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2004 Methodology for Developing the Texas List of Water Bodies Not Meeting Surface Water Quality Standards

Clean Water Act Section 303(d)

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2004 Methodology for Developing the Texas List of Water Bodies Not Meeting Surface Water Quality Standards

Introduction and Summary of 2004 Approach

In compliance with Section 303(d) of the federal Clean Water Act (CWA), the Texas Commission on Environmental Quality (TCEQ) identifies water bodies in the state that do not meet the Texas Surface Water Quality Standards. The compilation of these water bodies is called the 303(d) List. The methodology to identify these water bodies and to create the 303(d) List is described in this document.

This methodology meets the requirements of the Clean Water Act (CWA) Section 303(d)(1)(A) and 40 Code of Federal Regulations (CFR) Section 130.7, and incorporates the United States Environmental Protection Agency (EPA), Region 6 Section 303(d) Listing Regional Guidance as appropriate.

Beginning in 2002, EPA guidance directed states to document the results of the Water Quality Inventory [required under CWA Section 305(b)] and the 303(d) List in a single report entitled the *Texas Water Quality Inventory and 303(d) List* (hereafter called “Report”). The EPA guidance requires that all water bodies be placed into one of five categories.

The state’s water quality inventory forms the basis for 303(d) listing decisions. The TCEQ guidance for assessing water bodies for the 305(b) is documented separately in the *Guidance for Assessing Texas Surface and Finished Drinking Water Quality Data, 2002*.

The Draft 2004 Report will be developed using the Texas Surface Water Quality Standards adopted by TCEQ in July 2000 and an approach targeted to the following types of water bodies:

- Water bodies where a request is made by an entity or citizen to review the use-attainment status. Requests may be made both to delist water bodies *listed in 2002*, as well as to list water bodies *not listed in 2002*. A summary that uses recent data and demonstrates that the current listing status is inaccurate must be submitted with the request. The TCEQ will review the summary assessment and conduct an additional analysis, if needed. Summary assessments with requests for changes in listing status must be submitted to the TCEQ by July 18, 2003.

- Water bodies identified in 2002 as a Primary Concern, where data were insufficient and additional monitoring was scheduled. All areas of the water body will be reassessed for the parameter of concern.
- Water bodies where 24-hour dissolved oxygen data has been collected. Recently available data sets will be evaluated for compliance with 24-hour average and minimum criteria.
- Water bodies for which the TCEQ Permits or Total Maximum Daily Load programs request an assessment.
- Water bodies for which special projects have been conducted and a timely assessment of water quality status is part of a TCEQ-approved work plan.
- Water bodies with changes since 2002 to shellfish harvesting (oyster waters) areas as determined by the Texas Department of Health (TDH).
- Water bodies with changes since 2002 to fish consumption advisories issued by TDH.
- Water bodies that are a drinking water source with an exceedance of the maximum contaminate levels for toxic substances.

Schedule

The time line for developing the 2004 Report is as follows:

June 2003...	Post notice of plans for development of the Report on the TCEQ Web site.
July through December 2003...	Prepare the Draft 2004 303(d) List and post on the TCEQ Web site.
January 2004...	Hold a 30-day public comment period on the draft list.
February 2004..	Develop response to the comments received during the public comment period.
March 2004...	Propose the draft list at Commissioners' Work Session to seek approval for submission to EPA.
April 1, 2004...	Submit the 2004 303(d) List to EPA for approval and post the Report to the TCEQ Web site.

The Listing Process

Development of the Report includes the following basic steps:

- active solicitation and selection of acceptable data and information to develop the inventory;
- assessing these data and information to determine which water bodies are not meeting water quality standards (described in greater detail in the *Guidance for Assessing Texas Surface and Finished Drinking Water Quality Data, 2002*);
- preparing and categorizing the draft inventory and list;
- ranking Category 5a water bodies for TMDL development;
- receiving public comment on the draft list;
- revising and finalizing the list based on new information and comments from the EPA and the public; and
- developing a schedule for development of TMDLs for Category 5a water bodies.

Data and Information Used

As required by CWA Section 303(d) and CFR Section 130.7(b)(5), the TCEQ considers “all existing and readily available water quality-related data and information” during the development of the Report. The TCEQ solicits data and information primarily through the established public outreach mechanisms of the Texas Clean Rivers Program (CRP), including steering committee meetings, public meetings, and publications, and by posting drafts of the Report on the TCEQ Web site.

The TCEQ and the EPA recognize that there are some boundaries that must be established for the data and information ultimately used for listing. These boundaries are:

- **Time limitations.** Data collected prior to the most recent five-year assessment period do not adequately reflect current conditions.
- **Data quality.** Given the regulatory implications associated with the use of water quality data, the TCEQ requires the highest quality data feasible. Data collected using consistent and scientifically rigorous water quality sampling methods ensures a predictable process for all stakeholders.

All data must be in a form that does not require extensive data format manipulation to be useable for assessment. To provide additional confidence, data must meet minimum quality assurance/quality control requirements established by the TCEQ. Data submitted that is not collected under a TCEQ-approved

quality assurance plan must be accompanied by documentation of quality assurance for evaluation by TCEQ water quality staff. Data without appropriate quality assurance documentation will be considered, but may not be used in statistical evaluations.

In order to increase the data available to the TCEQ for water quality assessment purposes, CRP staff work closely with local and regional agencies and other interest groups to develop and implement data collection efforts under an established quality assurance/quality control program.

Readily Available Data and Information

Readily available data include two general categories:

- *Routine data stored in the TCEQ integrated database* (surface water quality monitoring module). These data are used to conduct the assessment and to compile the draft Report. This database consists of water quality data collected by the TCEQ, the U.S. Geological Survey (USGS), the Texas Department of Health (TDH), the Texas Parks and Wildlife Department (TPWD), and CRP planning agencies.
- *Other routine data and information* obtained from sources such as:
 - ▶ Fish consumption advisories, aquatic life closures, and oyster waters closures issued by the TDH.
 - ▶ The Chemical Monitoring System database of the TCEQ Water Utilities Division, which includes data on finished drinking water quality for pollutants related to surface water quality. Drinking water system samples are collected under quality assurance project plans in compliance with regulations passed in support of the federal Safe Drinking Water Act.

Other Data and Information

To refine the draft Report, the TCEQ relies on formal public comment to solicit additional data and information that support the listing process. These additional data and information can be used to support or refute results of the initial data assessment and to revise the priority ranking of water bodies. These data and information may also be used to direct future water quality monitoring activities. In all cases, the value and accuracy of these data are evaluated by TCEQ water quality staff.

Development of the Draft Water Quality Inventory and 303(d) List

The Report identifies water bodies using a segment number and name. Water bodies are assessed for attainment of all designated uses and criteria. Data for conventional and toxic pollutants are assessed to determine if there are violations of surface water quality standards. Summaries of each water body identify and highlight water bodies not meeting water quality standards and concerns. The TCEQ actively solicits public comment on the Report.

The TCEQ compiles the 303(d) List from the 305(b) inventory. This list is published on the TCEQ Web site (www.tnrcc.state.tx.us/water/quality).

Removing a Water Body from the 303(d) List

The TCEQ has developed a process for removing water bodies from the 303(d) List that is consistent with the listing process. Data and information used for both listing and delisting must follow the same guidelines, with the same emphasis on data quality and representativeness.

Water bodies are removed from the list for any one on the following five reasons:

- *New data.* Additional monitoring data demonstrate that a water body meets applicable water quality standards.
- *Errors in listing.* Errors in the data or procedures used to list the water body invalidate the original basis for listing.
- *New procedures or criteria.* Procedures and criteria used by the state to assess water quality monitoring data are routinely updated. Because of these revisions, a listed water body may no longer meet the criteria for listing. Adequate, recent data must demonstrate compliance with revised criteria.
- *New standards.* Water quality standards are revised, and a listed water body is in compliance with the new standards.
- *TMDL approval.* The EPA approves a TMDL designed to attain water quality standards for a water body.

Water bodies remain on the list if data continue to support the listing, or when there are insufficient data to reassess the water body.

Categorization of Water Bodies

One of five categories is assigned to each parameter and water body to provide information about water quality status and management activities. When a water body has parameters in multiple subcategories, its overall category is the highest category.

Category 1 - Attaining all water quality standards and no use is threatened.

Category 2 - Attaining some water quality standards and no use is threatened; and insufficient data and information are available to determine if the remaining uses are attained or threatened.

Category 3 - Insufficient data and information are available to determine if any water quality standard is attained.

Category 4 - Water quality standard is not supported or is threatened for one or more designated uses but does not require the development of a Total Maximum Daily Load (TMDL).

Category 4a - TMDL has been completed and approved by EPA.

Category 4b - Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard in the near future.

Category 4c - Nonsupport of the water quality standard is not caused by a pollutant.

Category 5 - The water body does not meet applicable water quality standards or is threatened for one or more designated uses by one or more pollutants.

Category 5a - A TMDL is underway, scheduled, or will be scheduled.

Category 5b - A review of the water quality standards will be conducted before a TMDL is scheduled.

Category 5c - Additional data and information will be collected before a TMDL is scheduled.

Ranking 303(d)-Listed Water Bodies

After the draft 303(d) List is compiled, the TCEQ assigns a rank of High, Medium or Low to each impairment (stressor or pollutant) of Category 5a water bodies. This rank helps in determining the priority for TMDL development. The rank is based on criteria developed by the TCEQ (see Table 1), but considers additional aspects, such as the degree of exceedance of the water quality standard, or the level of public concern (as judged, in part, by the interest of local groups in addressing the issue). Comments are accepted during the public comment period on the initially-assigned rank. Changes may be made as a result of public comment.

Public Participation

The draft Report, including the 303(d) List, is posted on the TCEQ Web site. Stakeholders and the public are alerted of opportunities to comment through a notice of publication in the *Texas Register*, and through e-mails to persons and organizations that have been active in this process. The Report is also available in paper copy during the comment period from the TCEQ Surface Water Quality Monitoring (SWQM) Team. Requests may be made in the following ways: by mail at MC-150, TCEQ, P.O. Box 13087, Austin, Texas 78711-3087; by phone at 512/239-2310; or by e-mail to 303d@tceq.state.tx.us.

Comments, data, and information must be submitted during the formal public comment period in written form, via letter, facsimile transmission, or e-mail, to ensure an accurate record of the concerns of the person or group submitting them. Comments received during the comment period are considered in the development of the final Report. Those commenting will not receive written acknowledgment of receipt of their comments.

All comments received during the formal public comment period, along with the TCEQ's response to those comments, will be published with the draft Report on the TCEQ Web site.

Preparation of the Final 303(d) List

During the comment period on the draft Report, TCEQ staff evaluate the data and information received and respond to requests for more information. TCEQ staff modify the Report (including the 303(d) List) as appropriate, considering sound science and legal requirements. This may result in:

- removal of a water body or a parameter from the 303(d) List;
- addition to the 303(d) List of water bodies or parameters not on the draft list; and
- changes in ranking.

The final list, schedule, and supporting materials and documents are submitted to EPA Region 6 on April 1. The supporting materials include:

- *Methodology for Developing the Texas List of Water Bodies not Meeting Surface Water Quality Standards* (this document);
- *Guidance for Assessing Texas Surface and Finished Drinking Water Quality Data*;
- a list of water bodies or pollutants removed from the previous list, along with reasons for delisting; and

- a summary of public comments on the draft 303(d) List received during the comment period, and the TCEQ's response to the comments.

The final submission is also available for public review on the TCEQ Web site (www.tnrcc.state.tx.us/water/quality), and by mail upon request by telephone, mail, or e-mail.

Preparation of the Schedule for TMDL Development

In compliance with CFR 130.7(b)(4), the TCEQ prepares a schedule that identifies the TMDLs that will be initiated within the next two years. The most important factor in determining the schedule is the priority ranking assigned to each pollutant. As a general rule, the higher the rank, the more quickly a water body is scheduled for TMDL development. The TMDL schedule is submitted to the EPA in April along with the 303(d) List. After TCEQ submits the 303(d) List, the TCEQ seeks additional information to develop TMDL projects that usually encompass more than one pollutant and water body. This information includes:

- watershed proximity and related pollutants
- local and regional support for TMDL development
- data availability for immediate TMDL development
- special cases of international and interstate water bodies
- strategy for each water body/pollutant

Based on this information, the TCEQ then refines the schedule to initiate the TMDL process for a select group of water bodies each year. Available funding ultimately determines how many TMDLs will be initiated annually. This information is not always available at the time of schedule development; consequently, the internal schedule may change based on changes in funding.

Table 1. Ranking Criteria Used to Assign Priority for Action to Category 5 Water Bodies

Priority Rank	Ranking Criteria	
Category 5a: A TMDL is underway, scheduled, or will be scheduled.		
HIGH General Description Impairment represents serious problem	Texas Surface Water Quality Standards Impairment and...	...Additional Considerations
	1. Designated use not supported	<i>Impairments classified as HIGH represent one or more of the following:</i> <ul style="list-style-type: none"> • programmatic needs or planning cycle require immediate action • legislative initiatives or court orders/decisions must be met
	A. Aquatic Life use not supported due to exceedances of numeric criteria (DO, toxic substances) or toxicity in ambient water or sediment; or to impairments to fish or macrobenthos community or to habitat, & (a) B. Public Water Supply use not supported due to violation in treated water or in surface (source) water of the primary MCL, & (b) C. Contact Recreation use not supported & (c) D. Fish Consumption Use not supported due to an Aquatic Life Closure or No-consumption Advisory by the TDH E. Fish Consumption Use not supported due to exceedances of numeric human health criteria in water (for bioaccumulation in fish tissue) for metals and organic substances, and (e) F. Oyster Waters Use not supported, & (f)	(a) Recurring fish kills or bioaccumulative toxics identified. (b) MCL violation is a result of surface water contamination from human activities. (c) Water body is heavily used for contact recreation & illnesses caused by waterborne pathogens have been confirmed. (e) Fish tissue data indicate human health risk from consumption. (f) Tissue data identifies toxic pollutant.
	G. General Use not supported due to exceedances of numeric criteria (temperature, pH, TDS, chloride, sulfate & Enterococci) (Not ranked as HIGH) H. Narrative criteria (e.g., excessive plant growth) are not met & (h)	(h) Problem also represents significant public concern (e.g. nutrient levels & effects are excessive & local entities have taken actions to address them).

DO=Dissolved oxygen
 MCL=Maximum Contaminant Level

TDH=Texas Department of Health
 TDS=Total dissolved solids

TMDL = Total Maximum Daily Load

Priority Rank	Ranking Criteria	
MEDIUM General Description Impairment represents less serious problem (in comparison to HIGH)	Texas Surface Water Quality Standards Impairment and...	...Additional Considerations
	2. Designated use not supported or partially supported	
	A. Aquatic Life use not supported or partially supported due to exceedances of numeric criteria (DO, toxic substances); or toxicity in ambient water or sediment; or to impairments of the macrobenthos or fish communities or to habitat B. Public Water Supply (Not ranked as MEDIUM) C. Contact Recreation use not supported & (c)	(c) Water body is heavily used for contact recreation & there is considerable local support for addressing problem.
	D. Fish Consumption Use partially supported due to a Restricted Consumption Advisory by the TDH E. Numeric criteria exceeded in water for human health (for bioaccumulation in fish) & (f)	(e) Fish tissue data not available or insufficient for determining human health risk from fish consumption.
	F. Oyster Waters harvesting not supported or partially supported & (e)	(f) Pollutant is toxic substance.
	G. General Use not supported due to exceedances of numeric criteria (temperature, pH, TDS, chloride, sulfate & Enterococci)	
	H. Narrative criteria (e.g., excessive plant growth) not met & (h)	(h) Problem represents a potential but not verified public concern.

DO=Dissolved oxygen
MCL=Maximum Contaminant Level

TDH=Texas Department of Health
TDS=Total dissolved solids

TMDL = Total Maximum Daily Load

Priority Rank	Ranking Criteria	
LOW General Description Impairment represents occasional, intermittent, or minor problem	Texas Surface Water Quality Standards Impairment and...	...Additional Considerations
	3. Designated use not supported or partially supported	<i>Impairments classified as LOW represent one or more of the following</i> <ul style="list-style-type: none"> • TMDL requires international or interstate collaboration • is better addressed through another program (e.g., Superfund)
	A. Aquatic life use not supported or partially supported due to exceedances of numeric criteria (DO, toxic substances) or toxicity in ambient water or sediment, & (a) B. Public Water Supply (Not ranked as LOW) C. Contact Recreation use not supported due to exceedances of fecal coliform bacteria criteria D. TDH Fish Consumption Advisory (Not ranked as LOW) E. Numeric criteria...human health, etc. (Not ranked as LOW) F. Oyster Waters Use not supported or partially supported.	(a) Historical data or other information indicates that exceedances of numeric criteria are chronic seasonal events associated with natural variations in flow, temperature, or other environmental factors that limit aquatic life use but are not caused by discharges or human alteration of the environment.
	G. Numeric criteria exceeded for TDS, chloride, sulfate, temperature, pH or enterococcus bacteria & (g)	(g) Criteria exceeded but with no significant public concern
	H. Narrative criteria not met & (h)	(h) No known public concern
Category 5b: A review of the water quality standards will be conducted before a TMDL is scheduled.		
S	Available information indicates that the current water quality standard may be inappropriate.	
Category 5c: Additional data and information will be collected before a TMDL is scheduled.		
D	Available information on the severity, geographic extent, and cause of non-support of the standard or the source of pollution is not adequate to determine the need for a standards review or a TMDL.	

DO=Dissolved oxygen
MCL=Maximum Contaminant Level

TDH=Texas Department of Health
TDS=Total dissolved solids

TMDL = Total Maximum Daily Load