

TEXAS WATER QUALITY STANDARDS: CRITERIA FOR RECREATION
TCEQ Staff Draft **May 15, 2008**

The following information is intended to provide a draft overview of (1) the current recreational criteria in the water quality standards, (2) the recent history of recreational criteria in Texas, (3) the status of ongoing revisions of water quality standards, and (4) options that are under consideration for recreational criteria.

STATUS OF CURRENT RECREATIONAL CRITERIA:

- Uses and numerical criteria for Texas waters are established in Texas Surface Water Quality Standards (Title 30, Chapter 307 of the Texas Administrative Code). Water bodies in Texas are presumed to have contact recreation except where specifically proven otherwise by a use-attainability analysis.
- The water quality standards have two recreational use designations: (primary) contact recreation, and noncontact recreation. Contact recreation is defined as “recreational activities involving a significant risk of ingestion of water, including wading by children, swimming, water skiing, diving, and surfing.” Noncontact recreation is defined as “aquatic recreational pursuits not involving a significant risk of water ingestion: including fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity.”
- In the year 2,000 standards revisions, TCEQ adopted EPA’s recommended recreational indicator bacteria -- *E. coli* for freshwater and enterococci for saltwater. Fecal coliform was also temporarily continued as an indicator to allow for a transition period.
- Applicable uses and bacteria criteria in the current Texas water quality standards:

| | Contact recreation (# per 100 ml) | Noncontact recreation (# per 100 ml) |
|------------------------------------|--------------------------------------|---|
| <u><i>E. coli</i> (freshwater)</u> | | |
| geometric mean | 126 | 605 |
| single sample max | 394 | --- |
| <u>Enterococci (saltwater)</u> | | |
| geometric mean | 35 | 168 |
| single sample max | 89 | --- |
| <u>Fecal coliform (all waters)</u> | | |
| geometric mean | 200 | 2,000 |
| Single sample max | 400 | --- |

- Recreation criteria are not attained in numerous Texas water bodies. In the 2006 Texas 303(d) list of impaired water bodies, 36% of assessed stream and river miles did not meet recreation criteria.

NOTES ON HISTORY OF CONTACT RECREATION STANDARDS IN TEXAS:

In the first Texas water quality standards to be adopted under the federal Clean Water Act in 1973, recreational uses and criteria were a mix of contact and noncontact recreation. The classified list of water bodies was also much smaller then. The San Jacinto watershed, for example, included only the above-tidal portions of Spring Creek, Cypress Creek, Caney Creek, and Peach Creek.

Initially, urban bayous were often classified as noncontact recreation, with fecal coliform criteria of either 2,000 or 1,000 per 100 ml, as a geometric mean. These uses and criteria were generally assigned based on the experience of aquatic scientists who were familiar with the water bodies. The uses and criteria were periodically adjusted for some of the bayous based on observations and other information. Peach Creek, for example, was designated for contact recreation in 1981, with a fecal coliform criterion of 200 per 100 ml.

By 1984, the criterion for the remaining noncontact water bodies was uniformly set at 2,000 fecal coliform per 100 ml, rather than having some at 1,000 per 100 ml. Up until this time, specific uses and criteria were not "presumed" for unclassified water bodies in the general criteria of the standards.

In 1983, EPA substantially changed the federal regulations for state water quality standards, and use-attainability analyses were required for all water bodies that were designated for less than primary contact recreation. Accordingly, EPA conditionally approved the 1984 revisions of the Texas Surface Water Quality Standards to require use-attainability analyses for a large number of specific segments and for smaller, unclassified water bodies.

Initial proposals for recreational uses of less than primary contact were disapproved by EPA. An example was the use-attainability analysis submitted for Dickinson Bayou in 1986. EPA did concur that designated recreational uses were not required for the Houston Ship Channel.

In 1986, a consortium of environmental groups (Sportsmen's Clubs of Texas, Sierra Club, Environmental Defense Fund) sued EPA for approving the Texas Surface Water Quality Standards, and part of the lawsuit focused on the lack of use-attainability analyses for designations of less than "fishable/swimmable." The lawsuit was revised in 1988, remained in court for years, and is now no longer an active legal action.

In the 1988 water quality standards revisions, the "presumed" use for small, unclassified streams was designated as contact recreation, except where a use-attainability analysis was approved by EPA and the stream was individually designated in the water quality standards. Classified water bodies also were designated for contact recreation except for those few instances where a use-attainability analysis had been approved by EPA, such as for Houston Ship Channel Segments 1006 and 1007. There were other ship channel areas — such as Texas City, Bayport Channel, and the lower part of the Houston Ship Channel (Segment 1005) — that were also designated for noncontact recreation due to concerns by channel operators that recreation wasn't safe due to ship traffic. However, these other ship channels were still assigned criteria commensurate with contact recreation use.

In the standards revisions for the year 2000, TCEQ adopted EPA's current (1986) criteria that are based on *E. coli* for freshwater and enterococci for tidal waters. Fecal coliform was temporarily retained as a criterion to allow for a transition period for monitoring programs.

The National Beach Act of 2000 required states to (1) monitor coastal swimming beaches and post notice when bacterial indicators are elevated, and (2) adopt EPA's current saltwater recreational bacterial indicator (enterococci) in state water quality standards by April 10, 2004.

In November 2004, EPA promulgated recreational indicator criteria for coastal and Great Lakes states. Of the 35 applicable states, TCEQ was among the 14 states considered fully compliant with the Beach Act. The monitoring and public notice requirements of the Beach Act are addressed by local beachwatch programs under coordination of the Texas General Land Office.

STATUS OF PENDING REVISIONS OF THE WATER QUALITY STANDARDS:

For previous standards revisions in 2000, EPA has approved them except for:

- Toxic criteria to protect aquatic life in freshwater
- Site-specific selenium criteria for 4 water bodies
- Various narrative provisions and criteria

Status of upcoming revisions:

- Preliminary informal recommendations for changes, January-March 2006
- Initiation of rulemaking approved in November 2006
- Water Quality Standards Advisory Workgroup meetings:
 - March 7, 2007: nutrient criteria, toxic criteria
 - May 16, 2007: recreation criteria, standards applicability & assessment
 - June 26, 2007: whole effluent testing (WET), site-specific standards
 - Sept 6, 2007: nutrient criteria, standards applicability
 - May 5, 2008: recreation criteria, WET, standards applicability

Major Revisions under consideration:

Consider numerical nutrient criteria for large water supply reservoirs.

Recalculate human-health toxic criteria to incorporate updated procedures to address child exposure, estimated amounts of fish consumed, and bioaccumulation rates – in coordination with toxicologists in the TCEQ Chief Engineer’s Office.

Consider updating selected toxic criteria for both human-health and aquatic-life protection - including consideration of EPA 2001 guidelines for mercury to protect human consumption of fish.

Review recent site-specific studies to consider (1) revised uses and/or criteria for about 40 larger water bodies, (2) aquatic-life uses for about 43 new small streams in Appendix D, and (3) toxic criteria for about 16 water bodies.

Review recreational criteria in order to consider (1) a broader range of recreational uses and associated bacteria criteria, (2) a methodology to study and assign recreational uses and criteria, and (3) updated procedures to assess whether recreational uses are being attained:

- Revised use categories could include primary and secondary contact recreation.
- Methodology for use-attainability would facilitate site-specific recreational criteria.
- Considerations for assessing attainment:
 - Assessing impairments with the average criterion, rather than the using both the average and single-sample max.
 - More clearly defining “non-representative” sampling situations that might be excluded.
 - Reviewing possibility of limited exemptions of data at very high streamflows

A large number of additional revisions will also be considered in order to incorporate new data and information, and to improve clarity of various provisions.

TCEQ is concurrently evaluating, updating, and revising the Procedures to Implement the Texas Surface Water Quality Standards, RG-194. For example, TCEQ is evaluating new EPA requirements for whole effluent toxicity testing based on sublethal effects and for establishing permit limits based on “reasonable potential” of toxicity.

For more information:

Search TCEQ’s website for “water quality standards,” and browse handouts for the water quality standards advisory workgroup

[http://www.tceq.state.tx.us/permitting/water_quality/wq_assessment/standards/WQ_standards_revisions_future.html].

EXAMPLES OF OPTIONS TO CONSIDER FOR RECREATIONAL CRITERIA:

(Excerpt from TCEQ website on the Water Quality Standards Workgroup, May 5, 2008)

**Water Quality Standards for Recreation: Options for Revision - Summary
TCEQ Staff Draft May 5, 2008**

Options:

- Expand the existing categories recreational uses and associated criteria
- Assess and recommend options for applying expanded recreational categories

Summary of Recreational Uses and Selected Criteria:

| Uses | Criteria and Estimated Risk* | | | | | |
|----------------------------|------------------------------|-------|------------------|-------|---------------------|------|
| | <i>E. coli</i> (FW) | | Enterococci (SW) | | Fecal coli (FW& SW) | |
| | G. mean | Risk | G. mean | Risk | G. mean | Risk |
| Existing Standards: | | | | | | |
| Contact recreation | 126 | 8 | 35 | 19 | 200 | -- |
| Noncontact rec. | 605 | ~14 | 168 | ~27 | 2000 | -- |
| | | | | | | |
| Proposed Standards: | | | | | | |
| Primary CR 1 | 126 | 8 | 35 | 19 | -- | -- |
| Primary CR 2 | 206 | 10 | -- | -- | -- | -- |
| Secondary CR | 630 | 14-15 | 175 | 27-28 | -- | -- |
| Noncontact Rec. | 1260 | 17-18 | 350 | 31-32 | -- | -- |

* G. mean = Geometric mean of bacteria per 100 ml

Risk = Risk of illness (gastroenteritis) per 1000 swimmers (from EPA 1986 guidance criteria)

High saline inland water bodies with conductivity values greater than or equal to 9,000 micromhos:

| Uses | Criteria and Estimated Risk* | |
|----------------------------|------------------------------|-------|
| | Enterococci (FW) | |
| | G. mean | Risk |
| Proposed Standards: | | |
| Primary CR 1 | 33 | 8 |
| Primary CR 2 | 54 | 10 |
| Secondary CR | 165 | 14-15 |
| Noncontact Rec. | 330 | 17-18 |

* G. mean = Geometric mean of bacteria per 100 ml

Risk = Risk of illness (gastroenteritis) per 1000 swimmers (from EPA 1986 guidance criteria)

Applying Recreational-Use Categories:

Applicability – Recommended Options:

- Contact 1: Classified segments
- Contact 1: Unclassified reservoirs, tidal rivers, bays and unclassified freshwater streams & rivers that are located in national and state parks
- Contact 2: Unclassified perennial streams or pools
- Secondary: Unclassified intermittent streams and nontidal wetlands
- Noncontact: Segments now designated noncontact

Applicability – Additional Options:

- Contact 2: Also apply to classified streams and rivers ?
- Secondary: Also apply to unclassified streams < 18” deep ?

Uses less stringent: based on a use-attainability analysis and a site-specific standards change

Non-human Sources (Include language in Implementation Procedures):

In situations where sanitary surveys, Bacteria Source Tracking or similar studies demonstrate that there are limited areas where wildlife sources of bacteria are unavoidably high, such as in wildlife preserves with very large waterfowl populations and limited aquatic recreational potential, site-specific uses, such as secondary contact recreation, may be designated for individual water bodies in the Texas Surface Water Quality Standards.

Flow-Dependent Applications of Standards in Streams [307.8(a)(1)(A) & (F)]:

Remove low-flow standards exemptions [307.8(a)(1)(A) & (F)] for recreational criteria (geometric mean) for all perennial streams that should be applicable during all but negligible flow conditions (e.g., <0.1 CFS in perennial streams).

Sampling periodicity and evaluation [307.9(e)(3)]:

For bacteria, base standards attainment on geometric mean criteria. Use single-sample maximum criteria for swimmer safety notification and for evaluating maximum limits in wastewater permits.

Effluent limits:

Leave fecal coliform as an alternative indicator in effluent limits for wastewater discharges for one year after the adoption of the TSWQS. Address permitting and bacteria in the Implementation Procedures.

Minor editorial changes