

## Workgroup II – May 16, 2007 Summary

### Comments:

1. Areas below dams can be lower in DO than the segment criteria because of bottom releases. Should these areas be considered mixing zones? LCRA
2. Should TCEQ consider seasonal uses for chronic toxic criteria in streams like they do for other constituents? Example intermittent streams.
3. Since TCEQ is considering using a tissue based number for mercury, they should also consider using a tissue based number for all the other toxics in the standards that bioaccumulate. Lial Tischler

### Recreational uses and criteria

#### General comments:

- Standards are not for monitoring “swimming areas.” It would be useful to keep them separate.
- Care should be taken in depending on recreational and bacteria studies because they were either done in northern waters or in California. They may not be representative of Texas waters.
- Even though these studies may not be directly applicable to Texas, there are no studies in Texas and they are better than nothing. Risk levels should not be lowered. There is not sufficient data to indicate that they should be.
- Regrowth should be considered.
- Alternative options suggested would be to define recreational uses as per the activity, ex. Swimming, wading, boating, etc. Scale the criteria to water ingestion risk or immersion risk. Also consider the frequency of use, ex. public vs. private and seasonal variations. Private and seasonal would not be protected at as high a level.

### Questions

1. Should a broader range of recreational uses be considered?

Option 1: No changes to 2000 recreational uses and criteria. *All groups agreed that there needed to be some changes.*

Option 2: Separate contact recreation into primary and secondary and keep noncontact recreational use. *One group suggested a multimatrix structure considering depth, flow, and season. There are problems with the administration and assessment of this approach. One group agreed that there needed to be more categories.*

Option 3: Have two types of primary contact recreation water (class 1A and 1B), secondary contact recreation and noncontact recreation. *This option is difficult.*

*One group discussed that with multiple uses, look at most protective/stringent use, perhaps use a factor of 10 for different uses. For example, boating = X, fishing = 10X, wading = 100X, swimming = 1000X. Questions were asked such as: Will the*

*categorization be based on real data (studies) or be anecdotal? Should some type of study be done, as is for WERs? Though not necessarily a full TMDL. The problem is defining use, e.g., kayakers, but not swimmers with HFEC, since kayakers aren't expected to ingest water. Uses could be grouped by ingestion rates. Flexibility is key, the more options the better. Option 2 less challenging than 3. The options should be done incrementally. This group wasn't sure if there ever would be enough data to implement this option. It would required UAAs to get to secondary from primary? UAA without accounting for downstream use?*

*Another group was split on which option was most favorable. They agreed that there should be different standards for different risks, and that there needed to be studies and good data. They liked the multiple standards idea with a UAA to change the use.*

*One group suggested a 4<sup>th</sup> option that uses be grouped by ingestion rates.*

*Another group discussion revealed that some felt that the uses are subjective and that the data was not available to subdivide into categories. The lack of data is a problem and there may need for a broad based study; however, a study of that nature may not be possible. The risks and levels of bacteria are unknown in a lot of areas. Some other questions that arose in the group were: What is the background of streams, such as high flow events, especially since "Not every water is swimmable." For those unswimmable streams how do we protect the public? Put up signs or fence off everything? This was thought to not be possible or effective. The bacteria document does not make suggestions about ingestion. The group suggested using a 100ml ingestion event? Should there be wording such as "For uses that are attainable <18in deep normal flow." You can distinguish a water body to be not head immersion, but less than full body. There should be recognition of different levels of contact recreation.*

*One issue mentioned is the Houston Ship channel example, which has a site specific standard of incidental ingestion. Can you adjust the risk level proportionally?*

*Is it possible to recognize potential exposure and reduce it by 10 or some other risk calculation? There needs to be well defined goals for appropriate contact recreation. What about different uses at different times of year? How do you clarify a person getting their feet wet to get in a canoe, or children having their face in the water and putting their hands in their mouths.*

*Can there be a footnote for more than 3 categories? Can uses specific to that stream be considered? Overall one group voted for option 2 and 3. Some thought option 2 would be more feasible and cleaner than option 3. Option 3 would require study. UAAs were also believed to be necessary to determine anything other than PCR.*

2. What are the appropriate risk levels for the different recreational use options listed in question 1? Consider that they should be protective of human health and downstream uses. *One group discussed that it comes down to, "How many people are allowed to get sick?" 1%? Should the risk level be the same for all types of uses? Does the risk of getting sick outweigh other risks during high flows, such as drowning or getting hit by floating debris? The group felt hamstrung by limited data and uncertainty. They felt that there needed to be more epidemiological studies. Another group indicated that the risk levels were fine and that the risks could be less stringent if the incidence of immersion was lower than predicted. Noncontact recreation (NCR) wouldn't particularly make the*

*criteria less stringent. For high flow, such data shouldn't be assessed, or a different use could be considered. One group suggested that noncontact recreation could be applied, but that additional data would need to be collected. Another group agreed and added that ingestion risk could be extrapolated from the 1984 studies. Also that NCR and secondary risk levels did not have to be set at the same level. One group suggested that all risk levels be set to 10. This would be the default. Studies would be needed to change it.*

*It appeared to the group that secondary was the same as NCR risk levels. It was pointed out that there are 7-8 ship channels currently and Rio Blanca, do other places need NCR? There was a suggestion that local input would be needed to determine reasonable distances downstream and that in general, risk levels should be a local decision. As far as protecting a water body, having a sign up doesn't mean people won't swim. Again it was questioned whether the secondary risk level was the same as NCR. Can there be different access periods? There was a suggestion to vote for different numbers for NCR and secondary (605 or 630). A statement was made that the number is based on ingestion risk. Also it was suggested that criteria be scaled based on risk.*

### 3. Nonhuman sources of bacteria

a. Can and should the water quality standards address situations where nonhuman sources of bacteria are known to be prevalent? *One group indicated Yes, but...are non-human bacteria less susceptible to cause illness to humans? What level of risk to human illness are non-human sources? If the answer is not known, how can the question be answered? If not addressed in standards (WQS), where should it be addressed? One group suggested that these sources could be addressed through TMDLs, permitting, as well as standards. This group suggested that the risk be addressed in WQS, but in a general sense. Possibly provide a site specific variance that would be addressed in the IPs? They had no suggestions for how this would be done. Another group agreed that nonhuman sources should be addressed, but only after demonstrations and studies.*

*One group suggested that risk levels could be looked at based on a percentage of bacteria. This use could be used for wildlife management areas or be site-specific criteria and uses.*

*For areas heavily used by wildlife the risk levels could be refined and be site-specific.*

3.b. Should TCEQ consider designating less stringent recreational categories for limited areas where wildlife sources of bacteria are unavoidably high, such as in wildlife preserves with very large waterfowl populations and limited aquatic recreational potential? *Goes back to the use...yes, but with caution. See notes in 3.a.*

3.c. Are there other ways in which TCEQ should address bacterial source tracking data? *One group questioned what is the appropriate goal? Could it be used as part of other data? One group encouraged its use, but indicated that more experience using it was needed. One group stated that more information was necessary on how they would be evaluated and applied. One group was fine with using BST data. Is there anything other than BST? Ultimately no. The Rio Blanca example was brought up.*

*In another group, the whole group voted yes for a). For b) There should be consideration of human diseases from non human sources. A statement was made that in the implementation of BST, it must define a standard procedure for the state that can be*

*modified with more information as it becomes available. They said as a caveat to (a) that a defined, accepted procedure be established for (c) before taking on (a). There was a concern for the term “souly” being used for non-human sources. The group also questioned how to adjust the criteria to human exposure?*

4. Options for assigning recreation uses for freshwater water bodies where uses are presumed.

Option 1: Should TCEQ continue to assume contact recreation for all unclassified water bodies? Why or Why not? *No, not if we don't know, but the default should be for the majority. The group also said yes, but there should be a clear road map provided so that it could be changed to other uses. UAAs submitted for approval. One group listed why not: there would be recreational restrictions, it would apply to small or shallow intermittent streams, it would be hard to change to a more appropriate use in the future. Their why change it covered: assume that the water bodies were contact recreation until an assessment was done. They also supported a presumption if there was an assessment that would lead to a change. One group indicated that there should be no blanket number.*

*One group member commented that concrete lined channels are not wading streams. Barton Creek was used as an example. For example, when Barton Creek has water in it people swim; however, the creek is unclassified. Therefore it was suggested that when there is a permit action on a stream or assessment it is advised to get local knowledge. Initially set it up as secondary. It may be possible to pull RWAs to determine use along with local entities. There could also be studies done. The consensus was no.*

Option 2: Should TCEQ consider applying secondary contact recreation to unclassified intermittent streams? Why or why not? *One group decided: Intermittent with pools - secondary contact recreation. Intermittent without pools - contact recreation. One group suggested that secondary recreation criteria and use could be applied as appropriate. Secondary could apply to intermittent or small unclassified streams, but that seasonal uses ex. Swimming holes, would have to be protected. Local knowledge would have to be used to support the use.*

*One group wondered about other unclassified streams.*

Option 3: Are there additional options that can be developed in coordination with the workgroup that should be evaluated?

5. Should the freshwater single sample numbers for *E. coli* be updated and if so how?

d. Options for contact recreation or primary contact recreation. *One group indicated that both state, regional, and local data should be used to recalculate the numbers. Another group agreed with using a state data set. For secondary, if EPA considers it necessary, the state data set would apply and would better characterize the state instead of what EPA had based their numbers on. They also questioned if there needed to be a secondary or NCR single sample number.*

i. Use newly collected state data to calculate a new standard deviation based on 82% moderate use. 82% was used to calculate single sample numbers in the 2000 TSWQS. *One group's input: Don't use single sample.*

Calculate new SD for moderate use using state data? One group agreed with this option.

- ii. Use EPA's single sample values based on different levels of recreational usage  
*One group's suggestions 75<sup>th</sup> for a beach, 385 (new) vs. 394 (current) and 82<sup>nd</sup> for moderate use, 489 (new) vs. 394 (current). Another group suggested selecting 1 % or the 90<sup>th</sup> percentile. With an assessment then you could pick 82-89 %.*

e.. Options for secondary contact recreation and noncontact recreation

- i. Use newly collected state data to calculate a new standard deviation based on 82% moderate use. *One group suggested: Yes and add to IPs. One group asked what was the point of having a single sample criteria. There was a proposal for the removal of the single sample.*

*There were QA concerns. There were some explanations about the differences in the single samples vs. criteria and that single samples don't exceed the geomean of all values. There was concern expressed about sample sites not being randomly selected; therefore creating bias.*

### **Standards Assessment/Attainment questions**

1. What are the groups' thoughts on revising the low-flow exemptions for the following criteria that are expressed as long-term averages so that the criteria apply at all flow conditions. And why?

*One group didn't think it was necessary for bacteria, but might be appropriate for TDS and toxics. Another group felt that many streams and swimming holes needed to be protected. This group felt that all the data should be used in an assessment. Other groups felt there were pros and cons to expanding the exemptions. One group felt that there was no reason to keep the exemption. Some in the group were opposed. There should be guidance in the IPs. For recreation, if the geomean was used for assessment the low flow would not be represented because the stream would be too shallow to sample and characterize. One group suggested including all the data for TDS and flow weight it. Human health exemption was fine. For recreation, the geomean was appropriate with a 7Q2 cut off where immersion was not practical. Then all the data could be used. But they were aware that there were assessment problems. One of the other groups supported different uses applying at different conditions.*

*For TDS in streams, one group had no concerns with including low-flow data as a long-term average as long as the monitoring data wasn't weighted to low-flow conditions (more data collected at the stations in the summer as opposed to the rest of the year). One member of the group did point out that this may discourage water reuse as it would tend to be more stringent. They were also alright with doing this for toxic criteria and recreational criteria (unless we develop a low-flow cut off for recreational uses).*

- a. How would the group suggest addressing instances of zero stream flow?

*One group was not sure what to respond. When flow slowed on a perennial stream to pools because of drought or other reasons the samples would not be representative of the water body. They suggested keeping the exemption. One group had no real opinion/answer for zero flow. One group was in favor of not having an exemption at zero stream flow.*

## 2. High flow conditions

What about exempting some recreational criteria at high flow conditions?

*The high flow exemption topic was focused exclusively on recreational criteria and bacteria data. The summaries coming out of the break-out group discussions were somewhat varied. One group was for working for an exemption for all recreational uses on all streams and rivers, but not reservoirs but acknowledged that it would be difficult to set the high-flow benchmark for the entire state and recommended a more regional approach. Questions arose as to how to define high flow and how to assess them. It would be hard to include variables in a “representative” sample on a statewide basis. It would need to be done on a river basin scale and include velocity, depth, and rainfall. Another group agreed that velocity and depth were better to measure than “stage”. One group stated that kayaking should be protected at the higher flows. They suggested that the sampling authority should be the one to determine when to monitor and the quality of the samples and if it was dangerous or not. They suggested a percentile basis of exemption with a bench mark documented in the IPs and site-specific. They indicated that “representative” sample was a work in progress and that the sampler should be the one making the decision. Another group suggested that there be flow velocity profiles for a water body and a point indicated as to when a person would be swept away. A “representative” sample could be one above the velocity profile. These values would not be used in assessment. One group discussed whether there should be an exemption if it rains at all (since storm water isn’t treated)? Must tie the criteria to use, where flows are high enough to preclude the designated use?*

*Another group could not reach consensus. Some folks suggested using velocity as opposed to flow to develop exemptions (like the velocity it takes to sweep away a toddler), but others in the group pointed out that this may be the ideal velocities for kayakers. One idea was to incorporate some sort of depth/velocity approach (i.e., determine when flows get “dangerous” based on individual stream characteristics)*

*One of the groups suggested that a high-flow benchmark could be established on a percentile basis and should be placed in the monitoring guidance and not the standards. The last group was in favor of a high-flow exemption for all recreational criteria and suggested using some sort of flow/velocity profile or a straight 95th percentile to set the benchmark*

3. Which averaging statistics (mean or median) are most appropriate for determining compliance with a given criteria in the following contexts and why? What averaging period is most appropriate?

*Most groups agreed that the geomean was appropriate, even though one group had different opinions. The concern was that POTW's do not typically do an analysis to get a geomean. One group indicated that the geomean should be used only for contact*

*recreation designated waters. One group wanted to keep the single sample value but did not want to use it as the primary indicator for assessments. Another group wanted to keep the single sample maximum for wastewater permitting and swimmer notice. They suggested that intent and purpose language needed to be included. Another group wanted to also keep the single sample for notification but pointed out the delay in getting the information out to the public because of the time it takes to run the tests. They suggested that for 303d waters that a wastewater treatment plant analyze for E. coli for compliance and that it be used for setting TMDLs. One group wanted to see analysis of how many water bodies are listed for bacteria based on single sample vs. geo mean criteria. One group mentioned providing language in the standards that clarifies the role/responsibility of those collecting bacteria single samples from a water body in terms of the potential ramifications of reporting the results.*

**Surface Water Quality Standards Advisory Workgroup  
Attendee List  
May 16, 2007**

Nicole Coss	Port of Houston Authority
Mel Vargas	Parsons
Larry Hauck	TIAER
Charles Maguire	TCEQ
Michael Bloom	PBS&J/TXDOT Houston
Tony Bennett	TCB
Pat Radloff	TPWD
John Payne	SRA
Jay Bragg	BRA
Tony Smith	Espey Consultants
Tom Weber	TCEQ
Dan Obenour	JMA
Vickie Reat	TCEQ/Remediation Division
Lauren Kalisek	Lloyd Gosselink
Donna Long	TSSWCB
Randy Palachek	Parsons
Justin Bower	City of Sugar Land
Richard Eyster	TDA
Jason Leifester	TCEQ
Alicia Reinmund	LCRA
Marc Friberg	TCEQ
Mark Fisher	TCEQ
Sara Burgin	Baker Botts
Karen Holligan	TCEQ
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Mary Etter	LCRA
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Carol Ellinger	City of Houston
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L'Oreal Stepney	TCEQ
Clyde Bohmfalk	TCEQ
Ed Peacock	City of Austin
Nancy Vignali	TCEQ
Kenda Smith	TCEQ
Kevin Phillips	Eastman Chemical Co.
Miles Hall	SRA
Ned Meister	Texas Farm Bureau
Mike Morrison	Freese & Nichols
Norm King	TXDOT
Lial Tischler	Tischler/Kocurek TCC
Aaron Wendt	TSSWCB
Glenn Clingenpeel	TRA
Adam Smith	City of Sugar Land
Larry Koenig	TCEQ
Jennifer Elms	EHRA
Cindy Contreros	TPWD
Mike Compton	TCEQ
Tiffany Morgan	BRA
Kay Barnes	BRA
Ben Weinheimer	TCFA
Louis Brzuzny	Shell
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Lauren Crawford	TML
John Cuddihee	Terracon
Roger Schenk	CDM
Myron Hess	NWF
Catherine Nash	NRCS
Debbie Magin	GBRA
Yuguin Yang	TWDB
David T. Villareal	TDA
Anne Rogers	TCEQ-SWQM
Lucas Gregory	TWRI
Eric Allmon	Caddo Lake Institute
Darrell Andrews	Tarrant Regional
Ken Kramer	Sierra Club
Todd Renaly	HGAC
Catherine Elliott	HCFC
Allison Woodall	TCEQ
Patrick Roques	TCEQ
Jim Davenport	TCEQ