

**The Surface Water Quality Monitoring Guidance Advisory Work Group Meeting**  
September 21, 2004

Handout # 1, draft 1 (September 14, 2004)

The Texas Commission on Environmental Quality will hold the third meeting of the Surface Water Quality Monitoring Guidance Advisory Work Group on September 21, 2004. This group of external stakeholders will advise the agency on revisions to the guidance used to prepare the Texas Surface Water Quality Inventory and 303(d) List.

DATE: Tuesday, September 21, 2004

TIME: 10 am to 4 pm

8:30 am to 9:45 am... informal discussion on statistical methods for interested parties

LOCATION: TCEQ Central Office, Building B, Room 201A... same as last meeting

Fourth and last meeting if needed... Thursday October 7, 2004

*Before the main meeting, we will have a presentation and discussion of alternate statistical methods from 8:30 to 9:45 am.*

Multiple Lines of Evidence Will Be Considered for Establishing Sediment Instream Toxicity

*See Handout #2*

- Establish the results of each test or line of evidence that will demonstrate the condition of toxicity
- Discuss the relative weights of each test or line of evidence
- Consider how these can be used to develop a matrix or numerical scoring that will give a starting point for evaluating toxicity on a water body
- Monitoring planning and path forward for water bodies with concerns for toxicity

Statistical Methods for Determining Compliance with Criteria

At the last meeting a comprehensive explanation of the binomial approach was presented that illustrated the balances between Type I and Type II errors. Future guidance should present a clearer explanation of the effects of sample size, error rates and the power of decisions made with a particular method. Discussion on this topic will continue.

Assigning Parameters to Water Quality Categories and Management Strategies

*See Handout #3, #4, and #5*

TCEQ assigns impairment parameters to categories indicating use support status and TCEQ's management strategy. We will discuss the initial assignment of impairment parameters to each category and why/how these are moved to other categories as information is developed, water quality controls are implemented, or water quality improves.

Determining Support of the Dissolved Oxygen and Bacteria Criteria at Various Flow Conditions  
*See Handout #6*

Example tables will be reviewed that illustrate the application of the criteria for bacteria and dissolved oxygen, particularly at low flows and in pools. Only the bacteria table is included in the parameters handout now. Are these useful?

Is any final discussion needed on these items?:

- Time-line for developing this new Guidance
- The revised levels of support for uses and criteria
- Number of samples for assessment
- Determining criteria attainment in the mixed surface layer
- Use of data below critical flows
- Monitoring planning for representative sample sets
- Narrative Criteria
  - Fish advisories and fish tissue screening
  - Water bodies may be listed for nutrients
  - The statewide survey of instream color
  - Radioactive materials as a potentially emerging issue
  - Excessive sedimentation (suspended sediment, silt) as an emerging issue
- Statistically-based (randomized) monitoring initiatives and use of data
- Monitoring planning for water bodies with concerns
- Bacterial indicators...a comparison of fecal coliform and E. coli assessments

Topics Related to Application of the Criteria:

Could we use the median rather than the average to assess compliance with chronic criteria? This condition represents the typical condition of exposure for organisms and the calculation is not sensitive to extremely high or low values. The acute criteria were developed to protect against short-term exposure to higher levels of toxic substances.

Percent saturation or DO deficit could be calculated for grab samples and used for screening to identify concerns and target subsequent 24-hour monitoring to determine support of the criterion.

Determination of the critical period and conditions for sampling... considering more than just calendar dates. Antecedent conditions, temperature, etc., may be an alternative to calendar dates.

How is the influence of seasonality considered in application of the criteria. Criteria are developed to protect against extremes which are often exceeded in only one season.

Maximum Contaminant Levels (MCL) for drinking water can be used to determine use support when applied to ambient waters... the new guidance will clarify the use of MCLs

### Topics Related to Listing or Process:

It has been suggested that it would be useful to have an intermediate list with water bodies that need more data or information to determine if they were impaired (this is our current concerns list). What are the legal and regulatory considerations for automatically listing these water bodies if new information was not developed before the next listing cycle indicating support of the standard.

Wetlands are protected by the TSWQS and it has been the practice of TCEQ to apply chronic criteria for permitting. Criteria developed for the water body apply to representative parts of that water body. Distinct areas of assessment (AUs) will be specified for areas with wetland characteristics. These distinct may occur in any type of water body. When monitoring is planned, a determination should be made if a distinct wetland area is to be represented by the data set, and if the data will be used to determine use attainment.

An exact definition of threatened waters will be provided for the Texas 303(d) list. Threatened waters are listed on the 303(d) List because a TMDL may be needed.

### Explanations Related to Protecting Aquatic Species

How can the existence of a balanced indigenous population, which indicates support of the aquatic life use, be documented for tidal streams, estuaries, and reservoirs.

Should waters be listed for invasive species? How can invasive species be tied to impairment of use?

How are the needs of rare and endangered species evaluated and assessed?