

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Commissioners **Date:** June 11, 2010

Thru: LaDonna Castañuela, Chief Clerk
Mark R. Vickery, P.G., Executive Director

From: L'Oreal W. Stepney, P.E., Deputy Director
Office of Water

Docket No.: 2009-0889-RUL

Subject: Commission Approval for Rulemaking Adoption
Chapter 307, Texas Surface Water Quality Standards
Revisions to the Texas Surface Water Quality Standards
Rule Project No. 2007-002-307-OW

Background and reason(s) for the rulemaking:

Texas has had Texas Surface Water Quality Standards (TSWQS) prior to the Federal Clean Water Act of 1972. Much of the present format was established in the early 1970s as United States Environmental Protection Agency (EPA) requirements and regulations for state standards became more defined. Published revisions of the TSWQS have occurred in 1967, 1973, 1976, 1981, 1984, 1988, 1991, 1993, 1995, 1997, and 2000.

Initially, site-specific standards were set for individual water bodies in the state relatively quickly, and in some cases there were limited data to establish uses and criteria. Many of the subsequent changes in the TSWQS, including some of the current proposals, have involved revisions to the initial standards based on additional data and evaluations.

This rule package is needed to meet federal rule and state statute requirements and to set water quality standards that establish the instream water quality conditions for surface waters in the state. The Federal Clean Water Act requires states to review and revise their surface water quality standards once every three years. This adopted revision will satisfy this requirement. More importantly, the rule revisions are necessary to provide clarity and updates to the TSWQS which are used by the commission to develop and authorize discharge permits, establish targets for the development of Total Maximum Daily Loads (TMDLs) and other studies, and assess whether water bodies are impaired under §303(d) of the Federal Clean Water Act. The standards found in these rules protect public health, enhance water quality, address the purposes of the Texas Water Code, and meet the goal of the Federal Clean Water Act – to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

The TSWQS revision process began in 2006 with the request of public comments to suggest recommended changes to the rules. Currently, there is no federal mandate or directive from the EPA to complete the current TSWQS revision by a specified deadline. The TSWQS were last revised in 2000, and the majority of the 2000 TSWQS were approved by the EPA by 2007. The EPA completed its final action on the 2000 TSWQS in October 2009.

As a result of the TSWQS revision process, amendments are adopted to the TSWQS, 30 TAC §§307.1-307.10. The revisions to the TSWQS are adopted to incorporate new information and studies on the appropriate uses and criteria of individual water bodies, to incorporate new scientific

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data on the effects of specific chemicals and pollutants, and to address new provisions in the Texas Water Code, federal regulations, and guidance of the EPA.

Specific adopted changes to the rules include:

- revisions to general criteria that are intended to improve statewide qualitative and quantitative criteria and to ensure that the general criteria are compatible with other adopted changes in the TSWQS;
- expanded categories for recreational uses and criteria and more specific protocols to assign recreational uses;
- revisions to toxic criteria to incorporate new data on toxicity effects and revisions to the basic requirements for toxicity effluent testing in order to address revised commission and EPA procedures;
- addition of new numerical nutrient criteria to protect numerous reservoirs from excessive growth of aquatic vegetation related to nutrients;
- additions and revisions to improve clarity on how the TSWQS apply under different stream flow conditions;
- numerous revisions and additions to the uses and criteria of individual water bodies to incorporate new data and the results of recent use attainability analyses (UAAs); and
- addition of site-specific recreational uses for selected water bodies.

Scope of the rulemaking:

The adopted revisions to the TSWQS include numerous substantive changes and clarifications in all sections of the rules except for §307.5. The adopted revisions to the TSWQS incorporate new information and studies on the appropriate uses and criteria of individual water bodies, incorporate new scientific data on the effects of specific chemicals and pollutants, and address new provisions in the Texas Water Code, federal regulations, and EPA guidance.

The adopted revisions in §§307.1-307.9 are changes in the basic numerical and narrative provisions of the TSWQS that apply to all surface water in the state. The numerous revisions and additions to site-specific uses and criteria in the Appendices of §307.10 are tailored to individual water bodies. These site-specific revisions are based on studies and evaluations of each water body, and UAAs have been conducted as needed to develop revisions in uses and/or associated numerical criteria.

A) Summary of what the rulemaking will do:

Revisions to the TSWQS are adopted to include new information and studies on the appropriate uses and criteria of individual water bodies, to incorporate new scientific data on the effects of specific chemicals and pollutants, and to address new provisions in the Texas Water Code, federal regulations, and guidance of the EPA.

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Adopted changes to the general criteria are intended to improve statewide qualitative and quantitative criteria and to ensure that the general criteria are compatible with other revisions. Numerous revisions of toxic criteria are adopted to incorporate new data on toxicity effects, and changes are adopted to provide additional explanation regarding the basic requirements for toxicity effluent testing. Other adopted changes provide expanded categories of recreational uses and provide more detail on assigning recreational uses. New criteria for nutrients are adopted to protect numerous reservoirs from potential excessive growth of aquatic vegetation and to address federal requirements. Revisions are also adopted to provide clarity on how water quality standards apply under different stream flow conditions and on how attainment of water quality standards is assessed using instream monitoring data. Numerous revisions are adopted for the uses and criteria of individual water bodies to incorporate new data and the results of recent UAAs.

Several of the adopted revisions to the general provisions and structure of recreational criteria, and many of the adopted site-specific revisions to criteria for individual water bodies in §307.10 are intended to address water bodies that are listed as impaired because of inappropriate water quality standards.

B) Scope required by federal regulations or state statutes:

The Federal Clean Water Act and associated EPA rules require states to review and, if appropriate, revise the TSWQS at least every three years. The Texas Water Code stipulates that the state may amend the standards from time to time.

The general federal requirements for state water quality standards are established in the Federal Clean Water Act, §303(c), and in the federal rules located in 40 CFR Part 131. Under these requirements, revisions to state water quality standards are not in effect for purposes under the Federal Clean Water Act until approved by the EPA. States are afforded flexibility in setting water quality standards, but substantial departures from current EPA water quality criteria or policies require additional analyses and justification.

These amendments are adopted under the Texas Water Code, §26.023, that provides the commission with the authority to make rules setting TSWQS for all waters in the state. These amendments are also being adopted under Texas Water Code, §5.103, that authorizes the commission to adopt any rules necessary to carry out its powers and duties under the Texas Water Code and other laws of this state. The adopted amendments will satisfy the provision in §303(c) of the Federal Clean Water Act that requires states to adopt water quality standards and to review and revise standards from time to time, but at least once each three year period.

None of the adopted revisions are specifically required by federal rule or statute. However, the adopted revisions for toxic criteria are based on updated EPA guidance documents, and the new criteria for nutrients are adopted in part as a response to an EPA policy mandate. Two amendments to the Texas Water Code are also incorporated into this adopted revision: a change in the wording in the General Policy Statement in §307.1 of the TSWQS to reflect amendments to Texas Water Code, §26.003 and the addition of a list of sole-source surface drinking water supplies in §307.10, Appendix B of the TSWQS, as directed by the Texas Water Code §26.0286(c). The changes to the Texas Water Code, §26.003 and §26.0286(c) were required by the 77th Texas Legislature (2001), House Bill 2912 and House Bill 3023, respectively.

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C) Additional staff recommendations that are not required by federal rule or state statute:

- In §307.3, numerous definitions are revised or added in order to improve clarity, including establishing new subcategories of contact recreation based on the level of contact recreation use and establishing a definition for sole-source surface drinking water supply.
- In §307.4, the applicability of new recreational use categories to smaller, unclassified water bodies is described. Waters with sufficient size and depth are assigned primary contact recreation; but small, shallow streams may be assigned secondary contact recreation 1.
- In Table 1 of §307.6, a variety of numeric toxic criteria to protect aquatic life are revised to reflect additional EPA data on toxic effects and updated EPA guidance.
- In Table 2 of §307.6, revisions to numerous numeric toxic criteria to protect human health incorporate updated EPA guidance procedures for calculating human-health criteria and incorporate additional EPA data on toxic effects. The adopted criterion for methylmercury in fish tissue is less stringent than current EPA guidance, but the adopted criterion is the same as that used by the Texas Department of State Health Services to set fish consumption advisories.
- In §307.6(e), the provisions on diazinon abatement are deleted since new numerical criteria for diazinon are adopted in Table 2, and the use of diazinon is now federally restricted.
- In §307.7, additional recreational categories and revisions to associated numerical criteria for indicator bacteria are adopted. The criterion for primary contact recreation in freshwater is revised from 126 to 206 *E. coli* per 100 milliliter. EPA has indicated that *E. coli* concentrations of up to 206 per 100 milliliters can be considered as protective of contact recreation (Attachment 1). Also see discussion under "Significant changes from proposal."
- In §307.7 and in new Appendix F in §307.10, numerical criteria for nutrients are adopted for numerous reservoirs. EPA policy requires that numerical nutrient criteria be adopted in federally approved state water quality standards, but this specific requirement is not in federal regulation or statute.
- In §307.8, revisions and additional specificity are adopted on the applicability of specific types of numerical criteria at low stream flows.
- In §307.9, additional descriptions are adopted to better define "representative" conditions to assess standards attainment, and a specific exemption is added to exclude the use of bacteria samples that are collected above specified high flow conditions.
- In §307.9, a revision is adopted to defer impaired listings for water bodies that do not meet criteria for a "presumed" high aquatic-life use.
- In Appendices A, D, E, and G in §307.10, a large number of additions and revisions are adopted to site-specific uses and numerical criteria. These changes are based on new data and evaluations for individual water bodies, and a UAA is required by the EPA to support those changes that are less stringent than current water quality standards or presumed uses.

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- Numerous other minor revisions are adopted throughout Chapter 307 to improve clarity and to provide additional specificity.

Statutory authority:

Texas Water Code, §5.103 and §26.023 and Federal Clean Water Act, §303(c)

Effect on the:

A) Regulated community:

The TSWQS can directly affect permitted wastewater discharges in Texas including cities, counties, state agencies, water districts, utility districts, investor-owned utilities, river authorities, mobile home parks, recreational vehicle parks, hotels, motels, industries, campgrounds, or any other business with an industrial and domestic wastewater treatment facility.

Adopted revisions to site-specific standards may affect requirements in state, municipal, agricultural, and industrial wastewater discharge permits. These changes may involve alterations or new treatment methods or techniques that can range from best management practices to renovating, expanding, or building new treatment facilities. These permit holders may need to seek permit amendments to adjust treatment criteria to newly adopted standards. Small businesses that discharge wastewater would also be required to comply with the adopted requirements.

There will be a fiscal impact to some permitted facilities. Other facilities could benefit from this rulemaking because of cost savings. The adopted amendments have potential cost implications associated with revised criteria for toxic substances to protect human health and aquatic life, revised criteria for recreational uses, and revised dissolved oxygen criteria and aquatic life uses for classified and unclassified water segments.

With respect to criteria for toxic substances, many of the revised criteria are more stringent than in the current standards. Of the adopted revisions to toxic criteria, 100 are more stringent, and 29 adopted criteria are new. However, most of the revisions and additions to toxic criteria are either not substantial, or the adopted changes address parameters that do not typically affect permit limits for wastewater treatment plants. Some of the adopted revisions, such as the more stringent aquatic life toxic criteria for copper in freshwater, could be significant to certain wastewater discharges. Cost implications regarding toxic substances are generally associated with chemical screening and monitoring and with the additional treatment of wastewater that may be needed to meet the standards for water quality. Where applicable, the costs associated with compliance to toxic standards will be determined by the size and current condition of a treatment facility, the extent of current controls, and the nature of the wastewater and receiving waters.

All of the adopted site-specific toxic criteria for metals at 24 sites are less stringent than the existing criteria. These site-specific criteria that are based on studies by permittees are expected to avoid the imposition of inappropriately stringent permit limits for a minimum of 24 industrial discharge permits.

None of the adopted revisions for dissolved oxygen criteria for classified segments in Appendix A are anticipated to require more stringent treatment by domestic wastewater facilities. However, 22 adopted dissolved oxygen criteria for unclassified streams in Appendix D are more stringent than

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required by the presumed standards for small intermittent streams with perennial pools. The adopted criteria for these 22 streams are based on site-specific sampling studies. Five domestic wastewater facilities are projected to need more stringent treatment limits than are currently imposed in existing permits to meet the adopted site-specific standard. The overall projected costs to upgrade these five facilities are estimated to be a minimum of \$38 million dollars.

Estimates were also completed to determine potential savings to dischargers due to the adopted revisions to dissolved oxygen criteria that are less stringent for 68 criteria for classified segments and unclassified waters listed in Appendix A and D. The analyses indicated that no wastewater facilities would have to complete substantial upgrades whether these revised criteria are adopted or not. However, future expansions of these facilities and associated permit amendments to increase discharge flow might be facilitated by the revisions.

No new group of persons will be affected by the revisions who were not affected previously. Numerous water quality uses and criteria are revised, but the scope and applicability of the rules or affected permitting actions are not expanded with this adoption.

B) Public:

The TSWQS affect all citizens of the state. The public benefit anticipated from enforcement and compliance of the adopted amendments includes increased protection of public drinking water supplies and aquatic life resources, an improved regulatory process for permitted wastewater discharges, and potentially improved quality of the surface water resources of the state. The adopted change to site-specific standards are the result of additional or more accurate information that the commission has obtained through testing and assessments regarding specific segments of water bodies and the reclassification of those segments. However, those adopted revisions to site-specific standards, recreational standards, and toxic criteria that are less stringent than the existing TSWQS are of interest and concern to some members of the public.

No revenues collected by local governments are expected to be increased or decreased by the adopted amendments to the TSWQS. The TSWQS do not contain provisions for fees, and no change in fee revenues due to the adopted revisions is anticipated. Additional costs to individual water bills or other individual costs have not been identified. No local employment impacts caused by the adopted TSWQS have been identified.

C) Agency programs:

Water quality standards are the basis for establishing discharge limits in wastewater and storm water discharge permits, setting instream water quality goals for TMDLs, and providing targets to assess water quality. The TMDL Program, Surface Water Quality Monitoring Program, and the wastewater permitting program will be affected by the adopted rules.

No additional costs are anticipated for the commission to implement the revisions to the TSWQS as the impacts will be primarily operational and procedural. These effects would be higher during the first two years after the commission's adoption and EPA approval of the water quality standards.

The statewide monitoring and assessment of surface water quality data and the review of wastewater permit applications will need to incorporate numerous changes and additions to numerical criteria. Numerous new recreation UAAs will be conducted and coordinated under the adopted revised

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framework for recreational standards. The addition of nutrient criteria for 83 reservoirs will require additional screening for the statewide monitoring assessment and for the review of wastewater permit applications.

No additional funding or new full-time equivalents (FTEs) have been appropriated by the Texas Legislature to implement the adopted revisions. The incorporation of revised criteria in wastewater permits is being facilitated by concurrent revisions in the commission's Standards Implementation Procedures. Sufficient FTEs are currently allocated to coordinate and conduct additional recreation UAAs and to implement new nutrient criteria. Funding to conduct UAAs by contractors has been established using federal funds under Federal Clean Water Act §106. The water quality standards do not contain provisions for fees, and no change in fee revenues due to the adopted revisions is anticipated.

Several of the adopted revisions to the general provisions and structure of recreational criteria, and many of the adopted site-specific revisions to criteria for individual water bodies in §307.10, are intended to address water bodies that are listed as impaired because of potentially inappropriate water quality standards. In these cases, the adopted TSWQS changes will help streamline the commission's water quality management program by curtailing unnecessary restorative activities, such as TMDLs, for water bodies that are currently identified as being impaired. The adopted revisions to recreational criteria are projected to remove approximately 62 water bodies from the 2008 list of impaired water bodies. This adopted change will eliminate the need for approximately 62 recreation UAAs and will result in a cost savings of a minimum of \$1 million dollars. In addition, the adopted changes for dissolved oxygen criteria in Appendices A and D are projected to remove 20 water bodies from the 2008 list of impaired water bodies. This adopted change will impact 20 TMDL studies or other studies for dissolved oxygen and will result in a cost savings of a minimum of \$3 million dollars.

Stakeholder meetings:

Seven stakeholder meetings were held at the TCEQ headquarters in Austin on the following dates: March 7, 2007, May 16, 2007, June 26, 2007, September 6, 2007, May 5, 2008, January 6, 2009, and April 27, 2009 (on nutrient criteria).

Other outreach efforts have included presentations at:

- Water Quality Advisory Group Quarterly Meetings
- TCEQ Environmental Trade Fair and Conference
- Numerous meetings of specific stakeholder groups

Written notice of the stakeholder meetings were sent to the Surface Water Quality Standards Advisory Workgroup, which is a balanced group of regulated entities, public, environmental, consumer, and professional organization representatives. An open invitation was also published on the TCEQ's TSWQS home page with a link under "Future Revisions to the Texas Surface Water Quality Standards." Other interested parties or individuals who requested notification of stakeholder meetings were provided an open invitation to the meetings via written notice.

The adopted revisions were developed with extensive input and involvement from stakeholder participation in the water quality standards workgroup. On average, approximately 100 people attended each meeting. However, a general consensus was not reached with various members of the workgroup on the following adopted revisions: recreational uses and criteria, and the process for

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assigning recreational uses; nutrient criteria calculations and assessment; new provisions for assessing the biological integrity of unclassified water bodies based on “presumed” high aquatic life uses; the appropriate tissue-based human health criterion for mercury; the adopted changes to the pH criterion in Caddo Lake and adopted changes to pH and dissolved oxygen criteria in the Cypress Creek Basin; and revising the dissolved minerals criteria for certain classified segments to accommodate future water development projects.

The adopted rules incorporate numerous changes that were made in response to stakeholder concerns. A variety of stakeholder suggestions are reflected in the adopted nutrient criteria, the adopted changes in recreational uses and criteria, and the adopted narrative changes in §§307.7, 307.8, and 307.9. However, not all concerns could be addressed on particular portions of the standards due to the different, sometimes conflicting, stakeholder positions.

Public comment:

The commission received 172 comment letters from organizations, affiliations, and elected officials. Over one thousand comments were received from individuals, including 1455 form letters, and six attendees provided oral comments at the Public Hearing on March 11, 2010. The 1455 form letters were in opposition to the proposed recreation use/criteria changes and 74 of the 172 comment letters were from local Soil and Water Conservation Districts that were in support of the proposed recreational changes and having secondary screening levels for total phosphorus as a part of the proposed nutrient criteria for reservoirs.

The major concerns identified during the public comment period include the following:

- Recreation – The commission received both support and opposition to the proposed recreational revisions in general. Specific comments regarding the proposed changes to recreational uses and criteria include: (1) concerns that the change in criterion for primary contact recreation for freshwater (from 126 to 206 *E. coli* per 100 milliliters as a geometric mean) would not be sufficiently protective, several commenters expressed specific concern about the Highland lakes; (2) concerns with primary contact recreation waters being impacted by upstream water bodies that may be assigned secondary contact criteria; (3) concerns with expanding the recreational use categories; (4) concerns with not requiring a TSWQS revision to assign a recreational use of secondary contact 1 to a small, shallow stream, especially since recreation UAA procedures are newly developed; (5) concerns with the high flow exemption for recreation criteria; and (6) concerns with assessing standards attainment for recreation using only geometric mean criteria (and not also using a single-sample maximum criterion). In addition, the EPA expressed concern regarding the presumed secondary contact recreation 1 for small, shallow streams and the high flow exemption for bacteria criteria.
- Nutrients – The commission received general support for establishing numerical nutrient criteria. Specific concerns regarding the proposed nutrient criteria include: (1) opposition to the commission’s statistical calculation (prediction interval); (2) opposition to using a median to assess criteria which were calculated using the mean; (3) concerns about the inclusion of new data, as well as concerns about using old data, in criteria calculation; (4) concerns that the minimum default criteria for assessing chlorophyll *a* and total phosphorus are too high; (5) opposition to the criteria for 21 reservoirs above 20 µg/L of chlorophyll *a*; and (6) opposition to using secondary screening levels in combination with chlorophyll *a*

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criteria. In addition, the EPA opposes the use of secondary screening to confirm an impairment and the proposed nutrient criteria for 21 reservoirs that exceed 20 µg/L of chlorophyll *a*.

- Mercury – The commission received both support and opposition to the proposed tissue based criterion of 0.7 ppm. Commenters opposing the proposed criterion request that the commission adopt the nationally recommended criterion of 0.3 ppm. In addition, the EPA opposes the proposed criterion.
- Deferring impairment listings based on presumed high aquatic life uses and dissolved oxygen – The commission received opposition to this proposal in general. In addition, EPA opposes deferring listings based on presumed high aquatic life uses.
- Declining to add seagrass uses for individual bays – The commission received both support and opposition for not designating a seagrass use to individual water bodies in the proposed rules.
- Site-specific revisions – Several commenters expressed concern about lowering any designated uses or criteria. The commission received both support and opposition to the following proposed site-specific standards changes:
 - Dissolved minerals criteria changes due to water reuse projects
 - Lower dissolved oxygen criteria for Laguna Madre and Oso Bay. In particular, there was substantial opposition to 1.5 mg/L as the minimum dissolved oxygen criterion.
 - Lower dissolved oxygen criteria and wider pH ranges for some Cypress Creek Basin streams, and a wider pH range for Caddo Lake
 - Applying the revised dissolved oxygen criteria for Black Cypress Bayou to other areas of the Cypress Creek Basin
 - Intermediate aquatic life use for the North Sulphur River

Significant changes from proposal:

- Recreation – In response to comments, the commission (1) clarified in §307.7(b)(1)(A)(v) when *E. coli* can be used as an indicator for unclassified water bodies in certain classified high saline inland segments; (2) clarified how a high flow exemption applies to freshwater and tidal streams; and (3) changed the term “indicates that swimming is not practical or safe” to “of flood or an equivalent category” in the bacteria high flow exemption portion of §307.9.

The Executive Director recommends that the criterion for primary contact recreation in freshwater be revised to 206 *E. coli* per 100 milliliter as proposed. However, if the Commission chooses to consider other alternatives, draft options are available that retain the current freshwater criterion of 126 *E. coli* per 100 milliliter for selected groups of freshwater bodies. Under these options, the revised criterion of 206 *E. coli* per 100 milliliter would still be applicable to the remainder of the freshwater bodies where primary contact is appropriate. These options are available for discussion and consideration by the Commission, if needed.

- Nutrients – In response to comments, the commission (1) adopted stand-alone chlorophyll *a* criteria; (2) removed all references to supplemental screening levels for nutrients; (3) modified the narrative and footnote to reflect the use of stand-alone chlorophyll *a* criteria

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that were calculated using a 0.01 confidence level; and (4) specified the minimum default criterion in Appendix F when calculated values were below quantification levels. In response to the comments concerned about trends over time in reservoirs, the commission re-evaluated the data used for criteria calculations. This re-evaluation indicated trends over time that appear to be anomalous and potentially artificial; and as a result 15 reservoirs were removed. The adoption of amended Appendix F of §307.10 includes changes that delete the following 15 reservoirs: Lake Meredith (Segment 0102), Farmers Creek Reservoir (Segment 0210), Diversion Lake (Segment 0215), Lake Mackenzie (Segment 0228), Lake O' the Pines (Segment 0403), Lake Arlington (Segment 0828), Lake Weatherford (Segment 0832), Lake Amon G. Carter (Segment 0834), Lake Houston (Segment 1002), Leon Reservoir (Segment 1224), Lake Palo Pinto (Segment 1230), Fort Phantom Hill Reservoir (Segment 1236), Inks Lake (Segment 1407), E. V. Spence Reservoir (Segment 1411), and Lake Brownwood (Segment 1418).

Buffalo Springs Lake (an unclassified water body in Segment 1221) was removed from the adopted list because of concerns about whether numerical criteria were appropriate for this small unclassified reservoir and because the calculated criterion was unusually high. Two boundary reservoirs on the Rio Grande, International Falcon Reservoir (Segment 2303), and International Amistad Reservoir (Segment 2305), were removed from the adopted list in response to comments that nutrient criteria for border reservoirs may not be appropriate at this time.

- Determination of Standards Attainment – In response to comments, the commission (1) deleted the proposed revision to change to the use of a median rather than a mean to assess standards attainment of dissolved minerals criteria and for human health criteria; and (2) removed all references to the minimum number of samples and the minimum period of record required for assessment purposes.
- Site-specific standards – In response to comments regarding the use of the regression equation in the Cypress Creek Basin, the commission (1) clarified the notation for the average 24-hour dissolved oxygen concentrations; and (2) raised the minimum 24-hour dissolved oxygen criteria and limited the watershed size where the regression equation is applied. In addition, the commission (1) raised the minimum 24-hour dissolved oxygen criterion for Oso Bay (Segment 2485) and Laguna Madre (Segment 2491); (2) deleted proposed revisions to the dissolved minerals criteria for White River (Segment 1239); and (3) incorporated a site-specific factor to convert from specific conductance in the calculation of dissolved minerals criteria for Nueces/Lower Frio River (Segment 2106).
- Appendix B (Sole-Source Surface Drinking Water Supplies) – In response to comments, the commission (1) edited the first paragraph in Appendix B by removing, “However, it is subject to amendment at any time.” and replacing that sentence with, “Where a water body has been identified as a sole-source drinking water supply, but is not included in Appendix B yet, the same level of protection may be applied.”; and (2) modified one entry in Appendix B by replacing “Guadalupe River” with “Terminal Reservoir” and replacing Segment “(1801)” with “(1802)”.

Potential controversial concerns and legislative interest remaining after proposal and public comment:

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- Recreation – Numerous commenters expressed general concerns and opposition to the proposed recreational revisions. Specific concerns regarding the proposed changes to recreational uses and criteria include: concerns that the change in criterion for primary contact recreation for freshwater (from 126 to 206 *E. coli* per 100 milliliters) would not be sufficiently protective; concerns with primary contact recreation waters being impacted by upstream water bodies that may be assigned secondary contact criteria; concerns with not requiring a TSWQS revision to assign a recreational use of secondary contact 1 to a small, shallow stream, especially since recreation UAA procedures are newly developed; and concerns with assessing standards attainment for recreation using only geometric mean criteria (and not also using a single-sample maximum criterion).

The current contact recreation geometric mean criterion is 126 *E. coli* per 100 milliliters. This criterion reflects federal guidance that was established in 1986, when EPA conducted epidemiological studies to relate concentrations of indicator bacteria to potential illness. More recently, EPA has indicated that *E. coli* concentrations of up to 206 per 100 milliliters can be considered as protective of contact recreation (Attachment 1). Other states, such as Utah and Colorado, also utilize the 206 *E. coli* per 100 ml to apply to primary contact recreation for some water bodies.

- Nutrients – The commission received general support for establishing numerical nutrient criteria. Specific concerns regarding the proposed nutrient criteria include: (1) opposition to the commission's statistical calculation (prediction interval) and opposition to using a median to assess criteria which were calculated using the mean; (2) concern about the inclusion of new data, as well as converse concerns about using old data in criteria calculation; (3) concerns that the minimum default criteria for assessing chlorophyll *a* and total phosphorus are too high; (4) opposition to the criteria for 21 reservoirs above 20 µg/L of chlorophyll *a*; and (5) opposition to using secondary screening levels. In addition, the EPA opposes the use of (1) secondary screening using phosphorus and transparency to confirm non-attainment of a chlorophyll *a* criterion; and (2) nutrient criteria for 21 reservoirs that exceed 20 µg/L of chlorophyll *a*.
- Presumed uses – Several commenters expressed concern about the commission's proposal to defer listings for presumed high aquatic life uses. The EPA commented that this approach is unacceptable.
- Mercury – The EPA and others disagree with the proposed criterion of 0.7 parts per million (ppm) for methylmercury in fish tissue. The EPA and dissenting commenters recommend a criterion of 0.3 ppm, in accordance with current EPA guidance.
- Site-specific revisions – Several commenters expressed concern about lowering any designated uses or criteria. Specific concerns regarding site-specific revisions include:
 - Dissolved minerals criteria changes due to water reuse projects
 - Lower dissolved oxygen criteria for Laguna Madre and Oso Bay—particularly to the proposed minimum dissolved oxygen criterion of 1.5 mg/L
 - Lower dissolved oxygen criteria and wider pH ranges for some Cypress Basin streams, and wider pH range for Caddo Lake
 - Applying the lower proposed dissolved oxygen criteria for Black Cypress Bayou to other areas of the Cypress Basin
 - Intermediate aquatic life use for North Sulphur River

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Does this rulemaking affect any current policies or require development of new policies?

The TSWQS establish specific targets and goals for water quality in Texas. Major adopted revisions to the rules, such as the changes to recreational criteria and the addition of nutrient criteria, could be considered changes in policy with respect to water quality management. These changes are explicit in the adopted revisions, and they are not intended to require the development of substantial new or amended supplemental policies. There are procedural changes that will be needed to implement the adopted TSWQS, as described in the previous section on Agency Programs.

What are the consequences if this rulemaking does not go forward? Are there alternatives to rulemaking?

The TSWQS establish the instream water quality conditions for surface waters in the state. TSWQS are the basis for establishing discharge limits in wastewater and storm water discharge permits, setting instream water quality goals for TMDLs, and providing water quality targets to assess water quality and identify impaired water bodies. If this rulemaking is not approved, these different commission water programs would be addressing water quality standards that have been shown to be inappropriate for some water bodies, resulting in the inappropriate allocation of resources externally and internally. Eventually, the EPA would likely promulgate federal water quality standards for Texas.

Eventual EPA promulgation of the TSWQS is a long-term alternative. Limited delay for selected revisions might also be an alternative if needed to better address very difficult issues. However, substantial efforts by stakeholders and commission staff have been devoted to developing the current revision, and the major regulatory issues have been extensively evaluated.

Key points in adoption rulemaking schedule:

***Texas Register* proposal publication date:** 1/29/10
Anticipated *Texas Register* publication date: 7/16/10
Anticipated effective date: 7/22/10
Six-month *Texas Register* filing deadline: 7/29/10

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Attachments

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Water Quality Standards For Coastal Recreation Waters

Considerations for States as They Select Appropriate Risk Levels

This fact sheet addresses questions regarding the appropriate risk level (or levels) a state may choose when adopting into the state's water quality standards bacteria criteria to protect its coastal recreation waters. This fact sheet is intended to answer key questions states may have about what EPA considers to be appropriate acceptable risk levels in the context of what EPA promulgated in the Water Quality Standards for Coastal and Great Lakes Recreation Waters (or BEACH Act) rule (69 FR 67217, November 16, 2004) and what EPA recommended in the 1986 Ambient Water Quality Criteria for Bacteria document (also known as the 1986 bacteria criteria document).

What are coastal recreation waters?

Coastal recreation waters are those Great Lakes and marine waters (including coastal estuaries) that are designated under section 303(c) of the Clean Water Act for use for swimming, bathing, surfing, or similar water contact activities. Inland waters or waters upstream from the mouth of a river or stream having an unimpaired natural connection with the open sea are not considered coastal recreation waters. (See CWA Section 502(21) and 40 CFR 131.41(b)).

What does the BEACH Act Rule say about risk levels?

In the November 16, 2004 rule, EPA promulgated water quality criteria corresponding to an illness rate of 0.8% for swimmers in freshwater and 1.9% for swimmers in marine waters. In determining whether to include a state in the rule, EPA considered states that used an illness rate of 1.0% or less for fresh waters to have criteria as protective of human health as the 1986 bacteria criteria, and therefore, EPA did not promulgate the criteria for these states.

Why did EPA take the approach in the BEACH Act Rule of establishing different risk levels for fresh and marine waters?

As EPA explained in the proposed Water Quality Standards for Coastal and Great Lakes Recreation Waters (69 FR 41719, 41724, July 9, 2004), there is no *a priori* reason to establish a higher level of protection for fresh waters than for marine waters. The difference in acceptable risk levels in the 1986 bacteria criteria document (8 illnesses per 1000 swimmers in fresh waters v. 19 per 1000 in marine waters) was based solely on the calculated risk levels for the previously recommended criterion of 200 fecal coliforms per 100 ml, which were different in marine and fresh waters. If the data upon which the 1986 bacteria criteria were based supported a reliable correlation between bacteria concentrations and higher illness rates, EPA could have, in judging whether a fresh water criterion is "as protective of human health as" EPA's 1986 bacteria criteria, considered fresh water criteria associated with risk levels up to 1.9% of swimmers to be sufficient. However, EPA could not determine, based on the available data that relate *E. coli* and enterococci levels to illness rates, what bacteria concentration would correlate with risk levels over 1.0% in freshwater. Therefore, EPA determined that existing data relating risk levels to bacteria concentrations in fresh coastal recreation waters were not reliable beyond 1.0% risk to swimmers.

Peer review of EPA's analysis of the study data relating illness rates to bacteria concentrations supports the conclusion that the existing data do not support the relationship between rates beyond the level of 1.0% of swimmers and their correlating bacteria concentrations (External Peer Review of EPA Analysis of Epidemiological Data from EPA Bacteriological Studies, February 2004, available in the public record for the BEACH Act rule, Docket ID No. OW-2004-0010). The peer reviewers recommended that EPA should not extrapolate beyond the 1.0% risk level, based on the observed data. Based on that peer-reviewed information, EPA does not believe at this time that a state's water quality standards for fresh waters based on any geometric mean or SSM higher than the levels associated with an illness rate of 1.0% would be as protective of human health as EPA's 1986 bacteria criteria. As discussed earlier, however, in evaluating any new or revised state water quality standards for bacteria, EPA will review information states provide showing a scientifically defensible relationship between higher illness rates and corresponding indicator concentrations.

How did EPA determine these risk levels were appropriate?

EPA developed the criteria values for enterococci and *E. coli* based on indicator concentrations from EPA's epidemiological studies that roughly corresponded to the estimated illness rate associated with the previously recommended fecal coliform criteria. EPA estimated this illness rate to be approximately 0.8% of swimmers exposed in freshwater and 1.9% of swimmers exposed in marine waters.

The analyses upon which these risk level estimates are based include some uncertainties because at the time they were developed, there was little correlation between illness rate and fecal coliform density. These estimated risk levels were used to calculate the specific bacteria density values presented in tabular form in the 1986 bacteria criteria document. These estimated illness rates are correctly described in the 1986 bacteria criteria document as approximate, and as "EPA's best estimates at the time."

Would EPA approve a state's water quality standards for bacteria in freshwater with a risk level higher than 0.8% of swimmers?

Yes. EPA would approve up to and including 1% without any additional data. Higher risk levels would require additional data to be collected and submitted because existing data are not adequate to establish the relationship in freshwater between an illness rate of above 1.0% up to 1.9% and the corresponding bacteria concentrations. Levels higher than 1.9% for fresh waters would not be as protective of human health as the 1986 bacteria for either fresh waters or marine waters because 1.9% is the upper limit of the acceptable risk range in the 1986 bacteria criteria. More information can be found in the "Why did EPA take this approach in the BEACH Act Rule?" section below.

Does a state have to conduct a Use Attainability Analysis to adopt a fresh water risk level higher than 0.8% but below 1.0%?

No. Risk levels in the 0.8% to 1.0% range all protect primary contact recreation. For states that change the risk level and thus change the numeric value of the criterion, if such changes may be the basis for less stringent permit limits anti-backsliding provisions may apply to such permits.

More information can be found in the “What is the flexibility in how a State may choose an appropriate risk level?” section.

Can a state adopt criteria for similar risk levels for their fresh and marine coastal recreation waters?

Yes, states may adopt criteria for marine waters with the same risk level as their fresh water criteria. However, for fresh waters, the available data do not allow extrapolating beyond a 1.0% risk level. This means that states that want to use the same or similar risk levels for their fresh and marine coastal recreation waters have several options: they could reduce the risk level for marine waters to no higher than 1%; they could develop the data needed in freshwaters to establish in a scientifically sound manner the relationship between a 1.9% illness rate in freshwater and the corresponding concentration of indicator bacteria in their fresh waters; or they could develop the data needed in freshwaters to establish in a scientifically sound manner the relationship between an illness rate higher than 1% but less than 1.9% and corresponding indicator concentrations in freshwater.

What is the flexibility in how a State may choose an appropriate risk level for their Great Lakes coastal recreation waters?

In utilizing risk management discretion, states may wish to establish more than one category of primary contact recreation use in their Great Lakes coastal recreation waters. States opting to protect their fresh coastal recreation waters with criteria associated with risk levels within the 0.8% to 1.0% range should recognize that this is a risk management decision analogous to selecting alternate risk levels when adopting human health criteria for carcinogens, and thus would not require a use attainability analysis (UAA) as described by the federal regulations at 40 CFR 131.10. Additionally, in exercising such discretion, states should assure, however, that downstream uses are protected, including downstream uses across state or tribal boundaries. As with any addition or revision to a state or authorized tribe’s water quality standards, any changes resulting from these risk management decisions are subject to the public participation requirements at 40 CFR 131.20(b).

To get more information

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DEC 20 2006

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Dear Dr. Jones,

Thanks for your leadership and active involvement with the Texas Bacteria Task Force (TBTF) which was formed on September 27, 2006. Since the TBTF was formed, we have had several discussions within EPA on the technical and scientific issues inherent with the establishment of bacteria criteria and the development of Total Maximum Daily Loads (TMDLs) nationwide and particularly in Texas. At the same time, several members of my staff have participated in the TBTF teleconferences held on October 24, 2006, and November 27, 2006, respectively.

Enclosed with this letter, you will find a table summarizing various approaches used by other states to develop bacteria TMDLs, a document with a list of options related to bacteria modeling, and a document with possible options for establishing bacteria criteria. Electronic copies of the TMDLs will be sent via e-mail directly to you. Please note that this information does not include all available TMDLs and options used by other states nationwide.

EPA looks forward to seeing recommendations from the TBTF for expedited development of bacteria TMDLs using more practical methods such as mass balance or load duration curve. As we have stated previously, requiring bacteria source tracking (BST) data as part of the TMDL development will significantly delay timely development and approval of TMDLs. EPA supports the use of BST, as needed, in the implementation phase of TMDLs.

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I look forward to receiving a copy of the final recommendations developed by the Texas Bacteria Task Force by the end of January 2007. If you would like to discuss the enclosed information or need additional information, please contact me at (214) 665-7101.

Sincerely,


Miguel I. Flores
Director
Water Quality Protection Division

Enclosures

Attachment 1 – Examples of Bacteria TMDLs

Attachment 2 – Options for Bacteria TMDL Modeling

Attachment 3 – Options for Establishing Bacteria Criteria

Attachment 1: Examples of Bacteria TMDLs								
	State/ Region	TMDL Project	EPA Approval Date	Modelling/Approach	Water Quality Standard	BST Study Completed	Wildlife	Stakeholder Group
1	SC/4	Hanging Rock and Lick Creek Fecal Coliform TMDLs	Aug-03	Watershed Characterization System (WCS) and the Non-Point Source Model (NPSM).	200/100mL (geometric mean); No more than 10% of the samples collected during any 30 day period shall exceed 400/100mL.	No	Deer used as surrogate for all wildlife.	No
2	SC/4	Thompson Creek Fecal TMDL	Jan-04	Bacterial Indicator Tool (BIT) and Hydrological Simulation Program Fortran (HSPF) at one station; Load Duration Curve (LDC) at the second station.	200/100mL (geometric mean); No more than 10% of the samples collected during any 30 day period shall exceed 400/100mL.	No	Deer and raccoon population density used to estimate in-stream contributions from the wildlife sources. Assumed 30 cf/100 mL background concentration under base flow conditions.	No
3	GA/4	Ogeechee River Basin Fecal Coliform TMDLs	Mar-05	Load Duration Curve (LDC)	200/100mL (geometric mean) May-Oct; 1000/100mL (geometric mean) Nov-Apr; 4000/100mL (single sample maximum) Nov-Apr; 300/100mL lakes, reservoirs; 500/100mL freshwater streams.	No	White-tailed Deer have a significant presence in the basin, but no individual loading is calculated.	Involved in implementation phase.
4	IN/5	Plummer Creek E. Coli TMDLs	Jun-06	Load Duration Curve (LDC)	126/100mL (geometric mean); 235/100mL (single sample maximum)	No	Wildlife contribution acknowledged, but not quantified.	No
5	MO/7	Shoal Creek Fecal Coliform TMDL	Nov-03	Soil and Water Assessment Tool (SWAT)	200/100mL shall not be exceeded during the recreational season in waters designated for whole-body-contact recreation or at any time in losing streams. The recreational season is from April 1 to October 31.	DNA Source Tracking	Turkey, Deer, Geese and Raccoons.	Involved in assessment and TMDL development.
6	MO/7	Little Sac Fecal Coliform TMDL	Aug-06	Soil and Water Assessment Tool (SWAT)	200/100mL shall not be exceeded during the recreational season in waters designated for whole-body-contact recreation or at any time in losing streams. The recreational season is from April 1 to October 31.	DNA Source Tracking	Wild Geese have a significant presence in the watershed.	Involved in assessment and TMDL development.
7	KS/7	Chetopa Creek Fecal Bacteria TMDL	Oct-02	Load Duration Curve (LDC)	2000/100mL (single sample maximum)	No	No	No
8	NE/7	Loup River Basin E. Coli TMDLs	Jan-06	Load Duration Curve (LDC)	126/100mL (geometric mean) May- Sept.	No	Big game, upland game, furbearers, waterfowl and other non-game species. Considered part of background, but not quantified.	No
9	NM/6	Middle Rio Grande Fecal Coliform TMDL	May-02	No	Segment-specific standards apply. 1000/100mL (geometric mean); 2000/100mL (single sample maximum).	No	Wildlife contribution acknowledged, but not quantified.	No
10	LA/6	Sabine River Fecal Coliform TMDL	Oct-06	Load Duration Curve (LDC)	400/100mL (Primary) May-Oct; 2000/100mL (Secondary) and Nov-Apr.	No	Wildlife contribution acknowledged, but not quantified.	No
11	LA/6	Bayou Segnette	Jul-04	Bacterial Indicator Tool (BIT)	400/100mL (Primary) May-Oct; 2000/100mL (Secondary) and Nov-Apr.	No	Wildlife and Waterfowl considered part of background. Quantified based on population density estimates.	No
12	LA/6	Bayou Lafourche	Jul-04	Bacterial Indicator Tool (BIT)	400/100mL (Primary) May-Oct; 2000/100mL (Secondary) and Nov-Apr.	No	Wildlife and Waterfowl considered part of background. Quantified based on population density estimates.	No

(EPA comments continued)

Attachment 2: Options for Bacteria TMDL Modeling

1. Include Level of Stakeholder Concern in Decision Matrix for Model Selection

An action item that resulted from the most recent conference call held by the task force on November 27, 2006, is to develop a decision matrix to assist with model selection. Since the TMDL development process in Texas includes significant stakeholder involvement, it may be helpful to include an assessment of the level of stakeholder concern or involvement as a criterion in model selection. Based on the draft report distributed by the task force on November 21, 2006, several modeling approaches (simple to complex) are being evaluated. It has been suggested that stakeholders tend to prefer complex models such as the Soil and Water Assessment Tool (SWAT). In light of this, it may be feasible to use simple modeling approaches such as mass balance or Load Duration Curve (LDC) in cases where stakeholder concern is minimal.

2. Comparison of Modeling Results obtained from a Simple Modeling Approach with those from a Complex Model

TCEQ has already drafted a number of bacteria TMDLs using complex models such as the Hydrological Simulation Program Fortran (HSPF). It may be helpful to recalculate the reductions for one of the draft bacteria TMDLs using a simple approach such as the Load Duration Curve (LDC). If both methods yield similar reduction requirements, it will help demonstrate the usefulness of the LDC method and help address stakeholder concerns.

Attachment 3: Options for Establishing Bacteria Criteria

1. Revise the Single Sample Maximum Criteria for Enterococci in Saltwater

The enterococci criterion of 89 colonies per 100 ml in the 2000 *Texas Surface Water Quality Standards* is based on EPA's *Quality Criteria for Water - 1986*, EPA 440/5-86-001 (the "Gold Book"). However, the recommended value for freshwater was inadvertently adopted in the TX WQS as the single sample maximum for saltwater. Additionally, EPA's Gold Book contains errors on several single sample maximum values for both freshwater and saltwater criteria. The correct value for an enterococci criterion in saltwater (moderate use level) is 158 colonies per 100 ml. EPA recommends that the state update the single sample maximum enterococci criterion for saltwater in the next revision. EPA's 1986 criteria document for bacteria is found at the following website: <http://www.epa.gov/waterscience/beaches/files/1986crit.pdf>.

(EPA comments continued)

2. Update the Standard Deviation in the Calculation of the Single Sample Maximum Criteria

EPA's 1986 criteria document recommends the use of state data to calculate a standard deviation, rather than the default values. In the 2000 Texas standards, the single sample maximum criteria for *E. coli* in freshwater is calculated with a state-specific standard deviation. Since most states, including Texas, focused on fecal coliform bacteria for assessing contact recreation uses, data for *E. coli* was limited to 126 stations in seven river basins. The Texas Surface Water Monitoring Program has collected extensive data for both *E. coli* and enterococci in recent years. This information may be used to recalculate the standard deviation used in the *E. coli* criterion and to develop a state-specific standard deviation for the enterococci criteria.

3. Consider the Adoption of Single Sample Maximum Criteria based on the level of use

EPA's 1986 criteria document provides geometric mean densities as well as four different single sample values (75th percentile, 82nd percentile, 90th percentile, and 95th percentile) that are appropriate for different levels of recreational usage. The moderate use level (82nd percentile) is used for the single sample maximum criteria in the 2000 Texas standards. Criteria based on a higher level of use (75th percentile) could be adopted for waters frequently used for swimming (e.g., Barton Springs, Padre Island beaches). Criteria based on a lower level of use (90th or 95th percentile) may be appropriate for other water bodies.

4. Consider Other Risk Levels for the Criteria to Protect Recreation Uses

The 2000 Texas standards include a risk level of 0.8% (i.e., 8 illnesses per 1000 swimmers). For freshwater, EPA recommends that states adopt criteria reflective of risk levels up to and including 1.0% (i.e., 10 illnesses per 1000 swimmers). For marine waters, EPA recommends that states adopt criteria reflective of risk levels up to and including 1.9% (or 19 illnesses per 1000 swimmers). Please table below for comparison of geometric mean and single sample maximum values at different risk levels for freshwater *E. coli* criteria.

EPA could consider approving criteria for the protection of primary contact recreation in inland freshwaters, at risk levels above 1% (up to a maximum of 1.9%) provided that states submit scientifically defensible information to show that the relationship between illness and indicator concentrations holds beyond 1.0% in freshwater. However, without this additional information, EPA expects criteria with a risk level above 1.0% would not be protective of the primary contact recreation use. This is because EPA's existing epidemiological data for freshwater are not adequate to establish a relationship between illness rates higher than 1.0% and the corresponding bacteria concentrations.

(EPA comments continued)

E. coli criteria for freshwater (bold font indicates current criteria in §307.7(b)(1)(A)(i) of 2000 Texas *Surface Water Quality Standards*).

Risk Level (% of swimmers)	Geometric Mean Density	Single Sample Maximum Allowable Density (colonies per 100 ml)			
		75 th percentile	82 nd percentile	90 th percentile	95 th percentile
0.8	126	235	298 *	409	575
0.9	161	301	382	523	736
1.0	206	385	489	668	940

* The single sample maximum in the 2000 Texas standards is 394 colonies per 100 ml. This value was calculated with a standard deviation based on water quality data from the state's monitoring programs (see additional information in option 2).

5. Conduct Use Attainability Analyses

For water bodies where there is reason to believe that recreational activities do not occur, even on a limited basis, a use attainability analysis could be conducted to determine if the recreation use is attainable. Use attainability analyses are required to demonstrate that a Clean Water Act §101(a)(2) goal use (e.g., contact recreation) is not attainable. If the use attainability analysis successfully makes this demonstration, a standards revision is required to change the designated or presumed use.

6. Use the Single Sample Maximum Criteria for Specific Purposes rather than Use Attainment Decisions

EPA notes that the term "maximum" in single sample *maximum* has led to some confusion as a plain reading would lead one to infer that a single sample maximum is a value not to be exceeded. The single sample maximum values in the 1986 bacteria criteria were not established as "never-to-be exceeded" or "maximum" values. States have the discretion to determine whether to include a single sample maximum in their water quality standards for inland waters. For example, states could establish water quality standards that include single sample maximum criteria for inland waters, but only for use in beach monitoring and notification programs. Likewise, while a single sample maximum criterion for coastal waters must be included in water quality standards, the state may decide not to use this value for determining attainment of standards under the Clean Water Act as long as this is clearly specified in the state's standards.

Single sample maximum criteria are useful in several Clean Water Act applications. Single sample maximums provide a valuable tool against which to measure individual grab samples as part of a monitoring and notification program to protect public health. Single sample maximums can also be helpful in water body assessments, particularly when states collect insufficient data to reliably average and compare to the geometric

(EPA comments continued)

mean component of the criteria. Lastly, single sample maximums can serve as daily limits in certain NPDES permits.

7. Limit Application of Bacteriological Criteria in Waters Affected Solely by Non-human Sources

The following paragraph is found in the final rule promulgating EPA's recommended indicators and criteria for use in coastal recreation waters. (Rule and other information at: <http://www.epa.gov/waterscience/beaches/bacteria-rule.htm>). While this rule is specific to coastal waters, the policy regarding the application of bacteriological criteria in waters impacted by non-human sources applies to inland freshwaters as well:

"States and Territories must apply the *E. coli* and enterococci criteria to all coastal recreation waters. If, however, sanitary surveys and epidemiological studies show the sources of the indicator bacteria to be non-human and the indicator densities do not indicate a human health risk, then it is reasonable for the State or Territory to not consider those sources of fecal contamination in determining whether the standard is being attained. This is the approach taken in the 1986 bacteria criteria document. It would be reasonable for a State or Territory to use existing epidemiological studies rather than conduct new or independent epidemiological studies for every water body if it is scientifically appropriate to do so."