

31.17 Nutrients

(1) 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.

(2) 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	160 ug/L ²
1 summer 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.	

(3) 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 ug/L ²
Rivers and Streams - warm	2000 ug/L ²
1 summer average Total 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.	

(4) Interim Chlorophyll a Values

Table 3 Interim Chlorophyll a Values		
Waterbody type		PWSR
Lakes and Reservoirs, cold, >25 acres	8 ug/L ²	5 ug/L ²
Lakes and Reservoirs, warm, > 25 acres	20ug/L ²	
Lakes and Reservoirs, <25 acres	RESERVED	
Rivers and Streams – cold	150 mg/m ¹	
Rivers and Streams - warm	150 mg/m ¹	
1 mg/m ² chlorophyll of attached algae, not to exceed. 2 summer average chlorophyll (ug/L) in the mixed layer of lakes (median of multiple depths), , allowable exceedance frequency 1-in-5 years..		

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

Prior to May 31, 2022, the values set forth in subsections (2) and (4) above will not be used for the adoption of water quality standards for specific water bodies in Colorado except in the following circumstances:

- (a) Waters located upstream of permitted point source dischargers with significant nutrient concentrations, existing as of May 31, 2012.
- (b) Protected Water Supply Lakes and Reservoirs.
 - (i) For the purpose of this section, “plant intake” means the works or structures at the head of a conduit through which water is diverted from a source (e.g., lake) into the treatment plant.
 - (ii) For the purpose of this section, “threshold odor number” means the value calculated by the Threshold Odor Test, as defined by the analytical procedure Standard Method 2150 B, described in the “Standard Methods for the Examination of Water and Wastewater,” 18th edition, American Public Health Association (1992).
 - (iii) Protected Water Supply Lakes and Reservoirs (PWSR) are those water supply lakes and reservoirs where the Commission has determined that adoption of numerical standards is warranted. Factors considered shall include:
 - A. Whether there is a plant intake located on a lake or reservoir that is used to provide raw water directly to a water treatment facility;
 - B. Whether the water supply lake or reservoir has water quality that meets the nutrient values for this sub-classification;
 - C. 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. Impacts may include increased chemical usage at the water plant, necessity to implement additional treatment processes, or impaired water quality. Impaired water quality can include documented increases in taste and odor complaints or threshold odor number (TON), higher levels of disinfection byproduct precursors, or higher levels of disinfection byproducts measured at the entry point to the distribution system. Additional treatment processes means the water quality of the reservoir requires treatment above standard treatment (defined as coagulation, flocculation, sedimentation, filtration, and disinfection with chlorine or its equivalent);
 - D. Whether there are lake or reservoir use restrictions in place that recognize the importance of the reservoir as a water supply; and
 - E. Whether application of this classification appropriately balances protection of all classified uses of the lake or reservoir.
- (c) Other unique 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.
- (6) Use of Interim Nitrogen Values for Standards Adoption
 - (a) Prior to May 31, 2017, the values set forth in subsection (3) above will not be used for the adoption of water quality standards for specific water bodies in Colorado.

(b) After May 31, 2017 and prior to May 31, 2022, the values set forth in subsection (3) above will not be used for the adoption of water quality standards for specific water bodies in Colorado except in the circumstances identified in subsection (5) above.