

TRIENNIAL REVIEW

of

VIRGINIA'S WATER QUALITY STANDARDS (9 VAC 25-260)

**Notice Of Public Comment
-- PUBLIC HEARING --**

**July 29, 2015 – Glen Allen, VA
August 4, 2015 – Roanoke, VA**



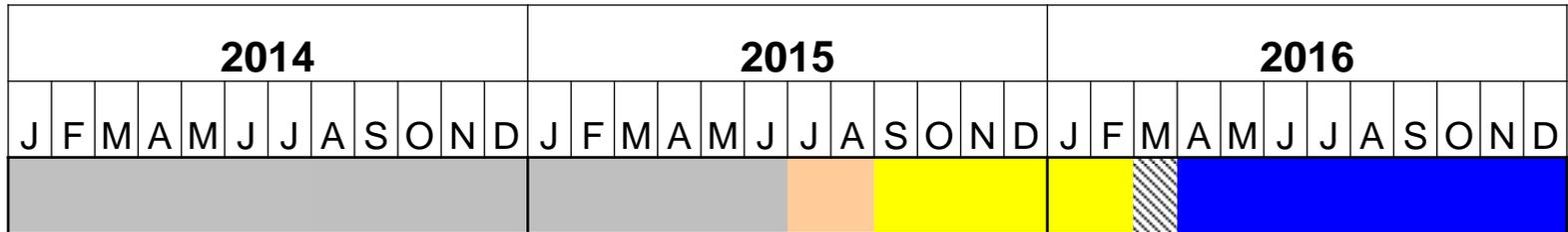
Background:

- Federal Clean Water Act requires review and update of Water Quality Standards every 3 years
- Last Triennial Review completed February 2010
- **Goal:** provide a technical regulation that is
 - protective of water quality in surface waters,
 - reflects recent scientific information,
 - reflects agency procedures, and
 - is reasonable and practical

Background:

- NOIRA issued August 12, 2013
- Comment period closed October 11, 2013
- 15 member Regulatory Advisory Panel formed and met 3 times
- Staff input, public comment, and Advisory Panel helped identify needed amendments

Schedule:



 Planned SWCB meetings

 Notice of Public Comment Period – **June 29 to August 28, 2015**

 180 Days - Public Comment Review, Board Adoption

 DBP and Executive Review – Minimum 28 Days - 14 for DPB, 14 for SNR and Governor*

 Final Stage Includes Final Publication, AGO Certification, EPA Approval

*No time limit for Governor’s pre-Final stage review

Reasons for Proposed Changes:

- Update criteria based on new EPA guidance
- Update waterbody class/use designations
- Revisions based on issues raised by agency programs
- Miscellaneous clarifications and updates

Toxic Parameters (9 VAC 25-260-140):

Criteria updates based on EPA's most recent criteria recommendations as of NOIRA publication date

Human Health Criteria:

- Updates to 8 compounds
- New Toxicity Information – recalculations based on newer information on reference dose or oral slope factor
- Possible economic impact on permittees if these parameters are present in effluent

Human Health Criteria Updates:

Chemical	<u>Old</u> Criteria (µg/L) Public Water Supply	<u>Updated</u> Criteria (µg/L) Public Water Supply	<u>Old</u> Criteria (µg/L) All Non-PWS Waters	<u>Updated</u> Criteria (µg/L) All Non-PWS Waters
Carbon Tetrachloride	2.3	4.3	16	30
Cyanide , free	140	4.2	16,000	480
Hexachloroethane	14	5.0	33	12
Methylene Chloride	46	170	5,900	22,000
Nitrobenzene	17	68	690	2,800
Pentachlorophenol	2.7	0.80	30	9.1
Tetrachloroethylene	6.9	130	33	620
Trichloroethylene	25	7.0	300	82

-- *RECENT DEVELOPMENT* --

Human Health Criteria Updates:

- EPA published updated Human Health criteria for 94 pollutants on **June 29, 2015**
- Reflects latest scientific information and EPA policies
- Updated fish consumption rate, body weight, drinking water intake, health toxicity values, bioaccumulation factors, and relative source contributions
- May affect EPA approval of VA's proposed HH amendments

-- *RECENT DEVELOPMENT* --

Human Health Criteria Updates:

- Options as rulemaking proceeds:
 1. Continue on to Final SWCB adoption and attempt EPA approval
 2. Recommend to SWCB removing HH updates from proposal before adoption, then address in future rulemaking

New Criteria – Aquatic Life:

- **Acrolein** (biocide): current VA criterion for human health protection = 9.3 ug/l
 - Aquatic Life Use criterion final in August 2009
 - Acute & Chronic for FW ALU = 3.0 ug/L
- **Carbaryl** (pesticide Sevin[®]TM): no current VA criterion
 - criterion final in May 2012
 - Recommended = 2.1 ug/L in freshwater (acute & chronic); 1.6 ug/L in saltwater (acute only)

Cadmium (Cd):

Revisions of freshwater Cd criteria based on more recent data.

Freshwater

Acute	Chronic
3.9 <u>1.8</u> WER = 1 CaCO ₃ =100	1.1 <u>0.52</u> WER = 1 CaCO ₃ = 100

Lead (Pb):

Inclusion of conversion factor to express criteria as dissolved

Freshwater		Saltwater	
Acute	Chronic	Acute	Chronic
120 <u>94</u> WER = 1 CaCO ₃ = 100	14 <u>11</u> WER = 1 CaCO ₃ = 100	240 <u>230</u> WER = 1	9.3 <u>8.8</u> WER = 1

-- RECENT DEVELOPMENT --

Lead Criteria – correct proposed text:

- Discussed with RAP and informed SWCB of need to apply conversion factor (CF) for Lead
- Proposed text in NOPC lacks Saltwater CF (0.951 for acute & chronic); correction and resulting concentrations:

Saltwater	
Acute	Chronic
240 <u>230</u>	9.3 <u>8.8</u>
WER=1	WER=1

Biotic Ligand Model for Copper - Freshwater Aquatic Life:

EPA presents two options for adoption of the BLM:
Incremental & State-wide.

- Current DEQ monitoring program not designed to acquire all 10 parameters to run BLM
- Proposal includes a site-specific option similar to WER
- Permittee responsible for generating needed data for the 10 water parameters needed to run model
- Without data for the 10 parameters, current hardness-based criteria will continue to be applicable

Manganese (Mn):

- Originated as Safe Drinking Water Act secondary maximum contaminant level for finished water
- Protect drinking water supplies from staining properties of Mn (criterion = 50 ug/l)
- Expressed in WQS as total; most other metals expressed as dissolved

The Issue:

Soils & underlying geology of many regions of VA naturally high in Mn and Mn compounds

Manganese (Mn):

- Half of all water samples analyzed for Mn in DEQ's historical water monitoring database contained values higher than 50 ug/l
- Mn is an essential nutrient; recommended daily intake 2,000 to 10,000 micrograms/day
- Staff concluded Mn values for finished drinking water misapplied as a surface water criterion

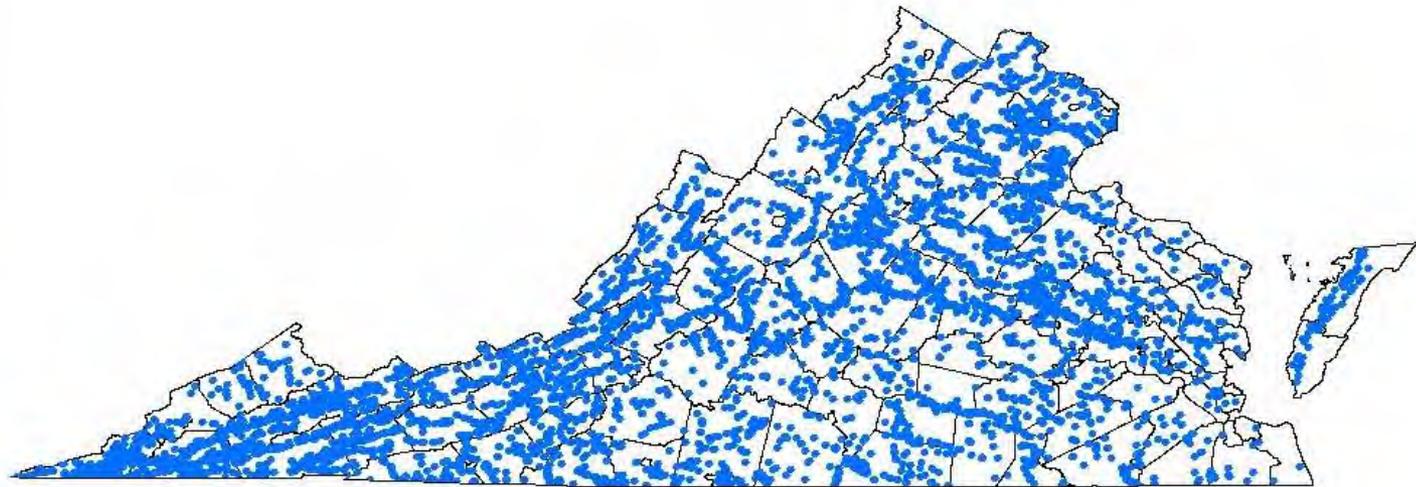
Ammonia W.Q. Criteria - 9 VAC 25-260-155:

- EPA reassessment of national criteria completed 2012
- Incorporates toxicity data for FW mussels in family *Unionidae*
- New criteria are approximately 1/2 of current values
- EPA criteria document provides for recalculation procedure for site-specific criteria derivation (mussels absent)
- DEQ staff met with DGIF/DCR/USFWS on mussel distribution in VA

Ammonia Criteria:

Virginia Mussel Observations

• Mussel Observation



0 25 50 100 150 200 Miles

Ammonia Criteria:

- Potential for Economic Impacts:
 - Approximately 352 active Virginia Pollutant Discharge Elimination System (VPDES) permits with effluent limitations for ammonia
 - Significant number of those may receive more stringent ammonia limits, and potential for new facilities to receive limits

Potential Costs to Meet Ammonia Criteria:

- Simple nitrification system costs for a 0.10 MGD plant about \$372,000
- Advanced system capable of nitrification and denitrification ranges from \$750,000 - \$8,195,000 depending current level & type of treatment and discharge volume
- Operation & maintenance could be \$23,000/yr for 0.10 MGD plant to \$195,000/yr for 0.60 MGD plant

Flexibility for Applying EPA's Ammonia Criteria Recommendations*:

1. *Recalculation Procedure for Site-specific Criteria Derivation*
2. *Variances*
3. *Revisions to Designated Uses*
4. *Dilution Allowances*
5. *Compliance Schedules*

*Source : EPA document - EPA-820-F-13-001; April 2013

Special Standard 'm' - 9 VAC 25-260-310:

- Effluent limits in the Chickahominy watershed above Walker's Dam to prevent nutrient enrichment of Chickahominy Lake:
 - BOD5 = 6mg/l mo. average; 5% samples > 8 mg/l
 - Settleable Solids = 0.1 ml/l monthly average
 - Suspended Solids = 5.0 mg/l mo. average; 5% samples > 7.5 mg/l
 - Ammonia Nitrogen = 2.0 mg/l monthly average
 - Total Phosphorus = 0.10 monthly average

Special Standard 'm':

- Currently applied to all permitted discharges except those consisting solely of stormwater
- Includes discharges from non-metallic mining operations
- Staff believe effluent limits required by the VA Industrial Discharge General Permit more appropriate for discharges of non-organic waste
- Proposed special standard “m” text;
“m. The following effluent limitations apply to wastewater treatment facilities treating an

Special Standards - 9 VAC 25-260-310:

- Special standards 'ee' & 'ff' – Maximum temperature for winter-only stocked trout waters:
 - Currently – stockable trout max. temp. applies all year (21° C or 69.8° F)
 - Adjust application of temperature criteria to winter-only stockable streams during summer
 - Considered application of Class IV (Mountainous Zone) temps May – Oct. (31° C or 87.8° F)



Special standards 'ee' & 'ff':

- USFWS had concerns re: application of max. temp Class IV waters May-Oct. not being protective of Roanoke logperch
- DEQ staff conferred with DGIF/DCR/USFWS
- USFWS recommendations:
 - Roanoke R. sections: max. temperature of 28° C
 - Tinker Creek: max. temperature of 26° C

Reclassification to Class VII (Swamp Waters) - 9 VAC 25-260-390; 410; 415; 440; 470; 520; & 530:

- ~ 20 waters are proposed to be changed from Class III (non-tidal Coastal & Piedmont waters) to Class VII (swamp waters):
 - Currently ~ 35 listed in WQS
 - Low velocity flow, abundant swamp vegetation and frequently low D.O. & acidic pH
 - Class VII recognizes natural water quality of swamps different than other waters with lower range for pH & D.O.

-- *RECENT DEVELOPMENT* --

Class VII Swamp Waters:

- Concerns expressed during consultations with EPA
- EPA asked DEQ staff to further investigate whether or not D.O. & pH are naturally low
- DEQ staff agreed to recommend to SWCB removing 4 waters from proposal for additional investigation:
 - Thompson Branch & tributaries
 - Lodge Creek & tributaries
 - Sullens & Mehixen Creek and tributaries
 - Masons Mill Swamp

Public Water Supply - 9 VAC 25-260-410

Lower James Basin:

- Old intake for the American Tobacco Co.'s raw water in the James R. above City Point (Hopewell)
- Intake not in operation for decades and likely was for process water, not potable water
- VDH could not find records for a domestic water intake at that location in years prior to 1978
- If “use” not present on or after CWA adoption then not considered an “existing use” and may be candidate for deletion

-- RECENT DEVELOPMENT --

Public Water Supply:

- Current owner, Sustainability Park, LLC, provided comments:
 - *“PWS is important feature for an industrial site and improves market potential”*
 - *“Request that the PWS designation be maintained”*

Other Amendments:

- Include definition of 'wetlands' in 9VAC25-260-5
- Amend Ches. Bay section (9VAC25-260-185) to indicate that section's D.O. criteria supersede those in 9VAC25-260-50
- Addition of 2 impoundments to Lake Nutrient section (9VAC25-260-187)
- Clarifications
- Typo corrections

End

Additional detailed information:

[http://www.deq.virginia.gov/Programs/Water/
WaterQualityInformationTMDLs/WaterQualityStandards/
RulemakingInfo.aspx](http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityStandards/RulemakingInfo.aspx)