

Nutrient Criteria for the Texas Surface Water Quality Standards
TCEQ Staff Draft Example July 11, 2005

§307.3 Definitions and Abbreviations.

(a) Definitions. ...

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(37) Nutrient criteria - Criteria that are established to protect multiple uses from excessive growth of aquatic plants. Nutrient criteria can be expressed in terms of chlorophyll *a* concentration per unit volume or area, concentration of total or soluble reactive phosphorus in water, concentration of total or inorganic nitrogen in water, or similar measures.

§307.4 General Criteria

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(e) Nutrients. Nutrients from permitted discharges or other controllable sources shall not cause excessive growth of aquatic ~~plants~~ ~~vegetation~~ which impairs an existing, attainable, or designated use. Site-specific nutrient criteria, nutrient permit limitations, and/or separate rules to control nutrients in individual watersheds will be established where appropriate after notice and opportunity for public participation and proper hearing. Site-specific criteria related to nutrients and aquatic plants are listed in Appendix F of this title.

§307.7 Site-specific Uses and Criteria.

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(b) Appropriate uses and criteria ...

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(4) Additional criteria.

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(E) Nutrient criteria. Criteria to preclude excessive growth of aquatic plants are intended to protect multiple uses, such as aquatic recreation, aquatic life, and public water supplies. Nutrient criteria for specific reservoirs, expressed as concentrations of chlorophyll *a* in water, are listed in Appendix F of this title.

§307.8 Application of Standards.

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(b) Mixing zones ...

(1) The following portions of the standards do not apply within mixing zones:

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(I) Nutrient criteria (e.g., chlorophyll *a*)

§307.9 Determination of Standards Attainment.

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(c) Collection and preservation of water samples.

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(2) ... Standards for chloride, sulfate, total dissolved solids, ~~and~~ pH, and nutrient criteria are applicable to the mixed surface layer, but a single sample taken near the surface normally provides an adequate representation of these parameters.

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(e) Sampling periodicity and evaluation.

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(7) Nutrient criteria. Standards attainment will be based on the average of measurements taken over a period of at least one year. In reservoirs, nutrient criteria apply to the main pool; and compliance is assessed using the median of long term data from one or more stations that represent conditions in deep, open-water areas of the main pool adjacent to the dam.

§307.10 Appendices A - E F.

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Appendix F - Site-specific Nutrient Criteria

In the following table, nutrient criteria for selected reservoirs are specified in terms of concentrations of chlorophyll *a* in water. Nutrient criteria are expressed as averages over at least an annual period, and the criteria are applicable to the main pool of each reservoir (see §307.9 (c)(2) and §307.9(e)(7)). For reservoirs where the calculated criteria are less than 5.00 micrograms per liter, the criteria will be considered to be 5.00 micrograms per liter.

[Criteria formulations were based on the following steps and assumptions:

- (1) Available data included the period of record from January 1970 to April 2003.
- (2) Selected reservoirs had 0 - 20% combined urban/agricultural land use and no major municipal discharges in their watersheds.

- (3) Selected sampling stations represent the deep pool of each reservoir near the dam.
- (4) Criteria represent average conditions with an allowance for statistical variability.
- (5) Criteria are calculated as the upper confidence interval of the mean (0.01 confidence level), with the assumption that a sample size of 10 is used to assess a statistically significant departure from the mean.

SEGMENT NUMBER	% LandUse	RESERVOIR NAME	Chlorophyll <i>a</i> CRITERIA (USGS calculated)
Unclassified to 0505	1	Lake Murvaul	38.10
Unclassified to 0611	1	Lake Tyler	9.05
Unclassified to 0611	1	Lake Tyler East	4.57
Unclassified to 1223	14	Leon Reservoir	13.17
Unclassified to 1208	17	Millers Creek Reservoir	20.94
Unclassified to 1426	17	Oak Creek Reservoir	6.92
0208	14	Lake Crook	9.69
0209	16	Pat Mayse Reservoir	15.31
0210	2	Farmers Creek Reservoir (Nocona Lake)	7.04
0212	12	Lake Arrowhead	13.57
0213	13	Lake Kickapoo	8.08
0215	<10	Diversion Lake	11.98
0217	19	Lake Kemp	9.62
0228	17	Lake Mackenzie	5.64
0302	1	Wright Patman Lake	24.70
0401	<10	Caddo Lake	18.49
0405	1	Lake Cypress Springs	12.98
0408	1	Lake Bob Sandlin	8.96
0603	<10	B. A. Steinhagen Reservoir	10.57
0614	6	Lake Jacksonville	5.20
0803	17	Lake Livingston	26.15
0807	19	Lake Worth	20.32
0809	18	Eagle Mountain Reservoir	20.13
0811	2	Lake Bridgeport	7.25
0813	2	Houston County Lake (in Houston Co.)	11.81
0818	12	Cedar Creek Reservoir	26.31
0832	14	Lake Weatherford	15.98
0834	4	Lake Amon G. Carter	11.32

SEGMENT NUMBER	% LandUse	RESERVOIR NAME	Chlorophyll <i>a</i> CRITERIA (USGS calculated)
1205	17	Lake Granbury	13.08
1216	1	Stillhouse Hollow Lake	2.14
1228	14	Pat Cleburne Reservoir	14.07
1230	1	Lake Palo Pinto	5.82
1233	3	Hubbard Creek Reservoir	6.34
1234	2	Lake Cisco	3.23
1237	14	Lake Sweetwater	17.28
1249	1	Lake Georgetown	5.01
1252	1	Lake Limestone	20.75
1403	16	Lake Austin	4.40
1404	1	Lake Travis	4.85
1405	3	Lake Marble Falls	9.76
1406	11	Lake Lyndon B. Johnson	7.61
1407	1	Inks Lake	13.42
1408	1	Lake Buchanan	8.64
1411	17	E. V. Spence Reservoir	11.14
1418	11	Lake Brownwood	6.60
1419	20	Lake Coleman	6.93
1423	13	Twin Buttes Reservoir	13.43
1433	3	O.C. Fisher Reservoir	31.80
1604	15	Lake Texana	6.42
1805	1	Canyon Lake	3.47
1904	1	Medina Lake	4.57
2103	2	Lake Corpus Christi	16.79
2116	1	Choke Canyon Reservoir	13.48
2305	<10	Amistad Reservoir	3.49
2312	<10	Red Bluff Reservoir	23.23