

## Surface Water Quality Standards Advisory Work Group May 5, 2008 Summary

8:30 Welcome – Charles Maguire

Introductions of staff and attendees

**Recreational Use Criteria 307.7** - Lori Hamilton –  
Definitions and Uses  
Additional Use Categories

Lori Hamilton (LH) provided a summary handout of the changes in the rule language for discussion. Changes in the rule language followed the items in the handout.

### Background information

Myron Hess – requested background information on how TCEQ decided on the proposed recreational uses categories. LH responded that TCEQ reviewed EPA guidance and recommendations, programs in other states, and public comment.

Myron Hess – what is the purpose in proposing the additional use categories and associated criteria? LH – existing categories are not sufficient for various recreational activities. Jim Davenport (JD) – the proposed categories provide a better range of activities than just contact recreation (CR) and non contact recreation (NCR). JD noted that another question to consider is how to implement the proposed categories and associated criteria.

JD asked attendees to review and comment on the summary handout sheet for bacteria. LH explained that the summary handout sheet included criteria, estimated risks, and implementation options.

### Definitions for primary and secondary

Michael Bloom inquired as to the process used to determine definitions for Primary and Secondary CR. Michael Bloom also asked what is the major difference between Primary CR1 and CR2. LH referred attendees to the different risk levels in the summary tables. Michael Bloom commented that it would be helpful to include the associated risk differences in the definitions. Lial Tischler pointed out that there is a significant difference between risk and exposures and it needs to be clarified exactly what is included in the definitions. It was suggested that new definitions for CR1 and CR2 needed to be added.

Paul Jensen pointed out that for Secondary CR and NCR, the only difference in criteria based on EPA studies was whether there was a risk of ingestion. Paul Jensen also noted that distinguishing between Primary CR 1 and Primary CR 2 was a good idea that he supports. Paul Jensen asked if the development of these categories was mainly based on the availability of public park lands and public access.

### Exposure risk

Myron Hess noted that the question really comes down to “what is the opportunity for exposure?” Myron pointed to the fact that a greater number of people visit national and state parks than a county park like Hamilton Pool, but it is just as important to protect the quality of water for all uses, whether the location is public or private. Lial Tischler asked how the standards and criteria would be used to protect intermittent streams with perennial pools in or out of state/county parks? JD responded that arials and maps are used to quantify intermittent

streams with perennial pools and that this approach is currently being refined by TCEQ. Myron Hess also pointed out that there is contact recreation on rural roads at streams.

Pat Radloff stated that TPWD supports TCEQ's efforts to expand recreational use categories and associated criteria for water quality protection. Myron Hess asked how the revised standards will work. For example, would the standards apply equally to waters within a state park and waters upstream of a state park? And would a non-perennial stream within a state park be characterized as Secondary CR? JD responded that it would be considered Secondary CR.

Randy Palachek stated that several definitions for perennial pools and their size are needed to adequately address CR and aquatic life uses (ALU). JD responded that concerns for CR and ALUs in perennial pools are very similar.

#### UAAs

Michael Bloom stated that some of these issues could be addressed in a use attainability analysis (UAA). LH pointed out that a full-blown UAA would not be required for Secondary CR, but issues could be addressed by other evaluation methods. JD stated that Secondary CR would apply to unclassified streams without a UAA. JD also noted that TCEQ recognizes the need to address criteria for unclassified segments.

#### Public and private access

One attendee emphasized the need to distinguish between public or private access and the type of access needs to be incorporated into the screening process.

Pat Radloff was concerned about the ability to distinguish between public and private access to pools. In some cases the private pools are commercial. JD responded that based on available information, TCEQ will change some presumptive uses but this will not necessarily require a UAA or sub-UAA. A site visit may be adequate for this purpose.

#### Problems being solved

One attendee asked "What are the problems TCEQ is trying to solve with this classification approach?" JD noted that we are dealing with a different regulatory framework than 20 years ago. For example, TMDLs and their impact on the regulatory system are overloading the system, and the system needs to be revised. A broader approach needs to be considered to develop appropriate standards and adequate protection. The attendee commented that additional categories and standards may only complicate the regulatory system without providing added protection.

#### Temporal aspect of streams

Paul Jensen – "Has TCEQ considered the temporal aspect of these streams? For example, the streams may be swimmable at times but not at other times due to flows; and high flows may result in high bacteria levels." JD – EPA has been reluctant to approve proposed changes to address these types of issues. Myron Hess pointed out that guidance already exists on how to deal with high flows and increased bacteria levels so that it doesn't skew the data or assessments. LH noted that EPA has only approved a high-flow exemption for one state – California. High bacteria levels may persist even after a high-flow event. M. Hess pointed out that assessment guidance should be included to not let high-flow values dominate.

#### Numbers of unclassified streams and uses

JD – Scope of this approach for recreation standards – some *soft* numbers for affected waters that have been identified

26 unclassified perennial streams meet Primary CR 2 but not Primary CR 1 criteria

11 intermittent streams with perennial pools will meet Primary CR 2 criteria

15 unclassified intermittent streams will meet Primary CR 2 criteria

#### Human vs. nonhuman bacteria

Randy Palachek – How will standards apply to human vs. non-human bacteria? Is language needed to address non-human bacterial sources? JD - We'll have to wait and see what future action EPA might take. JD noted that we can't be more stringent than "natural conditions" but data must be provided to support the characterization of "natural conditions." This is currently the case with DO.

#### Secondary CR focus

Michael Bloom – Numeric criteria for Secondary CR need to focus more carefully on ingestion rates (e.g., volume of water ingested and rate of metabolic decay of potential pathogens in the human body). Michael noted that the current CR standard of 126 CFU/100 ml may not be appropriate and needs to be re-evaluated. JD responded that this type of study would be useful. Lial Tischler emphasized the need to develop a framework that accurately depicts what is going on in the real world. Michael Bloom concurred.

10:00 Break

#### **Recreational use and criteria - Applicability and Additional Options - LH**

Randy Palachek – will changes be made across the board by TCEQ or will TCEQ entertain recommendations for specific classified segments? JD stated that TCEQ may look at segment-specific recommendations in the future, but not for this round of revisions.

Lial Tischler – How was the original risk number of 8 in 1000 swimmers arrived at by EPA? What was EPA's justification back when this criterion was adopted?

Paul Jensen pointed out that common sense dictates that reservoirs will have a higher number of CR users than creeks or streams. One attendee didn't agree that lakes/reservoirs will have more CR users. Myron Hess added that rivers and streams can have a very large number of users.

One attendee commented that the real issue is exposure risk, NOT whether a stream is classified/unclassified or whether the access is public or private!

Another attendee noted that EPA Region 6 has recommended an estimated risk criteria of 10 in 1,000 swimmers. Why not use this risk level as a basis for the development of standards for other categories of use?

Paul Jensen noted that EPA has recommended that Secondary CR criteria apply to unclassified streams with a depth < 18". This seems reasonable to assume that the exposure risk would be less. Myron Hess inquired how 18" pools are quantified. JD responded that the pool depth is an average, not a percentile. He stated that a site visit may be appropriate to determine the pool depth. Myron Hess stated that it is hard to envision how these criteria would be applied to intermittent streams with occasional pools. Cindy Contreras noted that shallow streams may

have a high number of child waders, so Secondary CR may be appropriate from a human health perspective.

Michael Bloom referred to language in 307.8(a) and questioned how to mesh flow rate and depth. Michael Bloom asked if velocity may be more appropriate than flow rate for CR. Myron Hess stated the need to factor in activities such as kayaking, which are not considered conventional boating, per se. Linda Broach emphasized the fact that kids love water, no matter what the depth. She also pointed out that high velocity can mean very different things to different users!

Paul Jensen noted that the use of the geometric mean for bacteria is more appropriate than the single sample value approach. Paul Jensen asked if TCEQ is suggesting doing away with the secondary criteria using the single sample value? JD responded in the affirmative. Paul Jensen agrees with this approach and it makes sense to retire the 75<sup>th</sup> percentile screening level.

The general discussion centered on the appropriate method to use for public warning of potential health hazards. Various attendees noted that lab analysis requires a minimum 24-hour time period and that if a high bacteria level is detected, additional testing is usually initiated. JD noted that the geometric mean approach will only be used for 303(d) listing. Rex Hunt asked how many water bodies would be de-listed based on a single criteria? JD responded that some of 294 water bodies on the 2006 List for high bacteria levels would be de-listed. Patrick Roques stated that TCEQ plans on doing away with the single sample criteria, even for public health warning. Myron Hess asked why not use both criteria since this is not a chronic health issue? Lial Tischler pointed out that single sample results can be erroneous and that 2 – 3 tests are usually taken in a short period of time if high levels are detected. Lial Tischler noted that multiple samples from the Leon River TMDL varied by as much as two orders of magnitude. Patrick Roques also pointed out that criteria for swimmable beaches will need to be addressed differently than criteria for freshwater bodies.

Paul Jensen – What is TCEQ’s basis for the proposed removal of the low-flow exemption? Gregg Easley responded that this is a result of how the criterion is derived and that all flow conditions should be included for attainment purposes based on the geometric mean. JD noted that we don’t see major differences in bacteria levels under low flow conditions, unlike the response of dissolved oxygen levels to low flow conditions. JD estimated the proposed change may affect approximately 160 unclassified perennial streams or streams with pools and approximately 30 unclassified intermittent streams.

LH – non-human sources of bacteria. The term “limited areas” refers to wildlife preserves and/or areas with no known human bacteria sources. Dickey Clary commented that this an issue of concern in many parts of the state. LH noted that epidemiological studies require a substantial commitment of funds and staffing resources. Another attendee added that many areas of the state are providing substantial funds to improve wildlife habitat and that the focus on non-human bacteria sources is, and will continue to be, a major concern. Patrick Roques stated that language referring to “limited areas” was not necessary. Pat Radloff suggested that the language allow for areas with high non-human bacteria levels such as Oso Bay to remain accessible for non-contact recreational uses such as birding and walking. LH and JD noted that the proposed language will require a standards change and that an epidemiological study or UAA may be appropriate to support the change.

Michael Bloom pointed out that EPA assumes that human bacteria and non-human bacteria are equivalent potential pathogens.

Pat Radloff emphasized that feral hogs are not considered wildlife by TPWD. They are exotics, non-natives!

Dickey Clary referred to current studies (in the Leon River region?) that indicate the contribution of non-human sources (wildlife) to bacteria levels is twice as high as contributions from human sources. Another attendee noted that there is no point in discussing human vs. non-human sources if the EPA considers both sources to be pathogenically equal.

JD stated that UAAs and site-specific studies may be done by 3<sup>rd</sup> parties to address these issues, but the parties involved need to coordinate with TCEQ and EPA.

LH presented the fecal coliform language as proposed by TCEQ. SAWS asked if this will affect existing 5-year permits. JD answered that it will not affect existing permits, but noted that lab availability may be an issue. Michael Bloom suggested requesting comments from NELAC. Randy Palachek asked if additional transition time may be required in permits? JD noted that this may be a good idea to consider. LH closed the morning session by stating that the fecal coliform language for oyster waters and high aquatic life use will remain.

### **Whole Effluent Toxicity (WET)**

JD introduced handouts for whole effluent toxicity testing (WET) and provided an overview of background information, issues, and concerns. Toxicity reduction evaluations (TRE) are currently based on lethal, not sub-lethal effects. However, EPA has mandated that all states need to consider sub-lethal effects in their toxicity programs. This is an important policy for EPA, including a June 2008 time limit. Several options being considered by TCEQ are presented in the handout.

JD introduced Michael Pfeil to present an update on the proposed SIP revisions for WET testing. One major change in the standards is the removal of the diazinon abatement program. The proposed change in the sub-lethal failure language should decrease the number of failures. In the language, toxicity replaces lethality and the alpha (nominal error rate) for sub-lethal rates will be 0.01 instead of 0.05. This is to insure that failures are really failures and not a result of statistics. Options 1 and 2 to assess reasonable potential determination for permit applications was also presented in the handout.

Michael Pfeil noted that the 7-day *Daphnia pulex* WET testing protocol have not yet been promulgated by EPA, so permittees will still need to use the 21-day test if they want to use *D. pulex* as an alternative to *Ceriodaphnia dubia*. He also noted that approximately 25% - 50% of the permitted facilities will have to add sub-lethal WET testing to their requirements and that 65 current permittees with WET limits cannot identify the toxicant(s) in their discharges. The problem may be related to available testing procedures.

Reasonable potential

1. Tiered approach - Looking at failures for 1, 2, 5 years and the duration and the magnitude of the failure.

2. EPA approach - 1, 2, 3, failures in 5 years. Sublethal TRE if there is enough toxicity over time and then a permittee would get a sublethal limit.

L. Tischler preferred option 1 based on significance level.

Another approach would be to take into account the magnitude and persistence and perform accelerated testing to help determine the sublethal toxicity and then go to a TRE. If the permittee fails the TRE then they get a limit.

Rex Hunt stated that he agreed with the NOEC at 50% but he has major concerns with the high degree of variability demonstrated in sub-lethal testing and the potential for sub-lethality as a result of naturally occurring conditions.

Myron Hess also expressed concerns with test variability and the fact that additional contributing factors may be ignored by focusing on potential sub-lethal toxicants. It was noted that as NOECs are increased, false positives decrease and false negatives increase. Michael Pfeil noted that initiating sub-lethal TREs and sub-lethal limits demonstrated a step forward in attempting to identify potential toxicants.

EPA – Claudia Hosch announced that Louisiana has adopted an EPA approved program for WET testing, including sub-lethality, and New Mexico has already implemented an EPA approved WET testing program.

EPA - Willie Lane provided an overview of the EPA WET testing program. In February 2005, Region 6 began to add the sub-lethal testing requirement to the WET program. Region 6 is moving towards compliance with Regulation §122.44(d)(1)(v) for reasonable potential (RP) evaluations. The regulations state that if RP exists then a WET limit must be added to the permit. With respect to the proposed Options 1 and 2, EPA prefers Option 2. However, EPA is agreeable to a compliance time leniency of 3 years before enforcement actions are implemented.

Claudia Hosch also stated that if TCEQ and EPA cannot reach an agreement by June 30, 2008, then permits will go directly to EPA to ensure adequate resource protection.

EPA feels that WET limits are no different than any other permit limit. However, Randy Palachek strongly disagreed with this statement. Phil Jennings stated that almost every case is going to be site-specific. EPA Region 6 stated that they are under the mandate of EPA headquarters. and they have no choice but to comply with headquarters' directives.

JD asked attendees to provide comments and suggestions on how Option 1 can be modified for EPA approval or a compromise.

3:20 Break

JD requested any additional thoughts or comments on WET testing. Lauren Kalichek asked what TCEQ is going to do? JD stated that TCEQ may provide EPA with an interim approach in order to avoid the June 30 deadline. Randy Palachek suggested that TCEQ could use its current power under the standards to include some site-specific sub-lethal TREs in permits. This would provide an additional 3 years to resolve the TCEQ – EPA impasse.

L'Oreal Stepney asked attendees for any comments or suggestions to improve Option 1.

### **MALs – Jill Russell (JR)**

Handout 1 – EPA MOA 2007 for mercury

Handout 2 – EPA 2008 Letter to Chris Linendoll

Handouts 3 and 4 – Tables B-4 and B-5

JR provided an overview of MDLs, MQLs, and MALs. She noted that the EPA MDLs for NPDES wastewater permits are in 40 CFR 136. MALs for pollutants regulated by the state are in §307.6. EPA Region 6 uses the MQL which is equal to 3.3 times the MDL. Presented in Tables B-4 and B-5 are the revisions and deletions for MALs and MAL screening levels.

L. Tischler suggested leaving out MDLs if they were higher than the MAL. He also questioned the use of method 1624 and 1625 and problems with isotopes, and said that 624 was also an approved method. He also questioned why the Aluminum MAL was being lowered when the criteria were so high. He suggested adding ICPM. Randy Palachek pointed out that these were EPA guidance and that TCEQ should be able to use a higher number and explain why they were using it. L. Tischler suggested that more than one method could be included in the table where necessary.

### **Rule language for §307.7 - nonrecreational - LH**

Sole Source Drinking Water Supply

### **Oyster Waters**

Myron Hess questioned the Oyster Water language.

### **Table 4 (now 3)**

LH presented Table 4 (the new Table 3) to the group. Revise? Add? Delete?

Gordon Linam suggested keeping the right side of the table. Pat Radloff asked if “minimal” replaces NSALU? LH – Yes. Patrick Roques pointed out that TCEQ staff needs to make additional revisions to the table before it is final. Mark Fisher pointed out that the biology section is good, but other systems need more work. Myron Hess asked for clarification of some descriptors and how they apply to the standards.

### **§307.8 and §307.9 changes to standards and attainment - GE**

Myron Hess stated that “other specified low-flow values” in 307.8(a)(1) is too ambiguous.

In defining thresholds for application of the geo mean bacteria criteria, Michael Bloom stated that depth and velocity may be a better approach compared to flow rate alone.

Myron Hess reiterated his concern with no longer using the single sample bacteria criteria for assessment purposes. Lial Tischler said that it's probably justified in that the bacteria test in itself is not altogether reliable.

Karen Holligan presented possible revisions for low-flow stats for spring dominated rivers and streams with and without endangered species. KH pointed out that additional protection may be appropriate in these spring dominated water bodies. Randy Palachek asked about the rationale behind the decision to use the 5th percentile for springs without endangered species. KH explained that the 5<sup>th</sup> percentile was used as only an example and that a different percentile may be more appropriate.

Myron Hess asked about the definition of 'sampling reach' in 307.8(a)(2)(B) and suggested that it could be better defined.

For 307.9, Patrick Roques stated that we need to draw a clearer line between when a standards change is warranted (e.g., via a UAA) and when it's not (e.g., due to natural conditions).

For determining attainment for dissolved solids, Pat Radloff and Paul Jensen stated that they don't agree with the use of a median when the actual criterion is based on an average. But for determining attainment of nutrient criteria, Pat stated that she'll be providing us support for using the median.

### **Seagrass use designation**

Paul Carangelo requested that the group discussion move on to the topic of seagrass protection. Paul expressed a strong concern that the process lacked guidance, and the end result could have substantial impacts for the regulated community. SGT explained that the list of seagrass segments would be added to Appendix A. Pat Radloff reminded the group that in 1999 the state regulatory agencies approved the Seagrass Conservation Plan, and that TPWD has identified seagrass segments. This information will be provided to the public in GIS format. Paul Carangelo asked what is the purpose and end-game for inclusion of this aquatic life use designation? He also stated that this process could end up as a big can of worms! Myron Hess stated that we don't have all the answers concerning seagrass communities, but we do know that seagrasses and water quality are important and need to be protected as we continue to find out more about these communities.

Rex Hunt asked when the associated IPs will be developed? SGT responded that they will be included as part of this review. Paul Carangelo emphasized the fact that implementation and criteria are critical and there are too many unknowns to proceed with the process at this point. Paul requested a separate seagrass working group session to address his concerns. Pat Radloff mentioned that she works with Paul on the Seagrass Monitoring Work Group. Pat disagrees with Paul's opinion and feels that we do know what is needed but we also need more work to define needs. Pat invited interested parties to join and participate in the Seagrass Monitoring Work Group.

### **§307.6 Toxics**

Lial Tischler inquired about the status of the dioxin standards.

### **Nutrient Criteria Language**

SGT updated the group on the nutrient criteria analyses. TCEQ is continuing to retrieve data for reservoirs with too few data points. All data is being tested for normalcy and transformed

appropriately. Criteria will be rerun. Additional data was received for some reservoirs that are not reflected in the nutrient criteria handout.

Glenn Clingenpeel noted that two issues that need to be addressed with regard to Nutrient Criteria are how to deal with detection limits and the minimum number of data points needed to evaluate a specific water body.

Various attendees asked if a future SWQSAWG meeting will focus on nutrients and nutrient criteria. JD replied that interested parties should comment on the narrative criteria and not focus too much on the numbers since they'll probably change based on data analysis decisions. JD emphasized the fact that the WET testing comments are due in two weeks and that needs to be a top priority.