

31.9 FLOW CONSIDERATIONS

(1) Low Flow Exceptions

~~[NO SUBSTANTIVE CHANGE IS BEING PROPOSED TO THE LOW FLOW DETERMINATION FOR TEMPERATURE STANDARDS]~~

Water quality standards shall apply at all times; provided, that in developing effluent limitations or other requirements for discharge permits, the Division shall normally define critical flow conditions using the following low-flow values:

- (a) Generally: the empirically based 30-day average low flow with an average 1-in-3 year recurrence interval (30E3) for chronic standards, and the empirically based 1-day low flow with an average 1-in-3 year recurrence interval (1E3) for acute standards, or the equivalent statistically-based flow.
- (b) Temperature limitations: the empirically based 7-day average low flow with an average 1-in-3 year recurrence interval (7E3), and the empirically based 1-day low flow with an average 1-in-3 year recurrence interval (1E3) for acute standards, or the equivalent statistically-based flow.
- (c) Total phosphorus and total nitrogen limitations: the median ~~daily flow of the period of the~~ July 1 – Oct 31 daily average flows, that can be expected to occur in the second driest year in a five year period.

(2) Data Requirements

~~[NO SUBSTANTIVE CHANGES ARE BEING PROPOSED]~~

The period of record for determining low flows shall be based on a minimum of ten years of flow data, except that, when ten years of data is not available, low flows may be determined, on a case-by-case basis, using a period of record of less than ten years. If more than ten years of flow data is available, it may be more appropriate to establish low flow conditions based on a longer period of record to more accurately reflect site specific conditions.

(3) Streams with rapid flow changes

~~[NO SUBSTANTIVE CHANGES ARE BEING PROPOSED]~~

For streams with seasonal rapidly rising or falling hydrographs, the Division shall use, if so requested by a discharger, the procedure set forth in subparagraphs (a) through (e) below for calculating 30E3 values for those transitional flow periods of the year. For certain substances such as ammonia, the low flow exceptions may be based on periodic or seasonal flows as determined on a case-by-case basis by the Division.

- (a) Averaging Procedure – Calculation of 30-day Forward Moving Harmonic Means - Moving harmonic means shall first be calculated for each consecutive thirty-day period in the period of record being considered.
- (b) Calculate Annual 30E3 Value - Determine the annual 30E3 value using the procedure set forth in Appendix A using (i) 30-day forward moving harmonic means, and (ii) the excursion procedure for a 1-in-3 year recurrence interval.

- (c) Assigning Harmonic Means - Each 30-day harmonic mean shall then be assigned to a month. A harmonic mean shall be assigned to a specific month only if the harmonic mean is calculated using data for 15 or more days from that month.
- (d) Ranking of Harmonic Means-Harmonic means shall be ranked from the lowest to highest for each month of the year. The lowest harmonic mean for a month shall be used to establish the low flow value forth at month using the procedure set forth in subparagraph (e)below.
- (e) Establishing Monthly 30E3 Low Flows–The low flow for a month shall be either the lowest harmonic mean assigned to that month (as determined in subparagraphs (c) and (d),above),or the annual low flow value (as determined in subparagraph (b), above), whichever is greater.

(4) Waters Not Yet Classified

Discharges to waters not presently classified must meet established effluent limitation regulations, the basic standards, antidegradation rule and control regulations. ...

31.13 STATE USE CLASSIFICATIONS

(1) Classifications

(a) Recreation

...

(b) Agriculture

...

(c) Aquatic Life

...

(d) Domestic Water Supply

These surface waters are suitable or intended to become suitable for potable water supplies. After receiving standard treatment (defined as coagulation, flocculation, sedimentation, filtration, and disinfection with chlorine or its equivalent) these waters will meet Colorado drinking water regulations and any revisions, amendments, or supplements thereto.

(i) Direct Use Water Supply Lakes and Reservoirs Sub-classification

(A) For the purpose of this section, “plant intake” means the works or structures at the head of a conduit through which surface water is diverted from a source (e.g., lake) into the treatment plant.

(B) Direct-Use Water Supply Lakes and Reservoirs (DUWS) are those water supply lakes and reservoirs where:

(I) There is a plant intake located in the lake or reservoir or a man-made conveyance from the lake or reservoir is used to provide raw water directly to a water treatment ~~facility~~ plant that treats and disinfects raw water, or

- (II) The Commission, based on evidence in the record, determines that the reservoir will meet the criteria in 31.13(1)(d)(i)(B)(I) in the future.

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31.17 NUTRIENTS

(4a) Overview

This section establishes interim numeric values for phosphorus, nitrogen and chlorophyll a and also sets forth provisions regarding the use of these numeric values for the adoption of water quality standards.

(2b) Interim Phosphorus Values

Table 1 Interim Phosphorus Values	
Lakes and Reservoirs, cold, >25 acres	20 ug/L ¹
Lakes and Reservoirs, warm > 25 acres	80 ug/L ¹
Lakes and Reservoirs, <=25 acres	RESERVED
Rivers and Streams – cold	110 ug/L ²
Rivers and Streams - warm	460 170 ug/L ²
¹ summer (July 1-September 30) average Total Phosphorus (ug/L) in the mixed layer of lakes (median of multiple depths), allowable exceedance frequency 1-in-5 years.	
² 5- year median Total Phosphorus (ug/L), in rivers and streams, not to exceed <u>allowable exceedance frequency 1-in-5 years.</u>	

(3c) Interim Nitrogen Values (Effective May 31, 2017)

Table 2 Interim Total Nitrogen Values	
Lakes and Reservoirs, cold, >25 acres	410 ug/L ¹
Lakes and Reservoirs, warm, > 25 acres	850 ug/L ¹
Lakes and Reservoirs, <=25 acres	RESERVED
Rivers and Streams – cold	400 1,250 ug/L ²
Rivers and Streams - warm	2000 2,010 ug/L ²
¹ summer (July 1-September 30) Nitrogen (ug/L) in the mixed layer of lakes (median of multiple depths), allowable exceedance frequency 1-in-5 years.	
² 5- year median Total Nitrogen (ug/L), in rivers and streams, not to exceed <u>allowable exceedance frequency 1-in-5 years.</u>	

(4d) Interim Chlorophyll a Values

Table 3 Interim Chlorophyll a Values		
Waterbody type		<u>PWSRDUWS</u>
Lakes and Reservoirs, cold, >25 acres	8 ug/L ²	5 ug/L ²
Lakes and Reservoirs, warm, > 25 acres	20 ug/L ²	
Lakes and Reservoirs, <=25 acres	RESERVED	
Rivers and Streams – cold	150 mg/m ^{4 1}	
Rivers and Streams - warm	150 mg/m ^{4 1}	

¹ mg/m² chlorophyll of attached algae, not to exceed.

² ~~summer~~ March-November average chlorophyll (ug/L) in the mixed layer of lakes (median of multiple depths), , allowable exceedance frequency 1-in-5 years..

(5e) Use of Interim Phosphorus and Chlorophyll a values for Standards Adoption

Prior to May 31, 2022, the values set forth in subsection (2b) and (4d) above will be considered for the adoption of water quality standards for specific water bodies in Colorado in the following circumstances.

- (ai) Waters located upstream of permitted point source dischargers with significant nutrient discharges, with preliminary effluent limits issued prior to May 2012.
- (bij) Discretionary Application of the Values for Direct-Use Water Supply (DUWS) Lakes and Reservoirs. The Commission may determine that a numerical chlorophyll standard is appropriate for specific water bodies with this sub-classification after consideration of the following factors:
 - (A)- Whether the public water system using the lake or reservoir as a raw water supply experiences impacts attributed to algae on an intermittent or continual basis;
 - (B)- Whether there are lake or reservoir use restrictions in place that recognize the importance of the reservoir as a water supply;
 - (C)- Whether application of this value appropriately balances protection of all classified uses of the lake or reservoir;
 - (D)- Other site specific considerations which affect the need for a more protective value criterion.
- (eiii) Other unanticipated circumstances where the Commission has determined that adoption of numerical standards is necessary to address existing or potential nutrient pollution because the provisions of Regulation #85 will not result in adequate control of such pollution.

(6f) Use of Interim Nitrogen Values for Standards Adoption

After May 31, 2017 and prior to May 31, 2022, the values set forth in subsection (3c) above will be considered for the adoption of water quality standards for specific water bodies in Colorado in the circumstances identified in subsection (5e)(ai) and (eiii) above.