

Revised Attachment A to Resolution No. R20-0XX

Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Bacteria Objectives for Fresh, Estuarine and Marine Waters Designated for Water Contact Recreation, based on the Statewide Bacteria Provisions.

Amendments:

In Chapter 3: “Water Quality Objectives” of the Basin Plan, replace the entire section on “Bacteria Coliform” (from page 3-26 through 3-29) with the following language:

In Marine (Ocean) Waters designated for Water Contact Recreation (REC-1)

Enterococci

A six-week rolling geometric mean (GM) of enterococci not to exceed 30 colony forming units (cfu) per 100 milliliters (mL), calculated weekly, and a statistical threshold value (STV) of 110 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner. U.S. EPA recommends using U.S. EPA Method 1600 or other equivalent method to measure culturable enterococci.

Indicator	Estimated Illness Rate (NGI): 32 per 1000 water contact recreators	
	Magnitude	
	GM (cfu/100 mL)	STV (cfu/100 mL)
<i>Enterococci</i>	30	110
<p>The waterbody GM shall not be greater than the GM magnitude in any six-week interval, calculated weekly. The STV shall not be exceeded by more than 10 percent of the samples collected in a calendar month¹, calculated in a static manner.</p> <p>NGI = National Epidemiological and Environmental Assessment of Recreational Water gastrointestinal illness rate GM = geometric mean cfu = colony forming units STV = statistical threshold value mL = milliliters</p>		

Fecal coliform

A 30-day geometric mean (GM) of fecal coliform density not to exceed 200 per 100 milliliters (mL), calculated based on the five most recent samples from each site, and a single sample maximum (SSM) not to exceed 400 per 100 mL.

¹ Calendar month is a period of time from a day of one month to the day before the corresponding day of the next month if the corresponding day exists, or if not to the last day of the next month (e.g. from January 1 to January 31, from June 15 to July 14, or from January 31 to February 28).

Indicator	Magnitude	
	30-day GM	SSM
<i>Fecal coliform density</i>	200 per 100 mL	400 per 100 mL
GM = geometric mean SSM = single sample maximum mL = milliliters		

In Fresh and Estuarine Waters Designated for Water Contact Recreation (REC-1)

E. coli

The bacteria water quality objective for all waters where the salinity is equal to or less than 1 part per thousand (ppth) 95 percent or more of the time during the calendar year is: a six-week rolling geometric mean of *Escherichia coli* (*E. coli*) not to exceed 100 colony forming units (cfu) per 100 milliliters (mL), calculated weekly, and a Statistical Threshold Value (STV) of 320 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner. U.S. EPA Method 1603 or an equivalent method may be used to measure culturable *E. coli*.

Enterococci

The bacteria water quality objective for all waters where the salinity is greater than 1 ppth more than 5 percent of the time during the calendar year is: a six-week rolling geometric mean of enterococci not to exceed 30 cfu/100 mL, calculated weekly, with a STV of 110 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner. U.S. EPA Method 1600 or an equivalent method may be used to measure culturable enterococci.

Applicable Waters	Objective Elements	Estimated Illness Rate (NGI): 32 per 1000 water contact recreators	
		Magnitude	
	Indicator	GM (cfu/100 mL)	STV (cfu/100 mL)
All waters where salinity is equal to or less than 1 ppth 95 percent or more of the time	<i>E. coli</i>	100	320
All waters where salinity is greater than 1 ppth more than 5 percent of the time	<i>Enterococci</i>	30	110
<p>The water body GM shall not be greater than the applicable GM magnitude in any six-week interval, calculated weekly. The applicable STV shall not be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.</p> <p>NGI = National Epidemiological and Environmental Assessment of Recreational Water gastrointestinal illness rate GM = geometric mean STV = statistical threshold value cfu = colony forming units mL = milliliters ppth = parts per thousand</p>			

In Fresh Waters Designated for Limited Water Contact Recreation (LREC-1)

E. coli

Indicator	Magnitude	
	30-day GM	SSM
<i>E. coli</i> density	126 per 100 mL	576 per 100 mL
GM = geometric mean SSM = single sample maximum mL = milliliters		

The single sample limit for *E. coli* is based on EPA's determination of the most appropriate single sample maximum density for water bodies infrequently used for full-body recreation².

Implementation Provisions for Water Contact Recreation Bacteria Objectives

The geometric mean values for all but the fecal coliform objective shall be a six-week rolling geometric mean calculated weekly. For the fecal coliform objective, the geometric mean values shall be calculated based on a statistically sufficient number of samples (generally not less than 5 samples equally spaced over a 30-day period). The geometric mean objectives shall be strictly applied.

In the context of a TMDL or other Basin Plan amendment, the Regional Board may implement the geometric mean, statistical threshold values and/or single sample objectives in fresh, estuarine, and marine waters by using a 'reference system/antidegradation approach' or 'natural sources exclusion approach' as discussed below. A reference system is defined as an area and associated monitoring point that is not impacted by human activities that potentially affect bacteria densities in the receiving water body.

These approaches recognize that there are natural sources of bacteria, which may cause or contribute to exceedances of the water quality objectives for bacterial indicators. They also acknowledge that it is not the intent of the Regional Board to require treatment or diversion of natural water bodies or to require treatment of natural sources of bacteria from undeveloped areas. Such requirements, if imposed by the Regional Board, could adversely affect valuable aquatic life and wildlife beneficial uses supported by natural water bodies in the Region.

Under the reference system/antidegradation implementation procedure, a certain frequency of exceedance of the bacteria water quality objectives above shall be permitted on the basis of the observed exceedance frequency in the selected reference system or the targeted water body, whichever is less. The reference system/anti-degradation approach ensures that bacteriological water quality is at least as good as that of a reference system and that no degradation of existing bacteriological water quality is permitted where existing bacteriological water quality is better than that of the selected reference system.

Under the natural sources exclusion implementation procedure, after all anthropogenic sources of bacteria have been controlled such that they do not cause or contribute to an exceedance of the single sample objectives and natural sources have been identified and quantified, a certain frequency of exceedance of the bacteria water quality objectives shall be permitted based on the residual exceedance frequency in the specific water body. The residual exceedance frequency shall define the background level of exceedance due to natural sources. The 'natural sources exclusion' approach may be used if an appropriate reference system cannot be identified due to unique characteristics of the target water body. These approaches are consistent with the State

² U.S. EPA. 1986. *Ambient Water Quality Criteria for Bacteria-1986*. Report No. EPA 330/5-84-002. January 1986.

Antidegradation Policy (State Board Resolution No. 68-16) and with federal antidegradation requirements (40 CFR 131.12).

The appropriateness of these approaches and the specific exceedance frequencies to be permitted under each will be evaluated within the context of TMDL development or other Basin Plan amendment for a specific water body, at which time the Regional Board may select one of these approaches, if appropriate.

These implementation procedures may only be implemented within the context of a TMDL or Basin Plan amendment addressing municipal storm water, including the municipal storm water requirements of the Statewide Permit for Storm Water Discharges from the State of California Department of Transportation (Caltrans), and non-point sources discharges. These implementation provisions do not apply to NPDES discharges other than MS4 discharges.³

The Statewide Bacteria Provisions contained in the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) and the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays and Estuaries of California (ISWEBE Plan) outline additional implementation provisions pertaining to high flow and seasonal suspensions of the water contact recreation (REC-1) beneficial use that Regional Boards may consider in the application of bacteria water quality objectives.

In Waters Designated for Non-contact Water Recreation (REC-2)

Fecal Coliform

In waters designated for non-water contact recreation (REC-2) and not designated for water contact recreation (REC-1), the fecal coliform concentration shall not exceed a log mean of 2000/100 ml (based on a minimum of not less than four samples for any 30-day period), nor shall more than 10 percent of samples collected during any 30-day period exceed 4000/100 ml.

Indicator	Magnitude	
	30-day GM	SSM
Fecal coliform density	2000 per 100 mL	4000 per 100 mL
The waterbody GM shall be calculated with a minimum of four samples and shall not exceed the GM magnitude for any 30-day period.		
Not more than 10% of samples collected during any 30-day period shall exceed the SSM. GM = geometric mean SSM = single sample maximum mL = milliliters		

In Waters Designated for Shellfish Harvesting (SHELL)

Total Coliform

In all waters where shellfish can be harvested for human consumption (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 ten percent of the samples collected during any 30-day period exceed

³ Municipal storm water discharges in the Los Angeles Region are those with permits under the Municipal Separate Storm Sewer System (MS4) NPDES Program. For example, the MS4 permits at the time of this amendment are the Los Angeles County Municipal Storm Water NPDES Permit, Ventura County Municipal Storm Water NPDES Permit, City of Long Beach Municipal Storm Water NPDES Permit, and elements of the statewide storm water permit for the California Department of Transportation (Caltrans).

230/100 ml for a five-tube decimal dilution test or 330/100 ml when a three-tube decimal dilution test is used.

Indicator	Magnitude	
	30-day Median	SSM
Total coliform density	70 per 100 mL	230 per 100 mL (5-tube test) 330 per 100mL (3-tube test)
<p>The waterbody Median and shall not exceed the Median magnitude for any 30-day period.</p> <p>Not more than 10% of samples collected during any 30-day period shall exceed the applicable SSM. SSM = single sample maximum mL = milliliters</p>		