

**Summary**  
**Chesapeake Bay WQS AD HOC Committee**  
**May 26, 2004**

**Welcome/Introductions**

*Attendees:*

**DEQ:** Alan Pollock, Eleanore Daub, Rick Hoffman, Arthur Butt, John Kennedy

**CB COMMISSION:** Melanie Davenport

**CBF:** Jeff Corbin

**DCR:** Charlie Lunsford

**EPA/CBPO:** Rich Batuik, Mark Smith

**Greeley & Hanson:** Ed Cronin

**JRA:** Patti Jackson

**ODU:** Harold Marshall

**RRBC:** Eldon James

**USFWS:** Cindy Kane

**VACo:** Frank Harkson

**VAMWA:** Will Hunley, Norm LeBlanc, Jim Pletl, Chris Pomeroy, Clifton Bell

**VIMS:** Lyle Varnell

**VMA:** Bernard Kiernan, Tom Bodkins

**VML:** Bob Steidel

**Review of Proposal Development**

Virginia Draft Language

DEQ will ask State Water Control Board for approval to go hearing at the June 17 Board meeting. The proposal then goes to the Department of Planning and Budget for a 45-day economic assessment followed by an undetermined amount of time in executive review. Even with the Governor's unlimited time review of the regulation, we expect to have hearings scheduled in October or November 2004.

Use Designation Description and Boundaries

DEQ is proposing to add a definition of Chesapeake Bay and its tidal tributaries so it is clear where the criteria and uses end (at the fall line/head of tidal waters). It was questioned why the fall line is the upper reference point only for larger rivers. In the river basin tables smaller rivers are described as 'to the end of tidal waters' and larger rivers are usually noted to their fall lines. It was suggested to add the reference to the technical support document for the migratory, open, deep and deep channel uses so the detailed descriptions of the boundaries are known. The horizontal boundary lines are fixed in that document and its addendum. DEQ is also proposing to add a definition of pycnocline since that may be an unknown term to some of the public.

EPA suggested the addition of definitions for the tidal-fresh, oligohaline, mesohaline and polyhaline by a salinity range. DEQ is not comfortable with that since these salinity regimes are only used in the Bay segmentation schemes, which are geographically defined. Placing a salinity range along with the geographical boundary might confuse staff and the public because it might be interpreted that the boundary could change based on salinity. Also, the

term tidal-fresh is used elsewhere in the regulation and the salinity-based definition may not be consistent with that term.

DEQ proposes to describe the five new uses in the 'Designation of Uses' section. These are migratory fish spawning and nursery, shallow-water, open-water aquatic life, deep-water aquatic life and deep-channel seasonal refuge. The descriptions are similar to EPAs except open water and deep water recognize that they include all 'aquatic life' uses in those waters rather than just 'ecologically and commercially important fish and shellfish' uses. The criteria are also protective of all aquatic life in the deep and open waters. The migratory use focuses on anadromous fish, the shallow water use focuses on submerged aquatic vegetation and the deep-channel use focuses on benthic fauna. The open water use includes the migratory and the shallow water use. It was suggested to also include or reference the open water use in the migratory and shallow water descriptions. The open-water, deep-water and deep-channel all depend on the presence of a pycnocline, the correct season and that the pycnocline is preventing a barrier to oxygen replenishment.

DEQ and EPA collaborated to adjust the CB6, Rappahannock River and the Elizabeth River deep-water boundaries, which will be referenced in the Technical Support Document addendum (another reason to reference the TSD addendum in the description).

#### Criteria (D.O., SAV/WaterClarity/Chlorophyll)

All EPAs dissolved oxygen criteria are proposed. DEQ did not keep the existing instantaneous D.O. criteria of 4.0 or adding an averaging period to the 5.0 currently proposed as an instantaneous minimum in migratory water as was suggested by VAMWA in previous meetings. EPA reviewed the information provided and determined the 5 mg/1 criterion was the proper value to use. [NOTE FROM EPA: *Six different components were factored not the derivation of the migratory spawning and nursery designated use dissolved oxygen criteria: protection against larval recruitment effects, protection of juvenile/adult survival, protection against growth effects, protection of resident tidal fresh species, protection against effects on threatened/endangered listed species and additional scientific literature findings. The 5 mg liter<sup>-1</sup> criterion value was derived from five of these six components-see Table III-6 in Ambient Water Quality for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries. The determination that an instantaneous minimum temporal averaging period was required to protect the early life stages of migratory and resident tidal fresh species was based on the published EPA freshwater dissolved oxygen criteria temporal averaging period and the rationale explained on page 48 to protect against short term growth effects during very short spawning/nursery life stage windows for migratory species.*]

A footnote is proposed that references the Mattaponi and Pamunkey Rivers site-specific dissolved oxygen criteria.

The second footnote proposed requires tier 2 anti-degradation protection for dissolved oxygen in high quality waters. It was suggested this should be expanded to all state waters and all criteria. DEQ elected to require this approach for dissolved oxygen because the 'holistic' procedure for placing

waters in tier 1 or tier 2 could jeopardize the higher dissolved oxygen found in the lower Bay. That is, exceeding any one criterion (except bacteria) could place these waters in Tier 1. If that happens and without this statement, the higher water quality for dissolved oxygen would not be required to be maintained.

DEQ proposes SAV acre criteria for each Bay program segment. If the SAV acres are met in that segment, then the shallow-water bay grass use is met. However, if the SAV acres are not met, then the water clarity criteria apply to the water clarity acres in that segment. DEQ explained that the SAV acreage criteria were based on either the historical not clipped acres, the existing use acres (if higher than historical) or in areas where the model clearly showed non-attainment at cap load allocation, the modeled acres were substituted.

EPA recommends that when the modeled acres and the existing use acres are close, then DEQ should propose a value in-between the existing use acres and the unclipped AV goal acres. This would increase the SAV acres in RPPMH to 4,440 and the JMSPH to 490 acres. DEQ's concern is that this approach would result in non-attainment in these waters for a long time and would rather keep the SAV acres at the modeled level and adjust upward as needed in triennial review.

It was suggested that DEQ define submerged aquatic vegetation and consistently use the term in the regulation (sometimes it is referred to as 'bay grasses' and other times as 'submerged aquatic vegetation').

Some members of the group are still concerned that these acres cannot be met because the frequency of seeing this acreage is much greater than what can be found in a 3-year period.

DEQ should make it clear that these acres apply in a 3-year period.

DEQ explained that the water clarity acre criteria were based on multiplying the SAV acres by 2.5. DEQ did not use the factors for each salinity regime as recommended in the EPA Technical Support Document (Oct. 2003) which are based on the amount of shallow water in that segment and the restoration acres. DEQ wanted to use a factor that was based on what the scientific literature said regarding how many more acres of good water clarity are needed to support the SAV acres. The concept that more clear water was needed to support SAV was published in the scientific literature and DEQ has asked EPA for that information. EPA agrees that 2.5 is a reasonable factor to use to determine what water clarity acres are needed to support the necessary growth of SAV.

DEQ explained the temporal application of the SAV/water clarity criteria in polyhaline areas are different from the EPA Technical Support Document (Oct. 2003) because the Virginia polyhaline areas support widgeon grass which spans a longer growing season.

The last criteria included for the entire Chesapeake Bay is the narrative chlorophyll *a* criteria, which has been modified to reflect VAs existing narrative standards. One concern was that this narrative reflected conditions we would want to see year round – not just in the spring and summer.

Implementation (CFD), Bay Program Segmentation, Application to Watershed)  
The Bay program segmentation scheme that will be used as the spatial assessment unit to determine attainment of the criteria are referenced and listed in this section. The James River Tidal fresh segment (JMSTF) was subdivided into an upper segment (JMSTF2) and a lower segment (JMSTF1). The upper segment which extends from Richmond to Hopewell (JMSTF2) is narrower, faster flowing (shorter residence time), and with much greater average depth. The river widens from appx .4 miles across at the end of JMSTF2 to as much as 1.6 miles shortly downriver in the JMSTF2 region of Hopewell and also the Appomattox River enters the James here. There are much wider shoals and greater photic zone area due to the increased width-depth ratio.

The next part of the implementation section is the description of the cumulative frequency distribution (CFD) method for determining attainment of the criteria. One comment was that it could be rewritten from a positive (as an accepted attainment rate) rather than negative approach (as an accepted violation rate). Another comment was that the state should be allowed to develop a reference curve at any time to use to measure attainment and the current proposal only allow the EPA published reference curves. DEQ thinks that if a new reference curve was developed, it would have to be listed in the regulation (i.e. an amendment to the regulation would be necessary) before we could use it as the reference curves are part of the criteria. It was also noted that since the significance test (the test to determine if there was a significant difference between the reference curve and the observed data curve) was still being explored by EPA that it would not be part of the criteria at this time.

The last part of the implementation section clarifies that although these criteria and uses only apply to the Chesapeake Bay and its tidal tributaries, VPDES permits in the entire watershed may get effluent limits to meet the requirements of this section. Suggested language changes included stating the standards apply to all permits or that the standards shall be considered when issuing permits. There was some concern that the draft language indicated that VPDES permits would be modified immediately and timing of compliance must be carefully considered and should be included in the regulation. It may be impossible for some permittees to hire consultants to design and build to meet new treatment requirements when all these resources (materials and contractors) in the Bay watershed will be needed during the same time period. Further concerns noted were that the Star-kist/Caribe Inc. decision stated that if compliance periods were allowed they must be allowed by in the states water quality standards regulation. [*NOTE: the decision says the only basis in which a*

*permittee may delay compliance after July 1, 1977, is pursuant to a schedule of compliance established in the permit which is authorized by the State in the water quality standard itself or in other State implementing regulations. Virginia's permit regulation currently allows schedules of compliance not to exceed the life of the permit (5 years).]*

#### Nutrient Enriched Waters (Deletion of Bay related NEWs)

DEQ is proposing to repeal the nutrient enriched waters to the Bay watershed. Some attendees were unsure as to whether this was acceptable. Agreement to these amendments was dependent on whether any protection to these waters would be lost by the deletion.

#### Special Standards (Mattaponi/Pamunkey D.O. and James Chlorophyll)

The tidal Mattaponi and Pamunkey rivers and their tidal tributaries have a site-specific seasonal criteria of 4.0 mg/l as a 30-day average compared to the 5.0 - 5.5 mg/l 30-day average for other open waters. There is no 7-day mean in the Mattaponi and Pamunkey and the instantaneous levels are the same as other open waters. These criteria are based on EPA recommendations that will be supported in the EPA Criteria Addendum.

The draft proposal includes numerical chlorophyll a criteria for the tidal James (excludes tributaries). Although these criteria only apply to the main stem James River, there will be reductions needed in the tributaries to meet the chlorophyll a criteria. These values were included because VA believes the James falls under the EPA recommendation that where algal-related impairments are expected to persist even when the dissolved oxygen and water clarity criteria are attained, states should adopt numerical chlorophyll a criteria. The criteria were based on various thresholds (reference community, existing concentrations, harmful algal bloom concentrations, EPA recommendations and attainment levels). Concerns were that these criteria should apply statewide. DEQ did not want to apply these values statewide in order to remain consistent with EPA's recommendation regarding where site-specific numerical chlorophyll a criteria should be developed (in areas where algal impairments remained but dissolved oxygen attained) and DEQ did not believe these criteria would be applicable to the Virginia Potomac River. Some believe attainment should not be taken into consideration when developing criteria. *[NOTE: the attainment levels are at or below the concentrations of many of the other thresholds. Therefore, while they are attainable - they are protective also.]* DEQ and others believe that attainment should be taken into consideration as states are allowed to consider attainment. A request was made that EPA to do the attainment charts using the loading from the confirmation run, the tributary strategies, incorporate the CFD and look at 3-year assessment windows as opposed to the 10-year period. EPA would like to focus on the agreed upon allocations. DEQ will decide on which allocations to bracket model runs. Additional attainment information was provided to DEQ that seems contradictory to the attainment information provided by EPA. *[NOTE: DEQ and EPA reviewed this data and confirmed that the additional attainment*

*information provided did not reflect the current allocations for the James River. They reflect a higher loading, which results in greater non-attainment.]*

Concerns were raised that sampling in bloom conditions will exaggerate the actual average levels but when assessing attainment of the chlorophyll *a* criteria. However, that bloom should be captured under the CFD. The continuous and spatially intensive sampling procedures currently used in some segments will also allow a better picture of the segment so blooms wouldn't skew the data. Other concerns raised were that the criteria had no biological basis (although it was noted that many of the thresholds are in the same range which gives credence that these values are protective), that the science behind the criteria was not strong, that groundwater input can continue to affect nutrient levels for hundreds of years, that the cap loads should be implemented first to see if the load reductions get us to the levels we need (in order to avoid future retrofits) and that lower levels of chlorophyll *a* do not necessarily represent a 'balanced' community. It was acknowledged that these values could be revised when the state does their mandatory three-year review of the regulation.

The sections of the River Basin Tables have been modified to reflect the two new site-specific criteria in the 'Special Standards' column.

Each group represented on the committee was given the opportunity to provide final comments on the proposal.

CBF: Still have concerns related to the chlorophyll *a* criteria not being protective enough and that they need to make sure no protection is lost in the removal of the nutrient enriched waters to the Bay.

DCR: Satisfied overall. Does believe attainability is important and should be taken into consideration, as a lot of the load reduction is dependent on non-regulated sources.

CBPO: Need to make sure all the Bay states are consistent and would like to see continued joint efforts between the states to update the CFD reference curves and to reflect what is published in the addendums to the EPA criteria and technical support document each triennial review.

EPA 3: VA should consider EPA's comments that will be updated based on discussion heard today.

ODU: Agrees that the chlorophyll *a* values presented are debatable but VA is moving in the right direction.

USFWS: Believes we considered attainment too much in setting the chlorophyll *a* criteria. Water quality standards have always been based on protecting uses. It's acceptable to respect attainment but not to set criteria that way. Does not agree compliance schedules should be included in the water quality standards.

VaCo: Attainability and implementation scheduling must be considered in the water quality standards. We have been criticized in the past for not doing that. Capital improvements will be constructed at the same time and there are not enough contractors to do the work.

VAMWA: The return frequency on the SAV criteria is just as important as the acreage. They maintain their concerns with the numerical chlorophyll *a* criteria and want to see EPA rerun the 'stoplight' plots to get updated attainability information.

VIMS: No further comment at this time.

VMA: Still concerned with the chlorophyll *a* as criteria. The numbers are low and attainability is a concern. The agency needs to make sure all these regulations related to nutrients are work together and that the allocations are finalized up front so no retrofits are needed.

VML: Does not agree that numerical chlorophyll *a* criteria should move forward. All these regulations and issues need to come together and work from a watershed approach.

RRBC: Concerns about the implementation schedule and the very limited resources. Agrees with VMAs concerns about avoiding retrofits especially since we are dealing with a weak science basis.

Others observers in the room were given the opportunity to comment. One statement was that it took 20 years to get all treatment plants to secondary level of treatment. The magnitude of this rulemaking exceeds that and we should keep timing of the implementation of this regulation in mind.