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Final Regulation Agency Background Document

Agency name	State Water Control Board (Board)
Virginia Administrative Code (VAC) citation(s)	9VAC25-260
Regulation title(s)	Water Quality Standards
Action title	Triennial Review – Remaining Issues
Date this document prepared	May 25, 2018

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 17 (2014) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual*.

Brief summary

Please provide a brief summary of the proposed new regulation, proposed amendments to the existing regulation, or the regulation proposed to be repealed. Alert the reader to all substantive matters or changes. If applicable, generally describe the existing regulation.

Amendments to Virginia's Water Quality Standards Regulation (9 VAC 25-260) have been adopted to revise sections 140 and 170, including revisions to bacteria criteria for human health protection in recreation waters; revisions to cadmium criteria for the protection of aquatic life; and, amendments to update 94 human health criteria. Amendments to the ammonia criteria were deferred due to recent legislation adopted by the 2018 General Assembly. Virginia Code now requires that Ammonia criteria amendments cannot be adopted unless the Board includes in such adoption a phased implementation program that addresses the potential adverse impact on permitted dischargers across the State. DEQ staff intends to develop this phased implementation program and return to the Board with recommendations for approval before the end of this year.

The amendments resulted from continuation of the Triennial Review (TR) of the water quality standards which was the subject of a Notice of Intended Regulatory Action published in the Virginia Register of Regulations on August 12, 2013 (Volume 29, Issue 25). The State Water Control Board, at its meeting on

January 14, 2016, adopted amendments to the water quality standards but decided to postpone the adoption of the amendments included in this proposal in response to public comments and concerns and to provide an opportunity for the Department of Environmental Quality (DEQ) to gather additional information, utilize the most current information and further consult with interested stakeholders. DEQ reconvened the TR Regulatory Advisory Panel which met four times, then presented amendments to the Board at their December 2016 meeting and received authorization for public comment on the amendments. (For details of the prior action see <http://townhall.virginia.gov/L/ViewAction.cfm?actionid=4017>). The public comment period on the Board's action at the December 2016 meeting was announced in the Virginia Register of Regulations on September 18, 2017 (Volume 34, Issue 2).

The following substantive changes have been made since the proposed action was published on September 18, 2017:

- Changing the criteria value of butyl benzyl phthalate for “Public Water Supplies” and “All Other Surface Waters” in Section 140 from 0.10 micrograms per liter (ug/L) to 1.0 ug/L to conform to the same carcinogenicity risk level (10⁻⁵) used for all other carcinogens.
- Changing the criteria value of 2-(2,4,5 Trichlorophenoxy) propionic acid (Silvex) for “Public Water Supplies” and “All Other Surface Waters” in Section 140 to 100 ug/L and 400 ug/L, respectively. Current criterion is 50 ug/L for Public Water Supplies only.
- Defer amendments to the Ammonia criteria for surface waters, 9 VAC 25-260-155.
- Bacteria standard (Section 170) has been revised so that it specifies a 90-day duration for assessment of both the geometric mean (GM) and the statistical threshold value (STV). Changes to wording for clarity, and changed units from colony forming units (CFU) per 100 milliliters to “counts” per 100 milliliters. Language was added to cover the type and frequency of bacterial effluent monitoring at permitted discharges requiring disinfection. Language regarding secondary contact recreation criteria proposed to be stricken will be retained.

(Note: an effective date of the amendments will be published in the Virginia Register of Regulations after completion of Virginia's regulatory process and approval of the amendments by the U.S. Environmental Protection Agency. Regarding the amendments to 9VAC25-260-155, when final action is taken on the amendments, a separate final action will be published in the Virginia Register of Regulations.)

Acronyms and definitions

Please define all acronyms used in the Agency Background Document. Also, please define any technical terms that are used in the document that are not also defined in the “Definition” section of the regulations.

CFU	Colony Forming Units
DEQ	Department of Environmental Quality
DGIF	Virginia Department of Game and Inland Fisheries
EPA	U.S. Environmental Protection Agency
GM	Geometric Mean
SSM	Single Sample Maximum
STV	Statistical Threshold Value
USFWS	U.S. Fish and Wildlife Service
VDH	Virginia Department of Health

Statement of final agency action

Please provide a statement of the final action taken by the agency including: 1) the date the action was taken; 2) the name of the agency taking the action; and 3) the title of the regulation.

At the meeting on August 21, 2018, the State Water Control Board:

1. Adopted the amendments to the bacteria criteria in 9VAC 25-260-170, as provided in the Board materials;
2. Adopted the amendments to the freshwater aquatic life criteria for cadmium in 9VAC25-260-140, as provided in the Board materials;
3. Adopted the amendments to the 94 human health criteria in 9VAC25-260-140, as provided in the Board materials; and
4. Deferred action on amendments to 9 VAC 25-260-155, Ammonia Surface Water Quality Criteria, in consideration of Chapters 510 and 511 of the 2018 Acts of Assembly.

Legal basis

Please identify the state and/or federal legal authority to promulgate this proposed regulation, including: 1) the most relevant citations to the Code of Virginia or General Assembly chapter number(s), if applicable; and 2) promulgating entity, i.e., agency, board, or person. Your citation should include a specific provision authorizing the promulgating entity to regulate this specific subject or program, as well as a reference to the agency/board/person’s overall regulatory authority.

Federal and state mandates in the Clean Water Act at 303(c), 40 CFR 131 and the Code of Virginia in §62.1-44.15(3a) require that water quality standards be reviewed, and, as appropriate, adopted, modified, or cancelled at least once every three years. These are the most relevant laws and regulations. The promulgating entity is the State Water Control Board.

The Clean Water Act authorizes restoration and maintenance of the chemical, physical, and biological integrity of the Nation’s waters. The Clean Water Act at 303(c)(1) requires that the states hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards.

The Federal regulations at 40 CFR 131 authorize requirements and procedures for developing, reviewing, revising and approving water quality standards by the States as authorized by section 303(c) of the Clean Water Act. 40 CFR 131 specifically requires the states to adopt criteria to protect designated uses. The State Water Control Law (Virginia Code Title 62.1 – Waters of the State, Ports and Harbors) authorizes protection and restoration of the quality of state waters, safeguarding the clean waters from pollution, prevention and reduction of pollution and promotion of water conservation. The State Water Control Law at §62.1-44.15(3a) requires the Board to establish standards of quality and to modify, amend or cancel any such standards or policies. It also requires the Board to hold public hearings, at least once every three years, for the purpose of reviewing the water quality standards, and, as appropriate, adopting, modifying or canceling such standards.

The authority to adopt standards as provided by the provisions in the previously referenced citations is mandated, although the specific standards to be adopted or modified are discretionary to the Environmental Protection Agency and the state. The Office of the Attorney General has certified that the agency has the statutory authority to promulgate final text of the regulation.

Purpose

Please explain the need for the new or amended regulation. Describe the rationale or justification of the proposed regulatory action. Describe the specific reasons the regulation is essential to protect the health,

safety or welfare of citizens. Discuss the goals of the proposal and the problems the proposal is intended to solve.

The rulemaking is essential to the protection of health, safety or welfare of the citizens of the Commonwealth because proper water quality standards protect water quality and living resources of Virginia's waters for consumption of fish and shellfish, recreational uses and conservation in general. These standards will be used in setting Virginia Pollutant Discharge Elimination System Permit limits and for evaluating the waters of the Commonwealth for inclusion in the Clean Water Act Section 305(b) water quality characterization report and on the Section 303(d) list of impaired waters. Waters not meeting standards will require development of a Total Maximum Daily Load under the Clean Water Act at Section 303(e). The Water Quality Standards are the cornerstone for all these other programs. It is the goal to provide the citizens of the Commonwealth with a technical regulation that is protective of water quality in surface waters, reflects recent scientific information, reflects agency procedures and is reasonable and practical. The environment will benefit because implementation of these amendments will result in better water quality in the Commonwealth for recreation, consumption of fish and shellfish and protection of aquatic life.

Substance

Please briefly identify and explain the new substantive provisions, the substantive changes to existing sections, or both.

Table of Parameters (Toxics) § 9 VAC 25-260-140

EPA's 2016 nationally recommended cadmium criteria for the protection of aquatic life reflect toxicity data for 75 new species and 49 new genera. As in the 2001 criteria, the 2016 freshwater acute criterion was derived to be protective of aquatic species and was lowered further to protect the commercially and recreationally important rainbow trout. In addition, the duration of the 2016 acute criterion was changed to one-hour. Both changes are consistent with EPA's current aquatic life criteria guidelines. Modest changes to the saltwater acute and chronic criteria are due to inclusion of additional sensitive genera in the toxicity database used to derive the values.

In June 2015, EPA issued recommended updates for 94 human health parameters. EPA's recommended criteria updates included recent research into exposure factors (body weight, drinking water consumption rates, fish consumption rate, and relative source contribution), bioaccumulation factors, and toxicity factors (reference dose, cancer slope factor). Each human health parameter has two criteria (one for Public Water Supply and one for all other waters) for a total of 188 individual criteria concentrations:

- 127 of these would become more stringent
- 57 would become less stringent
- 2 remain unchanged
- 2 are new additions; did not have criteria in the current Regulation

Ammonia Criteria § 9 VAC 25-260-155

Amendments to the ammonia criteria are being further deferred due to recent legislation adopted by the 2018 General Assembly. Virginia Code now requires that Ammonia criteria amendments cannot be adopted unless the Board includes in such adoption a phased implementation program that addresses the potential adverse impact on permitted dischargers across the State. DEQ staff intends to develop this phased implementation program and return to the Board with recommendations for approval before the end of this year.

Bacteria Criteria 9 VAC 25-260-170

In 2012, EPA published nationally recommended Recreational Water Quality Criteria for assessing potential risks to humans posed by bacteria in surface waters. Amendments were proposed to

incorporate those updates into the Virginia water quality standards and replace the current bacteria criteria for the protection of the primary contact recreation use, which applies to all of Virginia’s surface waters. The revised EPA recommendations include a geometric mean (GM) value as well as a statistical threshold value (STV). The GM is a never-to-be-exceeded value; the STV is a value that should not have a greater than 10% exceedance frequency. Amendments also include provisions covering bacterial limits and monitoring periods in VPDES permits for discharges requiring disinfection.

Issues

Please identify the issues associated with the proposed regulatory action, including: 1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions; 2) the primary advantages and disadvantages to the agency or the Commonwealth; and 3) other pertinent matters of interest to the regulated community, government officials, and the public. If there are no disadvantages to the public or the Commonwealth, please indicate.

- 1) The primary advantages to the public are that the updated numerical toxics and human health criteria are based on more recent scientific information to protect water quality and human health through the consumption of fish and drinking water. The disadvantage is that entities currently discharging to state waters may have to incur the costs of increased treatment to meet new or revised water quality criteria that are more stringent.
- 2) The advantage to the agency or the Commonwealth that will result from the adoption of these amendments will be more accurate and scientifically defensible permit limits, assessments and clean-up plans.
- 3) The regulated community will find the amendments pertinent to their operations, particularly where the numerical criteria are more stringent since that may require additional capital or operating costs for control in their discharge. There is no disadvantage to the agency or the Commonwealth that will result from the adoption of these amendments.

Requirements more restrictive than federal

Please identify and describe any requirement of the proposal which is more restrictive than applicable federal requirements. Include a rationale for the need for the more restrictive requirements. If there are no applicable federal requirements or no requirements that exceed applicable federal requirements, include a statement to that effect.

There are no requirements that exceed applicable federal requirements.

Localities particularly affected

Please identify any locality particularly affected by the proposed regulation. Locality particularly affected means any locality which bears any identified disproportionate material impact which would not be experienced by other localities.

The amendments made are to parameters or pollutants with statewide application. Localities across the State are potentially and equally affected. However, no known disproportionate material impacts have been identified.

Changes made since the proposed stage

*Please list all changes that made to the text of the proposed regulation and the rationale for the changes; explain the new requirements and what they mean rather than merely quoting the proposed text of the regulation. *Please put an asterisk next to any substantive changes.*

Section number	Requirement at proposed stage	What has changed	Rationale for change
9VAC25-260-140. Criteria for surface water	<p>The original proposal included modifications of 93 criteria designed to protect human health.</p> <p>Butyl benzyl phthalate criteria value was 0.10 ug/L for “Public Water Supplies” and “All Other Surface Waters”.</p>	<p>The criteria value of 2-(2,4,5 Trichlorophenoxy) propionic acid (Silvex) for “Public Water Supplies” and “All Other Surface Waters” has been changed to 100 and 400 ug/L, respectively. Current regulation is 50 ug/L for Public Water Supplies only.</p> <p>Criteria value for butyl benzyl phthalate was changed from 0.10 ug/L to 1.0 ug/L.</p>	<p>In 2015, EPA issued revised recommended criteria for 94 human health criteria that reflect the latest scientific information and EPA policies, including updated factors for exposure, bioaccumulation, and toxicity data. The omission of the updated criteria for Silvex from the regulatory proposal was an oversight. This parameter is accounted for in the total count (94) of pollutant criteria being amended.</p> <p>EPA nationally recommended criteria for carcinogens are calculated utilizing a risk level factor of 10⁻⁶, though States may choose to use 10⁻⁵. Virginia expresses all other carcinogen criteria values using a 10⁻⁵ risk level factor. Butyl benzyl phthalate was changed to conform to this practice.</p>
9VAC25-260-155. Ammonia surface water quality criteria	The proposal included adopting EPA’s recently revised (2013) recommended water quality criteria for ammonia in freshwater.	Postponing the adoption of these ammonia criteria from this rulemaking and addressing the adoption of these updated criteria until a future Board meeting.	This amendment is deferred due to recent legislation adopted by the 2018 General Assembly. Virginia Code now requires that ammonia criteria amendments cannot be adopted unless the Board includes in such adoption a phased

			implementation program that addresses the potential adverse impact on permitted dischargers across the State.
9VAC25-260-170. Bacteria; Other Recreational Waters.	The proposed criteria utilized the same indicator organisms and the geometric mean (GM) criteria values remain the same. The GM criteria is a never-to-be-exceeded value. The GM is to be based on all monitoring data collected during up to a 90-day period. There is a Statistical Threshold Value (STV) similar to the existing single sample maximum. The STV is a value that should not have a greater than 10% exceedance frequency. Both the GM and STV apply. Language was added to indicate that VDH shall make determinations regarding beach advisories or closures. Secondary contact category was proposed to be deleted.	Language has been revised to remove the word “monthly”. Changes to wording for clarity, and changed units from ‘colony forming units’ (CFU) to “counts” per 100 milliliters. Language added to cover the type and frequency of bacterial effluent monitoring at permitted discharges requiring disinfection. Language regarding secondary contact recreation criteria proposed to be stricken will be retained and language for VDH determination of beach closures/notifications was deleted.	The word “monthly” was an error and removed so it does not contradict the specified 90-day duration for assessment of both the GM and the STV. Language referring to the type and frequency of bacterial effluent monitoring at permitted discharges requiring disinfection are permitting policy elements and it is appropriate to specify this in regulation now that instream assessment periods up to 90 days may be used. The section covering secondary contact recreation criteria was originally proposed to be stricken because EPA’s current (2012) recommendations did not provide any criteria for this classification. Upon further consideration, it was decided to retain this section in the event that EPA does provide recommendations in the future. Language regarding beach notifications and/or closures was removed because VDH is promulgating a regulation for consideration by the Board of Health that grants VDH the authority to issue recreational water advisories.

Public comment

Please summarize all comments received during the public comment period following the publication of the proposed stage, and provide the agency response. If no comment was received, please so indicate.

Commenter	Comment	Agency response
See Attachment 1	See Attachment 1	See Attachment 1

All changes made in this regulatory action

Please list all changes that are being proposed and the consequences of the proposed changes. Describe new provisions and/or all changes to existing sections. Explain the new requirements and what they mean rather than merely quoting the proposed text of the regulation

Current section number	Proposed new section number, if applicable	Current requirement	Proposed change and rationale
9VAC25-260-140. Criteria for surface water	N/A	Current cadmium criteria for freshwater are based upon 1985 EPA guidance and freshwater and saltwater criteria are expressed as “total recoverable”.	The proposed change mirrors EPA’s 2016 nationally recommended criteria. The update incorporates additional toxicity data for the development of both freshwater and estuarine/marine acute and chronic criteria and new toxicity data related to water hardness, and the acute criterion was lowered further to protect the commercially and recreationally important rainbow trout. Freshwater criteria now include a conversion factor and the criteria are expressed as the dissolved fraction.
9VAC25-260-140. Criteria for surface water	N/A	Current human health criteria for 92 toxic parameters are based upon various past iterations of EPA guidance.	Update all 92 toxics and add 2 new chemicals. In 2015, EPA issued new nationally recommended criteria for these 94 toxic parameters. The criteria recommendations are based on updated exposure inputs, bioaccumulation factors, health toxicity values, and relative source contributions.
9VAC25-260-170. Bacteria; Other Recreational Waters.	N/A	Current criteria consists of a geometric mean (GM) value for the indicator organisms (E. coli and enterococci) but only if 4 or more monitoring samples within a month are available and is never to be exceeded. No more than 10% of the total samples may exceed the single sample maximum (SSM) criteria. If there are not 4 or more samples for calculating a	Proposed amendments are intended to conform with EPA’s 2012 nationally recommended bacteria criteria. The GM values for freshwater and marine water are unchanged; the STV replaces the SSM for both freshwater and marine water and are slightly higher; revise the assessment period for both the GM and STV to consider all data collected in up to a 90-day period; and, include provisions covering bacterial limits and monitoring periods in VPDES permits for discharges requiring disinfection. Secondary contact recreation waters category, which is based on prior EPA

		<p>GM, only the SSM applies for assessment purposes. There is a category for 'secondary contact recreation' to which waters may be assigned if appropriate. Secondary contact waters have higher criteria values. Additionally, criteria values are listed for beach advisories or closures.</p>	<p>recommendations, has been retained in the event that EPA does provide recommendations in the future. Proposed language has been deleted regarding application of criteria for beach notifications/closures and reference to the VDH as the agency responsible for any such notifications and/or closures. VDH is promulgating a regulation for consideration by the Board of Health that grants VDH the authority to issue recreational water advisories.</p>
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Family impact

Please assess the impact of this regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.

The direct impact resulting from the development of water quality standards is for the protection of public health and safety and the protection of water quality in surface waters, which has only an indirect impact on families.

Regulatory flexibility analysis

Please describe the agency's analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) the establishment of less stringent compliance or reporting requirements; 2) the establishment of less stringent schedules or deadlines for compliance or reporting requirements; 3) the consolidation or simplification of compliance or reporting requirements; 4) the establishment of performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the proposed regulation.

There is no apparent alternative method that minimizes adverse impact while still accomplishing the intended positive policy goals. The proposal will have no impact regarding simplification or consolidation of reporting requirements. The Water Quality Standards Regulation is applicable statewide through Virginia Pollutant Discharge Elimination System (VPDES) permitted discharge limits for all businesses and entities that require such a permit. There are no clear alternative methods that would both comply with the Clean Water Act and cost less.

ATTACHMENT 1**Summary of Comment
Received during Notice of Public Comment Period
(September 18, 2017 – December 8, 2017)****Triennial Review – Remaining Issues****9VAC 25-260-140****Criteria for surface water**Commenters:

American Forest & Paper Association, Hampton Roads Sanitation District, National Council for Air and Stream Improvement, Inc., Virginia Manufacturers Association/Troutman Sanders LLP, West Rock, Virginia Coal and Energy Alliance, Inc.

Commenters expressed the opinion that there are substantial weaknesses with the assumptions (e.g., fish consumption rate, drinking water consumption rate, and relative source contribution factors) EPA used to derive the nationally recommended criteria for 94 human health pollutants. These commenters recommend that DEQ use alternative assumptions that are less conservative. Additionally, commenters recommended DEQ produce an estimate of potential costs.

Agency Response: EPA's updated criteria recommendations are based on science and policy that were vetted through a very extensive public process, including both external peer and stakeholder review. Because EPA proposed these updated criteria to the public and requested comments, it is EPA's view that these criteria have undergone review on a national level and no additional facts were presented during the review and comment periods that indicated to EPA any other alternate estimates for different exposure assumptions would be appropriate for these chemicals. DEQ lacks the resources to mobilize a multi-year process similar to that employed by EPA. The agency generally assumes that nationally recommended section 304(a) criteria are reasonably sound and scientifically defensible.

Although DEQ has not estimated the potential costs to dischargers that would be caused by the updated criteria, DEQ does not believe that costs will be substantial statewide since the majority of the affected pollutants are uncommon and discharger-specific. The Water Quality Standards Regulation (40 C.F.R. §131) provides states with multiple options when the costs of complying with WQS are proven to be too burdensome. These options can be considered once the criteria are adopted and discharger/waterbody-specific costs are better understood. Fifty-seven of the criteria would become less stringent which may result in cost savings for some facilities.

Commenters:

Chesapeake Bay Foundation

The commenter expressed support for the proposed revision to the recreational bacteria standard.

Agency Response: DEQ acknowledges CBF's support for the bacteria criteria amendments.

Commenters:

Environmental Protection Agency Region III

Commenter requests that Virginia consider: 1) adopting EPA's 2015 updated criteria for 2,4,5-Trichlorophenoxy propionic acid (Silvex), and 2) revising the proposed bacteria standard so that it is consistent with EPA recommendations regarding duration and frequency of exceedence.

Agency Response: *The omission of the updated criteria for Silvex from the regulatory proposal was an oversight that will be corrected prior to final adoption by the Virginia State Water Control Board (SWCB). Also, the updated bacteria criteria section will be revised so that it specifies a 90-day duration for assessment of the geometric mean and the statistical threshold value (STV). The proposed language will be edited to specify that the STV is not to be exceeded no more than 10% of the time.*

Comment received on 9VAC25-260-170. (Bacteria) after February 21, 2018 Regulatory Advisory Panel meeting.

Commenter:

Virginia Association of Municipal Wastewater Agencies

Additional comments were received from VAMWA stating that permitting procedures should not be addressed in the Water Quality Standards Regulation. The better approach is to use the permit manual or guidance to allow facilities greater flexibility. They also stated that it is unnecessary to include a specific STV-based limit in VPDES permits on the basis that compliance with the GM is protective and that specific STV limits are impracticable.

Agency Response:

It is not unusual for the Water Quality Standards Regulation to include policy elements related to permitting. For example, 9 VAC 25-260-20 (General Criteria) deals with the use of mixing zone concepts in evaluating VPDES permit limits. DEQ's Water Permit staff has advised that we should establish in the regulation that VPDES compliance with the GM of 126 counts/100ml for E.coli or 35 counts/100ml for enterococci will be determined with monthly geometric means. This has been our historical approach and it is appropriate to specify this in regulation now that instream assessment periods up to 90 days may be used. Regarding use of the STV, staff agrees that implementation can be addressed in permit guidance rather than in the Regulation and this provision has been removed from the proposal.