control Board and Regional Water Quality Control Boards. 45 pp. plus appendices.

⁴ USEPA. October 24, 2000. Letter from Geoffrey H. Grubbs and Robert H. Wayland III. USEPA Office of Water. WQSP-00-03.

Attachments:

1. Analysis of Mission Bay Bacteria Data for Dry Weather and Storm Weather
2. Location Maps of Mission Bay Sampling Points and Extent of Impairment for Dry Weather and Storm Weather
3. Aliso Creek Data Analysis
4. Bacteria Data and Analysis Submitted by the City of Laguna Beach
5. Bacteria Data and Analysis Submitted by the City of Carlsbad
6. 18 Fact Sheets Regarding New Proposed Beach Delistings for Orange and San Diego Counties
7. Additional Information of Support Beach Delistings Submitted by the City of Laguna Beach

Water Body Sampling Location: Aliso Creek (C1)

This site is located on Aliso Beach at the mouth of Aliso Creek. It lies within the Aliso HSA and is one of three shoreline sites on the 303(d) List within the Aliso HSA.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 8). Samples were taken throughout the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 10. A total of 1,949 analyses were performed from 1999 through 2004. Of these, there were 818 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci criterion, which was exceeded 408 times during this period. There were 222 exceedances for total coliform and 188 exceedances for fecal coliform. A total of 818 exceedances out of 1,949 analyses is well above the number of exceedances allowed by the SWRCB guidance document. The rolling geometric mean and monthly geometric mean percent exceedance values concur with the single sample results. The percent exceedance value was 100% for the rolling geometric mean and 95.84% for the monthly geometric mean. These results suggest that the Aliso Creek site should remain on the 303(d) List.

Table 10. Summary of bacteriological data at Aliso Creek (C1) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Creek mouth	C1	1,949	1,131	818	322	41.97
Rolling Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Creek mouth	C1	2,136	0	2,136	352	100
Monthly Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Creek mouth	C1	72	3	69	11	95.84

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Water Body Sampling Location: Aliso Beach – North (S10)

This site is located at the northern end of Aliso Beach. It is one of three sites within the Aliso HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 9). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 11. A total of 2,038 analyses were performed from 1999 through 2004. Of these, there were 43 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci indicator, which was exceeded 24 times during this period. The fecal coliform standard was exceeded ten times and the total coliform standard was exceeded nine times during this period. A total of 43 exceedances out of 2,038 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. The percent exceedance values for the rolling geometric mean and the monthly geometric mean analyses were also low (1.26% and 1.39%, respectively), suggesting that the Aliso Beach – North site should be considered for de-listing from the 303(d) List.

Table 11. Summary of bacteriological data at Aliso Beach – North (S10) from January 1999 through 2004.

The table includes the total number of analyses performed at the site for all three indicators combined (Total The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Beach – North	S10	2,038	1,995	43	336	2.11
Rolling Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Beach – North	S10	2,150	2,123	27	355	1.26
Monthly Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Beach – North	S10	72	71	1	11	1.39

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Water Body Sampling Location: Blue Lagoon (S13)

This site is located on Laguna Beach at Blue Lagoon Place. It is one of three sites within the Aliso HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 10). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 12. A total of 1,937 analyses were performed from 1999 through 2004. Of these, there were 49 exceedances of the bacterial standards for all three indicators with the majority occurring for the enterococci indicator, which was exceeded 41 times. There were four exceedances each for total and fecal coliform. The majority of exceedances occurred from 1999 through the beginning of 2001. A total of 49 exceedances out of 1,937 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. The percent exceedance values for the rolling geometric mean and monthly geometric mean analyses were also very low (2.98% and 0%, respectively). These data suggest that the Blue Lagoon Place site should be considered for de-listing from the 303(d) List.

Table 12. Summary of bacteriological data at Blue Lagoon (S13) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Aliso (HSA)	Blue Lagoon Place	S13	1,937	1,888	49	319	2.53
Rolling Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Blue Lagoon Place	S13	2,150	2,086	64	355	2.98
Monthly Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Blue Lagoon Place	S13	72	72	0	11	0

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Pacific Ocean Shoreline

Comment letter 187
Fig. 9

RAM

==== BinomBal 1.4, Balanced Error Binomial Program Output ==== Apr 28, 2006
11:20:19

Null Hypothesis: $r \geq r1 = 0.25$
Alt. Hypothesis: $r < r2 = 0.1$
Effect Size : $es = 0.15$

ssize	k	alpha	beta	min a-b	b/a
5924,	1210,	0.00000,	0.00000,	0.00000,	-9.00000

Pacific Ocean Skouline *Comment Letter 187*
leg 9

RAM

(POSALisoHSA_RollGeoMean.txt

==== BinomBal 1.4, Balanced Error Binomial Program Output ====

Apr 28, 2006

11:22:52

Null Hypothesis: $r \geq r1 = 0.25$
Alt. Hypothesis: $r < r2 = 0.1$
Effect Size : $es = 0.15$

ssize	k	alpha	beta	min a-b	b/a
6436,	1326,	0.00000,	0.00000,	0.00000,	-9.00000

Pacific Coast Shaulane
Aliso HSA

Comment Letter 187
Reg 9. RSM

===== BinomBal 1.4, Balanced Error Binomial Program Output ===== Apr 28, 2006
11:24:42

Null Hypothesis: $r \geq r1 = 0.25$
Alt. Hypothesis: $r < r2 = 0.1$
Effect Size : $es = 0.15$

ssize	k	alpha	beta	min a-b	b/a
216,	35,	0.00123,	0.00163,	0.00040,	1.32359

Water Body Sampling Location: Bluebird Canyon Road (S15)

143

This site is located at Arch Cove at Bluebird Canyon Road. It is one of four sites within the Laguna Beach HSA, which is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 12). Samples were taken throughout the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 14. A total of 1,940 analyses were performed from 1999 through 2004. Of these, there were 110 exceedances of the bacterial standards for all three indicators with the majority of exceedances for the enterococci indicator, which was exceeded a total of 83 times. There were 11 exceedances for fecal coliform and 16 exceedances for total coliform. The majority of exceedances occurred from 1999 through the beginning of 2001. A total of 110 exceedances out of 1,940 analyses is well below the number of exceedances allowed by the SWRCB guidance document. The percent exceedance values based on the rolling geometric mean and monthly geometric mean analyses were higher than those at most other sites (15.4% and 11.12%, respectively). However, the number of exceedances was still less than the number allowable for both analyses. Thus, the Bluebird Canyon Rd. site should be considered for delisting from the 303(d) List.

Table 14. Summary of bacteriological data at Bluebird Canyon Rd. (S15) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Bluebird Canyon Rd.	S15	1,940	1,830	110	320	5.67
Rolling Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Bluebird Canyon Rd.	S15	2,150	1,819	331	355	15.4
Monthly Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Bluebird Canyon Rd.	S15	72	64	8	11	11.12

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Water Body Sampling Location: Hotel Laguna (S16)

This site is located on Laguna Beach at the projection of Hotel Laguna. It is one of four sites within the Laguna Beach HSA, which is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 13). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 15. A total of 1,875 analyses were performed from 1999 through 2004. Of these, there were 72 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci indicator, which was exceeded a total of 58 times during this period. There were nine exceedances for total coliform and five fecal coliform exceedances. A total of 72 exceedances out of 1,875 analyses is well below the number of exceedances allowed by the SWRCB guidance document. In contrast, the percent exceedance values based on the rolling geometric mean and monthly geometric mean analyses were higher for this site than most others (12.3% and 12.5%, respectively). However, the number of exceedances was less than the number allowable for both analyses. These result data suggest that the Laguna Hotel site should be considered for de-listing from the 303(d) List.

Table 15. Summary of bacteriological data at Hotel Laguna (S16) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Hotel Laguna	S16	1,875	1,803	72	309	3.84
Rolling Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Hotel Laguna	S16	2,144	1,880	264	354	12.3
Monthly Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Hotel Laguna	S16	72	63	9	11	12.5

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Water Body Sampling Location: Laguna Main Beach (OLB00)

This site is located at the Laguna Main Beach at the northern end of the Laguna HSA. It is one of four sites within the Laguna Beach HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 14). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 16. A total of 942 analyses were performed from 1999 through 2004. Of these, there were 37 exceedances of the bacterial standards for all three indicators with the majority for the enterococci indicator, which was exceeded 21 times during this period. There were nine exceedances for fecal coliform and seven exceedances for total coliform. A total of 37 exceedances out of 942 analyses is well below the number of exceedances allowed by the SWRCB guidance document. In contrast, the percent exceedance values based on the rolling geometric mean and monthly geometric mean analyses were higher for this site than most others (12.9% and 5.71%, respectively). However, the number of exceedances was less than the number allowable for both analyses. These result data suggest that the Laguna Main Beach site should be considered for de-listing from the 303(d) List.

Table 16. Summary of bacteriological data at Laguna Main Beach (OLB00) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Laguna Main Beach	OLB00	942	905	37	155	3.98
Rolling Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Laguna Main Beach	OLB00	713	621	92	117	12.9
Monthly Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Laguna Main Beach	OLB00	70	66	4	11	5.71

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Water Body Sampling Location: Lagunita Place (S14)

This site is located at Victoria Beach at Dumond Drive. It is one of four sites within the Laguna Beach HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 11). Samples were taken throughout the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 13. A total of 1,858 analyses were performed from January 1999 through 2004. Of these, there were only 41 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci indicator, which was exceeded 33 times during this period. There were only three exceedances for fecal coliform and five exceedances for total coliform. A total of 41 exceedances out of 1,858 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. In addition, the percent exceedance values for the rolling geometric mean and monthly geometric mean analyses were also very low (1.67% and 1.39%, respectively). These results suggest that the Lagunita Place site should be considered for de-listing from the 303(d) List.

Table 13. Summary of bacteriological data at Victoria Beach (S14) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Lagunita Place	S14	1,858	1,817	41	306	2.21
Rolling Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Lagunita Place	S14	2,150	2,114	36	355	1.67
Monthly Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Lagunita Place	S14	72	71	1	11	1.39

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Pacific Ocean Shoulime

Comment Letter 137
Reg. 9

RAM

POSLagBchMSA_SingSamp.txt

==== BinomBal 1.4, Balanced Error Binomial Program Output ====

Apr 28, 2006

14:28:26

Null Hypothesis: $r \geq r1 = 0.25$
Alt. Hypothesis: $r < r2 = 0.1$
Effect Size : $es = 0.15$

ssize	k	alpha	beta	min a-b	b/a
6615,	1367,	0.00000,	0.00000,	0.00000,	-9.00000

Pacific Ocean Anneline

Comment Letter DD137
Reg 9

RAM

==== BinomBal 1.4, Balanced Error Binomial Program Output ====

Apr 28, 2006

Null Hypothesis: $r \geq r1 = 0.25$
Alt. Hypothesis: $r < r2 = 0.1$
Effect Size : $es = 0.15$

ssize	k	alpha	beta	min a-b	b/a
7157,	1490,	0.00000,	0.00000,	0.00000,	-9.00000

Pacific Ocean Houline

Comment Letter 187
Reg 9

RSJ

==== BinomBal 1.4, Balanced Error Binomial Program Output ====

Apr 28, 2006

Null Hypothesis: $r \geq r1 = 0.25$
Alt. Hypothesis: $r < r2 = 0.1$
Effect Size : $es = 0.15$

ssize	k	alpha	beta	min a-b	b/a
286,	47,	0.00032,	0.00027,	0.00005,	0.83726

Water Body Sampling Location: 1000 Steps Beach (S4)

143

This site is located at 1000 Steps Beach at Pacific Coast Highway and 9th Street. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 2). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 4. A total of 1,918 analyses were performed from 1999 through 2004. Of these, there were 19 exceedances of the bacterial standards for all three indicators. There were 17 exceedances for enterococcus, two exceedances for total coliform and no exceedances for fecal coliform. The majority of exceedances at this site occurred from 1999 through the beginning of 2001. A total of 19 exceedances out of 1,918 samples is well below the number of exceedances allowed by the SWRCB guidance document based on the single sample criteria. In addition, there were no exceedances based on the rolling geometric mean and monthly geometric mean criteria. These data suggest that the 1000 Steps Beach site should be considered for delisting from the 303(d) List.

Table 4. Summary of bacteriological data at 1000 Steps Beach (S4) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	1000 Steps Beach	S4	1,918	1,899	19	317	0.99
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	1000 Steps Beach	S4	2,150	2,150	0	355	0.00
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	1000 Steps Beach	S4	72	72	0	11	0.00

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Water Body Sampling Location: Laguna Lido (S5)

This site is located at the southern end of Laguna Beach upcoast below Seacliff Dr. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 3). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 5. A total of 1,921 analyses were performed from 1999 through 2004. Of these, there were 74 exceedances of the bacterial standards based on single sample criteria (the enterococci standard was exceeded 60 times, total coliform exceeded five times, and the fecal coliform standard was exceeded nine times). The majority of exceedances occurred from 1999 through the beginning of 2001. A total of 74 exceedances out of 1,921 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on the single sample criteria. In addition, the percent exceedance values based on the rolling geometric mean and monthly geometric mean were also low (6.28% and 4.17%, respectively). These results suggest that the Laguna Lido site should be considered for de-listing from the 303(d) List.

Table 5. Summary of bacteriological data at Laguna Lido (S5) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	Laguna Lido	S5	1,921	1,847	74	317	3.85
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Laguna Lido	S5	2,150	2,015	135	355	6.28
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Laguna Lido	S5	72	69	3	11	4.17

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Water Body Sampling Location: Table Rock (S6)

This site is located in South Laguna Beach at Table Rock Drive. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 4). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 6. A total of 1,920 analyses were performed from 1999 through 2004. Of these, there were 23 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci criterion, which was exceeded 19 times. There were only three exceedances for total coliform and one exceedance for fecal coliform during this period. A total of 23 exceedances out of 1,920 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on the single sample criteria. In addition, the percent exceedance values for the rolling geometric mean and monthly mean values were also very low (0.56% and 1.39%, respectively). These results suggest that the Table Rock site should be considered for de-listing from the 303(d) List.

Table 6. Summary of bacteriological data at Table Rock (S6) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	Table Rock	S6	1,920	1,897	23	317	1.20
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Table Rock	S6	2,150	2,138	12	355	0.56
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Table Rock	S6	72	71	1	11	1.39

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Water Body Sampling Location: Camel Point (S7)

This site is located at Camel Point on South Laguna Beach. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 5). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 7. A total of 2,066 analyses were performed from 1999 through 2004. Of these, there were 75 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci criterion, which was exceeded 53 times during this period. There were 13 exceedances for fecal coliform and only 9 exceedances for total coliform. The majority of exceedances occurred from 1999 through the beginning of 2001. A total of 75 exceedances out of 2,066 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. In addition, the percent exceedance values for the rolling geometric mean and the monthly geometric mean were also low (5.12% and 4.17%, respectively). These data suggest that the Camel Point site should be considered for de-listing from the 303(d) List.

Table 7. Summary of bacteriological data at Camel Point (S7) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	Camel Point	S7	2,066	1,991	75	340	3.63
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Camel Point	S7	2,150	2,040	110	355	5.12
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Camel Point	S7	72	69	3	11	4.17

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Water Body Sampling Location: Aliso Beach – South (S8).

This site is located at the southern end of Aliso Beach. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 6). Samples were taken throughout the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 8. A total of 2,033 analyses were performed from 1999 through 2004. Of these, there were 59 exceedances of the bacterial standards for all three indicators (39 for enterococci, six for fecal coliform, and 14 for total coliform). A total of 59 exceedances out of 2,033 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. The percent exceedance values for the rolling geometric mean and the monthly geometric mean were also very low (1.44% and 0.00%, respectively). These results suggest that the Aliso Beach – South site should be considered for de-listing from the 303(d) List.

Table 8. Summary of bacteriological data at Aliso Beach – South (S8) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach-South	S8	2,033	1,974	59	335	2.90
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach-South	S8	2,150	2,119	31	355	1.44
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach-South	S8	72	72	0	11	0.00

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Water Body Sampling Location: Aliso Beach – Middle (S9)

This site is located in the middle section of Aliso Beach and is at the northern end of Dana Point HSA. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 7). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 9. A total of 2,097 analyses were performed from 1999 through 2004. Of these, there were 169 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci criterion, which was exceeded 97 times. Both total and fecal coliform exceeded the standard 36 times each during this period. A total of 169 exceedances out of 2,097 analyses is below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. However, the results of the rolling geometric mean and monthly geometric mean analyses contradict those of the single sample analysis. The percent exceedance value was 22.1% for the rolling geometric mean and 22.2% for the monthly geometric mean. These values are well above the number of exceedances allowed by the SWRCB guidance document and suggest that the Aliso Beach – Middle site should remain on the 303(d) List.

Table 9. Summary of bacteriological data at Aliso Beach – Middle (S9) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach – Middle	S9	2,097	1,928	169	346	8.06
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach – Middle	S9	2,150	1,675	475	355	22.1
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach – Middle	S9	72	56	16	11	22.2

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

PAC. COAST SHORELINE
DANA PT HSA

COMMENT LETTER 137

27 APR
RAM

JINGLE SAMPLE

BinomBal.txt

==== BinomBal 1.4, Balanced Error Binomial Program Output =====
14:37:10

Apr 27, 2006

Null Hypothesis: $r \geq r1 = 0.25$
Alt. Hypothesis: $r < r2 = 0.1$
Effect Size : $es = 0.15$

ssize	k	alpha	beta	min a-b	b/a
11955,	2356,	0.00000,	0.00000,	0.00000,	-9.00000

1 A.C. COAST SHORELINE
DANA POINT HSA

COMMENT LETTER BT

1521

POSDanaPtGeoMean.txt

==== BinomBal 1.4, Balanced Error Binomial Program Output ==== Apr 27, 2006
14:52:35

Null Hypothesis: $r \geq r1 = 0.25$
Alt. Hypothesis: $r < r2 = 0.1$
Effect Size : $es = 0.15$

ssize	k	alpha	beta	min a-b	b/a
12900,	2491,	0.00000,	0.00000,	0.00000,	-9.00000

Pacific Coast Moulane Comments Letter 10187 RAM
Dana Point HLA

POSDanaPt_MoGeoMean.txt

==== BinomBal 1.4, Balanced Error Binomial Program Output ==== Apr 27, 2006
16:15:38

Null Hypothesis: $r \geq r1 = 0.25$
Alt. Hypothesis: $r < r2 = 0.1$
Effect Size : $es = 0.15$

ssize	k	alpha	beta	min a-b	b/a
432,	71,	0.00001,	0.00001,	0.00000,	1.09611

Water Body Sampling Location: Heisler Park North (OLB05)

143

This site is located at the north end of Heisler Park at Crescent Bay Beach. It is the only site within the San Joaquin Hills HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 15). Samples were taken throughout the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 17. A total of 917 analyses were performed from 1999 through 2004. Of these, there were only seven exceedances of the bacterial standards for the fecal coliform and enterococci indicators. There were five exceedances for enterococcus and two for fecal coliform. Seven exceedances out of 917 analyses is well below the number of exceedances allowed by the SWRCB guidance document. In addition, there were no exceedances based on the rolling geometric mean and monthly geometric mean analyses. These results suggest that the Heisler Park North site should be considered for de-listing from the 303(d) List.

Table 17. Summary of bacteriological data at Heisler Park North (OLB05) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, San Joaquin Hills (HSA)	Heisler Park North	OLB05	917	910	7	151	0.76
Rolling Geometric Mean							
Pacific Ocean Shoreline, San Joaquin Hills (HSA)	Heisler Park North	OLB05	615	615	0	101	0.00
Monthly Geometric Mean							
Pacific Ocean Shoreline, San Joaquin Hills (HSA)	Heisler Park North	OLB05	70	70	0	11	0.00

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Based on the info above, when looking at each individual analysis the water body could be delisted for Bacterial Indicators.

Pacific Ocean Shoreline - Aliso HSA (Bacterial Indicators)

	Single Sample			Rolling GeoMean			Monthly GeoMean		
	Total Analysis	No	Yes	Total Analysis	No	Yes	Total Analysis	No	Yes
Aliso Creek - mouth	1949	1131	818	2136	0	2136	72	3	69
Aliso Beach - North	2038	1995	43	2150	2123	27	72	71	1
Blue Lagoon Place	1937	1888	49	2150	2086	64	72	72	0
	5924	5014	910	6436	4209	2227	216	146	70

Data was taken from the 'Ocean Bacteriological Data Evaluation for City of Laguna Beach, 1999 through 2004 - Final Report' Weston Solutions Inc.
None of the data was used in the evaluation for the 2002 303(d) Listing

BiNomial Test

Single Sample For 5924 samples the maximum number of allowable exceedances is 1210.
The number of exceedances was 910; therefore, based on this data **alone**
this waterbody segment could be DeListed for bacterial indicators.

Rolling GeoMean For 6436 samples the maximum number of allowable exceedances is 1326.
The number of exceedances was 2227; therefore, based on this data **alone**
this waterbody segment should not be DeListed for bacterial indicators.

Monthly GeoMean For 216 samples the maximum number of allowable exceedances is 35.
The number of exceedances was 23; therefore, based on this data **alone**
this waterbody segment should not be DeListed for bacterial indicators.

Findings: *Based on an evaluation in total, the above waterbody segment **should not be DeListed** for Bacterial Indicators*

R. Musial (Apr24 - May 2nd, 2006)

Pacific Ocean Shoreline - Laguna Beach HSA (Bacterial Indicators)

	Single Sample			Rolling GeoMean			Monthly GeoMean		
	Total Analysis	No	Yes	Total Analysis	No	Yes	Total Analysis	No	Yes
Bluebird Canyon Rd.	1940	1830	110	2150	1819	331	72	64	8
Hotel Laguna	1875	1803	72	2144	1880	264	72	63	9
Laguna Main Beach	942	905	37	713	621	92	70	66	4
Lagunita Place	<u>1858</u>	<u>1817</u>	<u>41</u>	<u>2150</u>	<u>2114</u>	<u>36</u>	<u>72</u>	<u>71</u>	<u>1</u>
	6615	6355	260	7157	6434	723	286	264	22

Data was taken from the 'Ocean Bacteriological Data Evaluation for City of Laguna Beach, 1999 through 2004 - Final Report' Weston Solutions Inc.
None of the data was used in the evaluation for the 2002 303(d) Listing

BiNomial Test

Single Sample For 6615 samples the maximum number of allowable exceedances is 1367.
The number of exceedances was 260; therefore, based on this data **alone** this waterbody segment could be DeListed for bacterial indicators.

Rolling GeoMean For 7157 samples the maximum number of allowable exceedances is 1490.
The number of exceedances was 723; therefore, based on this data **alone** this waterbody segment could be DeListed for bacterial indicators.

Monthly GeoMean For 286 samples the maximum number of allowable exceedances is 47.
The number of exceedances was 22; therefore, based on this data **alone** this waterbody segment could be DeListed for bacterial indicators.

Findings: *Based on an evaluation in total, the above waterbody segment **could be DeListed** for Bacterial Indicators*

R. Musial (Apr24 - May 2nd, 2006)

Pacific Ocean Shoreline - Dana Point HAS (Bacterial Indicators)

	Single Sample			Rolling GeoMean			Monthly GeoMean		
	Total Analysis	No	Yes	Total Analysis	No	Yes	Total Analysis	No	Yes
1000 Steps	1918	1899	19	2150	2150	0	72	72	0
Laguna Lido	1921	1847	74	2150	2015	135	72	69	3
Table Rock	1920	1897	23	2150	2138	12	72	71	1
Camel Point	2066	1991	75	2150	2040	110	72	69	3
Aliso Beach South	2033	1974	59	2150	2119	31	72	72	0
Aliso Beach Middle	<u>2097</u>	<u>1928</u>	<u>169</u>	<u>2150</u>	<u>1675</u>	<u>475</u>	<u>72</u>	<u>56</u>	<u>16</u>
Total	11955	11536	419	12900	12137	763	432	409	23

Data was taken from the 'Ocean Bacteriological Data Evaluation for City of Laguna Beach, 1999 through 2004 - Final Report' Weston Solutions Inc.
None of the data was used in the evaluation for the 2002 303(d) Listing

BiNomial Test

Single Sample For 11955 samples the maximum number of allowable exceedances is 2356.
The number of exceedances was 419; therefore, based on this data **alone**
this waterbody segment could be DeListed for bacterial indicators.

Rolling GeoMean For 12900 samples the maximum number of allowable exceedances is 2491.
The number of exceedances was 763; therefore, based on this data **alone**
this waterbody segment could be DeListed for bacterial indicators.

Monthly GeoMean For 432 samples the maximum number of allowable exceedances is 71.
The number of exceedances was 23; therefore, based on this data **alone**
this waterbody segment could be DeListed for bacterial indicators.

Findings: *Based on an evaluation in total, the above waterbody segment **could be DeListed** for Bacterial Indicators*

R. Musial (Apr24 - May 2nd, 2006)

Comment Letter No. 187 - Reg. Bd. 9 (January30, 06)

A worksheet for San Juan Hills HAS was not developed because the information contained on page 38 of the 'Ocean Bacteriological Data Evaluation for City of Laguna Beach, 1999 through 2004 - Final Report' Weston Solutions Inc. is sufficient for evaluation and determination whether to List or DeList for Indicator Bacteria

A copy of page 38 is attached.

R. Musial (Apr24 - May 2nd, 2006)

2002 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS Approved by USEPA: July 2003

NO.	TYPE	NAME	ID	STATUS	WQ	WQ	WQ
					STATUS	WQ	WQ
9	C	Pacific Ocean Shoreline, Laguna Beach HSA <i>ORANGE Co.</i>	90112000				
				Bacteria Indicators	Medium	1.8 Miles	
				<i>Impairment located at Main Laguna Beach, Laguna Beach at Ocean Avenue, Laguna Beach at Laguna Avenue, Laguna Beach at Cleo Street, Arch Cove at Bluebird Canyon Road, Laguna Beach at Dumond Drive.</i>			
				Nonpoint/Point Source			
9	C	Pacific Ocean Shoreline, Loma Alta HA	90410000				
				Bacteria Indicators	Low	1.1 Miles	
				<i>Impairment located at Loma Alta Creek Mouth.</i>			
				Nonpoint/Point Source			
9	C	Pacific Ocean Shoreline, Lower San Juan HSA	90120000				
				Bacteria Indicators	Medium	1.2 Miles	
				<i>Impairment located at North Beach Creek, San Juan Creek (large outlet), Capistrano Beach, South Capistrano Beach at Beach Road.</i>			
				Nonpoint/Point Source			
9	C	Pacific Ocean Shoreline, Miramar Reservoir HA	90610000				
				Bacteria Indicators	Low	0.39 Miles	
				<i>Impairment located at Torrey Pines State Beach at Del Mar (Anderson Canyon).</i>			
				Urban Runoff/Storm Sewers			
				Unknown Nonpoint Source			
				Unknown point source			
9	C	Pacific Ocean Shoreline, San Clemente HA	90130000				
				Bacteria Indicators	Medium	3.7 Miles	
				<i>Impairment located at Poche Beach (large outlet), Ole Hanson Beach Club Beach at Pico Drain, San Clemente City Beach at El Portal St. Stairs, San Clemente City Beach at Mariposa St., San Clemente City Beach at Linda Lane, San Clemente City Beach at South Linda Lane, San Clemente City Beach at Lifeguard Headquarters, Under San Clemente Municipal Pier, San Clemente City Beach at Trafalgar Canyon (Trafalgar Ln.), San Clemente State Beach at Riviera Beach, San Clemente State Beach at Cypress Shores.</i>			
				Nonpoint/Point Source			
9	C	Pacific Ocean Shoreline, San Diego HU	90711000				
				Bacteria Indicators	Medium	0.37 Miles	
				<i>Impairment located at San Diego River Mouth (aka Dog Beach).</i>			
				Nonpoint/Point Source			
9	C	Pacific Ocean Shoreline, San Dieguito HU	90511000				
				Bacteria Indicators	Low	0.86 Miles	
				<i>Impairment located at San Dieguito Lagoon Mouth, Solana Beach.</i>			
				Nonpoint/Point Source			

2002 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENT

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

Approved by USEPA:
July 2003

9	C	Pacific Ocean Shoreline, San Dieguito HU	90511000	Bacteria Indicators	Low	0.86 Miles
				Impairment located at San Dieguito Lagoon Mouth, Solana Beach.		
				Nonpoint/Point Source		
9	C	Pacific Ocean Shoreline, San Joaquin Hills HSA ORANGE CO.	90111000	Bacteria Indicators	Low	0.63 Miles
				Impairment located at Cameo Cove at Irvine Cove Dr./Riviera Way, Heisler Park-North		
				Urban Runoff/Storm Sewers		
				Unknown Nonpoint Source		
				Unknown point source		
9	C	Pacific Ocean Shoreline, San Luis Rey HU	90311000	Bacteria Indicators	Low	0.49 Miles
				Impairment located at San Luis Rey River Mouth.		
				Nonpoint/Point Source		
9	C	Pacific Ocean Shoreline, San Marcos HA	90451000	Bacteria Indicators	Low	0.5 Miles
				Impairment located at Moonlight State Beach.		
				Nonpoint/Point Source		
9	C	Pacific Ocean Shoreline, Scripps HA	90630000	Bacteria Indicators	Medium	3.9 Miles
				Impairment located at La Jolla Shores Beach at El Paseo Grande, La Jolla Shores Beach at Caminito Del Oro, La Jolla Shores Beach at Vallecitos, La Jolla Shores Beach at Ave de la Playa, Casa Beach (Childrens Pool), South Casa Beach at Coast Blvd., Whispering Sands Beach at Ravina St., Windansea Beach at Vista de la Playa, Windansea Beach at Bonair St., Windansea Beach at Playa del Norte, Windansea Beach at Palomar Ave., Tourmaline Surf Park, Pacific Beach at Grand Ave.		
				Nonpoint/Point Source		
9	C	Pacific Ocean Shoreline, Tijuana HU	91111000	Bacteria Indicators	Low	3 Miles
				Impairment located from the border, extending north along the shore.		
				Nonpoint/Point Source		
9	R	Pine Valley Creek (Upper)	91141000	Enterococci	Medium	2.9 Miles
				Grazing-Related Sources		
				Concentrated Animal Feeding Operations (permitted, point source)		
				Transient encampments		

COMMENT LETTER (187) FROM: REGION 9
 ALISO CREEK TRIBUTARIES
 2002 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS

R. MUSIAL
 25 APRIL 06,

Approved by USEPA:
 July 2003

8	R	Summit Creek	80171000	Nutrients	High	1.5 Miles	2004
Construction/Land Development							
9	R	Agua Hedionda Creek	90431000	Total Dissolved Solids	Low	7 Miles	
				Urban Runoff/Storm Sewers			
				Unknown Nonpoint Source			
				Unknown point source			
9	E	Agua Hedionda Lagoon	90431000	Bacteria Indicators	Low	6.8 Acres	
				Nonpoint/Point Source			
				Sedimentation/Siltation	Low	6.8 Acres	
				Nonpoint/Point Source			
9	R	Aliso Creek	90113000	Bacteria Indicators	Medium	19 Miles	
				Urban Runoff/Storm Sewers			
				Unknown point source			
				Nonpoint/Point Source			
				Phosphorus	Low	19 Miles	
				Impairment located at lower 4 miles.			
				Urban Runoff/Storm Sewers			
				Unknown Nonpoint Source			
				Unknown point source			
				Toxicity	Low	19 Miles	
				Urban Runoff/Storm Sewers			
				Unknown Nonpoint Source			
				Unknown point source			
9	E	Aliso Creek (mouth)	90113000	Bacteria Indicators	Medium	0.29 Acres	
				Nonpoint/Point Source			
9	E	Buena Vista Lagoon	90421000	Bacteria Indicators	Low	202 Acres	
				Nonpoint/Point Source			
				Nutrients	Low	202 Acres	
				Estimated size of impairment is 150 acres located in upper portion of lagoon.			
				Nonpoint/Point Source			
				Sedimentation/Siltation	Medium	202 Acres	
				Nonpoint/Point Source			

Comment Letter #187 Attachment 4 24 Apr. 06
From Region 9 Site-Specific Results *RSM*

Site Locations

The beach shoreline sites along the City of Laguna Beach's coastline that are on the 303(d) List for apparent exceedances of indicator bacteria are presented in Table 3. These sites are shown graphically in Figure 1 along with the corresponding watershed HSA areas. A total of 14 beach shoreline sites that are on the 303(d) List were monitored from January 1999 through December 2004.

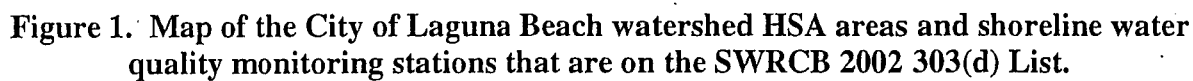
The shoreline sites are grouped in the 303(d) List by major hydrologic subarea (HSA) (Table 3). Of the 14 shoreline sites that are included on the 2002 303(d) List, six are located in the Dana Point HSA, three are located in the Aliso HSA, four are located in the Laguna Beach HSA and one is located in the San Joaquin Hills HSA. Each of these sites was assessed individually in this section. Each assessment includes a site description, an evaluation of the data's spatial and temporal representation, a review of the data relative to de-listing criteria, water body specific information and a graphical representation of the data showing the number of exceedances for each indicator. This assessment was designed to give a clear picture of the actual exceedance frequency over time at each site as well as to provide the SWRCB with information that can be readily used in their fact sheets.

Table 3. Coastal Shoreline sites within the City of Laguna Beach listed on the SWRCB 2002 303(d) List for impairment due to elevated levels of indicator bacteria.

303(d) List Site Name	Beach Area	Location of Impairment	Site Number
<i>Laguna HA</i> Pacific Ocean Shoreline, Dana Point (HSA) <i>1.14</i>	1000 Steps Beach ✓	At Pacific Coast Hwy and 9 th Street	S4
	Laguna Lido	Upcoast below Seaciff Dr.	S5
	Table Rock Drive ✓	Aliso Beach at Table Rock Dr.	S6
	Camel Point	Camel Point Dr.	S7
	Aliso Beach South	Aliso County Beach	S8
	Aliso Beach Middle	Aliso County Beach	S9
Pacific Ocean Shoreline, Aliso (HSA) <i>1.13</i>	Aliso Creek	Aliso Beach at Aliso Creek mouth	C1
	Aliso Beach North	Aliso County Beach	S10
	Blue Lagoon Place	Laguna Beach at Blue Lagoon Place	S13
Pacific Ocean Shoreline, Laguna Beach (HSA) <i>1.12</i>	Lagunita Place ✓	Victoria Beach at Dumond Dr.	S14
	Bluebird Canyon ✓	Arch Cove at Bluebird Canyon Rd.	S15
	Hotel Laguna ✓	Projection of Hotel Laguna	S16
	Laguna Main Beach	Upcoast of Broadway	OLB00
<i>1.11</i> Pacific Ocean Shoreline, San Joaquin Hills (HSA)	Heisler Park North ✓	Crescent Bay Beach north of Heisler Park	OLB05

Site Assessments

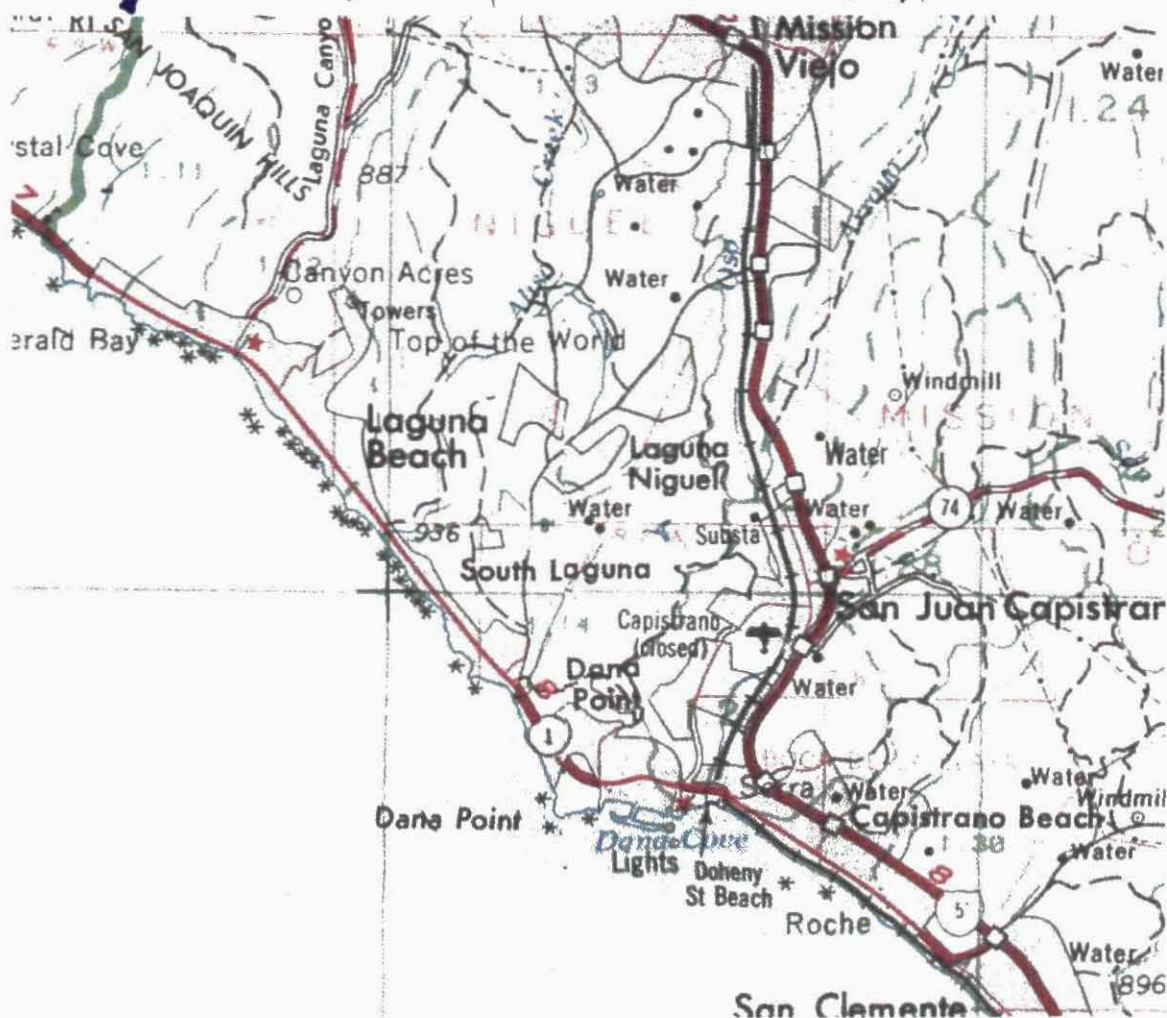
Individual assessments of each of the sites on the 2002 303(d) List are provided below.



REGIONAL
BOARD 8/9
BOUNDARY

Hwy 133

PACIFIC OCEAN SHORELINE
DANA POINT, ALISO, LAGUNA BEACH, SAN JOAQUIN HILLS
HSA



LEGEND

- Regional Boundary
- Hydrologic Unit Boundary (HU)
- Hydrologic Area Boundary (HA)
- Hydrologic Subarea Boundary (SA)

Water Body Sampling Location: 1000 Steps Beach (S4)

This site is located at 1000 Steps Beach at Pacific Coast Highway and 9th Street. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 2). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 4. A total of 1,918 analyses were performed from 1999 through 2004. Of these, there were 19 exceedances of the bacterial standards for all three indicators. There were 17 exceedances for enterococcus, two exceedances for total coliform and no exceedances for fecal coliform. The majority of exceedances at this site occurred from 1999 through the beginning of 2001. A total of 19 exceedances out of 1,918 samples is well below the number of exceedances allowed by the SWRCB guidance document based on the single sample criteria. In addition, there were no exceedances based on the rolling geometric mean and monthly geometric mean criteria. These data suggest that the 1000 Steps Beach site should be considered for delisting from the 303(d) List.

Table 4. Summary of bacteriological data at 1000 Steps Beach (S4) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	1000 Steps Beach	S4	1,918	1,899	19	317	0.99
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	1000 Steps Beach	S4	2,150	2,150	0	355	0.00
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	1000 Steps Beach	S4	72	72	0	11	0.00

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

Summary and Conclusions

The SWRCB 2002 303(d) List identifies four watershed areas within the City of Laguna Beach that have shoreline sites that are listed due to apparent elevated bacterial levels: Dana Point HSA, Aliso HSA, Laguna Beach HSA and San Joaquin Hills HSA. Individual ocean monitoring sites within these areas were assessed in the Results sections of this report. These results are summarized by area below.

Dana Point HSA

There are six sites on the 303(d) List for bacterial indicators in Dana Point HSA: 1000 Steps Beach, Laguna Lido, Table Rock, Camel Point, Aliso Beach-South and Aliso Beach-Middle (Table 18). The percent exceedance values for the first five sites listed above were less than 6.3% for all three criteria (single sample, rolling geometric mean, and monthly geometric mean) and typically less than 3%. All of these values were well below the number of exceedances allowed by the SWRCB de-listing guidance document, which suggests that these five sites should be considered for de-listing from the 303(d) List. The majority of exceedances for most of these sites occurred from 1999 through the beginning of 2001.

For the sixth site monitored in this HSA (Aliso Beach Middle, Site S9) the percent exceedance values were much greater (Table 18). The single sample limit exceedance value was 8.06%, which is less than the number of exceedances allowed by the SWRCB de-listing guidance document. However, the percent exceedance values for the rolling geometric mean and the monthly geometric mean were much higher (22.1% and 22.2%, respectively). These values are greater than the number of exceedances allowed by the SWRCB de-listing guidance document, which suggests that this site should not be considered for de-listing from the 303(d) List.

Table 18. De-listing consideration for coastal shoreline sites within the Dana Point HSA listed on the SWRCB 2002 303(d) List for impairment due to elevated levels of indicator bacteria (total coliform, fecal coliform, and enterococcus). The de-listing consideration is based on the sample size, the total number of exceedances, and the allowable exceedances identified by the SWRCB using three different criteria: the single sample limit, the rolling geometric mean, and the monthly geometric mean.

Beach Area	Location of Impairment	Site #	Single Sample De-Listing Consideration	Rolling Geo. Mean De-Listing Consideration	Monthly Geo. Mean De-Listing Consideration
1000 Steps Beach	1000 Steps Beach at Pacific Coast Hwy. and 9 th Street	S4	Yes	Yes	Yes
Laguna Lido	Upcoast below Seacliff Dr.	S5	Yes	Yes	Yes
Table Rock	Aliso Beach at Table Rock Dr.	S6	Yes	Yes	Yes
Camel Point	Camel Point Dr.	S7	Yes	Yes	Yes
Aliso Beach-South	Aliso County Beach	S8	Yes	Yes	Yes
Aliso Beach-Middle	Aliso County Beach	S9	Yes	No	No

Aliso HSA

Within the Aliso HSA there are three sites that are on the 2002 303(d) List for excessive indicator bacteria levels: Aliso Creek, Aliso Beach North, and Blue Lagoon Place (Table 19). The site with the highest number of exceedances in this area as well as the entire data set was Aliso Creek Mouth. At this site the single sample criteria were exceeded in 41.97% of the analyses and the rolling geometric mean and monthly geometric mean criteria were exceeded in 100% and 95.8% of the analyses, respectively. This site had the highest percentage of exceedances of all the sites assessed in this evaluation. Clearly the data do not support de-listing of this site from the 303(d) List.

The data do suggest that the other two sites in this area be considered for de-listing (Table 19). The percent exceedance values for Aliso Beach-North and Blue Lagoon Place were less than 3% for all three criteria (single sample, rolling geometric mean, and monthly geometric mean). These values are well below the number of exceedances allowed by the SWRCB de-listing guidance document, which supports de-listing consideration for both these sites.

Table 19. De-listing consideration for coastal shoreline sites within the Aliso HSA listed on the SWRCB 2002 303(d) List for impairment due to elevated levels of indicator bacteria (total coliform, fecal coliform, and enterococcus). The de-listing consideration is based on the sample size, the total number of exceedances, and the allowable exceedances identified by the SWRCB using three different criteria: the single sample limit, the rolling geometric mean, and the monthly geometric mean.

Beach Area	Location of Impairment	Site #	Single Sample De-Listing Consideration	Rolling Geo. Mean De-Listing Consideration	Monthly Geo. Mean De-Listing Consideration
Aliso Creek	Aliso Creek Mouth	C1	No	No	No
Aliso Beach-North	Aliso County Beach	S10	Yes	Yes	Yes
Blue Lagoon Place	Laguna Beach at Blue Lagoon Place	S13	Yes	Yes	Yes

Laguna Beach HSA

There are four sites on the 2002 303(d) List for excessive indicator bacteria levels within the Aliso HSA: Lagunita Place, Bluebird Canyon, Laguna Hotel and Laguna Main Beach (Table 20). The percent exceedance values for Lagunita Place were less than 2.2% for all three criteria (single sample, rolling geometric mean, and monthly geometric mean). The percent exceedance values for the other three sites in this HSA were slightly higher, ranging from 3.84% to 5.67% for the single sample criterion, 12.3% to 15.4% for the rolling geometric mean, and 5.71% to 12.5% for the monthly geometric mean. All of these values were below the number of exceedances allowed by the SWRCB de-listing guidance document, which suggests that these three sites, along with Lagunita Place, should be considered for de-listing from the 303(d) List.

Table 20. De-listing consideration for coastal shoreline sites within the Laguna Beach HSA listed on the SWRCB 2002 303(d) List for impairment due to elevated levels of indicator bacteria (total coliform, fecal coliform, and enterococcus). The de-listing consideration is based on the sample size, the total number of exceedances, and the allowable exceedances identified by the SWRCB using three different criteria: the single sample limit, the rolling geometric mean, and the monthly geometric mean.

Beach Area	Location of Impairment	Site #	Single Sample De-Listing Consideration	Rolling Geo. Mean De-Listing Consideration	Monthly Geo. Mean De-Listing Consideration
Lagunita Place	Victoria Beach at Dumond Drive	S14	Yes	Yes	Yes
Bluebird Canyon	Arch Cove at Bluebird Canyon Rd.	S15	Yes	Yes	Yes
Laguna Hotel	Projection of Hotel Laguna	S16	Yes	Yes	Yes
Laguna Main Beach	Upcoast of Broadway	OLB 00	Yes	Yes	Yes

San Joaquin Hills HSA

There is one site within the San Joaquin Hills HSA that is on the 2002 303(d) List for excessive indicator bacteria levels (Table 21): Heisler Park North. This site had a low percentage of exceedances for the single sample criteria (0.76%) and no exceedances based on the rolling geometric mean or the monthly geometric mean. These values are well below the number of exceedances allowed by the SWRCB de-listing guidance document, which suggests that this site should be considered for de-listing from the 303(d) List.

Table 21. De-listing consideration for coastal shoreline sites within the San Joaquin Hills HSA listed on the SWRCB 2002 303(d) List for impairment due to elevated levels of indicator bacteria (total coliform, fecal coliform, and enterococcus). The de-listing consideration is based on the sample size, the total number of exceedances, and the allowable exceedances identified by the SWRCB using three different criteria: the single sample limit, the rolling geometric mean, and the monthly geometric mean.

Beach Area	Location of Impairment	Site #	Single Sample De-Listing Consideration	Rolling Geo. Mean De-Listing Consideration	Monthly Geo. Mean De-Listing Consideration
Heisler Park North	Crescent Bay Beach north of Heisler Park	OLB 05	Yes	Yes	Yes

Literature Cited

SWRCB 2004. State of California State Water Resources Control Board, Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. September 2004.

MEC ANALYTICAL SYSTEMS.

Shoreline Bacterial Data Evaluation – Final Report

1999 - 2003

Used on

Applicable Water Quality Standards

Comments letter 187
Reg 9.

All of the beach shoreline sites assessed in this document are considered contact recreational waters with a beneficial use designation of REC-1. The most applicable criteria for REC-1 waters are those designated under Assembly Bill 411 (AB411) for three bacterial indicators: total coliform, fecal coliform, and Enterococcus. The AB411 criteria are summarized in Table 2.

Table 2. Assembly Bill 411 (AB411) bacteriological standards.

	30-Day Limit ¹	Single Sample Limit
Total Coliform	1,000 MPN/ 100 ml ²	1,000 MPN/ 100 ml if Fecal > 10% of Total, or 10,000 MPN/100 ml ³
Fecal Coliform	200 MPN/ 100 ml	400 MPN/ 100 ml
Enterococcus	35 MPN/ 100 ml	104 MPN/ 100 ml

1 = 30 day limit is based on the geometric mean of at least five weekly samples

2 = MPN is Most Probable Number

3 = Total coliform single sample limit of 10,000 MPN decreases to 1,000 when the fecal coliform value is greater than 10% of total coliform value

The AB411 single sample limits were used in this document to determine the number of exceedances for a given sample size. Typically, a single sample is collected on a given day from a site and analyzed for three indicators: total coliform, fecal coliform, and Enterococcus. Thus, a single sample usually produces three different analyses. To assess the number of exceedances at a site, first, the data were assessed to determine the total number of analyses for each indicator that exceeded the single sample limits at each site. The number of exceedances for each of the three indicators over the five year period (January 1999 through October 2003) were then summed for each site. The total number of exceedances was then compared to the number allowable by SWRCB (2003) for the sample size (Table 1) at that site.

The SWRCB delisting criteria presented in Table 1 are based on a nonparametric procedure using a binomial distribution (Lin et al. 2000). In this case, the number of exceedances are based on independent, single samples taken from a water body. Since the 30-day limit criteria in Table 2 apply to a mean of at least 5 analyses, the geometric mean criteria were not included with the single sample exceedances used for comparison to values in Table 1.

In addition to the comparisons made to the 10% exceedance frequency in Table 1, each site assessment contains a table with the actual percentage of exceedances per number of samples taken at that site. In this way, if another exceedance frequency (e.g. 4%) is adopted by the SWRCB, the data is available for review.

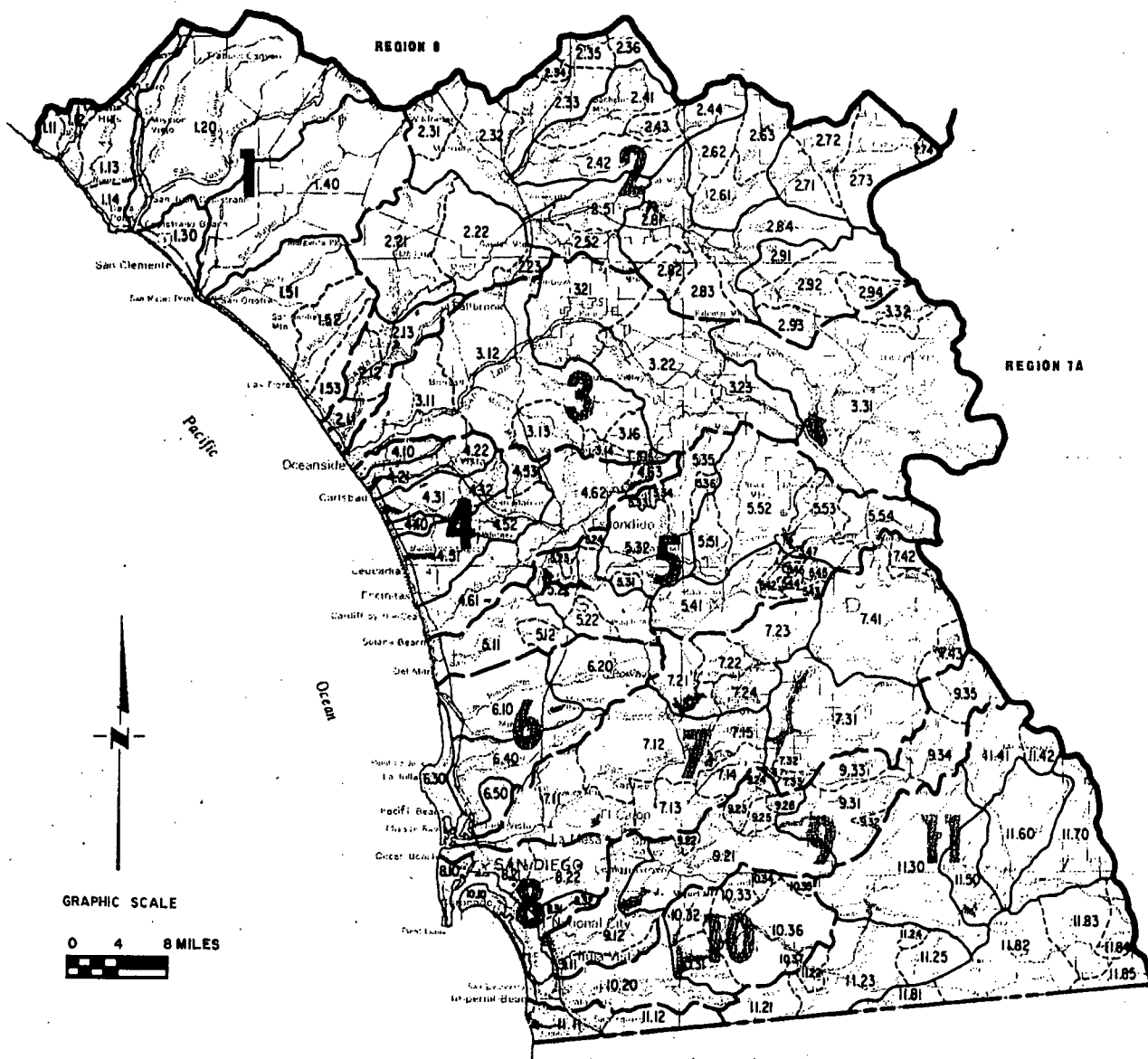


**TABLE 1 - 2. HYDROLOGIC UNITS, AREAS (HA) AND SUBAREAS (HSA)
OF THE SAN DIEGO REGION**





BASIN NUMBER	HYDROLOGIC BASIN	BASIN NUMBER	HYDROLOGIC BASIN
1.00	SAN JUAN HYDROLOGIC UNIT	2.74	Burnt HSA
1.10	Laguna HA	2.80	Aguanga HA
1.11	San Joaquin Hills HSA	2.81	Vail HSA
1.12	Laguna Beach HSA	2.82	Devils Hole HSA
1.13	Aliso HSA	2.83	Redec HSA
1.14	Dana Point HSA	2.84	Tule Creek HSA
1.20	Mission Viejo HA	2.90	Oakgrove HA
1.21	Oso HSA	2.91	Lower Culp HSA
1.22	Upper Trabuco HSA	2.92	Previtt Canyon HSA
1.23	Middle Trabuco HSA	2.93	Dodge HSA
1.24	Gobernadora HSA	2.94	Chihuahua HSA
1.25	Upper San Juan HSA		
1.26	Middle San Juan HSA	3.00	SAN LUIS REY HYDROLOGIC UNIT
1.27	Lower San Juan HSA	3.10	Lower San Luis HA
1.28	Ortega HSA	3.11	Mission HSA
1.30	San Clemente HA	3.12	Bonsall HSA
1.31	Prima Deshecha HSA	3.13	Moosa HSA
1.32	Segunda Deshecha HSA	3.14	Valley Center HSA
1.40	San Mateo Canyon HA	3.15	Woods HSA
1.50	San Onofre HA	3.16	Rincon HSA
1.51	San Onofre Valley HSA	3.20	Monserate HA
1.52	Las Pulgas HSA	3.21	Pala HSA
1.53	Stuart HSA	3.22	Pauma HSA
		3.23	La Jolla Amago HSA
2.00	SANTA MARGARITA HYDROLOGIC UNIT	3.30	Warner Valley HA
2.10	Ysidora HA	3.31	Warner HSA
2.11	Lower Ysidora HSA	3.32	Combs HSA
2.12	Chappo HSA		
2.13	Upper Ysidora HSA	4.00	CARLSBAD HYDROLOGIC UNIT
2.20	DeLuz HA	4.10	Loma Alta HA
2.21	DeLuz Creek HSA	4.20	Buena Vista Creek HA
2.22	Gavilan HSA	4.21	El Salto HSA
2.23	Vallecitos HSA	4.22	Vista HSA
2.30	Murrieta HA	4.30	Agua Hedionda HA
2.31	Wildomar HSA	4.31	Los Monos HSA
2.32	Murrieta HSA	4.32	Buena HSA
2.33	French HSA	4.40	Encinas HA
2.34	Lower Domenigoni HSA	4.50	San Marcos HA
2.35	Domenigoni HSA	4.51	Batiquitos HSA
2.36	Diamond HSA	4.52	Richland HSA
2.40	Auld HA	4.53	Twin Oaks HSA
2.41	Bachelor Mountain HSA	4.60	Escondido Creek HA
2.42	Gertrudis HSA	4.61	San Elijo HSA
2.43	Lower Tualota HSA	4.62	Escondido HSA
2.44	Tualota HSA	4.63	Lake Wohlford HSA
2.50	Pechanga HA		
2.51	Pauba HSA	5.00	SAN DIEGUITO HYDROLOGIC UNIT
2.52	Wolf HSA	5.10	Solana Beach HA
2.60	Wilson HA	5.11	Rancho Santa Fe HSA
2.61	Lancaster Valley HSA	5.12	La Jolla HSA
2.62	Lewis HSA	5.20	Hodges HA
2.63	Reed Valley HSA	5.21	Del Dios HSA
2.70	Cave Rocks HA	5.22	Green HSA
2.71	Lower Coahuila HSA	5.23	Felicita HSA
2.72	Upper Coahuila HSA	5.24	Bear HSA
2.73	Anza HSA		

**TABLE 1 - 2. HYDROLOGIC UNITS, AREAS (HA) AND SUBAREAS (HSA)
OF THE SAN DIEGO REGION**

BASIN NUMBER	HYDROLOGIC BASIN	BASIN NUMBER	HYDROLOGIC BASIN
5.30	San Pasqual HA	9.00	SWEETWATER HYDROLOGIC UNIT
5.31	Highland HSA	9.10	Lower Sweetwater HA
5.32	Las Lomas Muertas HSA	9.11	Telegraph HSA
5.33	Reed HSA	9.12	La Nacion HSA
5.34	Hidden HSA	9.20	Middle Sweetwater HA
5.35	Guejito HSA	9.21	Jamacha HSA
5.36	Vineyard HSA	9.22	Hillsdale HSA
5.40	Santa Maria Valley HA	9.23	Dehesa HSA
5.41	Ramona HSA	9.24	Galloway HSA
5.42	Lower Hatfield HSA	9.25	Sequan HSA
5.43	Wash Hollow HSA	9.26	Alpine Heights HSA
5.44	Upper Hatfield HSA	9.30	Upper Sweetwater HA
5.45	Ballena HSA	9.31	Loveland HSA
5.46	East Santa Teresa HSA	9.32	Japatul HSA
5.47	West Santa Teresa HSA	9.33	Viejas HSA
5.50	Santa Ysabel HA	9.34	Descanso HSA
5.51	Boden HSA	9.35	Garnet HSA
5.52	Pamo HSA		
5.53	Sutherland HSA	10.00	OTAY HYDROLOGIC UNIT
5.54	Witch Creek HSA	10.10	Coronado HA
6.00	PENASQUITOS HYDROLOGIC UNIT	10.20	Otay Valley HA
6.10	Miramar Reservoir HA	10.30	Dulzura HA
6.20	Poway HA	10.31	Savage HSA
6.30	Scripps HA	10.32	Proctor HSA
6.40	Miramar HA	10.33	Jamul HSA
6.50	Tecolote HA	10.34	Lee HSA
7.00	SAN DIEGO HYDROLOGIC UNIT	10.35	Lyon HSA
7.10	Lower San Diego HA	10.36	Hollenbeck HSA
7.11	Mission San Diego HSA	10.37	Engineer Springs HSA
7.12	Santee HSA	11.00	TIJUANA HYDROLOGIC UNIT
7.13	El Cajon HSA	11.10	Tijuana Valley HA
7.14	Coches HSA	11.11	San Ysidro HSA
7.15	El Monte HSA	11.12	Water Tanks HSA
7.20	San Vicente HA	11.20	Potrero HA
7.21	Fernbrook HSA	11.21	Marron HSA
7.22	Kimball HSA	11.22	Bee Canyon HSA
7.23	Gower HSA	11.23	Barrett HSA
7.24	Barona HSA	11.24	Round Potrero HSA
7.30	El Capitan HA	11.25	Long Potrero HSA
7.31	Conejos Creek HSA	11.30	Barrett Lake HA
7.32	Glen Oaks HSA	11.40	Monument HA
7.33	Alpine HSA	11.41	Pine HSA
7.40	Boulder Creek HA	11.42	Mount Laguna HSA
7.41	Inaja HSA	11.50	Morena HA
7.42	Spencer HSA	11.60	Cottonwood HA
7.43	Cuyamaca HSA	11.70	Cameron HA
8.00	PUEBLO SAN DIEGO HYDROLOGIC UNIT	11.80	Campo HA
8.10	Point Loma HA	11.81	Tecate HSA
8.20	San Diego Mesa HA	11.82	Canyon City HSA
8.21	Lindbergh HSA	11.83	Clover Flat HSA
8.22	Chollas HSA	11.84	Hill HSA
8.30	National City HA	11.85	Hipass HSA
8.31	El Toyon HSA		
8.32	Paradise HSA		



LEGEND

-  DRAINAGE PROVINCE BOUNDARY
-  HYDROLOGIC UNIT BOUNDARY
-  HYDROLOGIC AREA BOUNDARY
-  HYDROLOGIC SUBAREA BOUNDARY

**FIGURE 1-2. SAN DIEGO REGION HYDROLOGIC UNITS
AREAS, AND SUBAREAS**

3 MAY 06

PACIFIC OCEAN SHORELINE - LAGUNA BEACH HSA

SINGLE SAMPLE	SAMPLE ANALYSIS	Σ EXCEED	FECAL	TOTAL	ENTEROCOCCI
BLUE BIRD	1940	110	11	16	83
HOTEL LAGUNA	1875	72	5	9	58
LAGUNA MAIN	942	37	9	7	21
LAGUNITA PL.	1858	41	3	5	33
	6615	260	28	37	195

MONTHLY MEAN	ANALYSIS	Σ EXCEEDED	ALLOWED
BLUE BIRD	72	8	11
HOTEL LAGUNA	72	9	11
LAGUNA MAIN	70	4	11
LAGUNITA PLACE	72	1	11
	286	22	47 (BINOMIAL)

FACT SHEET ID 3449, LOE ID 4134

This analysis was not used and a fact sheet not developed.
 No fact sheet currently exists for the individual water bodies. We have taken the position to review data for water bodies that have fact sheets.
 R. Miral 5/4/06

STATE WATER RESOURCES CONTROL BOARD			Date:
From: <i>Julie Chan</i>		2/7/06 Phone: 858 627-3926	
TO :			
Executive Office	Div. of Administrative Services	Div. of Financial Assistance	Div. of Water Rights - FILES
Executive Office	Business Mgt. Support Branch	Off. of Statewide Initiatives	Reproduction & Mail Unit
Off. of Legislative & Public Affairs	Accounting Branch	Div. of Water Quality	
Office of Chief Counsel	Budget Branch	Div. of Water Rights	
	Personnel Branch	Off. of Information Technology	
ACTION :			
DISTRIBUTE	APPROPRIATE ACTION	REVIEW & RETURN	INFORMATION
PER YOUR REQUEST	REPLY [copy to me]	APPROVAL	FILE
COMMENTS :			
<p>ATTN: Craig J. Wilson</p> <p>Craig - Please replace attachment 1 with the attached replacement document to our 303(d) list comment memo dated Jan. 31, 2006, with this document. Thank you, Julie Chan</p>			
U.S. POSTAL SERVICE :			
EPA, Region 9 -- San Francisco			
REGIONAL WATER QUALITY CONTROL BOARDS :			
1 - Santa Rosa Susan Warner, EO	5 - Sacramento Thomas R. Pinkos, EO	6v - Victorville [branch ofc.] Hlsam Baqal, AEO	
2 - Oakland Lorella Barsamian, EO	5f - Fresno [branch ofc.] Loren Harlow, AEO	7 - Palm Desert Phillip Gruenberg, EO	
3 - San Luis Obispo Roger Briggs, EO	5r - Redding [branch ofc.] James Pedri, AEO	8 - Riverside Gerald Thibeault, EO	
4 - Los Angeles Dennis Dickerson, EO	6 - South Lake Tahoe Harold Singer, EO	9 - San Diego John Robertus, EO	

~~187~~

663

314?



Attachment 1
Analysis of Mission Bay Bacteria
Data for Dry Weather and Storm Weather

Use this data
R/M 4/14



Bahia Point, MB-160					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	26	38	36	100	
Number of exceedances (REC-1)	6	5	2	13	13.0%
Fecal Coli	26	38	36	100	
Number of exceedances (REC-1)	2	3	0	5	5.0%
Total Coli	26	38	36	100	
Number of exceedances (REC-1)	2	2	2	6	6.0%
Number of exceedances (SHEL)	2	4	2	8	8.0%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	2	4	1	1	12	
Number of exceedances (REC-1)	1	2	3	0	0	6	50.0%
Fecal Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	1	2	2	0	0	5	38.5%
Total Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	1	1	2	0	1	5	38.5%
Number of exceedances (SHEL)	2	3	3	0	1	9	69.2%

Recommendation
Do not delist

Balboa Court, MB-225					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	22	32	29	83	
Number of exceedances (REC-1)	2	3	4	9	10.8%
Fecal Coli	23	32	29	84	
Number of exceedances (REC-1)	1	0	3	4	4.8%
Total Coli	23	32	34	89	
Number of exceedances (REC-1)	0	0	6	6	6.7%
Number of exceedances (SHEL)	1	1	8	10	11.2%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

Boat Launch, MB-193							
Indicator/Bacteria	Number of Samples					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	3	3	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	3	3	
Number of exceedances (REC-1)	0	0	0	0	2	2	66.7%
Number of exceedances (SHEL)	0	0	0	0	2	2	66.7%

Recommendation
Do not de-list; not enough sample:

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	1	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	1	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	1	1	
Number of exceedances (REC-1)	0	0	0	0	1	1	100.0%
Number of exceedances (SHEL)	0	0	0	0	1	1	100.0%

Recommendation
Do not de-list; not enough sample:

note: not necessary to filter out pre-May 15th 2001 data

Bonita Cove, MB-170					
Indicator/Bacteria	Number of Samples			Total	% Exceedance
	2001	2002	2003		
Enterococcus	41	48	55	144	
Number of exceedances (REC-1)	18	21	13	52	36.1%
Fecal Coli	41	48	54	143	
Number of exceedances (REC-1)	3	6	5	14	9.8%
Total Coli	39	48	55	142	
Number of exceedances (REC-1)	3	4	3	10	7.0%
Number of exceedances (SHEL)	14	14	11	39	27.5%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Total	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	6	1	1	15	
Number of exceedances (REC-1)	3	1	5	0	0	9	60.0%
Fecal Coli	4	3	6	1	1	15	
Number of exceedances (REC-1)	0	0	2	0	0	2	13.3%
Total Coli	4	3	6	1	1	15	
Number of exceedances (REC-1)	0	0	3	0	0	3	20.0%
Number of exceedances (SHEL)	2	1	5	0	1	9	60.0%

Recommendation
Do not delist

Campland, MB-080					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	34	60	58	152	
Number of exceedances (REC-1)	19	38	33	90	59.2%
Fecal Coli	35	60	59	154	
Number of exceedances (REC-1)	3	16	8	27	17.5%
Total Coli	34	60	59	153	
Number of exceedances (REC-1)	2	11	5	18	11.8%
Number of exceedances (SHEL)	8	30	23	61	39.9%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	6	2	1	16	
Number of exceedances (REC-1)	2	3	5	1	1	12	75.0%
Fecal Coli	3	5	6	2	1	17	
Number of exceedances (REC-1)	2	3	3	1	0	9	52.9%
Total Coli	3	5	6	2	1	17	
Number of exceedances (REC-1)	1	4	4	1	1	11	64.7%
Number of exceedances (SHEL)	2	5	5	2	1	15	88.2%

Recommendation
Do not delist

Crown Point, near storm drain MB-100					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	22	33	25	80	
Number of exceedances (REC-1)	6	4	3	13	16.3%
Fecal Coli	22	33	25	80	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	22	33	25	80	
Number of exceedances (REC-1)	0	0	1	1	1.3%
Number of exceedances (SHEL)	2	2	1	5	6.3%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	7	1	1	16	
Number of exceedances (REC-1)	1	4	2	0	1	8	50.0%
Fecal Coli	3	5	7	1	1	17	
Number of exceedances (REC-1)	1	1	1	0	0	3	17.6%
Total Coli	3	5	7	1	1	17	
Number of exceedances (REC-1)	1	1	1	0	1	4	23.5%
Number of exceedances (SHEL)	2	3	3	0	1	9	52.9%

Recommendation
Do not delist

Crown Point, watercraft area MB-101							
Indicator/Bacteria	Number of Samples					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	6	0	0	6	
Number of exceedances (REC-1)	0	0	2	0	0	2	33.3%
Fecal Coli	0	0	5	0	0	5	
Number of exceedances (REC-1)	0	0	1	0	0	1	20.0%
Total Coli	0	0	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	1	0	0	1	16.7%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

note: no need to break out pre-May 15 data

DeAnza Cove, swim area MB-070					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	35	42	45	122	
Number of exceedances (REC-1)	18	17	10	45	36.9%
Fecal Coli	35	42	45	122	
Number of exceedances (REC-1)	8	6	3	17	13.9%
Total Coli	35	42	45	122	
Number of exceedances (REC-1)	4	3	5	12	9.8%
Number of exceedances (SHEL)	14	11	7	32	26.2%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	5	3	0	1	10	71.4%
Fecal Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	2	2	1	1	7	50.0%
Total Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	3	1	0	1	6	42.9%
Number of exceedances (SHEL)	1	4	3	1	1	10	71.4%

Recommendation
Do not delist

DeAnza Cove, swim area MB-071					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	0	0	5	
Number of exceedances (REC-1)	1	0	0	1	20.0%
Fecal Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	1	0	0	1	20.0%

Recommendation
Delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

Fanuel Park, MB-120					
Indicator/Bacteria	Number of samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	27	36	47	110	
Number of exceedances (REC-1)	6	10	11	27	24.5%
Fecal Coli	27	36	47	110	
Number of exceedances (REC-1)	2	1	6	9	8.2%
Total Coli	27	36	47	110	
Number of exceedances (REC-1)	1	2	2	5	4.5%
Number of exceedances (SHEL)	4	8	9	21	19.1%

Recommendation
Do not delist

Indicator/Bacteria	Number of samples during Storm events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	4	3	4	2	0	13		Do not delist
Number of exceedances (REC-1)	4	1	3	1	0	9	69.2%	
Fecal Coli	4	3	4	2	0	13		
Number of exceedances (REC-1)	0	0	2	0	0	2	15.4%	
Total Coli	4	3	4	2	0	13		
Number of exceedances (REC-1)	0	0	3	0	0	3	23.1%	
Number of exceedances (SHEL)	2	1	3	0	0	6	46.2%	

Fiesta Island Bridge, MB-010					
Indicator/Bacteria	Number of samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	7	0	0	7	
Number of exceedances (REC-1)	1	0	0	1	14.3%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of samples during Storm events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	2	4	5	0	0	11		Delist SHEL
Number of exceedances (REC-1)	1	3	1	0	0	5	45.5%	
Fecal Coli	3	4	5	0	0	12		
Number of exceedances (REC-1)	0	1	0	0	0	1	8.3%	
Total Coli	3	4	5	0	0	12		
Number of exceedances (REC-1)	0	1	0	0	0	1	8.3%	
Number of exceedances (SHEL)	0	1	0	0	0	1	8.3%	

Hidden Anchorage, MB-020					
Indicator/Bacteria	Number of samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	9	3	14	26	
Number of exceedances (REC-1)	2	1	3	6	23.1%
Fecal Coli	9	3	14	26	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	9	3	14	26	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	1	0	1	2	7.7%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of samples during Storm events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	2	4	5	0	0	11		Do not delist
Number of exceedances (REC-1)	1	3	2	0	0	6	54.5%	
Fecal Coli	3	4	5	0	0	12		
Number of exceedances (REC-1)	0	1	0	0	0	1	8.3%	
Total Coli	3	4	5	0	0	12		
Number of exceedances (REC-1)	1	1	0	0	0	2	16.7%	
Number of exceedances (SHEL)	1	1	1	0	0	3	25.0%	

La Cima Beach, MB-111					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of (samples) during (Storm) Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist

La Cima, storm drain, MB-110					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	28	37	36	101	
Number of exceedances (REC-1)	12	5	2	19	18.8%
Fecal Coli	29	38	36	103	
Number of exceedances (REC-1)	2	2	0	4	3.9%
Total Coli	28	38	36	102	
Number of exceedances (REC-1)	1	0	0	1	1.0%
Number of exceedances (SHEL)	1	3	1	5	4.9%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of (Samples) During (Storm) Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	1	1	13	
Number of exceedances (REC-1)	1	1	2	1	0	5	38.5%
Fecal Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	0	1	1	0	0	2	15.4%
Total Coli	4	1	4	1	1	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Number of exceedances (SHEL)	0	0	2	0	1	3	27.3%

Recommendation
Do not delist

Leisure Lagoon, MB-050					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	24	39	44	107	
Number of exceedances (REC-1)	4	6	6	16	15.0%
Fecal Coli	24	39	44	107	
Number of exceedances (REC-1)	0	2	1	3	2.8%
Total Coli	24	39	44	107	
Number of exceedances (REC-1)	0	0	1	1	0.9%
Number of exceedances (SHEL)	3	8	2	13	12.1%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of (Samples) During (Storm) Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	5	1	1	1	9	64.3%
Fecal Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	1	1	0	1	4	28.6%
Total Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	3	1	0	1	6	42.9%
Number of exceedances (SHEL)	1	3	2	0	1	7	50.0%

Recommendation
Do not delist

Leisure Lagoon, swim area MB-051					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

North Pacific Passage, MB-042					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	22	32	36	90	
Number of exceedances (REC-1)	2	2	0	4	4.4%
Fecal Coli	22	32	36	90	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	22	32	36	90	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	1	1	2	4	4.4%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

Perez Cove, MB-190					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	7	0	0	7	
Number of exceedances (REC-1)	1	0	0	1	14.3%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	1	0	0	1	14.3%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	3	0	0	3	27.3%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	2	0	0	2	18.2%
Number of exceedances (SHEL)	0	1	2	0	0	3	27.3%

Recommendation
Do not delist

Quivera Basin, MB-180					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	3	0	0	4	36.4%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	0	0	0	1	9.1%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	0	0	0	1	9.1%
Number of exceedances (SHEL)	1	0	3	0	0	4	36.4%

Recommendation
Do not delist

Sail Bay, MB-130					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	9	0	1	10	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	9	0	1	10	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	9	0	1	10	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	1	0	0	1	10.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	3	0	0	4	36.4%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	1	0	0	2	18.2%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Number of exceedances (SHEL)	1	1	2	0	0	4	36.4%

Recommendation
Do not delist

San Juan Cove, MB-140					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	1	3	0	0	5	45.5%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	1	0	0	2	18.2%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	1	1	0	0	2	18.2%
Number of exceedances (SHEL)	2	1	3	0	0	6	54.5%

Recommendation
Do not delist

Santa Barbara, near storm drain, MB-150					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	24	31	24	79	
Number of exceedances (REC-1)	7	3	2	12	15.2%
Fecal Coli	24	31	24	79	
Number of exceedances (REC-1)	2	0	0	2	2.5%
Total Coli	24	31	24	79	
Number of exceedances (REC-1)	8	0	0	8	7.6%
Number of exceedances (SHEL)	7	0	4	11	13.9%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	1	1	13	
Number of exceedances (REC-1)	2	1	2	0	1	6	46.2%
Fecal Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	0	1	1	0	0	2	15.4%
Total Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	2	0	1	0	0	3	23.1%
Number of exceedances (SHEL)	2	0	2	0	1	5	38.5%

Recommendation
Do not delist

Santa Clara Cove, MB-132					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	32	0	37	
Number of exceedances (REC-1)	1	2	0	3	8.1%
Fecal Coli	5	32	0	37	
Number of exceedances (REC-1)	1	0	0	1	2.7%
Total Coli	5	32	0	37	
Number of exceedances (REC-1)	2	0	0	2	5.4%
Number of exceedances (SHEL)	3	1	0	4	10.8%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

Santa Clara Place, MB-131					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	4	39	28	71	
Number of exceedances (REC-1)	0	13	6	19	26.8%
Fecal Coli	4	39	27	70	
Number of exceedances (REC-1)	0	5	3	8	11.4%
Total Coli	4	39	27	70	
Number of exceedances (REC-1)	0	3	6	9	12.9%
Number of exceedances (SHEL)	0	8	11	19	27.1%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	1	0	0	1	0	2	
Number of exceedances (REC-1)	1	0	0	1	0	2	100.0%
Fecal Coli	1	0	0	1	0	2	
Number of exceedances (REC-1)	0	0	0	1	0	1	50.0%
Total Coli	1	0	0	1	0	2	
Number of exceedances (REC-1)	1	0	0	1	0	2	100.0%
Number of exceedances (SHEL)	1	0	0	1	0	2	100.0%

Recommendation
Do not delist; not enough samples

Seaworld Marina, west outfall, MB-191					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	20	38	13	71	
Number of exceedances (REC-1)	5	7	3	15	21.1%
Fecal Coli	15	37	13	65	
Number of exceedances (REC-1)	1	1	1	3	4.6%
Total Coli	20	38	13	71	
Number of exceedances (REC-1)	3	1	0	4	5.6%
Number of exceedances (SHEL)	7	5	2	14	19.7%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	1	3	2	6	
Number of exceedances (REC-1)	0	0	0	0	2	2	33.3%
Fecal Coli	0	0	1	3	2	6	
Number of exceedances (REC-1)	0	0	0	0	1	1	16.7%
Total Coli	0	0	1	3	2	6	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	1	2	3	50.0%

Recommendation
Do not delist

South Pacific Passage, east outfall, MB-192					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	20	38	13	71	
Number of exceedances (REC-1)	2	0	1	3	4.2%
Fecal Coli	15	37	13	65	
Number of exceedances (REC-1)	1	0	1	2	3.1%
Total Coli	20	38	13	71	
Number of exceedances (REC-1)	2	0	2	4	5.6%
Number of exceedances (SHEL)	4	2	2	8	11.3%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	1	3	2	6	
Number of exceedances (REC-1)	0	0	1	0	1	2	33.3%
Fecal Coli	0	0	1	3	2	6	
Number of exceedances (REC-1)	0	0	1	0	1	2	33.3%
Total Coli	0	0	1	3	2	6	
Number of exceedances (REC-1)	0	0	0	0	2	2	33.3%
Number of exceedances (SHEL)	0	0	1	1	2	4	66.7%

Recommendation
Do not delist

Tecolote Creek Outlet, MB-030					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	26	41	18	85	
Number of exceedances (REC-1)	5	18	13	36	42.4%
Fecal Coli	26	40	15	81	
Number of exceedances (REC-1)	2	6	1	9	11.1%
Total Coli	23	38	18	79	
Number of exceedances (REC-1)	1	4	7	12	15.2%
Number of exceedances (SHEL)	2	11	10	23	29.1%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	7	3	0	17	
Number of exceedances (REC-1)	2	5	7	2	0	16	94.1%
Fecal Coli	2	5	7	3	0	17	
Number of exceedances (REC-1)	1	3	3	1	0	8	47.1%
Total Coli	2	4	6	2	0	14	
Number of exceedances (REC-1)	1	3	5	0	0	9	64.3%
Number of exceedances (SHEL)	2	4	6	0	0	12	85.7%

Recommendation
Do not delist

Tecolote Playground, MB-031					
Indicator/Bacteria	Number of (Samples)			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	12	30	47	
Number of exceedances (REC-1)	0	2	6	8	17.0%
Fecal Coli	5	12	30	47	
Number of exceedances (REC-1)	0	0	2	2	4.3%
Total Coli	5	12	30	47	
Number of exceedances (REC-1)	0	0	1	1	2.1%
Number of exceedances (SHEL)	0	0	3	3	6.4%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of (Samples) During (Storm) Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	1	1	2	100.0%
Fecal Coli	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	0	1	1	50.0%
Total Coli	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	0	1	1	50.0%
Number of exceedances (SHEL)	0	0	0	0	1	1	50.0%

Recommendation
Do not delist; not enough samples

Tecolote Shores, MB-041					
Indicator/Bacteria	Number of (Samples)			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	1	0	6	
Number of exceedances (REC-1)	0	1	0	1	16.7%
Fecal Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of (Samples) During (Storm) Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

Tecolote Shores, near storm drain, MB-040					
Indicator/Bacteria	Number of (Samples)			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	25	31	31	87	
Number of exceedances (REC-1)	3	5	3	11	12.6%
Fecal Coli	24	32	31	87	
Number of exceedances (REC-1)	0	1	1	2	2.3%
Total Coli	24	32	31	87	
Number of exceedances (REC-1)	0	0	1	1	1.1%
Number of exceedances (SHEL)	0	2	1	3	3.4%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of (Samples) During (Storm) Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	6	1	0	14	
Number of exceedances (REC-1)	2	4	2	0	0	8	57.1%
Fecal Coli	4	5	6	1	0	16	
Number of exceedances (REC-1)	2	3	2	0	0	7	43.8%
Total Coli	4	4	6	1	0	15	
Number of exceedances (REC-1)	2	2	2	0	0	6	40.0%
Number of exceedances (SHEL)	3	3	4	0	0	10	66.7%

Recommendation
Do not delist

Vacation Isle, MB-200					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	2	0	0	2	18.2%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Number of exceedances (SHEL)	1	2	2	0	0	5	45.5%

Recommendation
Delist REC-1

Ventura Cove, MB-223					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	6	25	27	58	
Number of exceedances (REC-1)	2	1	1	4	6.9%
Fecal Coli	6	25	27	58	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	6	25	27	58	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHEL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	1	1	2	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHEL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

Visitor's Center, near storm drain, MB-060					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	35	55	56	146	
Number of exceedances (REC-1)	21	38	26	85	58.2%
Fecal Coli	36	58	56	150	
Number of exceedances (REC-1)	6	17	11	34	22.7%
Total Coli	35	58	56	149	
Number of exceedances (REC-1)	2	18	9	29	19.5%
Number of exceedances (SHEL)	12	33	23	68	45.6%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	6	2	0	15	
Number of exceedances (REC-1)	1	3	3	1	0	8	53.3%
Fecal Coli	3	5	6	3	0	17	
Number of exceedances (REC-1)	1	3	1	2	0	7	41.2%
Total Coli	4	5	6	3	0	18	
Number of exceedances (REC-1)	2	2	1	2	0	7	38.9%
Number of exceedances (SHEL)	4	3	3	2	0	12	66.7%

Recommendation
Do not delist

Wildlife Refuge, MB-090									
Indicator/Bacteria		Number of Samples		Number of Samples		Number of Samples		Totals	
		2001	2002	2003	2001	2002	2003	% Exceedance	Recommendation
Enterococcus		22	43	46	111				
Number of exceedances (REC-1)		3	15	13	31			27.9%	
Fecal Coli		22	43	46	111				
Number of exceedances (REC-1)		1	4	2	7			6.3%	
Total Coli		22	43	46	111				
Number of exceedances (REC-1)		1	4	2	7				
Total Coli		22	43	46	111				
Number of exceedances (REC-1)		0	4	1	5			4.5%	
Number of exceedances (SHEL)		2	10	4	16			14.4%	

Do not delist

Indicator/Bacteria									
Number of Samples		Number of Samples		Number of Samples		Number of Samples		Totals	
		2001	2002	2003	2001	2002	2003	% Exceedance	Recommendation
Enterococcus		2	5	7	1				
Number of exceedances (REC-1)		1	4	5	0			68.8%	
Fecal Coli		2	5	7	1				
Number of exceedances (REC-1)		1	3	2	0			43.8%	
Total Coli		2	5	7	1				
Number of exceedances (REC-1)		2	4	7	1				
Total Coli		2	4	7	1				
Number of exceedances (REC-1)		1	2	2	0				
Number of exceedances (SHEL)		1	2	2	0			40.0%	
Number of exceedances (REC-1)		1	2	2	0			80.0%	

Do not delist

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Attachment 1
Analysis of Mission Bay Bacteria
Data for Dry Weather and Storm Weather

This attachment was replaced

Do not use this data, 4/14
RW

Do Not Use 4/14

Bahia Point, MB-160						
Indicator Bacteria	Number of Samples			Totals	% Exceedance	Recommendation
	2001	2002	2003			
Enterococcus	0	38	36	74		Delist REC-1, SHELL
Number of exceedances (REC-1)	0	5	2	7	9.5%	
Fecal Coli	26	38	36	100		
Number of exceedances (REC-1)	2	3	0	5	5.0%	
Total Coli	26	38	36	100		
Number of exceedances (REC-1)	2	2	2	6	6.0%	
Number of exceedances (SHELL)	2	4	2	8	8.0%	

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	4	2	4	1	1	12		Do not delist
Number of exceedances (REC-1)	1	2	3	0	0	6	50.0%	
Fecal Coli	4	3	4	1	1	13		
Number of exceedances (REC-1)	1	2	2	0	0	5	38.5%	
Total Coli	4	3	4	1	1	13		
Number of exceedances (REC-1)	1	1	2	0	1	5	38.5%	
Number of exceedances (SHELL)	2	3	3	0	1	9	69.2%	

Balboa Court, MB-225						
Indicator Bacteria	Number of Samples			Totals	% Exceedance	Recommendation
	2001	2002	2003			
Enterococcus	22	32	29	83		Delist REC-1, SHELL
Number of exceedances (REC-1)	2	3	4	9	10.8%	
Fecal Coli	23	32	29	84		
Number of exceedances (REC-1)	1	0	3	4	4.8%	
Total Coli	23	32	34	89		
Number of exceedances (REC-1)	0	0	6	6	6.7%	
Number of exceedances (SHELL)	1	1	8	10	11.2%	

Indicator Bacteria	Number of Samples During Storm Events					Totals	% exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	0	0	0	1	0	1		Do not delist; not enough samples
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Fecal Coli	0	0	0	1	0	1		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Total Coli	0	0	0	1	0	1		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Number of exceedances (SHELL)	0	0	0	0	0	0	0.0%	

Boat Launch, MB-193								
Indicator Bacteria	Number of Samples					Totals	% Exceedance	Recommendation Do not de-list; not enough data
	1999	2000	2001	2002	2003			
Enterococcus	0	0	0	0	3	3		
Number of Exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Fecal Coli	0	0	0	0	0	0		
Number of Exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Total Coli	0	0	0	0	3	3		
Number of Exceedances (REC-1)	0	0	0	0	2	2	66.7%	
Number of exceedances (SHELL)	0	0	0	0	2	2	66.7%	

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	0	0	0	0	1	1		Do not de-list; not enough data
Number of Exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Fecal Coli	0	0	0	0	1	1		
Number of Exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Total Coli	0	0	0	0	1	1		
Number of Exceedances (REC-1)	0	0	0	0	1	1	100.0%	
Number of exceedances (SHELL)	0	0	0	0	1	1	100.0%	

note: not necessary to filter out pre-May 15th 2001 data

Do Not Use 4/14

Bonita Cove, MB-170					
Indicator/Bacteria	Number of Samples			Total	% Exceedance
	2001	2002	2003		
Enterococcus	41	48	55	144	
Number of exceedances (REC-1)	18	21	13	52	36.1%
Fecal Coli	41	48	54	143	
Number of exceedances (REC-1)	3	6	5	14	9.8%
Total Coli	39	48	55	142	
Number of exceedances (REC-1)	3	4	3	10	7.0%
Number of exceedances (SHELL)	14	14	11	39	27.5%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Total	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	6	1	1	15	
Number of exceedances (REC-1)	3	1	5	0	0	9	60.0%
Fecal Coli	4	3	6	1	1	15	
Number of exceedances (REC-1)	0	0	2	0	0	2	13.3%
Total Coli	4	3	6	1	1	15	
Number of exceedances (REC-1)	0	0	3	0	0	3	20.0%
Number of exceedances (SHELL)	2	1	5	0	1	9	60.0%

Recommendation
Do not delist

Campland, MB-080					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	34	60	58	152	
Number of exceedances (REC-1)	19	38	33	90	59.2%
Fecal Coli	35	60	59	154	
Number of exceedances (REC-1)	3	16	8	27	17.5%
Total Coli	34	60	59	153	
Number of exceedances (REC-1)	2	11	5	18	11.8%
Number of exceedances (SHELL)	8	30	23	61	39.9%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	6	2	1	16	
Number of exceedances (REC-1)	2	3	5	1	1	12	75.0%
Fecal Coli	3	5	6	2	1	17	
Number of exceedances (REC-1)	2	3	3	1	0	9	52.9%
Total Coli	3	5	6	2	1	17	
Number of exceedances (REC-1)	1	4	4	1	1	11	64.7%
Number of exceedances (SHELL)	2	5	5	2	1	15	88.2%

Recommendation
Do not delist

Crown Point, near storm drain MB-100					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	22	33	25	80	
Number of exceedances (REC-1)	6	4	3	13	16.3%
Fecal Coli	22	33	25	80	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	22	33	25	80	
Number of exceedances (REC-1)	0	0	1	1	1.3%
Number of exceedances (SHELL)	2	2	1	5	6.3%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	7	1	1	16	
Number of exceedances (REC-1)	1	4	2	0	1	8	50.0%
Fecal Coli	3	5	7	1	1	17	
Number of exceedances (REC-1)	1	1	1	0	0	3	17.6%
Total Coli	3	5	7	1	1	17	
Number of exceedances (REC-1)	1	1	1	0	1	4	23.5%
Number of exceedances (SHELL)	2	3	3	0	1	9	52.9%

Recommendation
Do not delist

Do Not Use 4/14

Crown Point, watercraft area MB-101							
Indicator Bacteria	Number of Samples					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	6	0	0	6	
Number of exceedances (REC-1)	0	0	2	0	0	2	33.3%
Fecal Coli	0	0	5	0	0	5	
Number of exceedances (REC-1)	0	0	1	0	0	1	20.0%
Total Coli	0	0	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	1	0	0	1	16.7%

Recommendation
Do not delist

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

note: no need to break out pre-May 15 data

DeAnza Cove, swim area MB-070					
Indicator Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	35	42	45	122	
Number of exceedances (REC-1)	18	17	10	45	36.9%
Fecal Coli	35	42	45	122	
Number of exceedances (REC-1)	8	6	3	17	13.9%
Total Coli	35	42	45	122	
Number of exceedances (REC-1)	4	3	5	12	9.8%
Number of exceedances (SHELL)	14	11	7	32	26.2%

Recommendation
Do not delist

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	5	3	0	1	10	71.4%
Fecal Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	2	2	1	1	7	50.0%
Total Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	3	1	0	1	6	42.9%
Number of exceedances (SHELL)	1	4	3	1	1	10	71.4%

Recommendation
Do not delist

DeAnza Cove, swim area MB-071					
Indicator Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

Do Not Use 4/14

Fanuel Park, MB-120					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	36	47	83	
Number of exceedances (REC-1)	27	10	11	48	57.8%
Fecal Coli	27	36	47	110	
Number of exceedances (REC-1)	6	1	6	13	11.8%
Total Coli	27	36	47	110	
Number of exceedances (REC-1)	2	2	2	6	5.5%
Number of exceedances (SHELL)	1	8	9	18	16.4%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	2	0	13	
Number of exceedances (REC-1)	4	1	3	1	0	9	69.2%
Fecal Coli	4	3	4	2	0	13	
Number of exceedances (REC-1)	0	0	2	0	0	2	15.4%
Total Coli	4	3	4	2	0	13	
Number of exceedances (REC-1)	0	0	3	0	0	3	23.1%
Number of exceedances (SHELL)	2	1	3	0	0	6	46.2%

Recommendation
Do not delist

Fiesta Island Bridge, MB-010					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	4	5	0	0	11	
Number of exceedances (REC-1)	1	3	1	0	0	5	45.5%
Fecal Coli	3	4	5	0	0	12	
Number of exceedances (REC-1)	0	1	0	0	0	1	8.3%
Total Coli	3	4	5	0	0	12	
Number of exceedances (REC-1)	0	1	0	0	0	1	8.3%
Number of exceedances (SHELL)	0	1	0	0	0	1	8.3%

Recommendation
Do not delist

Hidden Anchorage, MB-020					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	3	14	17	
Number of exceedances (REC-1)	0	1	3	4	23.5%
Fecal Coli	0	3	14	17	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	0	3	14	17	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	1	1	5.9%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	4	5	0	0	11	
Number of exceedances (REC-1)	1	3	2	0	0	6	54.5%
Fecal Coli	3	4	5	0	0	12	
Number of exceedances (REC-1)	0	1	0	0	0	1	8.3%
Total Coli	3	4	5	0	0	12	
Number of exceedances (REC-1)	1	1	0	0	0	2	16.7%
Number of exceedances (SHELL)	1	1	1	0	0	3	25.0%

Recommendation
Do not delist

Do Not Use 4/14

La Cima Beach, MB-111					
Indicator: Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	0	0	0	
Number of exceedances (REC-1)	6	0	0	6	0.0%
Fecal Coli	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	6	0	0	6	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHELL

Indicator: Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist

La Cima, storm drain, MB-110					
Indicator: Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	37	36	73	
Number of exceedances (REC-1)	0	5	2	7	9.6%
Fecal Coli	0	38	36	74	
Number of exceedances (REC-1)	0	2	0	2	2.7%
Total Coli	0	38	36	74	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	3	1	4	5.4%

Recommendation
Delist REC-1, SHELL

Indicator: Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	1	1	13	
Number of exceedances (REC-1)	1	1	2	1	0	5	38.5%
Fecal Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	0	1	1	0	0	2	15.4%
Total Coli	4	1	4	1	1	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Number of exceedances (SHELL)	0	0	2	0	1	3	27.3%

Recommendation
Do not delist

Leisure Lagoon, MB-050					
Indicator: Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	39	44	83	
Number of exceedances (REC-1)	0	6	6	12	14.5%
Fecal Coli	0	39	44	83	
Number of exceedances (REC-1)	0	2	1	3	3.6%
Total Coli	0	39	44	83	
Number of exceedances (REC-1)	0	0	1	1	1.2%
Number of exceedances (SHELL)	0	8	2	10	12.0%

Recommendation
Delist REC-1, SHELL

Indicator: Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	5	1	1	1	9	64.3%
Fecal Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	1	1	0	1	4	28.6%
Total Coli	2	5	5	1	1	14	
Number of exceedances (REC-1)	1	3	1	0	1	6	42.9%
Number of exceedances (SHELL)	1	3	2	0	1	7	50.0%

Recommendation
Do not delist

Do Not Use 4/14

Leisure Lagoon, swim area MB-051					
Indicator Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	0	0	0	
Number of exceedances (REC-1)	5	0	0	5	0.0%
Fecal Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHELL

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	0	0	0	0	0	0		Do not delist; not enough samples
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Fecal Coli	0	0	0	0	0	0		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Total Coli	0	0	0	0	0	0		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Number of exceedances (SHELL)	0	0	0	0	0	0	0.0%	

North Pacific Passage, MB-042					
Indicator Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	32	36	68	
Number of exceedances (REC-1)	0	2	0	2	2.9%
Fecal Coli	0	32	36	68	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	0	32	36	68	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	1	2	3	4.4%

Recommendation
Delist REC-1, SHELL

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	0	0	0	1	0	1		Do not delist; not enough samples
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Fecal Coli	0	0	0	1	0	1		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Total Coli	0	0	0	1	0	1		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Number of exceedances (SHELL)	0	0	0	0	0	0	0.0%	

Perez Cove, MB-190					
Indicator Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHELL

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	4	3	4	0	0	11		Do not delist
Number of exceedances (REC-1)	0	0	3	0	0	3	27.3%	
Fecal Coli	4	3	4	0	0	11		
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%	
Total Coli	4	3	4	0	0	11		
Number of exceedances (REC-1)	0	0	2	0	0	2	18.2%	
Number of exceedances (SHELL)	0	1	2	0	0	3	27.3%	

Do Not Use 4/14

Quivera Basin, MB-180					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	0	0	0	
Number of exceedances (REC-1)	7	0	0	7	0.0%
Fecal Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	7	0	0	7	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	3	0	0	4	36.4%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	0	0	0	1	9.1%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	0	0	0	1	9.1%
Number of exceedances (SHELL)	1	0	3	0	0	4	36.4%

Recommendation
Do not delist

Sail Bay, MB-130					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	9	0	1	10	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	0	0	1	1	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	0	0	1	1	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	3	0	0	4	36.4%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	1	0	0	2	18.2%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%
Number of exceedances (SHELL)	1	1	2	0	0	4	36.4%

Recommendation
Do not delist

San Juan Cove, MB-140					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	1	3	0	0	5	45.5%
Fecal Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	1	0	1	0	0	2	18.2%
Total Coli	4	3	4	0	0	11	
Number of exceedances (REC-1)	0	1	1	0	0	2	18.2%
Number of exceedances (SHELL)	2	1	3	0	0	6	54.5%

Recommendation
Do not delist

Do Not Use 4/14

Santa Barbara, near storm drain, MB-150					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	31	24	55	
Number of exceedances (REC-1)	24	3	2	29	52.7%
Fecal Coli	24	31	24	79	
Number of exceedances (REC-1)	7	0	0	7	8.9%
Total Coli	24	31	24	79	
Number of exceedances (REC-1)	2	0	0	2	2.5%
Number of exceedances (SHELL)	6	0	4	10	12.7%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	4	3	4	1	1	13	
Number of exceedances (REC-1)	2	1	2	0	1	6	46.2%
Fecal Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	0	1	1	0	0	2	15.4%
Total Coli	4	3	4	1	1	13	
Number of exceedances (REC-1)	2	0	1	0	0	3	23.1%
Number of exceedances (SHELL)	2	0	2	0	1	5	38.5%

Recommendation
Do not delist

Santa Clara Cove, MB-132					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	32	0	32	
Number of exceedances (REC-1)	0	2	0	2	6.3%
Fecal Coli	0	32	0	32	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	0	32	0	32	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	1	0	1	3.1%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Fecal Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Total Coli	0	0	0	1	0	1	
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0	0	0.0%

Recommendation
Do not delist; not enough samples

Santa Clara Place, MB-131					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	39	28	67	
Number of exceedances (REC-1)	0	13	6	19	28.4%
Fecal Coli	0	39	27	66	
Number of exceedances (REC-1)	0	5	3	8	12.1%
Total Coli	0	39	27	66	
Number of exceedances (REC-1)	0	3	6	9	13.6%
Number of exceedances (SHELL)	0	8	11	19	28.8%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance
	1999	2000	2001	2002	2003		
Enterococcus	1	0	0	1	0	2	
Number of exceedances (REC-1)	1	0	0	1	0	2	100.0%
Fecal Coli	1	0	0	1	0	2	
Number of exceedances (REC-1)	0	0	0	1	0	1	50.0%
Total Coli	1	0	0	1	0	2	
Number of exceedances (REC-1)	1	0	0	1	0	2	100.0%
Number of exceedances (SHELL)	1	0	0	1	0	2	100.0%

Recommendation
Do not delist; not enough samples

Do Not Use 4/14

Seaworld Marina, west outfall, MB-190					
Indicator Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	38	13	51	
Number of exceedances (REC-1)	20	7	3	30	58.8%
Fecal Coli	20	37	13	70	
Number of exceedances (REC-1)	5	1	1	7	10.0%
Total Coli	15	38	13	66	
Number of exceedances (REC-1)	1	1	0	2	3.0%
Number of exceedances (SHELL)	3	5	2	10	15.2%

Recommendation
Do not delist

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	0	0	1	3	2	6		Do not delist
Number of exceedances (REC-1)	0	0	0	0	2	2	33.3%	
Fecal Coli	0	0	1	3	2	6		
Number of exceedances (REC-1)	0	0	0	0	1	1	16.7%	
Total Coli	0	0	1	3	2	6		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Number of exceedances (SHELL)	0	0	0	1	2	3	50.0%	

South Pacific Passage, east outfall, MB-192					
Indicator Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	38	13	51	
Number of exceedances (REC-1)	0	0	1	1	2.0%
Fecal Coli	0	37	13	50	
Number of exceedances (REC-1)	0	0	1	1	2.0%
Total Coli	0	38	13	51	
Number of exceedances (REC-1)	0	0	2	2	3.9%
Number of exceedances (SHELL)	0	2	2	4	7.8%

Recommendation
Delist REC-1, SHELL

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	0	0	1	3	2	6		Do not delist
Number of exceedances (REC-1)	0	0	1	0	1	2	33.3%	
Fecal Coli	0	0	1	3	2	6		
Number of exceedances (REC-1)	0	0	1	0	1	2	33.3%	
Total Coli	0	0	1	3	2	6		
Number of exceedances (REC-1)	0	0	0	0	2	2	33.3%	
Number of exceedances (SHELL)	0	0	1	1	2	4	66.7%	

Tecolote Creek Outlet, MB-030					
Indicator Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	41	18	59	
Number of exceedances (REC-1)	0	18	13	31	52.5%
Fecal Coli	0	40	15	55	
Number of exceedances (REC-1)	0	6	1	7	12.7%
Total Coli	0	38	18	56	
Number of exceedances (REC-1)	0	4	7	11	19.6%
Number of exceedances (SHELL)	0	11	10	21	37.5%

Recommendation
Delist REC-1, SHELL

Indicator Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	2	5	7	3	0	17		Do not delist
Number of exceedances (REC-1)	2	5	7	2	0	16	94.1%	
Fecal Coli	2	5	7	3	0	17		
Number of exceedances (REC-1)	1	3	3	1	0	8	47.1%	
Total Coli	2	4	6	2	0	14		
Number of exceedances (REC-1)	1	3	5	0	0	9	64.3%	
Number of exceedances (SHELL)	2	4	6	0	0	12	85.7%	

Do Not Use 4/14

Tecolote Playground, MB-031					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	12	30	47	
Number of exceedances (REC-1)	0	2	6	8	17.0%
Fecal Coli	5	12	30	47	
Number of exceedances (REC-1)	0	0	2	2	4.3%
Total Coli	5	12	30	47	
Number of exceedances (REC-1)	0	0	1	1	2.1%
Number of exceedances (SHELL)	0	0	3	3	6.4%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	0	0	0	1	1	2		Do not delist; not enough samples
Number of exceedances (REC-1)	0	0	0	1	1	2	100.0%	
Fecal Coli	0	0	0	1	1	2		
Number of exceedances (REC-1)	0	0	0	0	1	1	50.0%	
Total Coli	0	0	0	1	1	2		
Number of exceedances (REC-1)	0	0	0	0	1	1	50.0%	
Number of exceedances (SHELL)	0	0	0	0	1	1	50.0%	

Tecolote Shores, MB-041					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	5	1	0	6	
Number of exceedances (REC-1)	0	1	0	1	16.7%
Fecal Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	5	0	0	5	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	0	0	0	0	0	0		Do not delist; not enough samples
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Fecal Coli	0	0	0	0	0	0		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Total Coli	0	0	0	0	0	0		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Number of exceedances (SHELL)	0	0	0	0	0	0	0.0%	

Tecolote Shores, near storm drain, MB-040					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	31	31	62	
Number of exceedances (REC-1)	0	5	3	8	12.9%
Fecal Coli	0	32	31	63	
Number of exceedances (REC-1)	0	1	1	2	3.2%
Total Coli	0	32	31	63	
Number of exceedances (REC-1)	0	0	1	1	1.6%
Number of exceedances (SHELL)	0	2	1	3	4.8%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	2	5	6	1	0	14		Do not delist
Number of exceedances (REC-1)	2	4	2	0	0	8	57.1%	
Fecal Coli	4	5	6	1	0	16		
Number of exceedances (REC-1)	2	3	2	0	0	7	43.8%	
Total Coli	4	4	6	1	0	15		
Number of exceedances (REC-1)	2	2	2	0	0	6	40.0%	
Number of exceedances (SHELL)	3	3	4	0	0	10	66.7%	

Do Not Use 4/14

Vacation Isle, MB-200					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Fecal Coli	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	0	0	0	0	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	4	3	4	0	0	11		Delist REC-1
Number of exceedances (REC-1)	0	0	2	0	0	2	18.2%	
Fecal Coli	4	3	4	0	0	11		
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%	
Total Coli	4	3	4	0	0	11		
Number of exceedances (REC-1)	0	0	1	0	0	1	9.1%	
Number of exceedances (SHELL)	1	2	2	0	0	5	45.5%	

Ventura Cove, MB-223					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	25	27	52	
Number of exceedances (REC-1)	0	1	1	2	3.8%
Fecal Coli	0	25	27	52	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Total Coli	0	25	27	52	
Number of exceedances (REC-1)	0	0	0	0	0.0%
Number of exceedances (SHELL)	0	0	0	0	0.0%

Recommendation
Delist REC-1, SHELL

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	0	0	0	1	1	2		Do not delist; not enough samples
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Fecal Coli	0	0	0	1	1	2		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Total Coli	0	0	0	1	1	2		
Number of exceedances (REC-1)	0	0	0	0	0	0	0.0%	
Number of exceedances (SHELL)	0	0	0	0	0	0	0.0%	

Visitor's Center, near storm drain, MB-060					
Indicator/Bacteria	Number of Samples			Totals	% Exceedance
	2001	2002	2003		
Enterococcus	0	55	56	111	
Number of exceedances (REC-1)	0	38	26	64	57.7%
Fecal Coli	0	58	56	114	
Number of exceedances (REC-1)	0	17	11	28	24.6%
Total Coli	0	58	56	114	
Number of exceedances (REC-1)	0	18	9	27	23.7%
Number of exceedances (SHELL)	0	33	23	56	49.1%

Recommendation
Do not delist

Indicator/Bacteria	Number of Samples During Storm Events					Totals	% Exceedance	Recommendation
	1999	2000	2001	2002	2003			
Enterococcus	2	5	6	2	0	15		Do not delist
Number of exceedances (REC-1)	1	3	3	1	0	8	53.3%	
Fecal Coli	3	5	6	3	0	17		
Number of exceedances (REC-1)	1	3	1	2	0	7	41.2%	
Total Coli	4	5	6	3	0	18		
Number of exceedances (REC-1)	2	2	1	2	0	7	38.9%	
Number of exceedances (SHELL)	4	3	3	2	0	12	66.7%	

Do not delist 4/14.

Wildlife Refuge, MB-090									
Indicator/Bacteria		2001	2002	2003	Totals	% Exceedance	Recommendation		
Enterococcus		0	43	46	89		Do not delist		
Number of exceedances (REC-1)		22	15	13	50	56.2%			
Fecal Coli		22	43	46	111				
Number of exceedances (REC-1)		3	4	2	9	8.1%			
Total Coli		22	43	46	111				
Number of exceedances (REC-1)		1	4	1	6	5.4%			
Number of exceedances (SHELL)		0	10	4	14	12.6%			

Indicator/Bacteria									
Indicator/Bacteria		1999	2000	2001	2002	2003	Totals	% Exceedance	Recommendation
Enterococcus		2	5	7	1	1	16		
Number of exceedances (REC-1)		1	4	5	0	1	11	68.8%	
Fecal Coli		2	5	7	1	1	16		
Number of exceedances (REC-1)		1	3	2	0	1	7	43.8%	
Total Coli		2	4	7	1	1	15		
Number of exceedances (REC-1)		1	2	2	0	1	6	40.0%	
Number of exceedances (SHELL)		1	3	6	1	1	12	80.0%	

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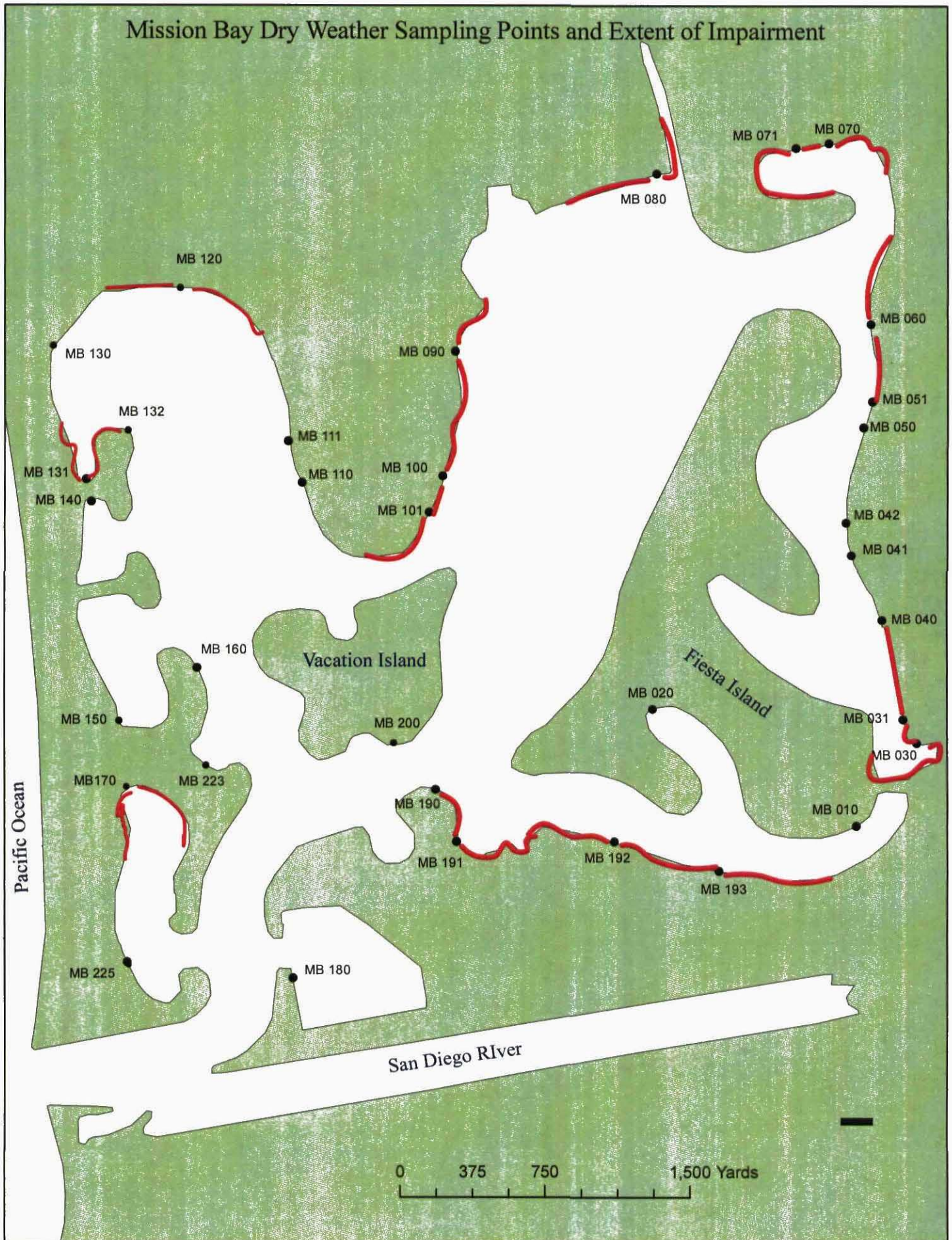
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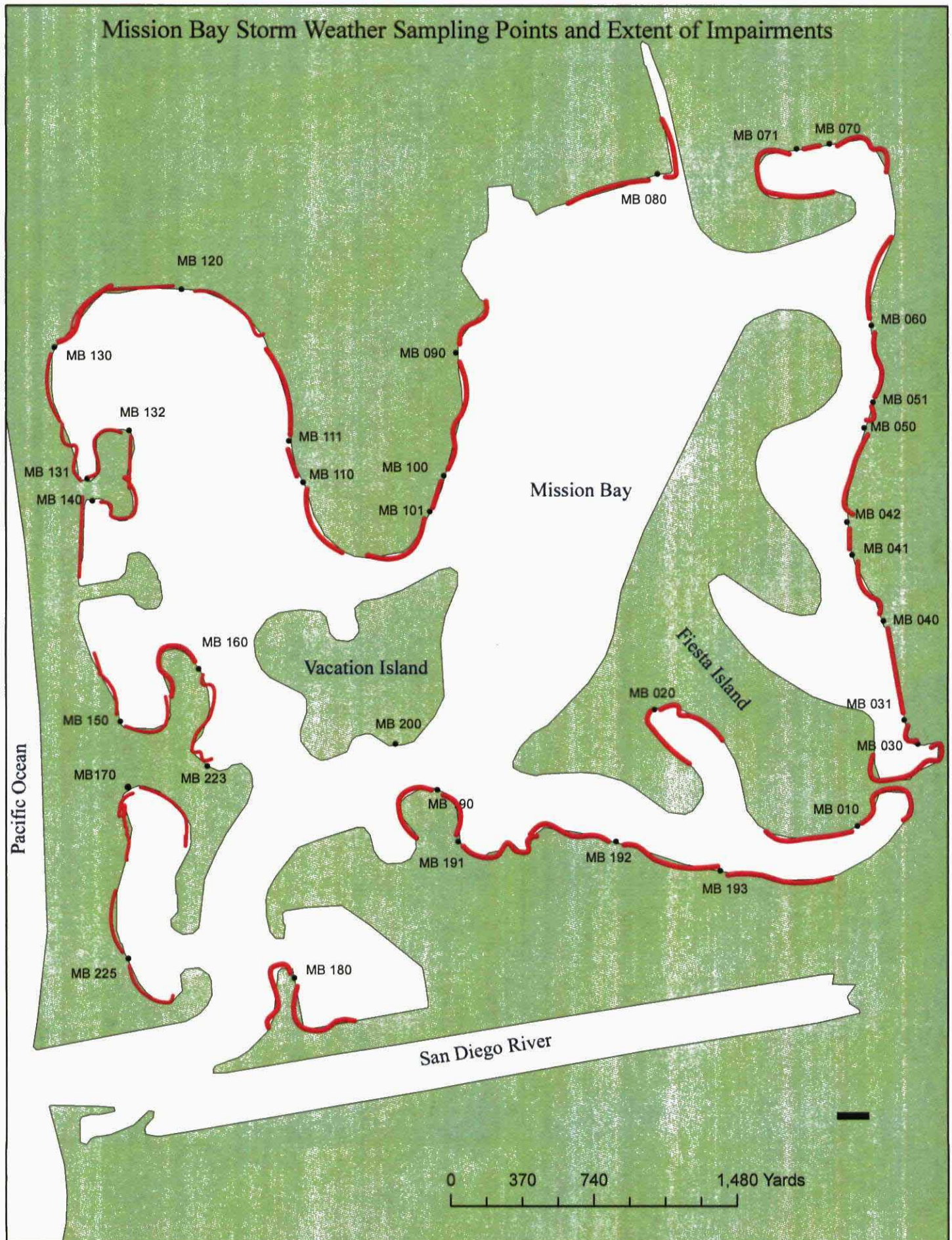
Attachment 2
Location Maps of Mission Bay Sampling Points and
Extent of Impairment for Dry Weather and Storm Weather



Mission Bay Dry Weather Sampling Points and Extent of Impairment



Mission Bay Storm Weather Sampling Points and Extent of Impairments



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Attachment 4:
Bacteria data and analysis submitted by the City of Laguna Beach

ORANGE COUNTY

ALISO CREEK

Hydrologic Subarea 901.13

NEW 303(d) LISTINGS

Enterococci, *Escherichia coli*, Fecal Coliform, Phosphorus and Toxicity.
Fecal indicator bacteria in all tributaries to Aliso Creek

PREVIOUS 303(d) LISTINGS

~~Coliform (lower 1 mile of creek)~~

Bacteria indicators and toxicity in 19 miles of Aliso Creek. Phosphorus in lower four miles.

WATERSHED CHARACTERISTICS

The following description of the Aliso Creek Watershed is taken from the Aliso Creek Water Quality Planning Study, Quarterly Progress Report¹. The Aliso Creek watershed encompasses a drainage area of 34.6 square miles in southern Orange County including the communities of Portola Hills and Leisure World, and the cities of Aliso Viejo, Lake Forest, Laguna Hills, Laguna Niguel, Laguna Woods and portions of Mission Viejo and Laguna Beach. The watershed drains for a distance of 16.5 miles in a northeast to southwest direction from the Santa Ana mountains of the Cleveland National Forest to the Pacific Ocean south of Laguna Beach. The upper half of the watershed, north of Interstate 5, is relatively narrow (1-2 miles), while the lower half broadens to a maximum of 5 miles in Laguna Niguel. The major tributaries of Aliso Creek are Sulphur Creek, Wood Canyon, Aliso Hills Channel, Dairy Fork, and English Canyon.

Aliso Creek is classified as inland surface water with the following beneficial uses: AGR, REC1 (designated potential), REC2, WARM and WILD².

WATER QUALITY OBJECTIVES NOT ATTAINED

The bacterial objectives used for evaluation of Aliso Creek water quality pertain to freshwater areas considered moderately or lightly used. This particular decision, namely the extent to which the area is used, is based on best professional judgment. If both steady state (30-day period) and single sample objectives are available, only the particular objective used for data assessment is described.

Enterococci The Basin Plan² REC1 single sample maximum allowable density is 108 colonies/100 mL, for a moderately or lightly used area.

***Escherichia coli* (*E. coli*)** The Basin Plan² REC1 single sample maximum allowable density is 406 colonies/100 mL, for a moderately or lightly used area.

Fecal coliform The Basin Plan² REC1 objective states that for not less than 5 samples, in any 30-day period, the log mean shall not exceed 200 colonies/100 mL. Additionally, no more than 10% of the total samples during any 30-day period shall exceed 400 colonies/100 mL.

Phosphorus The Basin Plan² states that "Inland surface waters...shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that

such growths cause nuisance or adversely affect beneficial uses.“ The Basin Plan² biostimulatory substance objective for phosphorus (P) is 0.1 mg/L. This objective is not to be exceeded more than 10% of the time during any one-year period.

Toxicity The Basin Plan² objective states that “all waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal or aquatic life.”

EVIDENCE OF IMPAIRMENT

Enterococci

Data collected from April 2001 through August 2005 for the Aliso Creek Bacteria Monitoring Program⁶ demonstrate chronic enterococci concentrations in excess of the single sample maximum allowable density of 108 colony forming units (CFU)/100 mL at 37 locations along Aliso Creek and its tributaries, including Aliso Hills Channel, English Canyon Creek, Dairy Fork Creek, Sulphur Creek and Wood Canyon Creek. Data was collected 5 times per month from each location and reported quarterly. The receiving water locations rarely meet the enterococci objective. For instance, during the 18th quarter (Summer 2005) two of 555 (0%) single samples met the enterococci objective of 108 CFU/100ml¹. The data show clear evidence of impairment of the REC1 beneficial use.

Table 1 lists the names and GPS locations of monitoring stations in the Aliso Creek Bacteria Monitoring Program. Table 2 shows the locations of the monitoring stations on a map within the Aliso Creek watershed. The stations are identified by County of Orange naming conventions for the flood control system. The J01 prefix refers to Aliso Creek, J02 refers to Wood Canyon, J03 is Sulphur Creek, J05 is Aliso Hills Channel, J06 is Dairy Fork, and J07 is English Canyon.

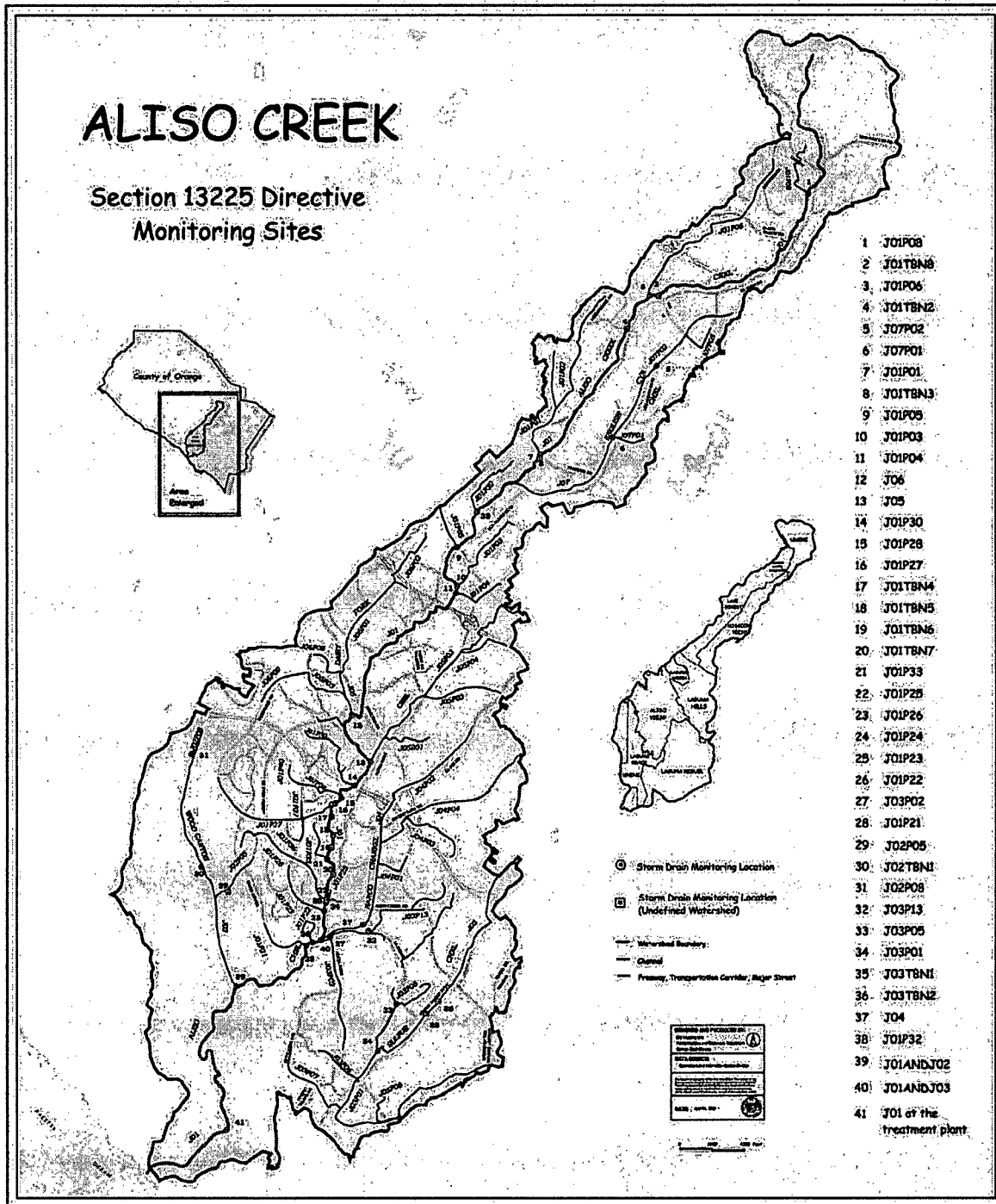
¹ Eighteenth Quarterly Progress Report for Directive Issued Pursuant to California Water Code Section 13225, Aliso Creek Watershed. October 28, 2005. Prepared by the County of Orange and Cities within the Aliso Creek watershed.

Table 1. Name and GPS Coordinates of Monitoring Locations for Aliso Creek Bacteria Monitoring Program 2001-2005.

Monitored Sites in the Aliso Creek Watershed

Site Name	GPS Coordinates					
		degrees	minutes		degrees	minutes
J01P08	N	33	40.700	W	117	37.400
J01TBN8	N	33	39.616	W	117	39.225
J01P06	N	33	39.804	W	117	39.239
J01TBN2	N	33	39.290	W	117	39.596
J07P02	N	33	38.784	W	117	39.353
J07P01	N	33	38.180	W	117	39.713
J01P01	N	33	38.006	W	117	40.614
J01TBN3	N	33	37.989	W	117	40.617
J01P05	N	33	37.026	W	117	41.620
J01P03	N	33	36.625	W	117	41.582
J01P04	N	33	37.027	W	117	41.546
J06	N	33	35.315	W	117	42.863
J05	N	33	34.806	W	117	42.578
J01P30	N	33	34.808	W	117	42.626
J01P28	N	33	34.480	W	117	42.955
J01P27	N	33	34.398	W	117	42.969
J01TBN4	N	33	34.266	W	117	43.024
J01TBN5	N	33	34.080	W	117	43.058
J01TBN6	N	33	33.961	W	117	43.067
J01P33	N	33	33.887	W	117	43.109
J01TBN7	N	33	33.668	W	117	42.998
J01P26	N	33	33.545	W	117	43.122
J01P25	N	33	33.453	W	117	43.075
J01P24	N	33	33.386	W	117	43.080
J01P23	N	33	33.303	W	117	43.137
J04	N	33	33.178	W	117	42.656
J03P13	N	33	33.126	W	117	42.595
J03P02	N	33	33.011	W	117	42.076
J03P05	N	33	32.400	W	117	42.246
J03P01	N	33	31.913	W	117	42.490
J03TBN1	N	33	32.272	W	117	41.857
J03TBN2	N	33	32.405	W	117	41.732
J01P22	N	33	32.982	W	117	43.278
J01P21	N	33	32.657	W	117	43.632
J02P08	N	33	33.939	W	117	44.711
J02P05	N	33	33.500	W	117	44.281
J02TBN1	N	33	33.755	W	117	44.641
J01/J03	N	33	33.015	W	117	43.150
J01 @ TP	N	33	31.062	W	117	44.256
J01/J02	N	33	32.458	W	117	44.214
J01P32 @ pond	N	33	37.370	W	117	41.362

Table 2. Map of Monitoring Locations for Aliso Creek Bacteria Monitoring Program 2001-2005.



In addition, data collected in June to August, 1999 for the Aliso Creek Water Quality Planning Study³ showed enterococci concentrations in excess of the single sample maximum allowable density of 108 colony forming units (CFU)/100 mL at several locations along Aliso Creek. From up to downstream, the following locations had these percentages of exceedances out of 9 total samples: at Cooks Corner (44%), downstream of English Canyon Creek (33%), downstream of Dairy Fork Creek (78%), downstream of Sulphur Creek (44%) and at Pacific Coast Highway (33%). It should be noted that these samples were taken in dry weather.

The tributaries to Aliso Creek also showed impairment. From June to August, 1999 the following tributaries had these percentages of exceedances out of 9 total samples: English Canyon Creek (56%), Dairy Fork Creek (78%), Aliso Hills Channel (100%), Sulphur Creek (33%) and Wood Canyon Creek (22%). It should be noted that these samples were taken in dry weather. These values show clear evidence of impairment of the REC1 beneficial use.

Escherichia coli

Data collected in June to August, 1999 for the Aliso Creek Water Quality Planning Study³ showed *E. coli* concentrations in excess of the single sample maximum allowable density of 406 colonies/100 mL at several locations along Aliso Creek. From up to downstream, the following locations had these percentages of exceedances out of 9 total samples: at Cooks Corner (22%), downstream of English Canyon Creek (56%), downstream of Dairy Fork Creek (89%) and downstream of Sulphur Creek (33%). It should be noted that these samples were taken in dry weather.

The tributaries to Aliso Creek also showed impairment due to *E. coli*. From June to August, 1999 the following tributaries had these percentages of exceedances out of 9 total samples: English Canyon Creek (44%), Dairy Fork Creek (78%), Aliso Hills Channel (67%), Sulphur Creek (22%) and Wood Canyon Creek (33%). It should be noted that these samples were taken in dry weather. These values show clear evidence of impairment of the REC1 beneficial use.

Fecal coliform

Data collected from April 2001 through August 2005⁶ demonstrate routine log mean concentrations of fecal coliform well above the Basin Plan 30-day log mean objective of 200 colonies/100 mL at 37 locations along Aliso Creek and its tributaries, including Aliso Hills Channel, English Canyon Creek, Dairy Fork Creek, Sulphur Creek and Wood Canyon Creek. (See Tables 1 and 2.) Data was collected weekly and reported quarterly. Each of 18 quarterly reports assessed compliance with REC-1 and REC-2 standards for each of the three months within the quarterly reporting period.

During the period from April 2001 through August 2005, an average of 21% of the receiving water stations located downstream of storm drains (25 feet downstream of storm drain outlet) met non-contact recreation (REC-2) objectives for all three months per reporting quarter. An average of zero% met the contact recreation (REC-1) objectives for all three months per reporting quarter.

The quarterly data can be assessed in two ways. First, how often each location meets an objective for the entire quarter (3 consecutive months). During the 18th quarter (Summer 2005), two of 35 (6%) stations downstream of storm drains met the REC-2 objective for each month in the quarter, and none (0%) met the REC-1 objective for any of the three months. Only seven of 34 (21%) stations upstream of storm drains met the REC-2 for each month in the quarter, and four (12%) stations met the REC-1 objective for only one month in the quarter. None met REC-1 for more than one month.

A second method of analysis is to aggregate each monthly assessment for each location and calculate how often monthly objectives were met in the watershed. The results of the 30-day monitoring periods throughout the watershed for all 18 quarters are summarized in Table 3. The data show clear evidence of impairment of the REC1 and REC-2 beneficial uses.

Table 3. How Often Recreational Beneficial Uses Were Met in the Aliso Creek Watershed During 30-day Monitoring Periods for Stormdrain Discharges and Receiving Water Locations Upstream (U/S) and Downstream (D/S) of Those Stormdrains.

(Note: Up to 37 storm drains and adjacent receiving waters were assessed three times per quarter, resulting in up to 111 (37 x 3) events per quarter.)

The results of the 30-day monitoring periods throughout the watershed are summarized below.

Met REC-1 Criteria								
Quarter	1	2	3	4	5	6	7	8
U/S of Drain	1/58	0/89	2/98	9/93	6/90	2/85	16/90	26/97
Stormdrain	1/66	0/99	1/103	6/104	2/105	1/99	5/105	7/105
D/S of Drain	0/62	0/94	1/103	4/96	0/93	0/88	6/93	17/100
Quarter	9	10	11	12	13	14	15	16
U/S of Drain	1/94	5/102	11/94	12/104	5/101	2/93	6/99	4/95
Stormdrain	0/101	0/110	3/105	2/111	0/111	0/105	3/105	5/102
D/S of Drain	0/97	0/105	4/97	6/109	2/108	0/105	3/102	2/102
Quarter	17	18						
U/S of Drain	5/99	4/96						
Stormdrain	3/105	1/105						
D/S of Drain	5/103	0/105						
Met REC-2 Criteria								
Quarter	1	2	3	4	5	6	7	8
U/S of Drain	30/58	38/91	38/98	61/93	64/91	43/90	69/91	87/97
Stormdrain	7/66	2/100	9/103	30/104	9/105	6/105	47/105	79/105
D/S of Drain	22/62	21/96	48/105	55/96	50/94	31/93	57/94	92/100
Quarter	9	10	11	12	13	14	15	16
U/S of Drain	55/96	62/102	57/94	55/104	61/101	35/93	54/99	75/99
Stormdrain	11/105	4/110	22/105	22/111	5/111	0/105	30/104	55/105
D/S of Drain	33/99	41/105	46/97	50/109	36/108	14/99	50/105	79/105
Quarter	17	18						
U/S of Drain	89/99	55/95						
Stormdrain	24/105	5/105						
D/S of Drain	86/105	30/105						

In addition, data collected in October, 1998 for the Aliso Creek Water Quality Planning Study³ show 4 locations along the creek to have log mean concentrations of fecal coliform well above the Basin Plan 30-day log mean objective of 200 colonies/100 mL. From up to downstream, the following locations had these log means: downstream of English Canyon Creek (1074 Most Probable Number (MPN)/100 mL), downstream of Dairy Fork Creek (4308 MPN/100 mL), downstream of Sulphur Creek (1410 MPN/100 mL) and at Pacific Coast Highway (3178 MPN/100 mL). Each of these log mean values were calculated using 5 samples in a 30-day period.

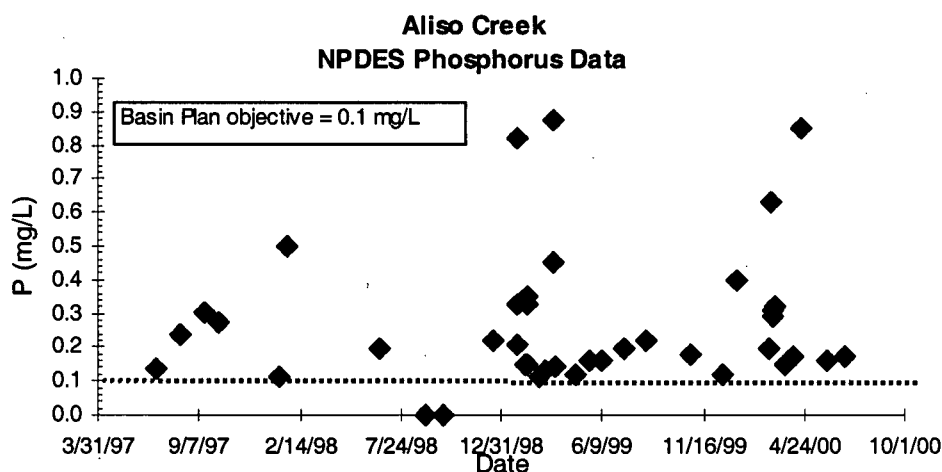
From October to December 1998, there were several exceedances of the Basin Plan objective of 400 MPN/100 mL (not to be exceeded by more than 10% of the total samples during any 30-day period). A breakdown of 30-day sampling periods at each location is shown in the table below, clearly indicating impairment of the REC1 beneficial use.

No. of Exceedances (REC1, Fecal Coliform)
October '98 November '98 December '98
(5 total samples) (3 total samples) (4 total samples)

at Cooks Corner	2 (40%)	2 (66%)	0
d/s English Canyon Creek	4 (80%)	2 (66%)	1 (25%)
d/s Dairy Fork Creek	5 (100%)	2 (66%)	1 (25%)
d/s Sulphur Creek	4 (80%)	1 (33%)	1 (25%)
at Pacific Coast Highway	5 (100%)	1 (33%)	0

Phosphorus Data collected between July, 1997 and June, 2000 contained in the County of Orange NPDES Annual Progress Report⁴ shows the Phosphorus objective to be exceeded more than 10% of the time during a one-year period. These data were converted from PO₄ to their equivalent phosphorus value. From July 1997 to June 1998, 5 of 5 samples (100%) exceeded the objective, with a mean of 0.23 mg/L and a median of 0.24 mg/L. From September 1998 to August 1999, 20 of 22 samples (91%) exceeded the objective, with a mean of 0.26 mg/L and a median of 0.18 mg/L. From October 1999 to June 2000, 13 of 13 samples (100%) exceeded the objective, with a mean of 0.304 mg/L and a median of 0.20 mg/L. See figure below for phosphorus concentrations plotted against time of year.

Samples collected at two locations of Aliso Creek on June 10, 1998 show both locations to have phosphorus concentrations (converted from phosphate) in excess of the Basin Plan objective for phosphorus. This data is from the California Regional Water Quality Control Board, San Diego Region (Regional Board) In-house monitoring⁵. At Country Club Road, the phosphorus concentration was 0.93 mg/L. At Pacific Park Drive and Oso Parkway, the concentration was 0.81 mg/L.



These concentrations of phosphorus over the Basin Plan objective are expected to contribute to excess algae growth that may impair the REC1, REC2, WARM and WILD beneficial uses through the creation of odors, colors, increased turbidity and low dissolved oxygen environments².

Toxicity Water collected in September 1998, November 1998 and January 1999 for the Aliso Creek Water Quality Planning Study³ showed toxicity to juvenile fathead minnows and *Ceriodaphnia dubia* for the latter two sampling dates. It should be noted that the latter two dates represent storm events, while the first sampling took place during low flow conditions. In 11 of 20 toxicity tests, survival rates for both species were less than 70%, with 10 of those 11 having survival rates less than 50%. The average survival rate for juvenile fathead minnows was 79%, with a median of 85%. The average survival rate for *Ceriodaphnia dubia* was 22%, with a median of 0%. This toxicity data is direct evidence of the impairment to the WARM and WILD beneficial uses of this waterbody.

EXTENT OF IMPAIRMENT

Enterococci Sampling occurred along the entire reach of Aliso Creek and in several tributaries. Since all locations contained elevated enterococci levels, the majority of the hydrologic sub area (HSA # 901.13) is impaired, specifically including the tributaries of Aliso Hills Channel, English Canyon Creek, Dairy Fork Creek, Sulphur Creek and Wood Canyon Creek.

E. coli Sampling occurred along the entire reach of Aliso Creek and in several tributaries. Since all locations contained elevated enterococci levels, the majority of the hydrologic sub area (HSA # 901.13) is impaired, specifically including the tributaries of Aliso Hills Channel, English Canyon Creek, Dairy Fork Creek, Sulphur Creek and Wood Canyon Creek.

Fecal coliform Current listing describes the extent of impairment as the lower 1 mile-19 miles of Aliso Creek. ~~Since recent sampling occurred along the entire reach of Aliso Creek, the entire reach (7.2 miles) is listed as impaired due to fecal coliform.~~ Weekly monitoring throughout Aliso Creek and its major tributaries demonstrates consistent exceedances of both REC-1 and REC-2 objectives, therefore, the entire watershed downstream of the uppermost monitoring station (J01P08) is listed as impaired due to fecal Coliform.

Phosphorus Sampling occurred at site ACJO1 (near the mouth of the creek) for the County of Orange NPDES Annual Progress Report⁴, and further upstream at Country Club Rd and at Pacific Park Dr. / Oso Parkway for the Regional Board In-house monitoring⁵. The furthest upstream station is approximately in the middle of the creek. Therefore, Aliso Creek is listed as impaired for phosphate from ½ mile upstream of Pacific Park Dr. / Oso Parkway all the way down to the mouth of the creek. This covers the lower 4 miles of the creek.

Toxicity Five stations, from the headwaters to the mouth, were sampled. All 5 stations showed toxicity for one or both of the storm event samplings. Therefore, the entire reach (7.2 miles) is listed as impaired due to toxicity.

POTENTIAL SOURCES

Enterococci Urban runoff, other point sources and non-point sources

E. coli Urban runoff, other point sources and non-point sources

Fecal coliform Urban runoff, other point sources and non-point sources

Phosphorus Urban runoff, other point sources and non-point sources

Toxicity The Aliso Creek Water Quality Planning Study³ indicates organophosphate pesticides are a significant component of the aquatic toxicity in storm samples. Organophosphate pesticides are found in urban and agricultural run-off.

TMDL PRIORITY

Enterococci Medium

E. coli Medium

Fecal coliform Medium

Phosphorus Medium

Toxicity Medium

INFORMATION SOURCES

Water Quality Objectives and Watershed Characteristics

¹ Aliso Creek Water Quality Planning Study, Quarterly Progress Report, January 1, 1999 – March 31, 1999. Agreement No. 7-042-250-0, Aliso Creek 205(j) Water Quality Planning Study.

² Water Quality Control Plan for the San Diego Basin (9), 1994. California Regional Water Quality Control Board, San Diego Region.

Data Sources

³ Aliso Creek Water Quality Planning Study, Draft Final Report, Aliso Creek 205(j) Water Quality Planning Study. June, 2000. Agreement No. 7-042-250-0.

⁴ NPDES Annual Progress Report, County of Orange. November, 2000. Orange County Board of Supervisors. Regional Water Quality Control Board, San Diego Region: Order No. 96-03.

⁵ SDRWQCB In-House Monitoring. 1998. California Regional Water Quality Control Board, San Diego Region.

⁶ Aliso Creek Watershed Quarterly Progress Reports, County of Orange, Orange County Flood Control District, City of Aliso Viejo, City of Laguna Beach, City of Laguna Hills, City of Laguna Niguel, City of Laguna Woods, City of Lake Forest, and City of Mission Viejo. 2001-2005.

~~197~~

143

663

Attachment 4:
Bacteria data and analysis submitted by the City of Laguna Beach

ORANGE COUNTY



Ocean Bacteriological Data Evaluation for City of Laguna Beach, 1999 Through 2004

Final Report

Prepared For:

**The City of Laguna Beach
505 Forest Avenue
Laguna Beach, CA 92651**

June 2005

SAN DIEGO REGIONAL
WATER QUALITY
CONTROL BOARD
2005 AUG 12 P 12:47



**Ocean Bacteriological Data Evaluation for
City of Laguna Beach,
1999 through 2004**

Final Report

Prepared For:
The City of Laguna Beach

Prepared By:
Weston Solutions, Inc.
2433 Impala Drive
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June 30, 2005

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Executive Summary

Along the City of Laguna Beach (City) coastline, there are 14 beach shoreline sites that have been monitored for bacterial indicators in the last six years. In 1998, these sites were 303(d) listed as impaired by the California State Water Resources Control Board (SWRCB) due to apparent exceedances of REC-1 bacterial indicator standards. In 2002, the SWRCB revised the 303(d) list as part of the 2002 bi-annual update. The City's fourteen (14) beach shoreline sites remained on the 2002 303(d) list. The purpose of this report is to 1) compile and summarize available bacterial data for shoreline sites monitored along the City of Laguna Beach coastline, 2) assess the ocean bacteria data at those sites that are listed on the SWRCB 2002 303(d) List, and 3) identify sites that should be considered for removal (de-listing) from the 303(d) List based on guidance criteria developed by the SWRCB.

Six years of ocean bacteria data were assessed: from January 1999 through December 2004. Data were compiled from Orange County Health Care Agency (OCHCA) raw data for all shoreline sites along the City's coastline. Ocean samples for most sites were typically collected and analyzed weekly by the OCHCA and the South Orange County Wastewater Authority (SOCWA). Samples were analyzed for three indicator bacteria: total coliform, fecal coliform, and enterococcus.

The process for removing a water body from the 303(d) List in California is summarized in the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (SWRCB 2004). The data used for the assessment were compared to AB411 standards for bacteria. The number of exceedances for a given sample size was compared against those allowed for de-listing in the SWRCB guidance using three different criteria: the single sample limit, the rolling geometric mean, and the monthly geometric mean. The three methods were presented to provide the SWRCB with a range of options for interpretation and assessment. All three methods produced similar final results with respect to de-listing consideration. The de-listing procedure provided a conservative (protective) approach to de-listing consideration, which allowed for the greatest protection of public health and the environment.

The SWRCB 2002 303(d) List identifies four watershed areas within the City of Laguna Beach that have 303(d) listed shoreline sites: Dana Point HSA, Aliso HSA, Laguna Beach HSA and San Joaquin Hills HSA. Below is a summary of the assessment results. The results indicate that twelve out of the fourteen sites meet the criteria described in the SWRCB guidance document and should be considered for removal (de-listing) from the 303(d) List.

- Dana Point HSA: There are six sites on the 2002 303(d) List in the Dana Point HSA. Five of the six sites had low percent exceedance values for all three criteria (single sample, rolling geometric mean, and monthly geometric mean) and were recommended for de-listing consideration. However, one site in the Dana Point HSA, Aliso Beach Middle (Site S9) on Aliso County Beach, had a greater number of exceedances than that allowed by the SWRCB guidance based on the rolling geometric mean and the monthly geometric mean. These results suggest that the Aliso Beach Middle site should remain on the 303(d) List.

- **Aliso HSA:** There are three sites on the 2002 303(d) List located in the Aliso HSA. At the Aliso Creek Mouth site there were 818 single sample exceedances of AB411 criteria out of 1949 analyses (41.97%), which is the highest exceedance frequency of any site along the City's shoreline. The rolling mean exceeded criteria 100% of the time and the monthly geometric mean exceeded criteria 95% of the time at this site. Clearly, these results do not support de-listing consideration at this site. However, the other two sites within Aliso HSA, Aliso Beach-North and Blue Lagoon Place, had very low percentages of exceedances. These results suggest that these two sites should be considered for de-listing from the 303(d) List.
- **Laguna Beach HSA:** Within the Laguna Beach HSA there are four sites that are on the 2002 303(d) List for excessive indicator bacteria levels. All four sites had percentages of exceedances for all three criteria (single sample, rolling geometric mean and monthly geometric mean) that were below the number allowable by the SWRCB guidance. These data support de-listing consideration for these sites.
- **San Joaquin Hills HSA:** There is only one site on the 303(d) List for bacterial indicators in San Joaquin Hills HSA: Heisler Park North at Crescent Bay Beach. There were only seven exceedances out of 917 weekly analyses (0.76%) at this site from 1999 through 2004, which is well below the number allowed by the SWRCB guidance using the single sample criteria. In addition, there were no exceedances based on the rolling geometric mean or the monthly geometric mean. These results suggest that the Heisler Park North at Crescent Bay Beach site should be considered for de-listing from the 303(d) List.

Introduction and Background

To meet the requirements of the California AB411 standards, the Orange County Health Care Agency (OCHCA) and South Orange County Wastewater Authority (SOCWA) routinely monitor the ocean water quality at numerous ocean locations along the City of Laguna Beach's coastline. Fourteen of these locations are listed on the State Water Resources Control Board (SWRCB) 2002 303(d) List for impairment due to apparent elevated levels of indicator bacteria (total coliform, fecal coliform, and enterococcus). The purpose of this document is to:

1. compile the available data on bacterial densities at the shoreline water quality monitoring sites along the City's coastline,
2. summarize the monitoring results in comparison to water quality standards and criteria, and
3. identify those sites that should be considered for removal from the 303(d) List based on guidance documents prepared by the SWRCB.

Methods of Data Evaluation

Data Sources

Data for this report were compiled from raw data for all shoreline sites along the City's coastline. All of the bacteriological data available for these sites from a six-year period (January 1999 through December 2004) are summarized and assessed in this report. Graphical representations of the data for each site on the 303(d) List are presented in the results section. Ocean water samples for most sites were typically collected and analyzed weekly by the OCHCA and the SOCWA. Samples were analyzed for three indicator bacteria: total coliform, fecal coliform, and enterococcus. Bacterial densities were determined by multiple tube fermentation (MTF), membrane filtration (MF), or the Enterolert technique (for enterococcus only).

De-listing Procedure

For those sites that are listed on the SWRCB 2002 303(d) List, an assessment was conducted to determine the number of exceedances of bacterial standards that have occurred at each site from 1999 through 2004 and to identify those sites that should be considered for de-listing. The process for removing a water body from the 303(d) List in California is summarized in the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (SWRCB 2004).

Table 1 is reproduced from Table 4.2 in the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (SWRCB 2004) and summarizes the maximum number of exceedances allowable for de-listing for a given sample size up to 121. For sample sizes greater than 121, the maximum number of allowable exceedances is determined using a formula in Microsoft Excel. The formula provided in the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (SWRCB 2004) can only be used for sample sizes up to approximately 1,000 (a limitation of Microsoft Excel). Because all of the sites assessed in this evaluation had sample sizes greater than 1,000, the maximum number of exceedances was estimated based on the percentage of exceedances. The percent of allowable exceedances for a sample size of 1,000 is estimated to be just above 16.5%, which is a maximum

of 165 exceedances. For sample sizes between 1,000 and 10,000, the percent of allowable exceedances was estimated to range from just above 16.5% to below 17%. Two sites evaluated in this document had a percentage of exceedances above this range, however, the other 12 sites had percentages of exceedances well below this range.

Table 1. Maximum number of measured exceedances allowable to remove a water segment from the Section 303(d) List (reproduced from SWRCB 2004, Table 4.2).

Sample Size		Maximum number of exceedances allowable for de-listing
From	To	
26	30	4
31	36	5
37	42	6
43	48	7
49	54	8
55	60	9
61	66	10
67	72	11
73	78	12
79	84	13
85	91	14
92	97	15
98	103	16
104	109	17
110	115	18
116	121	19

The minimum sample size for de-listing consideration identified by the SWRCB (2004) is 26.

Applicable Water Quality Standards

All of the beach shoreline sites assessed in this document are considered contact recreational waters with a beneficial use designation of REC-1. The most applicable criteria for REC-1 waters are those designated under Assembly Bill 411 (AB411) for three indicator bacteria: total coliform, fecal coliform, and enterococcus. The AB411 criteria are summarized in Table 2.

Table 2. Assembly Bill 411 (AB411) bacteriological standards.

	30-Day Limit ¹	Single Sample Limit
Total Coliform	1,000 MPN/ 100 ml ²	1,000 MPN/ 100 ml if Fecal > 10% of Total, or 10,000 MPN/100 ml ³
Fecal Coliform	200 MPN/ 100 ml	400 MPN/ 100 ml
Enterococcus	35 MPN/ 100 ml	104 MPN/ 100 ml

1 = 30 day limit is based on the geometric mean of at least five weekly samples

2 = MPN is Most Probable Number

3 = Total coliform single sample limit of 10,000 MPN decreases to 1,000 when the fecal coliform value is greater than 10% of total coliform value

There are two AB411 criteria presented in Table 2: the 30 day geometric mean of at least five weekly samples and the single sample limit. It is unclear from the SWRCB (2004) guidance document whether data should be assessed using the geometric mean or the single sample limit. Statistically, the single sample limit may be most valid because the statistical derivation of the allowable exceedance frequency listed in Table 1 is based on single sample, discrete data. However, regulatory agencies have stated that for data used for regulatory purposes, mean concentrations should be used for assessment. This suggests that the rolling 30 day geometric mean of at least five weekly samples, as presented in Table 2, should be used to compare to the values presented in Table 1. In addition, representatives from the SWRCB have indicated that their assessments for de-listing consideration should be based on the geometric mean of all samples collected in a single calendar month and the values compared to those in Table 1 (personal communication, Craig Wilson, SWRCB). To assure that proper consideration will be given to this assessment, the data in this document were compared to the values in Table 1 in three different ways:

1. single sample limit,
2. rolling 30 day geometric mean,
3. monthly geometric mean

The methods for each of these assessments are presented below.

Single Sample Limit. The AB411 single sample limits were used to determine the number of exceedances allowable for a given sample size, as listed in Table 1. Typically, a single sample is collected on a given day from a site and analyzed for three indicators: total coliform, fecal coliform, and enterococcus. Thus, a single sample usually produces three different analyses. To assess the number of exceedances at a site, first, the data were assessed to determine the total number of analyses for each indicator that exceeded the single sample limits at each site. The number of exceedances for each of the three indicators over the six year period (January 1999 through 2004) was then summed for each site. The total number of exceedances was then compared to the number allowable by SWRCB (2004) for the sample size at that site. Those sites that had a number of exceedances of water quality standards below that provided in the SWRCB guidance document for a given sample size, were recommended for de-listing consideration (i.e. removal from the 303(d) list).

The procedure discussed above provides a very conservative (i.e. protective) approach to de-listing consideration for several reasons:

- Exceedance of standards for any of the three indicators was counted as a single exceedance even if more than one standard was exceeded in a single day. For example, if both fecal coliform and enterococcus standards were exceeded at a site in the same sample, it was counted as two exceedances rather than just one.
- All data were considered in the six-year time frame for a given site, including data collected in dry and wet seasons as dry and wet weather (within 72 hours of a rain event).
- No allowances were given for samples collected under extreme conditions, such as those taken during a sewage spill.

The conservative approach provides the greatest protection of the beneficial uses for the protection of public health and the environment and generates de-listing recommendations only for those sites where bacterial contamination is minimal.

Rolling Geometric Mean. The rolling geometric mean is the averaging method used by the San Diego Department of Environmental Health (DEH) to evaluate bacterial water quality data (personal communication, Clay Clifton, DEH) and DEH protocols were followed for this assessment. For this method, the 30-day geometric mean was calculated for all values in the data set in chronological order starting from the date of the most recent sample. For instance, starting at the end of the data set (December 2004 in this case), the geometric mean was calculated for a given sample date using all the data from the previous 30 days when at least five weekly samples were collected. The mean value for that 30-day period was then compared to the AB411 Criteria in Table 2. Then the geometric mean was calculated from the next day and the data collected 30 days prior to that date. This method produces a continuous, or rolling, data set and provides an accurate chronological assessment of the bacteriological conditions at that site over time.

For this assessment, the number of exceedances of the 30-day geometric mean (given in Table 2) at a given site from 1999 through 2004 were compared to the allowable number of exceedances listed in Table 1 for the sample size at that site. For averaging purposes, one half the detection limit was used for all non-detect values in the data set, which is consistent with the protocols used by the San Diego County DEH (personal communication, Clay Clifton, DEH).

After the data were summarized, it was apparent that for all but three sites (C1, S9, and OLB00) only the geometric mean for enterococcus was exceeded over the six years of data analyzed. Therefore, the information provided in the site assessments for the geometric mean includes only the enterococcus data. For Sites S9 and OLB00, enterococcus was also used exclusively because the geometric means for total coliform and fecal coliform were exceeded 1% of the time or less and were therefore insignificant in terms of de-listing consideration. For Site C1 the geometric means for total coliform and fecal coliform exceeded their respective criteria 64% and 95% of the time, respectively. However, the geometric mean for enterococcus was exceeded 100% of the time so only this data is presented for de-listing consideration.

Monthly Geometric Mean. The monthly geometric mean is the averaging method preferred by the SWRCB for bacteriological data being considered for de-listing (personal communication, Craig Wilson, SWRCB). For this assessment, the geometric mean for all data collected within a given calendar month was calculated for the entire data set. This method produced 12 values per year or 72 values for the six-year data set. Each of these values was compared to the 30-day geometric mean AB411 criteria for a given indicator (Table 2). The total number of monthly geometric mean values that exceeded the allowable number given in Table 1 was then calculated for a given sample size (72 in most cases). For this assessment, all data within each month of collection were used to calculate the geometric mean. The five weekly sample minimum within a 30-day period required by AB411 was not adhered to for this assessment because it would have eliminated a large amount of data. As with the rolling geometric mean, for averaging purposes, one half the detection limit was used for all non-detect values in the data set. In addition, only the enterococcus results are presented in the site assessments for the same reasons stated above.

In the site assessment section that follows the data are presented in tabular form based on the assessment of all three methods described above.

Site-Specific Results

Site Locations

The beach shoreline sites along the City of Laguna Beach's coastline that are on the 303(d) List for apparent exceedances of indicator bacteria are presented in Table 3. These sites are shown graphically in Figure 1 along with the corresponding watershed HSA areas. A total of 14 beach shoreline sites that are on the 303(d) List were monitored from January 1999 through December 2004.

The shoreline sites are grouped in the 303(d) List by major hydrologic subarea (HSA) (Table 3). Of the 14 shoreline sites that are included on the 2002 303(d) List, six are located in the Dana Point HSA, three are located in the Aliso HSA, four are located in the Laguna Beach HSA and one is located in the San Joaquin Hills HSA. Each of these sites was assessed individually in this section. Each assessment includes a site description, an evaluation of the data's spatial and temporal representation, a review of the data relative to de-listing criteria, water body specific information and a graphical representation of the data showing the number of exceedances for each indicator. This assessment was designed to give a clear picture of the actual exceedance frequency over time at each site as well as to provide the SWRCB with information that can be readily used in their fact sheets.

Table 3. Coastal Shoreline sites within the City of Laguna Beach listed on the SWRCB 2002 303(d) List for impairment due to elevated levels of indicator bacteria.

303(d) List Site Name	Beach Area	Location of Impairment	Site Number
Pacific Ocean Shoreline, Dana Point (HSA)	1000 Steps Beach ✓	At Pacific Coast Hwy and 9 th Street	S4
	Laguna Lido	Upcoast below Seacliff Dr.	S5
	Table Rock Drive ✓	Aliso Beach at Table Rock Dr.	S6
	Camel Point	Camel Point Dr.	S7
	Aliso Beach South	Aliso County Beach	S8
	Aliso Beach Middle	Aliso County Beach	S9
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Creek	Aliso Beach at Aliso Creek mouth	S10
	Aliso Beach North	Aliso County Beach	S11
	Blue Lagoon Place	Laguna Beach at Blue Lagoon Place	S13
Pacific Ocean Shoreline, Laguna Beach (HSA)	Lagunita Place ✓	Victoria Beach at Dumond Dr.	S14
	Bluebird Canyon ✓	Arch Cove at Bluebird Canyon Rd.	S15
	Hotel Laguna ✓	Projection of Hotel Laguna	S16
	Laguna Main Beach	Upcoast of Broadway	OLB00
Pacific Ocean Shoreline, San Joaquin Hills (HSA)	Heisler Park North ✓	Crescent Bay Beach north of Heisler Park	OLB05

Site Assessments

Individual assessments of each of the sites on the 2002 303(d) List are provided below.

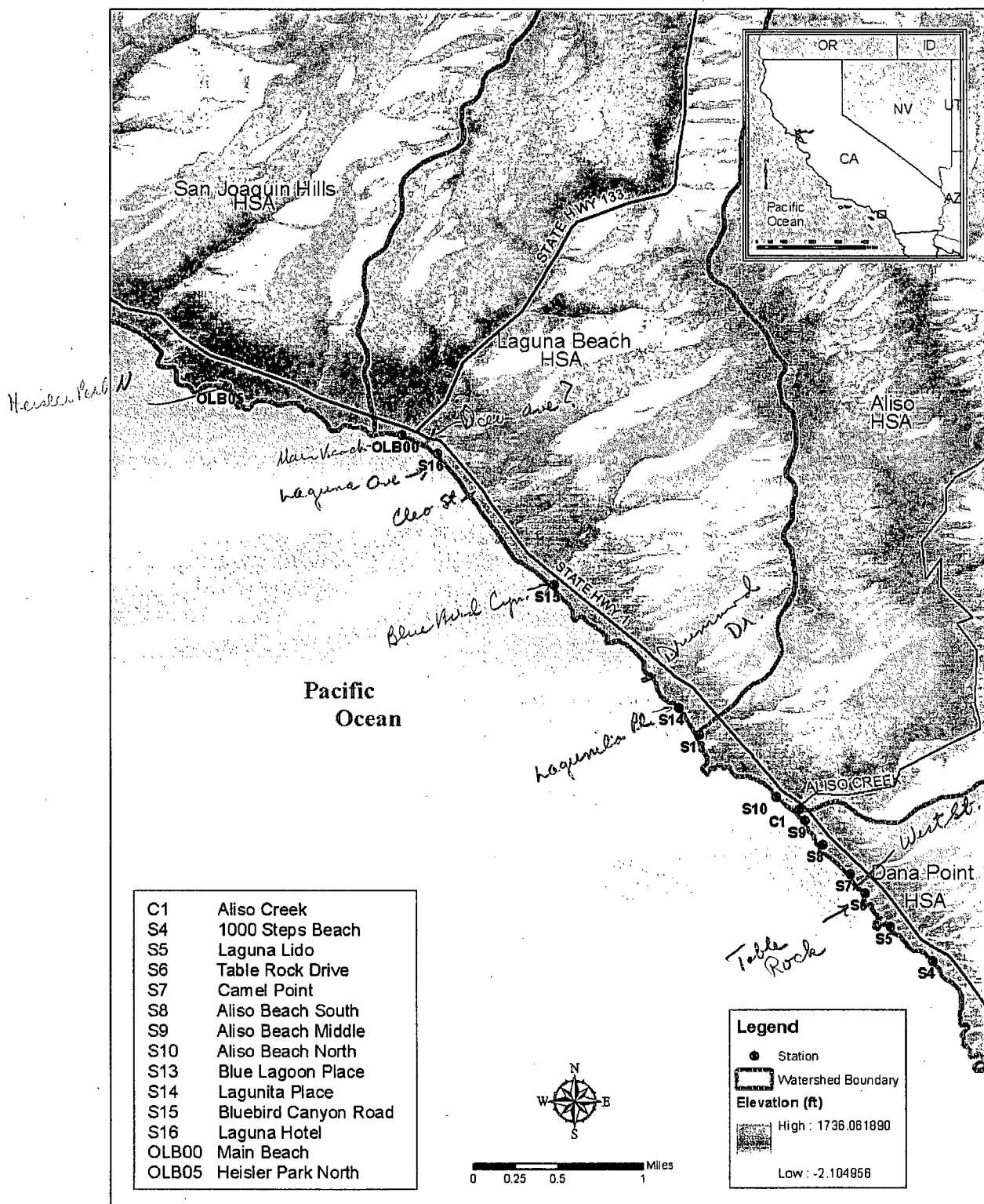


Figure 1. Map of the City of Laguna Beach watershed HSA areas and shoreline water quality monitoring stations that are on the SWRCB 2002 303(d) List.

Water Body Sampling Location: 1000 Steps Beach (S4)

This site is located at 1000 Steps Beach at Pacific Coast Highway and 9th Street. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 2). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 4. A total of 1,918 analyses were performed from 1999 through 2004. Of these, there were 19 exceedances of the bacterial standards for all three indicators. There were 17 exceedances for enterococcus, two exceedances for total coliform and no exceedances for fecal coliform. The majority of exceedances at this site occurred from 1999 through the beginning of 2001. A total of 19 exceedances out of 1,918 samples is well below the number of exceedances allowed by the SWRCB guidance document based on the single sample criteria. In addition, there were no exceedances based on the rolling geometric mean and monthly geometric mean criteria. These data suggest that the 1000 Steps Beach site should be considered for de-listing from the 303(d) List.

Table 4. Summary of bacteriological data at 1000 Steps Beach (S4) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	1000 Steps Beach	S4	1,918	1,899	19	317	0.99
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	1000 Steps Beach	S4	2,150	2,150	0	355	0.00
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	1000 Steps Beach	S4	72	72	0	11	0.00

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

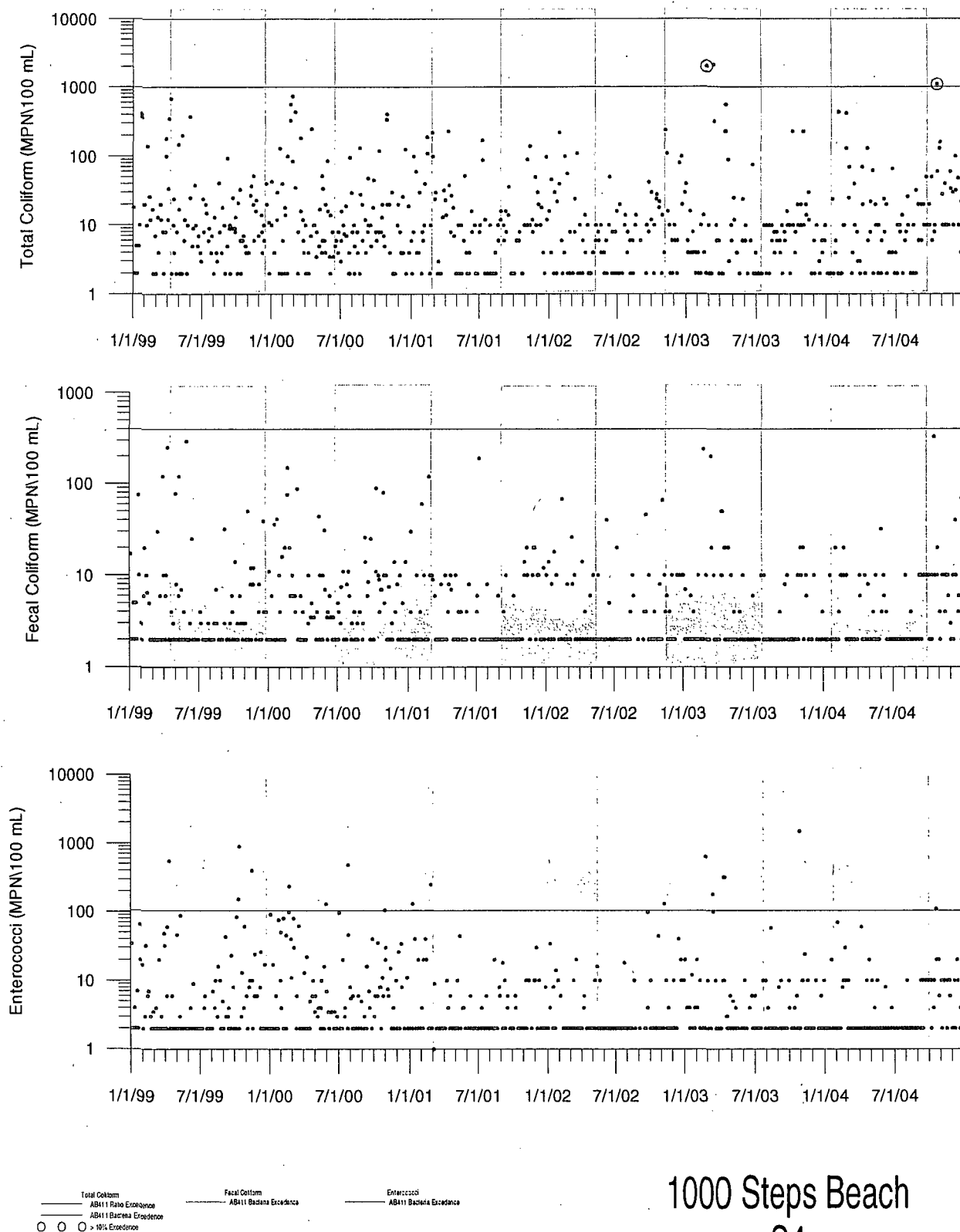


Figure 2. Summary of bacteriological water quality data collected from the 1000 Steps Beach monitoring site from January 1999 through 2004.

Water Body Sampling Location: Laguna Lido (S5)

This site is located at the southern end of Laguna Beach upcoast below Seacliff Dr. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

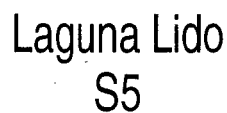
Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 3). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 5. A total of 1,921 analyses were performed from 1999 through 2004. Of these, there were 74 exceedances of the bacterial standards based on single sample criteria (the enterococci standard was exceeded 60 times, total coliform exceeded five times, and the fecal coliform standard was exceeded nine times). The majority of exceedances occurred from 1999 through the beginning of 2001. A total of 74 exceedances out of 1,921 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on the single sample criteria. In addition, the percent exceedance values based on the rolling geometric mean and monthly geometric mean were also low (6.28% and 4.17%, respectively). These results suggest that the Laguna Lido site should be considered for de-listing from the 303(d) List.

Table 5. Summary of bacteriological data at Laguna Lido (S5) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	Laguna Lido	S5	1,921	1,847	74	317	3.85
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Laguna Lido	S5	2,150	2,015	135	355	6.28
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Laguna Lido	S5	72	69	3	11	4.17

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.



Weston Solutions, Inc.

Water Body Sampling Location: Table Rock (S6)

This site is located in South Laguna Beach at Table Rock Drive. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 4). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 6. A total of 1,920 analyses were performed from 1999 through 2004. Of these, there were 23 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci criterion, which was exceeded 19 times. There were only three exceedances for total coliform and one exceedance for fecal coliform during this period. A total of 23 exceedances out of 1,920 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on the single sample criteria. In addition, the percent exceedance values for the rolling geometric mean and monthly mean values were also very low (0.56% and 1.39%, respectively). These results suggest that the Table Rock site should be considered for de-listing from the 303(d) List.

Table 6. Summary of bacteriological data at Table Rock (S6) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	Table Rock	S6	1,920	1,897	23	317	1.20
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Table Rock	S6	2,150	2,138	12	355	0.56
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Table Rock	S6	72	71	1	11	1.39

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

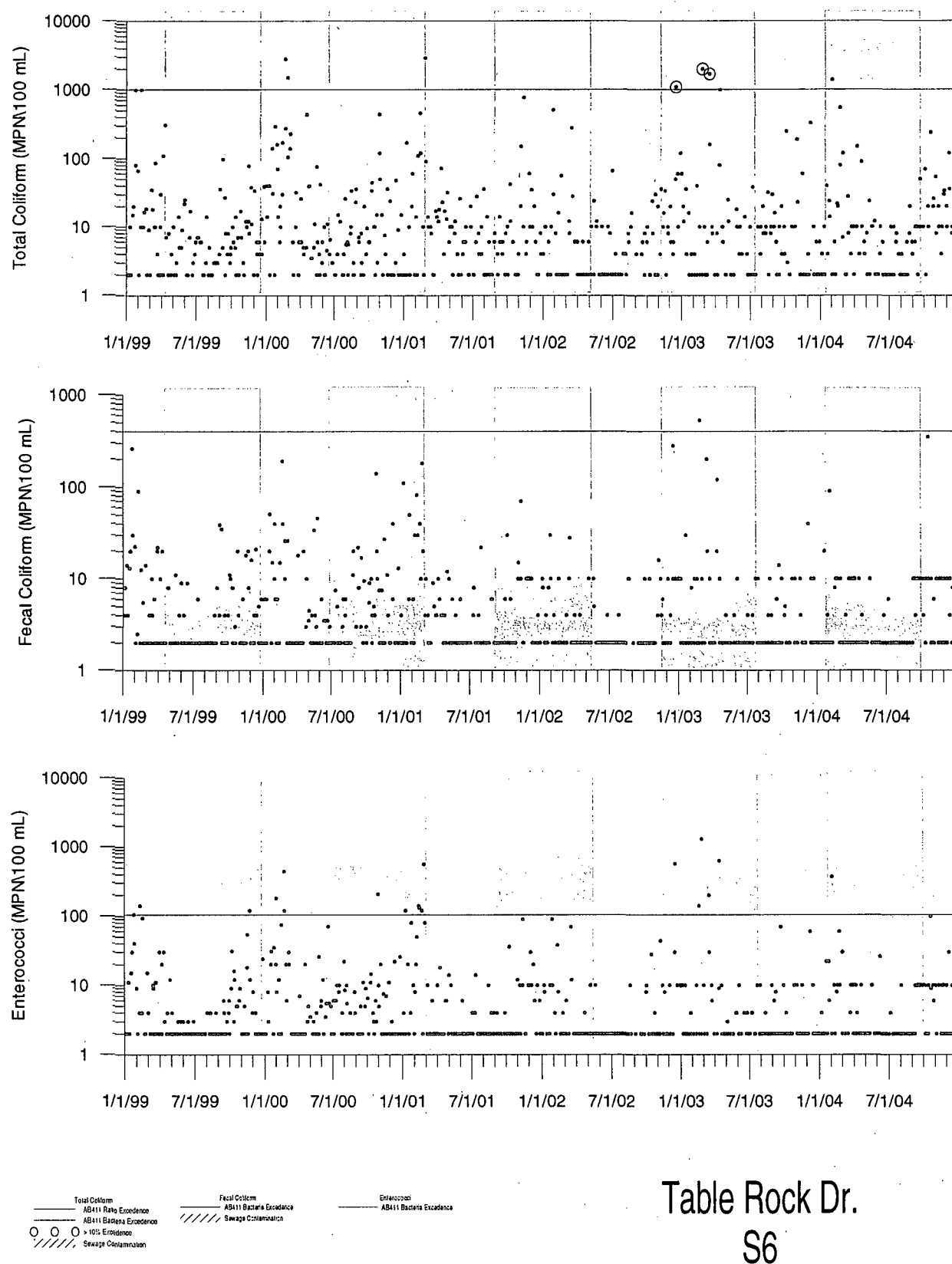


Figure 4. Summary of bacteriological water quality data collected from the Table Rock monitoring site from January 1999 through 2004.

Water Body Sampling Location: Camel Point (S7)

This site is located at Camel Point on South Laguna Beach. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 5). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 7. A total of 2,066 analyses were performed from 1999 through 2004. Of these, there were 75 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci criterion, which was exceeded 53 times during this period. There were 13 exceedances for fecal coliform and only 9 exceedances for total coliform. The majority of exceedances occurred from 1999 through the beginning of 2001. A total of 75 exceedances out of 2,066 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. In addition, the percent exceedance values for the rolling geometric mean and the monthly geometric mean were also low (5.12% and 4.17%, respectively). These data suggest that the Camel Point site should be considered for de-listing from the 303(d) List.

Table 7. Summary of bacteriological data at Camel Point (S7) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	Camel Point	S7	2,066	1,991	75	340	3.63
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Camel Point	S7	2,150	2,040	110	355	5.12
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Camel Point	S7	72	69	3	11	4.17

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

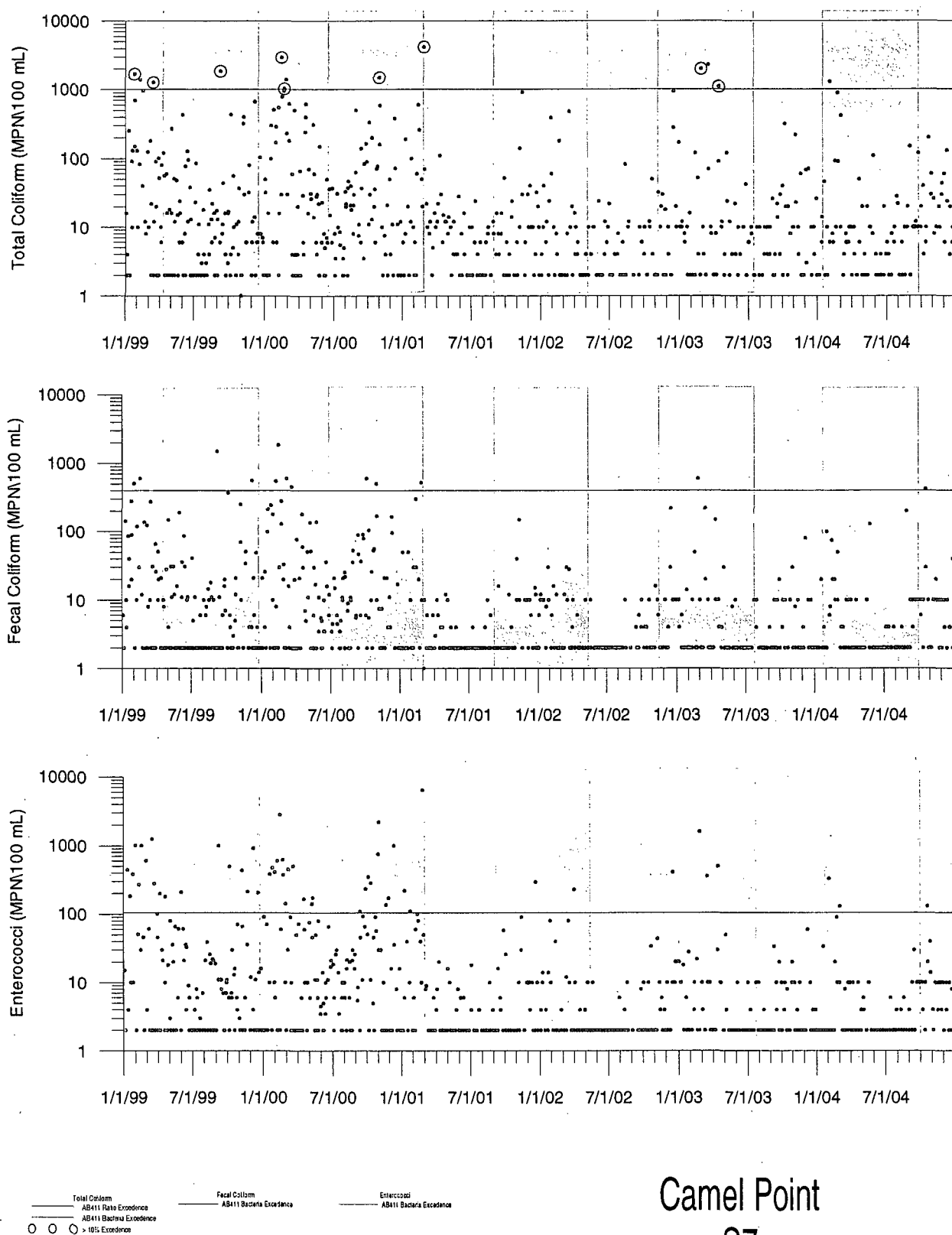


Figure 5. Summary of bacteriological water quality data collected from the Camel Point monitoring site from January 1999 through 2004.

Water Body Sampling Location: Aliso Beach – South (S8)

This site is located at the southern end of Aliso Beach. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

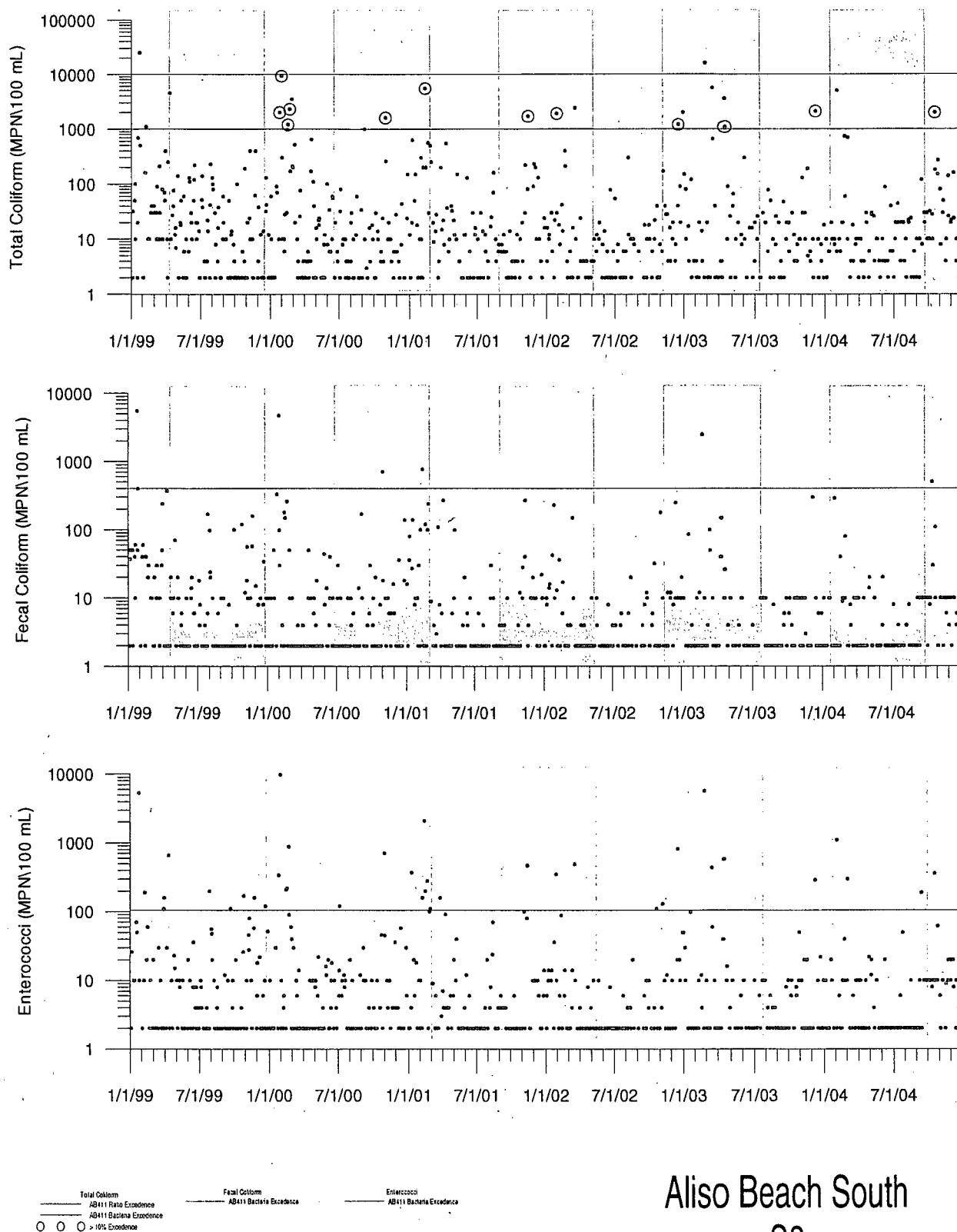
Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 6). Samples were taken throughout the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 8. A total of 2,033 analyses were performed from 1999 through 2004. Of these, there were 59 exceedances of the bacterial standards for all three indicators (39 for enterococci, six for fecal coliform, and 14 for total coliform). A total of 59 exceedances out of 2,033 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. The percent exceedance values for the rolling geometric mean and the monthly geometric mean were also very low (1.44% and 0.00%, respectively). These results suggest that the Aliso Beach – South site should be considered for de-listing from the 303(d) List.

Table 8. Summary of bacteriological data at Aliso Beach – South (S8) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach-South	S8	2,033	1,974	59	335	2.90
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach-South	S8	2,150	2,119	31	355	1.44
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach-South	S8	72	72	0	11	0.00

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.



Aliso Beach South S8

Figure 6. Summary of bacteriological water quality data collected from the Aliso Beach – South monitoring site from January 1999 through 2004.

Water Body Sampling Location: Aliso Beach – Middle (S9)

This site is located in the middle section of Aliso Beach and is at the northern end of Dana Point HSA. It is one of six sites within the Dana Point HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 7). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 9. A total of 2,097 analyses were performed from 1999 through 2004. Of these, there were 169 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci criterion, which was exceeded 97 times. Both total and fecal coliform exceeded the standard 36 times each during this period. A total of 169 exceedances out of 2,097 analyses is below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. However, the results of the rolling geometric mean and monthly geometric mean analyses contradict those of the single sample analysis. The percent exceedance value was 22.1% for the rolling geometric mean and 22.2% for the monthly geometric mean. These values are well above the number of exceedances allowed by the SWRCB guidance document and suggest that the Aliso Beach – Middle site should remain on the 303(d) List.

Table 9. Summary of bacteriological data at Aliso Beach – Middle (S9) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach – Middle	S9	2,097	1,928	169	346	8.06
Rolling Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach – Middle	S9	2,150	1,675	475	355	22.1
Monthly Geometric Mean							
Pacific Ocean Shoreline, Dana Point (HSA)	Aliso Beach – Middle	S9	72	56	16	11	22.2

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

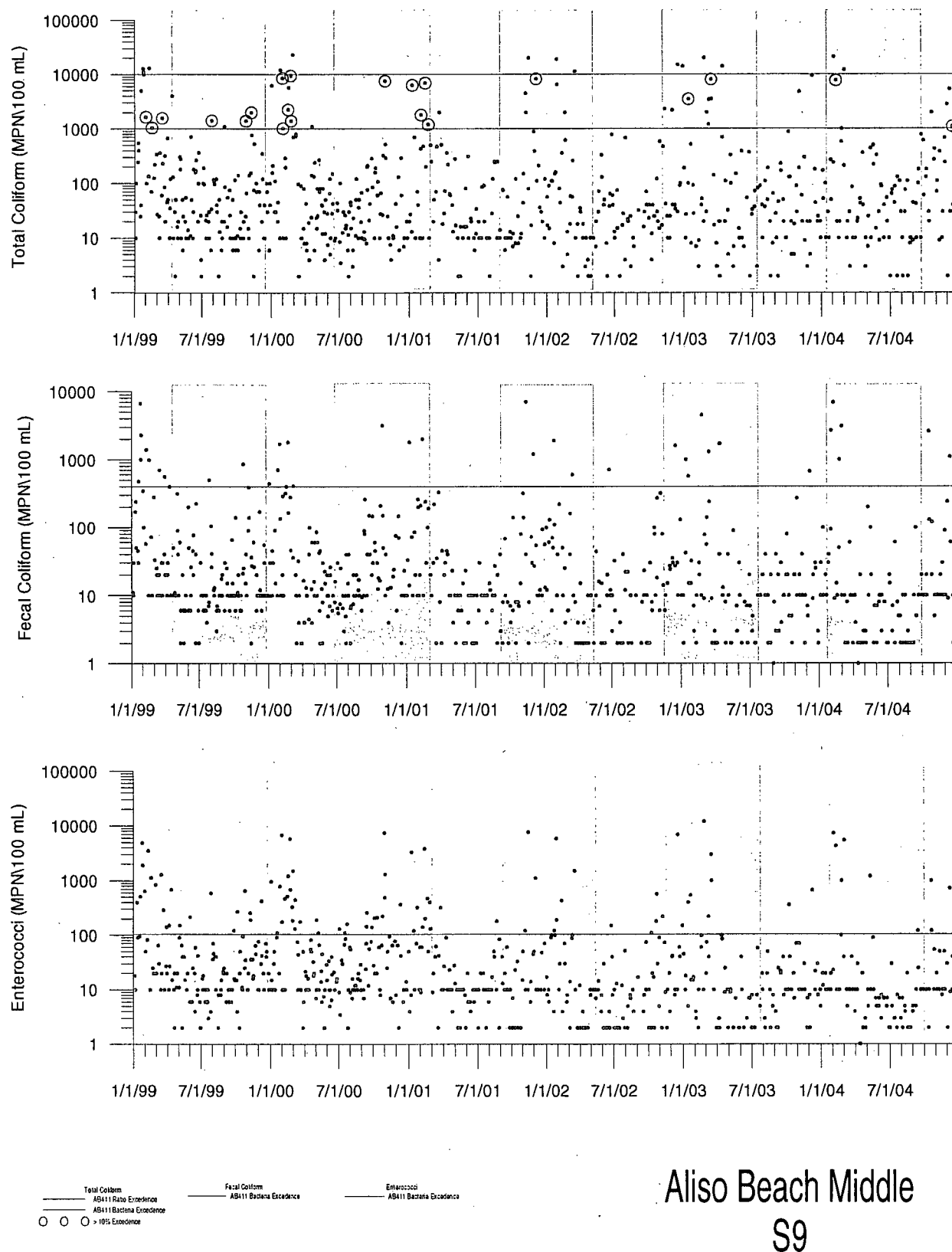


Figure 7. Summary of bacteriological water quality data collected from the Aliso Beach – Middle monitoring site from January 1999 through 2004.

Water Body Sampling Location: Aliso Creek (C1)

This site is located on Aliso Beach at the mouth of Aliso Creek. It lies within the Aliso HSA and is one of three shoreline sites on the 303(d) List within the Aliso HSA.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 8). Samples were taken throughout the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 10. A total of 1,949 analyses were performed from 1999 through 2004. Of these, there were 818 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci criterion, which was exceeded 408 times during this period. There were 222 exceedances for total coliform and 188 exceedances for fecal coliform. A total of 818 exceedances out of 1,949 analyses is well above the number of exceedances allowed by the SWRCB guidance document. The rolling geometric mean and monthly geometric mean percent exceedance values concur with the single sample results. The percent exceedance value was 100% for the rolling geometric mean and 95.84% for the monthly geometric mean. These results suggest that the Aliso Creek site should remain on the 303(d) List.

Table 10. Summary of bacteriological data at Aliso Creek (C1) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Creek mouth	C1	1,949	1,131	818	322	41.97
Rolling Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Creek mouth	C1	2,136	0	2,136	352	100
Monthly Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Creek mouth	C1	72	3	69	11	95.84

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

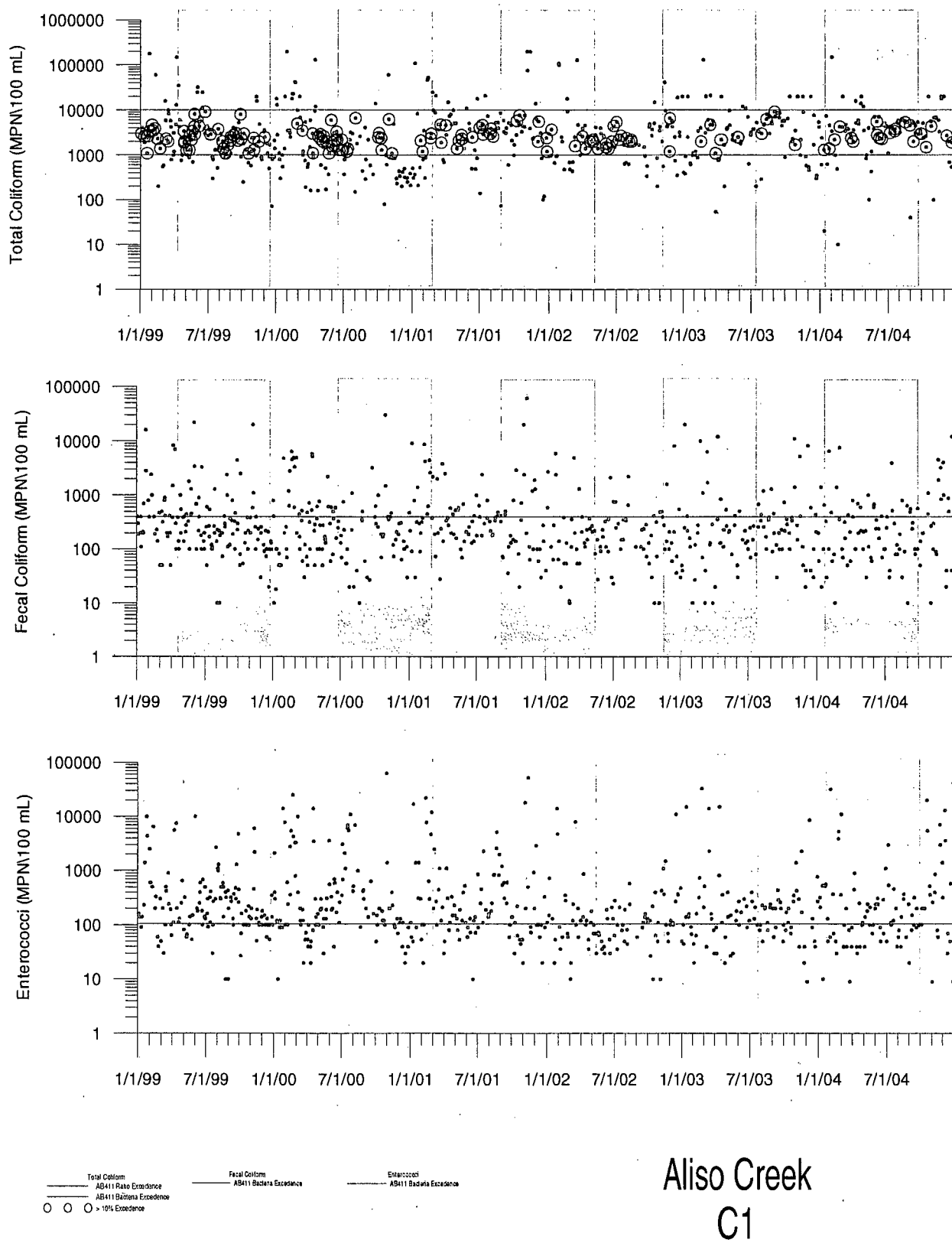


Figure 8. Summary of bacteriological water quality data collected from the Aliso Creek monitoring site from January 1999 through 2004.

Water Body Sampling Location: Aliso Beach – North (S10)

This site is located at the northern end of Aliso Beach. It is one of three sites within the Aliso HSA that is on the 303(d) List.

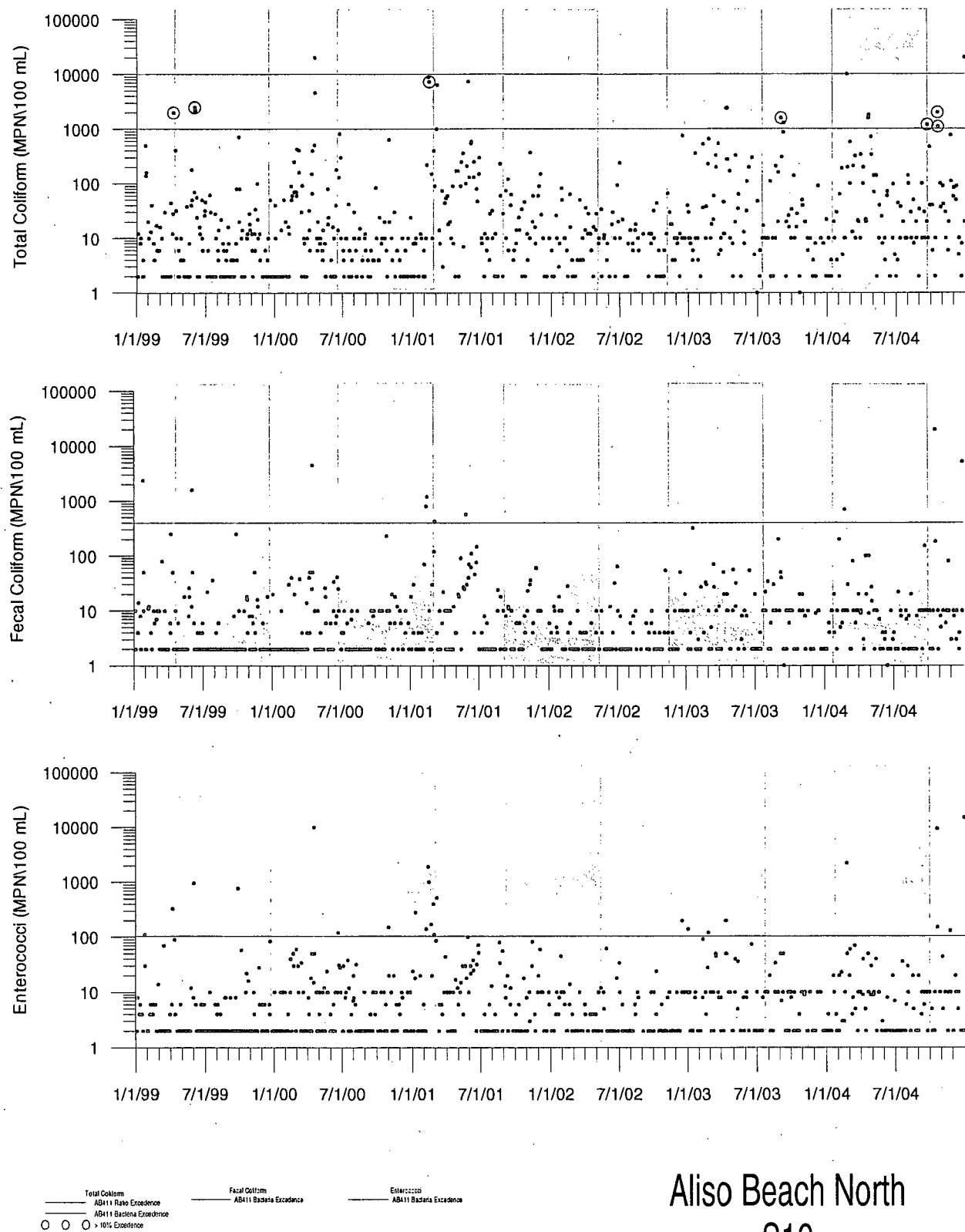
Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 9). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 11. A total of 2,038 analyses were performed from 1999 through 2004. Of these, there were 43 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci indicator, which was exceeded 24 times during this period. The fecal coliform standard was exceeded ten times and the total coliform standard was exceeded nine times during this period. A total of 43 exceedances out of 2,038 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. The percent exceedance values for the rolling geometric mean and the monthly geometric mean analyses were also low (1.26% and 1.39%, respectively), suggesting that the Aliso Beach – North site should be considered for de-listing from the 303(d) List.

Table 11. Summary of bacteriological data at Aliso Beach – North (S10) from January 1999 through 2004. The table includes the total number of analyses performed at the site for all three indicators combined (Total The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Beach – North	S10	2,038	1,995	43	336	2.11
Rolling Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Beach – North	S10	2,150	2,123	27	355	1.26
Monthly Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Aliso Beach – North	S10	72	71	1	11	1.39

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.



Aliso Beach North
S10

Figure 9. Summary of bacteriological water quality data collected from the Aliso Beach - North monitoring site from January 1999 through 2004.

Water Body Sampling Location: Blue Lagoon (S13)

This site is located on Laguna Beach at Blue Lagoon Place. It is one of three sites within the Aliso HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 10). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 12. A total of 1,937 analyses were performed from 1999 through 2004. Of these, there were 49 exceedances of the bacterial standards for all three indicators with the majority occurring for the enterococci indicator, which was exceeded 41 times. There were four exceedances each for total and fecal coliform. The majority of exceedances occurred from 1999 through the beginning of 2001. A total of 49 exceedances out of 1,937 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. The percent exceedance values for the rolling geometric mean and monthly geometric mean analyses were also very low (2.98% and 0%, respectively). These data suggest that the Blue Lagoon Place site should be considered for de-listing from the 303(d) List.

Table 12. Summary of bacteriological data at Blue Lagoon (S13) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Aliso (HSA)	Blue Lagoon Place	S13	1,937	1,888	49	319	2.53
Rolling Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Blue Lagoon Place	S13	2,150	2,086	64	355	2.98
Monthly Geometric Mean							
Pacific Ocean Shoreline, Aliso (HSA)	Blue Lagoon Place	S13	72	72	0	11	0

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

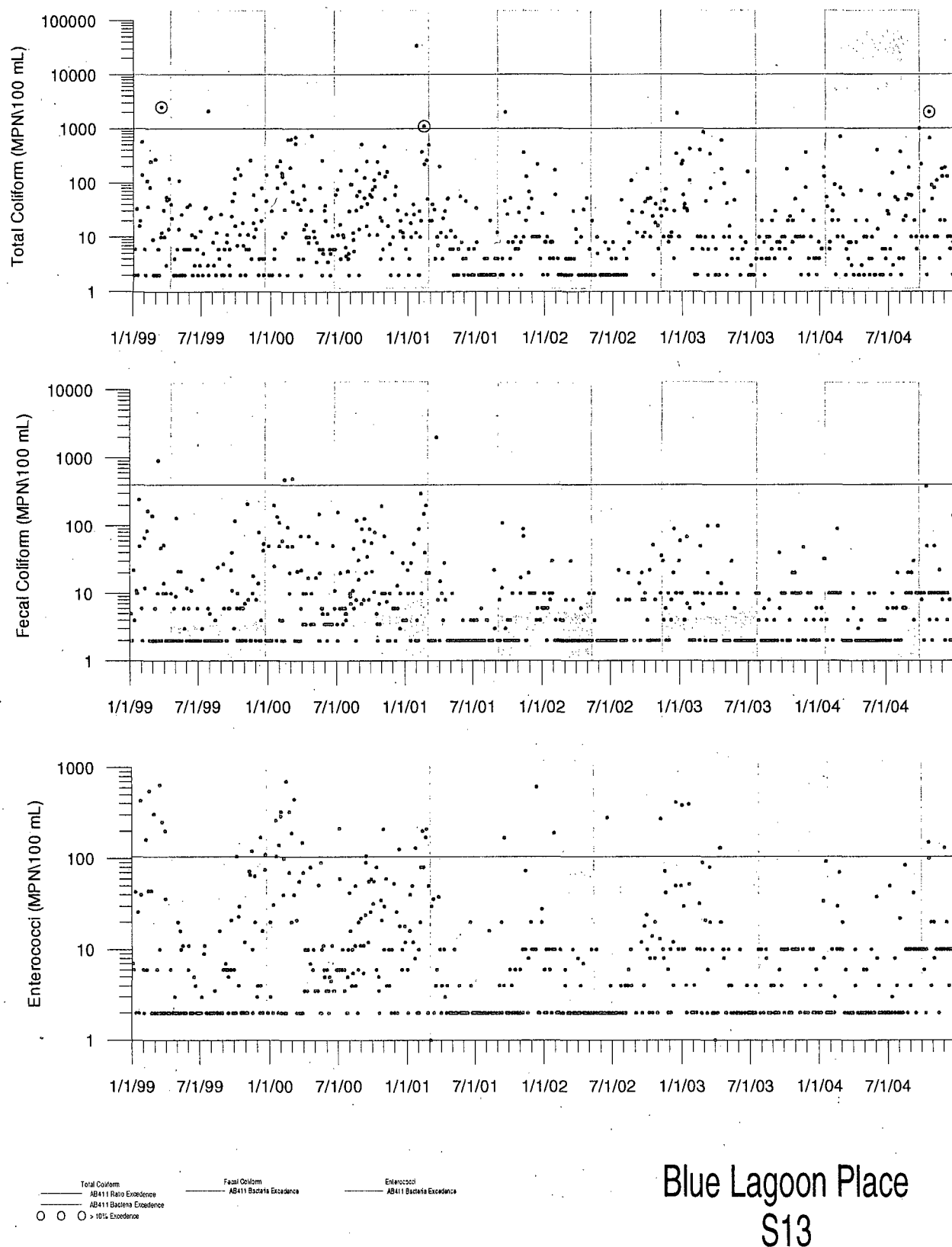


Figure 10. Summary of bacteriological water quality data collected from the Blue Lagoon monitoring site from January 1999 through 2004.

Water Body Sampling Location: Lagunita Place (S14)

This site is located at Victoria Beach at Dumond Drive. It is one of four sites within the Laguna Beach HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 11). Samples were taken throughout the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 13. A total of 1,858 analyses were performed from January 1999 through 2004. Of these, there were only 41 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci indicator, which was exceeded 33 times during this period. There were only three exceedances for fecal coliform and five exceedances for total coliform. A total of 41 exceedances out of 1,858 analyses is well below the number of exceedances allowed by the SWRCB guidance document based on single sample criteria. In addition, the percent exceedance values for the rolling geometric mean and monthly geometric mean analyses were also very low (1.67% and 1.39%, respectively). These results suggest that the Lagunita Place site should be considered for de-listing from the 303(d) List.

Table 13. Summary of bacteriological data at Victoria Beach (S14) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Lagunita Place	S14	1,858	1,817	41	306	2.21
Rolling Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Lagunita Place	S14	2,150	2,114	36	355	1.67
Monthly Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Lagunita Place	S14	72	71	1	11	1.39

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

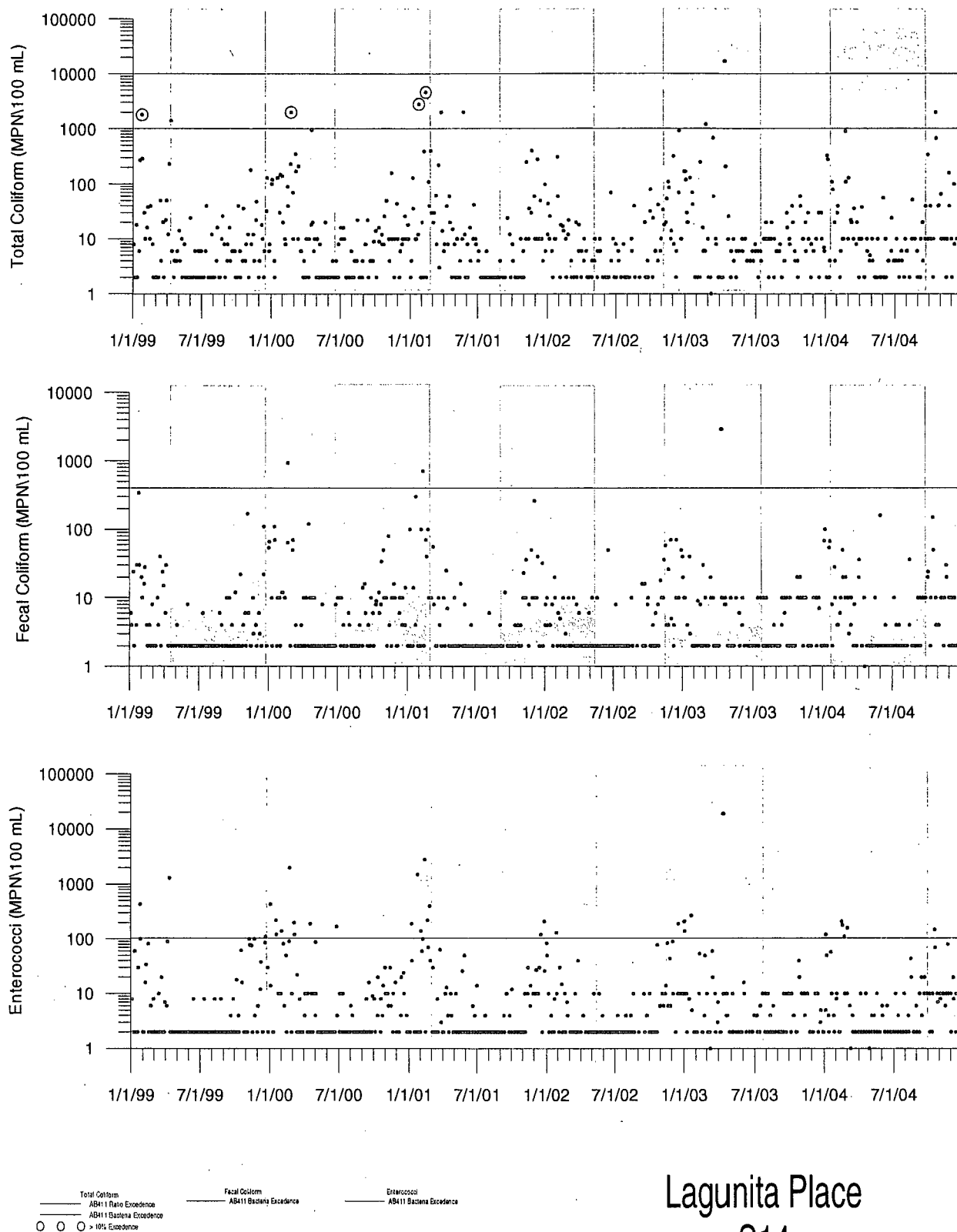


Figure 11. Summary of bacteriological water quality data collected from the Lagunita Place monitoring site from January 1999 through 2004.

Water Body Sampling Location: Bluebird Canyon Road (S15)

This site is located at Arch Cove at Bluebird Canyon Road. It is one of four sites within the Laguna Beach HSA, which is on the 303(d) List.

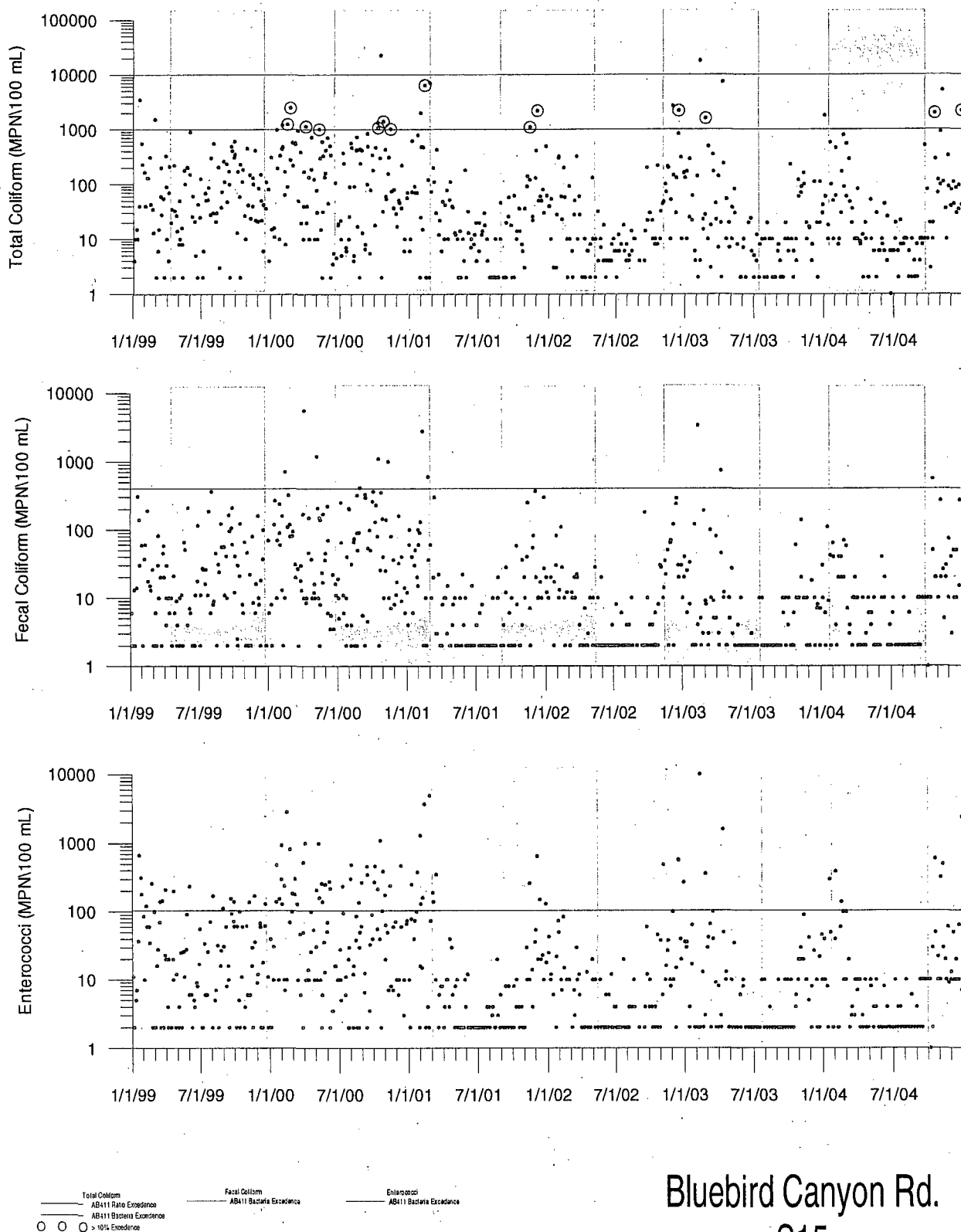
Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 12). Samples were taken throughout the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 14. A total of 1,940 analyses were performed from 1999 through 2004. Of these, there were 110 exceedances of the bacterial standards for all three indicators with the majority of exceedances for the enterococci indicator, which was exceeded a total of 83 times. There were 11 exceedances for fecal coliform and 16 exceedances for total coliform. The majority of exceedances occurred from 1999 through the beginning of 2001. A total of 110 exceedances out of 1,940 analyses is well below the number of exceedances allowed by the SWRCB guidance document. The percent exceedance values based on the rolling geometric mean and monthly geometric mean analyses were higher than those at most other sites (15.4% and 11.12%, respectively). However, the number of exceedances was still less than the number allowable for both analyses. Thus, the Bluebird Canyon Rd. site should be considered for delisting from the 303(d) List.

Table 14. Summary of bacteriological data at Bluebird Canyon Rd. (S15) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Bluebird Canyon Rd.	S15	1,940	1,830	110	320	5.67
Rolling Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Bluebird Canyon Rd.	S15	2,150	1,819	331	355	15.4
Monthly Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Bluebird Canyon Rd.	S15	72	64	8	11	11.12

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.



Bluebird Canyon Rd.
S15

Figure 12. Summary of bacteriological water quality data collected from the Bluebird Canyon Rd. monitoring site from January 1999 through 2004.

Water Body Sampling Location: Hotel Laguna (S16)

This site is located on Laguna Beach at the projection of Hotel Laguna. It is one of four sites within the Laguna Beach HSA, which is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 13). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 15. A total of 1,875 analyses were performed from 1999 through 2004. Of these, there were 72 exceedances of the bacterial standards for all three indicators. The majority of exceedances occurred for the enterococci indicator, which was exceeded a total of 58 times during this period. There were nine exceedances for total coliform and five fecal coliform exceedances. A total of 72 exceedances out of 1,875 analyses is well below the number of exceedances allowed by the SWRCB guidance document. In contrast, the percent exceedance values based on the rolling geometric mean and monthly geometric mean analyses were higher for this site than most others (12.3% and 12.5%, respectively). However, the number of exceedances was less than the number allowable for both analyses. These result data suggest that the Laguna Hotel site should be considered for de-listing from the 303(d) List.

Table 15. Summary of bacteriological data at Hotel Laguna (S16) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Hotel Laguna	S16	1,875	1,803	72	309	3.84
Rolling Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Hotel Laguna	S16	2,144	1,880	264	354	12.3
Monthly Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Hotel Laguna	S16	72	63	9	11	12.5

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

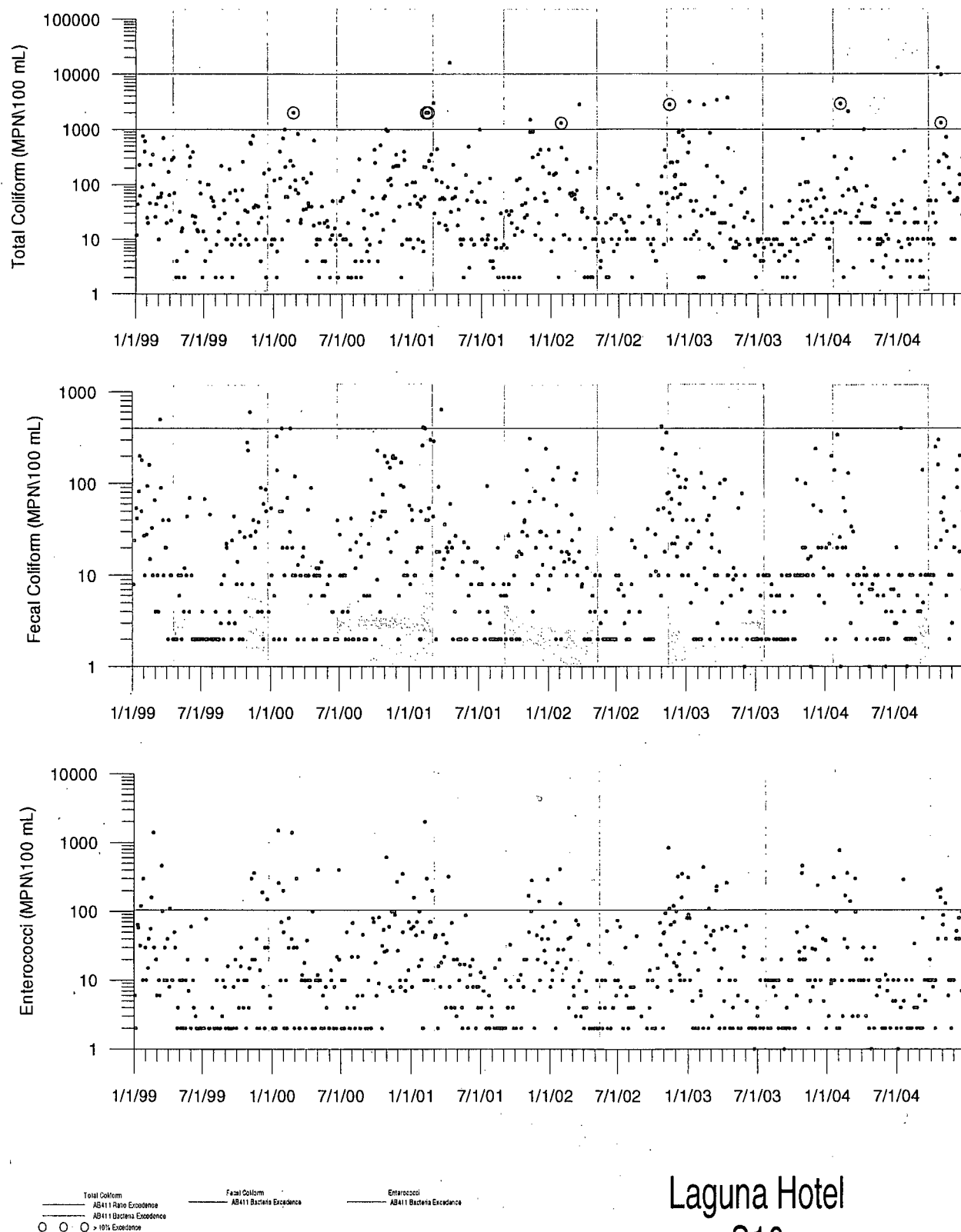


Figure 13. Summary of bacteriological water quality data collected from the Hotel Laguna monitoring site from January 1999 through 2004.

Water Body Sampling Location: Laguna Main Beach (OLB00)

This site is located at the Laguna Main Beach at the northern end of the Laguna HSA. It is one of four sites within the Laguna Beach HSA that is on the 303(d) List.

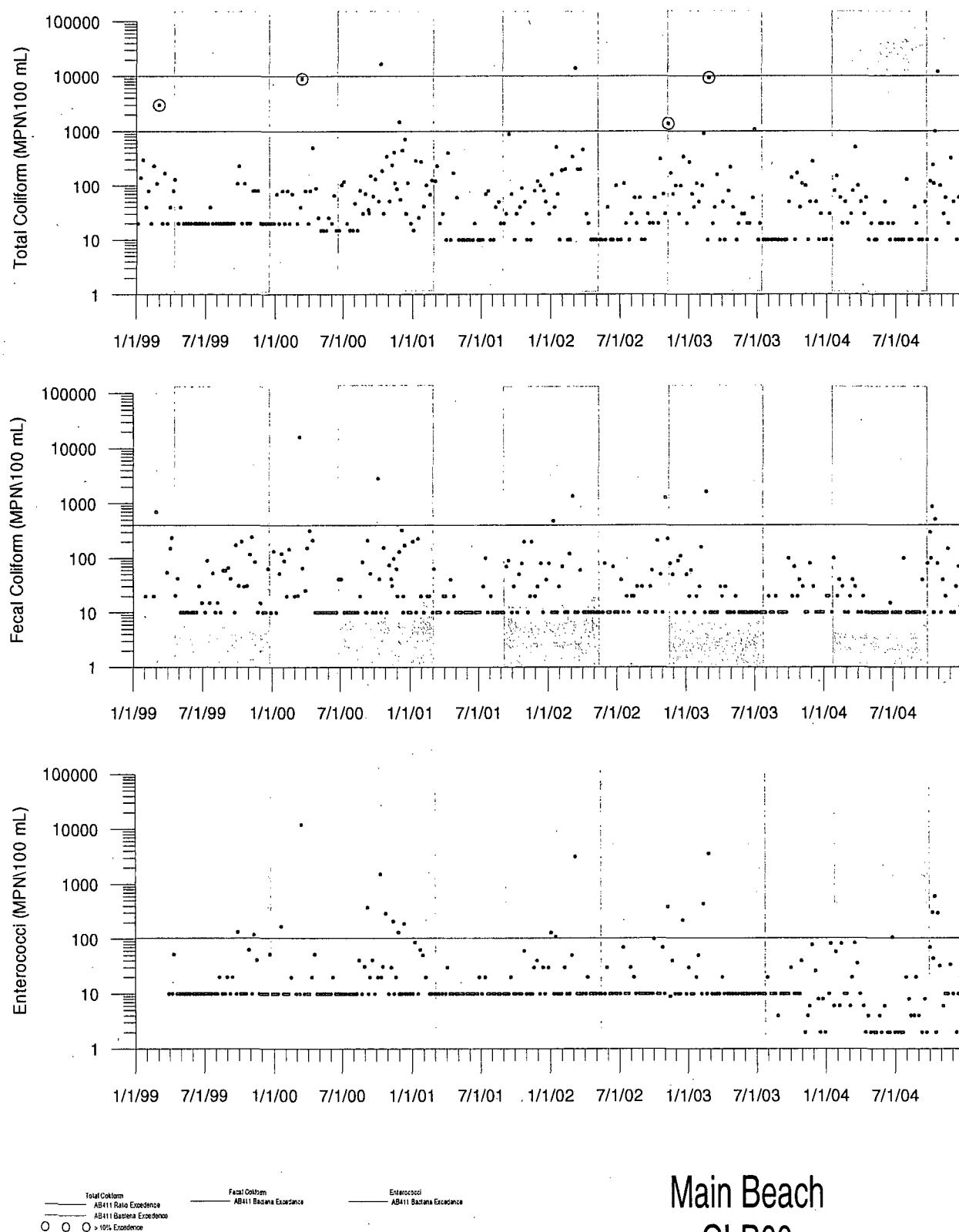
Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 14). Samples were taken during both the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 16. A total of 942 analyses were performed from 1999 through 2004. Of these, there were 37 exceedances of the bacterial standards for all three indicators with the majority for the enterococci indicator, which was exceeded 21 times during this period. There were nine exceedances for fecal coliform and seven exceedances for total coliform. A total of 37 exceedances out of 942 analyses is well below the number of exceedances allowed by the SWRCB guidance document. In contrast, the percent exceedance values based on the rolling geometric mean and monthly geometric mean analyses were higher for this site than most others (12.9% and 5.71%, respectively). However, the number of exceedances was less than the number allowable for both analyses. These results data suggest that the Laguna Main Beach site should be considered for de-listing from the 303(d) List.

Table 16. Summary of bacteriological data at Laguna Main Beach (OLB00) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Laguna Main Beach	OLB00	942	905	37	155	3.98
Rolling Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Laguna Main Beach	OLB00	713	621	92	117	12.9
Monthly Geometric Mean							
Pacific Ocean Shoreline, Laguna Beach (HSA)	Laguna Main Beach	OLB00	70	66	4	11	5.71

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.



Main Beach
OLB00

Figure 14. Summary of bacteriological water quality data collected from the Laguna Main Beach monitoring site from January 1999 through 2004.

Water Body Sampling Location: Heisler Park North (OLB05)

This site is located at the north end of Heisler Park at Crescent Bay Beach. It is the only site within the San Joaquin Hills HSA that is on the 303(d) List.

Temporal Representation: Data were available for this assessment from January 1999 through 2004 (Figure 15). Samples were taken throughout the wet and dry seasons.

Water Quality Standards: The number of exceedances of water quality standards at this site is presented in Table 17. A total of 917 analyses were performed from 1999 through 2004. Of these, there were only seven exceedances of the bacterial standards for the fecal coliform and enterococci indicators. There were five exceedances for enterococcus and two for fecal coliform. Seven exceedances out of 917 analyses is well below the number of exceedances allowed by the SWRCB guidance document. In addition, there were no exceedances based on the rolling geometric mean and monthly geometric mean analyses. These results suggest that the Heisler Park North site should be considered for de-listing from the 303(d) List.

Table 17. Summary of bacteriological data at Heisler Park North (OLB05) from January 1999 through 2004. The table includes the total number of analyses analyzed for each criterion (single sample limit, rolling geometric mean, and monthly geometric mean) from 1999 through 2004 (Total Analyses), the number that did not exceed water quality criteria (No), the number that did exceed criteria (Yes), the number of exceedances allowed by the SWRCB (Allowable), and the percentage of exceedances relative to the total number of analyses (Percent).

303(d) List Site Name	Location	Station	Total Analyses	No	Yes	Allowable*	Percent (Yes/Total)
Single Sample Limit							
Pacific Ocean Shoreline, San Joaquin Hills (HSA)	Heisler Park North	OLB05	917	910	7	151	0.76
Rolling Geometric Mean							
Pacific Ocean Shoreline, San Joaquin Hills (HSA)	Heisler Park North	OLB05	615	615	0	101	0.00
Monthly Geometric Mean							
Pacific Ocean Shoreline, San Joaquin Hills (HSA)	Heisler Park North	OLB05	70	70	0	11	0.00

* This number is based on the total number of samples and the estimated percent of exceedances, which is between 15.5 and 16.6%. See methods.

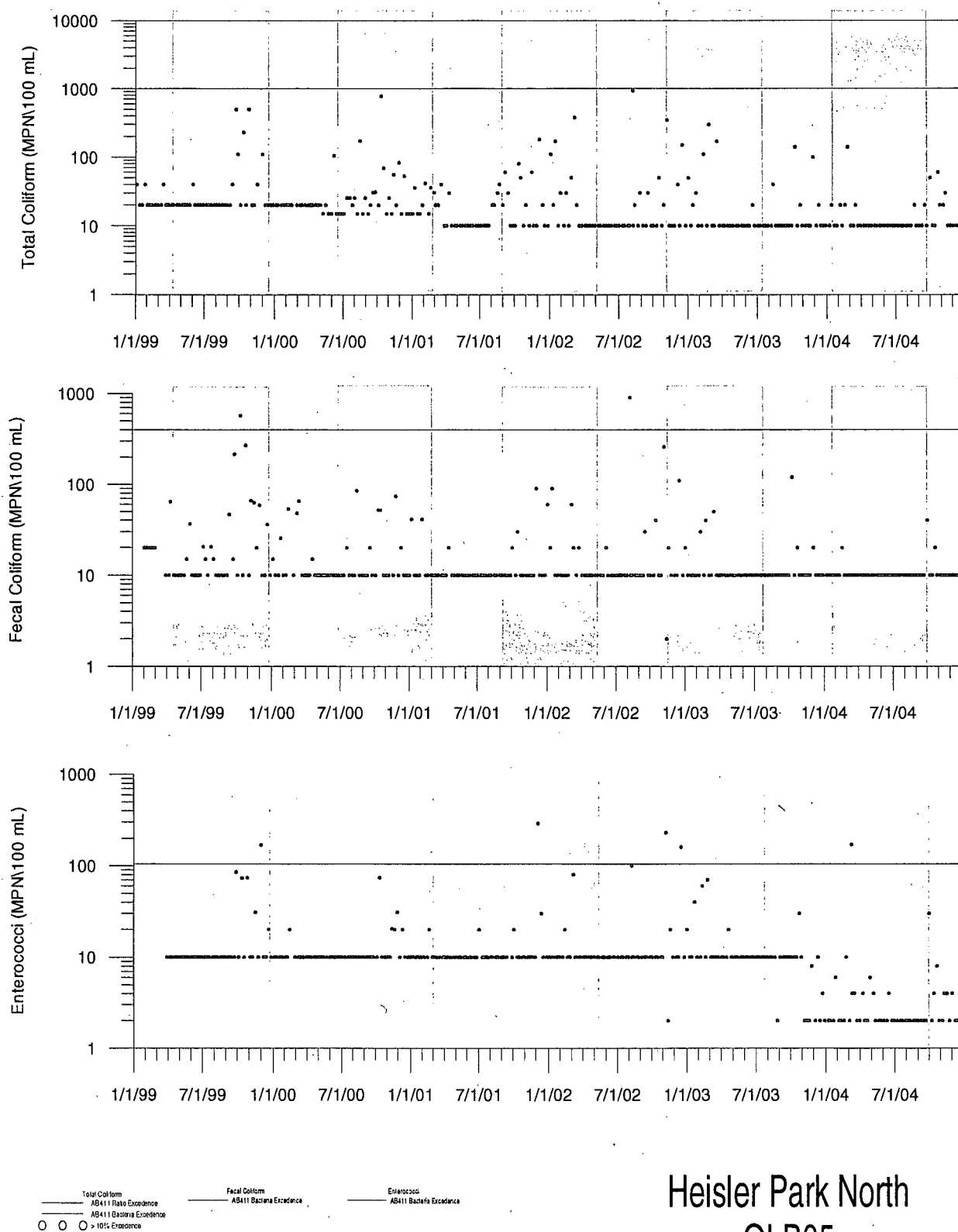


Figure 15. Summary of bacteriological water quality data collected from the Heisler Park North monitoring site from January 1999 through 2004.

Summary and Conclusions

The SWRCB 2002 303(d) List identifies four watershed areas within the City of Laguna Beach that have shoreline sites that are listed due to apparent elevated bacterial levels: Dana Point HSA, Aliso HSA, Laguna Beach HSA and San Joaquin Hills HSA. Individual ocean monitoring sites within these areas were assessed in the Results sections of this report. These results are summarized by area below.

Dana Point HSA

There are six sites on the 303(d) List for bacterial indicators in Dana Point HSA: 1000 Steps Beach, Laguna Lido, Table Rock, Camel Point, Aliso Beach-South and Aliso Beach-Middle (Table 18). The percent exceedance values for the first five sites listed above were less than 6.3% for all three criteria (single sample, rolling geometric mean, and monthly geometric mean) and typically less than 3%. All of these values were well below the number of exceedances allowed by the SWRCB de-listing guidance document, which suggests that these five sites should be considered for de-listing from the 303(d) List. The majority of exceedances for most of these sites occurred from 1999 through the beginning of 2001.

For the sixth site monitored in this HSA (Aliso Beach Middle, Site S9) the percent exceedance values were much greater (Table 18). The single sample limit exceedance value was 8.06%, which is less than the number of exceedances allowed by the SWRCB de-listing guidance document. However, the percent exceedance values for the rolling geometric mean and the monthly geometric mean were much higher (22.1% and 22.2%, respectively). These values are greater than the number of exceedances allowed by the SWRCB de-listing guidance document, which suggests that this site should not be considered for de-listing from the 303(d) List.

Table 18. De-listing consideration for coastal shoreline sites within the Dana Point HSA listed on the SWRCB 2002 303(d) List for impairment due to elevated levels of indicator bacteria (total coliform, fecal coliform, and enterococcus). The de-listing consideration is based on the sample size, the total number of exceedances, and the allowable exceedances identified by the SWRCB using three different criteria: the single sample limit, the rolling geometric mean, and the monthly geometric mean.

Beach Area	Location of Impairment	Site #	Single Sample De-Listing Consideration	Rolling Geo. Mean De-Listing Consideration	Monthly Geo. Mean De-Listing Consideration
1000 Steps Beach	1000 Steps Beach at Pacific Coast Hwy. and 9 th Street	S4	Yes	Yes	Yes
Laguna Lido	Upcoast below Seacliff Dr.	S5	Yes	Yes	Yes
Table Rock	Aliso Beach at Table Rock Dr.	S6	Yes	Yes	Yes
Camel Point	Camel Point Dr.	S7	Yes	Yes	Yes
Aliso Beach-South	Aliso County Beach	S8	Yes	Yes	Yes
Aliso Beach-Middle	Aliso County Beach	S9	Yes	No	No

Aliso HSA

Within the Aliso HSA there are three sites that are on the 2002 303(d) List for excessive indicator bacteria levels: Aliso Creek, Aliso Beach North, and Blue Lagoon Place (Table 19). The site with the highest number of exceedances in this area as well as the entire data set was Aliso Creek Mouth. At this site the single sample criteria were exceeded in 41.97% of the analyses and the rolling geometric mean and monthly geometric mean criteria were exceeded in 100% and 95.8% of the analyses, respectively. This site had the highest percentage of exceedances of all the sites assessed in this evaluation. Clearly the data do not support de-listing of this site from the 303(d) List.

The data do suggest that the other two sites in this area be considered for de-listing (Table 19). The percent exceedance values for Aliso Beach-North and Blue Lagoon Place were less than 3% for all three criteria (single sample, rolling geometric mean, and monthly geometric mean). These values are well below the number of exceedances allowed by the SWRCB de-listing guidance document, which supports de-listing consideration for both these sites.

Table 19. De-listing consideration for coastal shoreline sites within the Aliso HSA listed on the SWRCB 2002 303(d) List for impairment due to elevated levels of indicator bacteria (total coliform, fecal coliform, and enterococcus). The de-listing consideration is based on the sample size, the total number of exceedances, and the allowable exceedances identified by the SWRCB using three different criteria: the single sample limit, the rolling geometric mean, and the monthly geometric mean.

Beach Area	Location of Impairment	Site #	Single Sample De-Listing Consideration	Rolling Geo. Mean De-Listing Consideration	Monthly Geo. Mean De-Listing Consideration
Aliso Creek	Aliso Creek Mouth	C1	No	No	No
Aliso Beach-North	Aliso County Beach	S10	Yes	Yes	Yes
Blue Lagoon Place	Laguna Beach at Blue Lagoon Place	S13	Yes	Yes	Yes

Laguna Beach HSA

There are four sites on the 2002 303(d) List for excessive indicator bacteria levels within the Aliso HSA: Lagunita Place, Bluebird Canyon, Laguna Hotel and Laguna Main Beach (Table 20). The percent exceedance values for Lagunita Place were less than 2.2% for all three criteria (single sample, rolling geometric mean, and monthly geometric mean). The percent exceedance values for the other three sites in this HSA were slightly higher, ranging from 3.84% to 5.67% for the single sample criterion, 12.3% to 15.4% for the rolling geometric mean, and 5.71% to 12.5% for the monthly geometric mean. All of these values were below the number of exceedances allowed by the SWRCB de-listing guidance document, which suggests that these three sites, along with Lagunita Place, should be considered for de-listing from the 303(d) List.

Table 20. De-listing consideration for coastal shoreline sites within the Laguna Beach HSA listed on the SWRCB 2002 303(d) List for impairment due to elevated levels of indicator bacteria (total coliform, fecal coliform, and enterococcus). The de-listing consideration is based on the sample size, the total number of exceedances, and the allowable exceedances identified by the SWRCB using three different criteria: the single sample limit, the rolling geometric mean, and the monthly geometric mean.

Beach Area	Location of Impairment	Site #	Single Sample De-Listing Consideration	Rolling Geo. Mean De-Listing Consideration	Monthly Geo. Mean De-Listing Consideration
Lagunita Place	Victoria Beach at Dumond Drive	S14	Yes	Yes	Yes
Bluebird Canyon	Arch Cove at Bluebird Canyon Rd.	S15	Yes	Yes	Yes
Laguna Hotel	Projection of Hotel Laguna	S16	Yes	Yes	Yes
Laguna Main Beach	Upcoast of Broadway	OLB 00	Yes	Yes	Yes

San Joaquin Hills HSA

There is one site within the San Joaquin Hills HSA that is on the 2002 303(d) List for excessive indicator bacteria levels (Table 21): Heisler Park North. This site had a low percentage of exceedances for the single sample criteria (0.76%) and no exceedances based on the rolling geometric mean or the monthly geometric mean. These values are well below the number of exceedances allowed by the SWRCB de-listing guidance document, which suggests that this site should be considered for de-listing from the 303(d) List.

Table 21. De-listing consideration for coastal shoreline sites within the San Joaquin Hills HSA listed on the SWRCB 2002 303(d) List for impairment due to elevated levels of indicator bacteria (total coliform, fecal coliform, and enterococcus). The de-listing consideration is based on the sample size, the total number of exceedances, and the allowable exceedances identified by the SWRCB using three different criteria: the single sample limit, the rolling geometric mean, and the monthly geometric mean.

Beach Area	Location of Impairment	Site #	Single Sample De-Listing Consideration	Rolling Geo. Mean De-Listing Consideration	Monthly Geo. Mean De-Listing Consideration
Heisler Park North	Crescent Bay Beach north of Heisler Park	OLB 05	Yes	Yes	Yes

Literature Cited

SWRCB 2004. State of California State Water Resources Control Board, Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. September 2004.

~~187~~

143

663

Attachment 5:
Bacteria data and analysis submitted by the City of Carlsbad
SAN DIEGO COUNTY,



General information regarding water body**Region:** 9, San Diego**Type:** C**Name:** Pacific Ocean Shoreline, Buena Vista Creek HA**Calwater Watershed:** 90421000**Pollutant/Stressor:** Bacteria indicators**Potential Sources:** Nonpoint/Point Source**TMDL Priority:** Low**Estimated Size affected:** 1.2 miles**Description:** Impairment located at Buena Vista, Carlsbad City Beach at Carlsbad Village drive, Carlsbad State Beach at Pine.**Water Quality Standards:**

Indicator	Standard
Enterococci	104 MPN/100 ml
Fecal Coliform	400 MPN/100 ml
Total Coliform	10,000 MPN/100 ml

Summary of data:

Data collection dates: 1998 - 2004

Collection seasonal or year round: year round

Source or reference of data: San Diego County Dept of Environmental Health and City of Carlsbad Public Works

Quality assurance assessment: QA confirmed (see attached cover letter with sign-off)

Sample site	Total sample number	Exceedances (based on WQ standard)		
		Enterococci	Fecal coliforms	Total coliforms
Tamarack	191	1	1	0
Pine Avenue	91	0	0	0
Carlsbad Village Drive	179	0	0	0
Buena Vista	232	14	5	1

Please see attached map of sample site locations**Conclusion:**

Measured exceedances support rejection of the null hypothesis as presented in Table 4.2 of the September 2004 Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List.



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General contact information:

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Mailing address: 1635 Faraday Avenue, Carlsbad, CA 92008

Data certification:

Persons certifying accuracy of data/information (including qualification):

County of San Diego: Clay Clifton, Recreational Water Program

Coordinator, Department of Environmental Health: State of CA Registered
Environmental Health Specialist.

City of Carlsbad: Elaine Lukey, Sr. Environmental Specialist,
Environmental Programs Department: Masters in Science - Environmental Health
Science and Policy, BEAC Certified Professional Environmental Auditor – EMS.

Data presented in this submission:

Electronic spreadsheets using the following abbreviations:

CoC: City of Carlsbad, Public Works Dept

DEH – Dept of Environmental Health, County of San Diego

N/A: Not applicable

RWQCB – Recreational water quality control board

QA: Quality assurance

QC: Quality control

Certification statement:

These data present complete and full records of water quality monitoring undertaken by the Department of Environmental health, County of San Diego and the Public Works Department, City of Carlsbad from April 1999 – October 2004. All samples were collected and processed according to Standard Methods using the most probable number (MPN) technique (unless stated otherwise). Analyses were undertaken by certified laboratories under strict quality control. Data transcription and statistical analyses have been performed in accordance with Sections 3 and 4 of the California Water Code, Section 303 (d).

Signed: _____

Date: _____

Summary of Data Table with Exceedances

	Permitted exceedance	Total sample number	exceedances		
			Entero	FC	TC
Tamarack	< about 26	191	1	1	0
Pine Ave	<15	91	0	0	0
Carlsbad Village Drive	<19	179	0	0	0
Buena Vista	< about 37	232	14	5	1

~~187~~

663

143

Attachment 7
Additional Information to Support
Beach Delistings Submitted by the City of Laguna Beach





January 20, 2006

San Diego Regional Water Quality Control Board
Julie Chan, Bacteria TMDL Project I
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Dear Ms. Chan:

As requested, enclosed is additional information supporting the City's June 2005 ocean bacteria evaluation results and request to remove the appropriate locations from the 303(d) impaired waters list. The information provided is for the three locations where sampling under the AB 411 ocean water monitoring program has not been completed. These include two locations within the Laguna Beach Pacific Ocean HSA at Cleo Street and Dumond Drive and one location within the Dana Point Pacific Ocean HAS at West Street.

It is the City's understanding, based on available information, that the 1998 303(d) coastal water listings were based on two main criteria; 1) Permanent postings and 2) Elevated coliform levels. Below discusses each of these listing criteria as related to the three locations:

Permanent Postings

The new AB 411 ocean water monitoring standards were initiated in late 1998. To implement the standards, public notification signs were placed at the larger storm drain outlet locations along the Orange County Coastline. The City, in coordination with the Orange County Health Care Agency, installed advisory postings at Cleo Street, Dumond Drive and West Street to educate and inform the public on potential runoff pollution. They were not installed based on ocean water bacteria monitoring results. In addition to the advisory postings, there were also permanent postings at storm drain outlets along the Orange County coastline where there were continuous elevated ocean bacteria levels.

Elevated Coliform Levels

The Orange County Health Care Agency has established ocean monitoring locations along the coastline. The agency maintained the same locations when initiating the AB 411 program. The locations at Cleo Street, Dumond Drive and West Street have never been included in the agency monitoring program. Therefore, there was no available ocean bacteria data for these locations when the 1998 303(d) list was created.

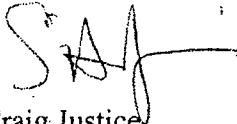
There are other considerations supporting the City evaluation results. They are described below:

1. In 2003, the City initiated new storm drain and ocean monitoring to comply with the San Diego Region NPDES Urban Runoff Permit. Monitoring is completed at the storm drain outlet and within the ocean 25 yards up-coast and down-coast of the storm drain ocean

interface. Attached is a graphic showing the 2004 data results. The three locations at Cleo Street, Dumond Drive and West Street indicate good ocean water quality with less than a 10 percent exceedance of AB 411 standards. The 2003 data indicate the same results. In addition, the results at these three locations are consistent with the other City locations where AB 411 ocean monitoring data is available.

2. The City's June 2005 bacteria evaluation was completed using a conservative approach. Not only was the single sample and 30-day geometric mean methods used, but a rolling geometric mean method was also evaluated.
3. At two of the three locations, Cleo Street and Dumond Drive, the City has installed urban runoff diversion systems as a pollution control measure. At the West Street location, any dry weather runoff normally pools by the storm drain outlet, seeps into the beach sand and does not reach the ocean.
4. In the summer of 2005, the Orange County Health Care Agency, at the request of the Laguna Beach Chapter of the Surfrider Foundation, collected six ocean bacteria samples at Cleo Street over a one-month period. The samples results were all within AB 411 standards.

Sincerely,

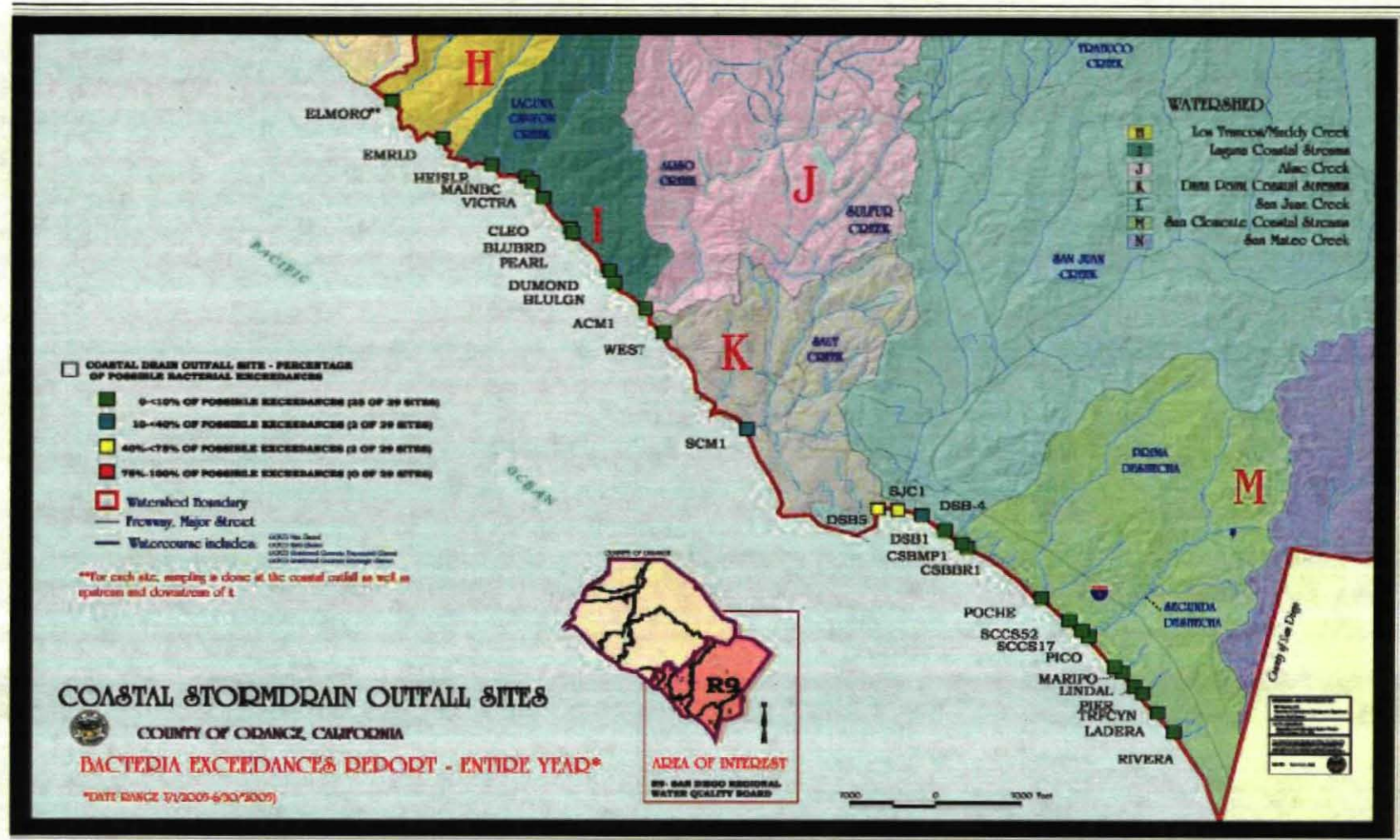
A handwritten signature in black ink, appearing to read 'Craig Justice', with a stylized flourish extending to the right.

Craig Justice
Senior Water Quality Analyst

Enclosed

cc: David Shissler, Director of Water Quality

Orange County Stormwater Program Coastal Storm Drain Outfall and Ocean Monitoring



Enclosure RWR009 (143)
January 31, 2006 Memorandum
Comments on Proposed Changes to the
CWA Section 303(d) List of Water
Quality Segments MISSION BAY ONLY

