

## TEXAS ASSOCIATION OF CLEAN WATER AGENCIES

### COMMENTS ON PROPOSED REVISIONS TEXAS SURFACE WATER QUALITY STANDARDS

January 2009

Following are comments and recommendations provided by the Texas Association of Clean Water Agencies (TACWA) regarding proposed revisions to 30 Texas Administrative Code Chapter 307 (Ch 307), the "Texas Surface Water Quality Standards." The comments pertain to the Ch 307 revisions that were discussed at the January 6, 2009, meeting of the Texas Commission on Environmental Quality (TCEQ) Surface Water Quality Standards Advisory Workgroup. Comments are offered on provisions related to sole-source surface drinking water supplies (S3DWS) aquatic life use (ALU) classifications, standards to protect recreational uses, nutrient criteria, human health criteria, whole effluent toxicity, and seagrass protection.

#### **SOLE-SOURCE SURFACE DRINKING WATER SUPPLY**

Appendix B only identifies the location of S3DWS diversions with respect to the classified segment with which they are associated. In order for an existing or potential permittee to determine whether a permit action they are considering may be impacted by a S3DWS, a specific location is required.

In addition, it is our understanding that the S3DWS list is dynamic and subject to being updated at any time. Therefore, the regulated community needs to be advised that Appendix B may not be current, and information should be provided on how to identify currently listed diversions and their precise locations

Recommendation: Add the following paragraph to the introduction of Appendix B:

*"This list is current as of the date of adoption of these standards. However, it is subject to amendment at any time. For a current list and the precise location of a S3DWS, contact the TCEQ Drinking Water Protection Team."*

It was mentioned at the Advisory Group meeting that it might be helpful to have the most recent estimates of the seven-day average low flow with a recurrence interval of two years (7Q2) and the harmonic mean flow (Appendix C of the IPs) on the TCEQ website so that they can be routinely updated. This may be a good idea for Appendix B of Ch 307, also.

## **DESIGNATION OF MINIMAL AQUATIC LIFE USE**

The existing standards establish an aquatic life use category of “No Significant Aquatic Life Use” (No Significant ALU). It is proposed to change this to “Minimal” ALU since virtually all water bodies have some type of aquatic life present. This is an appropriate change in terminology.

It is also proposed to specifically identify “Minimal” as an ALU category in Table 3. This, too, is appropriate.

However, a technical problem that existed for the category of No Significant ALU also exists for the category of Minimal ALU. There are no narrative or numeric biological criteria established for what constitutes a Minimal ALU. All of the other ALU categories have both narrative and numeric criteria to assist in classifications.

Section 307.4(h)(4) states that the Minimal ALU designation applies, in general, to intermittent streams without significant perennial pools. It would be helpful to document in Table 3 that flow characteristics, and not indices of biotic integrity, are used to classify a stream as having Minimal ALU.

Recommendation: Add the following footnote to Table 3:

*“In most cases, the classification of a water body as supporting Minimal ALU is based on flow characteristics (intermittent without perennial pools), as set forth in 307.4(h)(4), and not on aquatic life attributes.”*

## **BACTERIAL STANDARDS TO PROTECT RECREATIONAL USES**

TACWA appreciates the work performed by TCEQ to develop more realistic risk-based standards for bacteria to protect recreational uses. It is not possible for all surface waters to maintain swimmable quality at all times. When the standards are too stringent, the program becomes overwhelming (such as at the current time when 274 water bodies are listed as impaired for recreation), and there are not sufficient resources to address all of the problem areas. In addition, it is not possible to prioritize resources and focus on those water bodies that really are impaired.

To develop appropriate recreational standards, more research is needed on the following:

- What is the relationship between risk and frequency/type of exposure in water bodies that are not used as public beaches?
- What is an achievable standard for surface waters? This determination must take into consideration the effects of stormwater runoff, as well as other naturally occurring conditions that affect bacterial densities in surface waters.

However, while research is needed, it is important to begin to address these limitations in the current standards. TCEQ has taken steps to do so with respect to the first issue but not the second issue. Following are comments on both issues:

### **Relationship Between Exposure and Risk**

TCEQ is to be commended for developing standards that address the relationship between exposure and risk. The establishment of multiple categories of recreational use, with more stringent standards being applied to the uses with the greatest exposure, is supported by TACWA.

TCEQ is also to be commended for their work toward developing Use Attainability Analysis (UAA) guidelines for recreational uses. As acknowledged by TCEQ, there are areas in which further modifications may be appropriate; so, it is hoped that this will be a flexible guidance document that will continue to evolve. However, much has been accomplished to establish a good foundation.

Recommendations: The following actions are recommended:

- Implement the proposed multiple categories of recreational use with less stringent standards for recreational uses involving less exposure.
- Conduct studies to improve the scientific basis for the bacterial standards associated with each recreational use category.
- Continue to refine the UAA guidance.

### **Stormwater Runoff Impacts on Bacterial Water Quality**

Available data clearly document that waters influenced by stormwater runoff cannot comply with bacteriological criteria for contact recreation uses, even in watersheds with minimal anthropogenic influences. TCEQ has acknowledged this fact; but, like other states, the agency has not been able to identify a good method for distinguishing between data that are, and data that are not, influenced by stormwater runoff. Such a determination is essential in order to prioritize which water bodies should receive the most emphasis with respect to developing appropriate programs to manage water quality for contact recreation.

It is suggested that this topic be assigned a high priority for study so that this limitation can be addressed in the next revision of standards. Alternate methods should be evaluated, but one approach to consider is an evaluation that correlates the magnitude of rainfall events and the days since the last rainfall event with probable instream impacts. There are now many computerized weather stations maintained by TV stations, governmental agencies, and others; rainfall data may be available for many more locations than in the past.

Recommendation: Prior to the next standards revision, conduct one or more studies to develop a method to categorize bacteriological data with respect to the potential that water quality has been influenced by stormwater runoff.

## **NUTRIENT CRITERIA**

In general, TACWA is supportive of the approach to nutrient criteria proposed by TCEQ. The agency is to be commended for having conducted a rigorous development process providing opportunities for participation by a wide range of stakeholders. There are, however, two aspects of the proposed nutrient criteria for which TACWA would like to offer comments, as set forth below.

### **Use of Pre-1995 Data**

The TACWA members are concerned about the quality of the older data used to establish the chlorophyll-*a* criteria. In particular, there are concerns about the validity of chlorophyll-*a* measurements made prior to 1995. Early in the 1990s, it was recognized that there were aspects of the analytical methodology that were not well developed, and more detailed documented analytical protocols were needed. These revised protocols have now been implemented by many laboratories, and it appears that much of the older data are inaccurate. Inspection of the data for many reservoirs, regardless of the presence or absence of specific changes in land uses in the watershed, reveals much lower concentrations of chlorophyll-*a* in the 1970s and 1980s, than in the 1990s and later.

**Recommendation:** Base chlorophyll-*a* criteria on data collected in and after 1995.

### **Treatment of Outliers**

In calculating the chlorophyll-*a* criteria, a statistical method was used to remove outliers. TACWA is concerned that the outliers removed may be valid indicators of the natural range of conditions, particularly conditions associated with droughts. Since drought-related data will be included in future assessments of water quality, it is inappropriate not to include those values in the determination of the criteria.

**Recommendation:** Do not exclude “outliers” when calculating chlorophyll-*a* criteria unless the value is clearly outside the range of physical probability; e.g., a chlorophyll-*a* concentration of 500 micrograms per liter (ug/L).

## **HUMAN HEALTH PROTECTION CRITERIA**

Some of the criteria set forth in proposed Table 2 have decreased dramatically, and new parameters are proposed for regulation at very low concentrations. The bases for some of these proposed criteria are not clear. Examples of parameters with proposed criteria of concern are arsenic, lead, nickel, and thallium. The concerns are described below.

It should be noted that there may be other parameters of concern in addition to arsenic, lead, nickel, and thallium. TACWA would like to reserve the right to comment on other parameters as further reviews are conducted.

### **Arsenic and Lead**

The arsenic criterion for "Water and Fish" has decreased from 50 ug/L to 0.17 ug/L, a factor of over 100-fold. In addition, the lead criterion for "Water and Fish" has decreased from 4.98 ug/L to 1.15 ug/L.

Both of these elements are ubiquitous in the environment. It should be determined whether the proposed criteria are at, or even below, ambient background levels.

The criteria for arsenic and lead are sufficiently low that they may prove problematic for many municipal dischargers when testing for permit renewals. Implementing controls or treatment to meet these levels may be difficult or unattainable. Achieving these criteria may also prove problematic for industrial dischargers to municipal systems since they may result in extremely low limits in the industrial pretreatment program.

The Rio Grande and the City of El Paso provide examples of the problems that may be associated with the proposed arsenic criteria:

- Arsenic concentrations in the Rio Grande at El Paso during the last two years have averaged over 8 ug/L. Therefore, if the criteria are adopted, a TMDL would have to be developed. Since much, if not all, of the arsenic is probably naturally occurring, it is unclear what the conclusion of the study would be. If a site-specific standard is ultimately developed, the existence of the proposed standard until such time as the site-specific standard is adopted could be extremely burdensome on the cities and industries that discharge to this reach of the Rio Grande.

- The groundwater that serves as the City of El Paso water supply is high in arsenic. The City recently spent \$70 million for a treatment system so that they can achieve compliance with the Safe Drinking Water Act standard of 10 ug/L. Clearly, if the municipal supply contains close to 10 ug/L of arsenic after treatment, the discharge of the wastewater effluent will result in an exceedance of a water quality standard of 0.17 ug/L. The subject has not yet been researched, but it is questionable whether treatment technology exists for either water or wastewater that will achieve a discharge concentration of approximately 0.17 ug/L. If such technology exists, it well may be prohibitively expensive.

We are especially concerned about the basis for the arsenic criteria. We believe the values proposed may be based on preliminary criteria that are still under review by EPA. A more appropriate criterion, at this time, for "Water and Fish" is the drinking water standard of 10 ug/L. This value has been developed with extensive involvement of both scientists and stakeholders. In addition, adopting the drinking water standard avoids creating the situation described above related to the City of El Paso. El Paso is not the only community that treats their drinking water to reduce arsenic. Therefore, this situation is probably not unique to El Paso. Some of the water systems that treat to reduce arsenic may be very small. They would be particularly ill-equipped to comply with the arsenic criteria, if they were adopted.

### **Nickel and Thallium**

It is proposed to add nickel and thallium to Table 2. The limit proposed for thallium is very low (0.16 ug/L) and appears to be significantly lower than the recommended EPA criterion. Similarly, nickel appears to be below the recommended EPA criterion.

TACWA is unaware of water quality problems in Texas attributable to thallium and, therefore, questions the need to add thallium to the list of parameters for which samples must be tested on a routine basis.

However, a bigger concern is whether information is currently available to determine if the proposed criteria are achievable. It is believed very little data are available on background concentrations of thallium in Texas waters.

Recommendations: The following actions are recommended:

- Provide information on the following and an opportunity for additional stakeholder comments when the information is available:
  - The basis for adding thallium to Table 2
  - The basis for the criteria proposed for arsenic, lead, nickel, and thallium.
  - Naturally occurring background concentrations of arsenic, lead, nickel, and thallium in Texas waters.
- Establish the arsenic human health criterion at 10 ug/L.

## **WHOLE EFFLUENT TOXICITY**

Section 307.6(e)(2)(F) lists factors that may justify a temporary variance or site-specific standards amendment related to total toxicity. The fifth factor (item v) is “technological, economic, or legal limits of treatability or control for specific toxic material”. (Emphasis added) Section 307.6 (e) relates to total toxicity. It is not always possible to know the “specific toxic material” that must be controlled to achieve the total toxicity standards. This language should be revised so that it is not a requirement to identify the specific toxic material that needs to be controlled in order to qualify for this exemption.

Recommendation: Revise Section 307.6 (e)(2)(F)(v) as follows:

*“technological, economic or legal limits of treatability or control for total toxicity.” (revision underlined)*

## **PROTECTION OF SEAGRASS PROPAGATION**

In Appendix A, a new category of use has been added for 22 of the Bay and Estuary segments. Under the heading “Other,” these segments have been designated for “seagrass propagation.” In addition, the implementation procedures have been revised

to identify specific factors to be considered when issuing permits for discharges to segments designated for seagrass propagation.

TACWA recognizes the ecological value of seagrass beds and fully supports the protection of this resource. However, there are two serious concerns regarding the proposed approach in the drafts of Ch 307 and the implementation procedures:

- In many, if not most, of the segments designated for seagrass propagation use, only a small portion of the segment has seagrass beds, or is suitable for seagrass propagation, due to depth or other physical factors. The proposed revisions for Ch 307 do not clarify that the entire segment is not used for seagrass propagation and do not provide guidance on how to determine the areas where propagation does occur.
- While the implementation procedures list factors to be considered, no guidance is provided in the implementation procedures on a scientific basis for evaluating whether an impact may occur; and, if so, what measures are necessary to protect the seagrasses. Therefore, permit writers will not have the tools they need to make sound permitting decisions.

The narrative criteria in the existing Ch 307 provide TCEQ with the ability to incorporate permit provisions to protect seagrass beds in cases where this is a clear concern. If there is a desire to have a more well-defined review process and to identify specific types of permit provisions related to seagrass beds, these should be developed based on existing and/or, if needed, new scientific studies. In addition, there should be an opportunity for stakeholder input during the development of the review process and permit provisions.

It should be noted that as soon as more specific permitting protocols are developed to protect seagrasses, they can be implemented. It will not be necessary to wait for the next standards revision. The narrative provisions of Ch 307 provide TCEQ with a basis for implementing the protocols that are developed.

Recommendations: The following are recommended:

- Do not designate seagrass propagation use in specific segments at this time.

- Implement a study program, including stakeholder participation, to develop protocols for evaluating the potential for adverse impacts on seagrasses and identifying appropriate permit provisions.