



## Bacteria Standards

### INTRODUCTION AND BACKGROUND:

In order to protect Texas's surface waters for drinking, recreation and other uses, the Texas Commission on Environmental Quality (TCEQ) maintains *surface water quality standards*. These standards establish maximum, and in some cases minimum, concentrations of certain substances that are permitted to be in surface waters.

Bacteria standards specify the maximum amount of bacteria (*E. coli* or fecal coliforms) that can be present in water so that it is safe for recreation. The TCEQ is currently proposing to modify these standards to address two issues. First, the bacteria standards do not recognize the natural variability of bacterial concentrations that occur in different types of surface waters. For instance, the same types of recreation are assumed to be appropriate for a small urban drainage ditch as for a large reservoir with a pristine watershed. Secondly, the standards currently account for only two types of recreation: "contact" and "noncontact." Having only two categories does not recognize that some types of recreation, such as wading or fishing, involve a much lower risk of ingesting water than activities such as swimming or diving.

In addition, the current standards were developed from studies conducted on a natural lake in the northern United States; in Texas, all but one of our "lakes" are, in fact, man-made reservoirs. The appropriateness of applying these criteria to man-made reservoirs or flowing streams and rivers, in a different climate and under different environmental conditions, is questionable.



### ISSUE:

The current standards, as implemented, have indicated that hundreds of water bodies have bacteria levels that are too high for any type of recreation that involves contact with the water. Many of these "impairments" are in streams that are either too shallow to allow most forms of recreation, or were measured in large rivers during high flows or flooding when conditions are too dangerous for swimming.

For each of these impairments, the TCEQ is required to perform a detailed study, called a Total Maximum Daily Load. The end result of these studies is a load allocation to each of the contributors of bacteria to the water body in question. While this may

be appropriate for substances like metals, much of the bacteria that enters our rivers, streams and reservoirs are from natural or diffuse sources that are difficult to control. In fact, while wastewater from treatment plants may seem a likely source, these facilities are required to disinfect the water they discharge. This removes virtually all of the bacteria from wastewater before it is released to the environment.

### CONCLUSION AND RECOMMENDATIONS:

The TCEQ is proposing specific amendments to the Texas Surface Water Quality Standards in order to improve recreational stream standards. These changes, summarized in the table below, will more accurately reflect differences in water bodies and recreational activities. ***The standard revisions are appropriate and will help identify those water bodies that have legitimate water quality concerns.*** This, in turn, will help the state focus its resources and limit the number of studies that must be conducted on water bodies with few controllable sources of bacteria.

For additional information on this topic, see the Water Environment Association of Texas' paper *Frequently asked Questions; Contact Recreation and Bacteria Standards*.

### Proposed Changes to the Texas Surface Water Quality Standards for Recreational Use

Contact Classification	Basic Definition	Proposed Change
<i>Existing</i> Primary Contact Recreation	Uses involving a significant risk of ingestion of water, such as wading, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting.	The TCEQ is proposing to change the criterion for the primary contact recreation category from 126 to 206 colonies per 100 ml for <i>E. coli</i> . EPA has indicated that <i>E. coli</i> concentrations of up to 206 per 100 ml can be considered protective of contact recreation.
<i>Proposed</i> Secondary Contact Recreation 1	New classification would apply to water bodies where water recreation can occur, but does not involve a significant risk of ingestion, such as fishing, boating, and limited body contact incidental to shoreline activity.	Applies to intermittent and perennial freshwaters where site-specific information demonstrates that primary contact recreation has little to no likelihood of occurring.
<i>Proposed</i> Secondary Contact Recreation 2	New classification would apply to water bodies where water recreation activities do not involve a significant risk of water ingestion and where activities occur less frequently than for secondary contact recreation 1 due to physical characteristics of the water body or limited public access.	May be assigned only where a use attainability analysis has been conducted consistent with EPA regulations (40 CFR 131.10) that demonstrates there is no reasonable potential for primary contact recreation uses (e.g. activities involving emersion) to occur.
<i>Existing</i> Noncontact Recreation	Applies to water bodies where recreation activities do not involve a significant risk of water ingestion and where contact recreation uses should not occur because of unsafe conditions. No water body, such as a lake, is presumed to have a use of noncontact recreation.	No proposed changes.