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TITLE 785. OKLAHOMA WATER RESOURCES BOARD
CHAPTER 46. IMPLEMENTATION OF OKLAHOMA'S WATER QUALITY STANDARDS

Introduction:
This document contains amendments to Chapter 46 promulgated by the Oklahoma Water Resources Board effective September 11, 2015. This document was prepared by Oklahoma Water Resources Board staff as a convenience to the reader, and is not a copy of the official Title 785 of the Oklahoma Administrative Code. The rules in the official Oklahoma Administrative Code control if there are any discrepancies between the Code and this document.

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SUBCHAPTER 1. GENERAL PROVISIONS

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785:46-1-1. Purpose, Scope and Applicability

(a) According to 82 O.S., §1085.30, the Oklahoma Water Resources Board *is authorized to promulgate rules to be known as "Oklahoma Water Quality Standards" which establish classifications of uses of waters of the state, criteria to maintain and protect such classifications, and other standards or policies pertaining to the quality of such waters* [82:1085.30(A)]. The "Oklahoma Water Quality Standards" are codified at OAC 785:45. Section 1085.30 of Title 82

O.S. also provides for the Oklahoma Water Resources Board to adopt and promulgate accompanying rules to implement the Oklahoma Water Quality Standards. Such implementation rules are set forth in OAC 785:46 *and shall be enforced by all state agencies within the scope of their jurisdiction* [82:1085.30(D)]. Implementation rules promulgated by other state environmental agencies shall not be inconsistent with the implementation rules in OAC 785:46.

(b) If an affected person can demonstrate to the satisfaction of the permitting authority that scientific methods, data, or implementation procedures different than those specified in this Chapter will achieve a more appropriate or representative implementation of the Standards, then the permitting authority shall use or apply such methods, data, or procedures to implement the Standards. In those circumstances where the permitting authority does not agree that the affected person's proposed scientific methods, data, or implementation will result in a more appropriate or representative implementation of the Standards, the affected person may request a review of the proposed scientific methods, data, or implementation by the agency responsible for Standards implementation who shall determine its appropriateness.

(c) Implementation rules promulgated in this Chapter by the OWRB and promulgated elsewhere by other state environmental agencies with authority for implementation provide a bridge between water quality standards in OAC 785:45 and water quality management. For example, water quality standards contain numerical criteria to protect aquatic life. Permits incorporating these criteria must be issued to limit effluent concentrations so that the criteria are not violated outside the mixing zone. In this case the implementation rules describe how the criteria are translated into permit limits.

(d) Subchapters in OAC 785:46 are arranged in the sequence in which they were drafted by the Oklahoma Water Resources Board staff and adopted by the Oklahoma Water Resources Board. Following the initial promulgation of OAC 785:46, additional subchapters and implementation rules may be promulgated as the need arises.

785:46-1-2. Definitions

In addition to definitions of terms found in OAC 785:45-1-2, which are incorporated herein by reference, the following words, terms and notations, when used in this Chapter, shall have the following meanings unless the context clearly indicates otherwise:

"7T2" means the seven-day maximum temperature likely to occur with a 50% probability each year. The 7T2 is calculated using a moving average of seven consecutive days for each year in a given record. These seven day receiving stream temperature values are ranked in descending order. An order number, m, is calculated based on the number of years of record, n, with a recurrence interval of 2 years, as $m = (n+1)/2$. The mth highest average temperature is the 7T2.

"A" means mean annual average flow.

"ACR" means acute to chronic ratio.

"Acute to chronic ratio" means LC50/NOEC. The NOEC is the highest concentration at which no effect on test organisms is observed over a relatively long period. Quarterly biomonitoring over the life of the permit is sufficient to determine the ACR if the NOEC and LC50 may be determined. If the ACR is unknown, a default value of 10 may be used for implementation purposes.

"Background" means the ambient condition upstream or upgradient from a facility, practice or activity which has not been affected by that facility, practice or activity.

"Beneficial use limitation" means a more stringent restriction than that required to protect the beneficial use. A prohibition on new point sources is an example of a beneficial use limitation.

"Board" means Oklahoma Water Resources Board.

"BOD" means biochemical oxygen demand.

"C" means maximum concentration on the mixing zone boundary.

"C_{95}" means the 95th percentile maximum likelihood concentration.

"C_b" means background concentration.

"C_e" means effluent concentration.

"cfs" means cubic feet per second.

"C_{mean}" means the geometric mean of all effluent concentrations analyzed for the toxicant.

"C_t" means the appropriate criterion listed in OAC 785:45.

"CBOD" means carbonaceous biochemical oxygen demand.

"Coefficient of variation" means standard deviation divided by the mean.

"Continuing Planning Process (CPP)" means the most recent edition of the document produced annually by the Oklahoma Department of Environmental Quality which describes water quality programs implemented within the State.

"Continuing toxicity" means a tendency to be toxic.

"Control" means test organisms exposed to 0% effluent as part of the whole effluent toxicity testing procedure.

"Cooling water reservoir" means a privately owned reservoir used in the process of cooling water for industrial purposes.

"CPP" means the Continuing Planning Process document.

"CV" means coefficient of variation.

"D" means diameter of the discharge pipe in feet.

"df" means dilution factor.

"Dilution capacity" means a measure of the ability of the receiving stream to dilute effluent, defined as the ratio of the regulatory effluent flow to the regulatory receiving stream flow.

"Dilution factor" means a measure of the minimum dilution that occurs on the mixing zone boundary.

"Discharge to a lake" means a discharge within the lake's normal pool elevation as listed in the Oklahoma Water Atlas, Oklahoma Water Resources Board Publication 135, May 1990, excluding discharges to lock and dam reservoirs.

"Discharge to a stream" means (1) any discharge outside the normal pool elevation of a lake as such elevation is listed in the Oklahoma Water Atlas, Oklahoma Water Resources Board Publication 135, May 1990, and (2) any discharge to a lock and dam reservoir, such as Webbers Falls Reservoir and Robert S. Kerr Reservoir.

"DO" means dissolved oxygen.

"Drainage area" means the area above the discharge drained by the receiving stream.

"Event mean concentration" means the flow-weighted average for a given storm event. The flow-weighted average is represented as the sum of the loads calculated for a series of storm samples divided by the sum of the discharges calculated for each of the storm samples.

"EPA" means the United States Environmental Protection Agency.

"HQW" means high quality waters as defined in OAC 785:45-3-2(b).

"Implementation Plan" means a Water Quality Standards Implementation Plan developed and promulgated by a state environmental agency as required by 27A O.S. § 1-1-202.

"Increased load" means the mass of pollutant discharged which is greater than the permitted mass loadings and concentrations, as appropriate, in the discharge permit effective when the SWS, HQW, or ORW beneficial use limitation was assigned.

"Lake mixing zone" means a volume extending one hundred feet from the source for implementation purposes, unless otherwise specified in OAC 785:45.

"LC50" means the lethal concentration as defined in OAC 785:45-1-2.

"LMFO" means licensed managed feeding operation as defined in 2 O.S. 9-202.

"Mean annual average flow" means the annual mean flow found in "Statistical

Summaries", USGS publication no. 87-4205, or most recent version thereof, or other annual mean flow as approved by the Oklahoma Water Resources Board or the permitting authority.

"Monthly average level" means the concentration of a toxicant in the permit which may not be exceeded by the observed effluent concentration averaged over a calendar month.

"Naturally occurring condition" means any condition affecting water quality which is not caused by human influence, including, but not limited to, soils, geology, hydrology, climate, wildlife, and water flow with specific consideration given to seasonal and other natural variations.

"NLW" means nutrient-limited watershed as defined in OAC 785:45-1-2.

"NOEC" means no observed effect concentration.

"NPDES" means National Pollutant Discharge Elimination System.

"Normal pool elevation" means the elevations listed in the "Oklahoma Water Atlas", Oklahoma Water Resources Board publication no. 135, or most recent version thereof.

"ORW" means Outstanding Resource Waters as defined in OAC 785:45-3-2(a).

"Outfall" means a point source which contains all the effluent being discharged to the receiving water.

"OWQS" means Oklahoma Water Quality Standards.

"Permitting authority" means state environmental agency as defined or provided in Title 27A of the Oklahoma Statutes having jurisdiction as provided by law.

"Persistent toxicity" means toxicity due to effluent constituents which are not subject to decay, degradation, transformation, volatilization, hydrolysis, or photolysis.

"Q*" means dilution capacity.

"Q_e" means the regulatory effluent flow.

"Q_{el}" means long term average effluent flow.

"Q_{es}" means short term average effluent flow.

"Q_u" means the regulatory receiving stream flow.

"Regulatory mixing zone" means the volume of receiving water described in 785:45-5-26.

"Reasonable potential factor" means the 95th percentile maximum likelihood estimator for a lognormal distribution.

"SS" means sample standard as defined in OAC 785:45-1-2.

"Storm event" means precipitation, after a minimum of 72 hours has elapsed since cessation of previous precipitation, in the watershed of a stream segment that produces a 30 percent rise in stream flow over the average flow of the preceding 72 hours resulting from surface run-off.

"SWS" means Sensitive Public and Private Water Supplies.

"T'" means maximum temperature difference at the edge of the mixing zone boundary.

"T_a" means regulatory ambient temperature.

"T_c" means the temperature criterion.

"T_f" means the 95th percentile maximum observed effluent temperature.

"TDS" means total dissolved solids at 180C.

"TMDL" means total maximum daily load.

"Total maximum daily load" means the sum of individual wasteload allocations for point sources, safety reserves, and loads from nonpoint source and natural backgrounds.

"Trophic State Index" means a numerical quantification of lake productivity. The Trophic State Index shall be determined by TSI = 9.81 x Ln(chlorophyll-a) + 30.6.

"TSI" means Trophic State Index.

"TSS" means total suspended solids.

"USGS" means United States Geological Survey.

"W" means canal width in feet.

"YMS" means yearly mean standard as defined in OAC 785:45-1-2.

785:46-1-3. Procedural and Substantive Authority

The rules in OAC 785:46 provide for implementation of the "Oklahoma Water Quality Standards". The rules in this Chapter are promulgated as rules by the Oklahoma Water Resources Board pursuant to the procedures specified in the Oklahoma Administrative Procedures Act, 75 O.S. Section 250 et. seq., and pursuant to the substantive law provided in 82 O.S. Section 1085.30.

785:46-1-4. Testing Procedures

All methods of sample collection, preservation, and analysis used in implementing OAC 785:45 shall be in accordance with "The Guidelines Establishing Test Procedures for the Analysis of Pollutants" as provided by 40 C.F.R. Part 136, or other procedures approved by the Oklahoma Laboratory Accreditation Program of the Oklahoma Department of Environmental Quality or practices that are institutionally recognized and appropriate for the parameter of concern and documented in accordance with 785:46-15-3(e) and (g)

785:46-1-5. Errors and Separability

(a) Any errors in OAC 785:46 resulting from inadequate and erroneous data or human or clerical oversight will be subject to correction by the Oklahoma Water Resources Board. Discovery of any such errors does not render the remaining and unaffected implementation rules in OAC 785:46 invalid.

(b) If any implementation rule in OAC 785:46 is held to be invalid, the application of such rule to other circumstances and the remainder of OAC 785:46 shall not be affected thereby.

785:46-1-6. Determination of Regulatory Low Flow

(a) **General.**

(1) **7Q2.** The 7Q2 is calculated as a moving average of seven consecutive days for each year in a given record. These seven-day low flow values are ranked in ascending order. An order number (m) is calculated based upon the number of years of record (n), with a recurrence interval (R) of two years, as m = (n+1)/R, where R = two years. A value of flow corresponding to the mth order is taken as the seven-day, two-year low flow for those historical data.

(2) **Seasonal 7Q2.** The seasonal 7Q2 is calculated as a moving average of seven consecutive days for the applicable dates specified in Table 1 of Appendix G of OAC 785:45 in a given period of record. These seven-day low flow values are ranked in ascending order. An order number (m) is calculated based upon the number of seasons (n) specified in Table 1 of OAC 785:45 Appendix G during the period of record, with a recurrence interval (R) of two years, as m = (n+1)/R, where R = two years. A value of flow corresponding to the mth order is taken as the seasonal seven-day, two-year low flow for those historical data.

(b) **Primary method for determination.** If the 7Q2 or seasonal 7Q2 for a given stream or stream segment is determinable from the United States Geological Survey publication entitled "Statistical Summaries of Streamflow in and near Oklahoma Through 2007" or the latest version of the Water Quality Management Plan published by the Department of Environmental Quality, then that 7Q2 and seasonal 7Q2 shall be conclusive except as provided otherwise in this section.

(c) **Alternative methods for determination of 7Q2 or seasonal 7Q2.**

(1) In lieu of determining the 7Q2 or seasonal 7Q2 as provided in (b) of this Section, the 7Q2 for a given stream or stream segment may be determined by an affected person or the permitting authority if all of the following conditions are satisfied:

(A) A hydrological modification affecting the flow in the stream is documented to the satisfaction of the Oklahoma Water Resources Board and permitting authority;

(B) At least 10 years of daily flow data comporting with the requirements of this section are available; and

(C) Data from the entire period of record for the stream, unless a different time frame of record is approved by the Board and the permitting authority, are used in the calculation.

(2) If the 7Q2 or seasonal 7Q2 for a given stream or stream segment is not determinable as provided in (b) or (c)(1) of this Section or if additional daily flow data have been collected, then the 7Q2 or seasonal 7Q2 for that stream or stream segment may be determined by an affected person or the permitting authority using the calculations provided in (a) of this Section, provided at least 10 years of daily flow data are available for that stream.

(3) If the flow is affected by contributions from gaged tributaries or other permitted discharges, then the 7Q2 or seasonal 7Q2 for a given stream or stream segment may be determined taking those contributions at 7Q2 or seasonal 7Q2, or both, into account on a case-by-case basis if approved by either the Board or the permitting authority.

(4) If the 7Q2 or seasonal 7Q2 for a given stream or stream segment is not determinable as provided in (b), (c)(1), (c)(2) or (c)(3) of this Section, then the 7Q2 or seasonal 7Q2 for that stream or stream segment may be determined by an affected person or the permitting authority using an estimate based upon limited data only if both the method for estimating, and the estimate itself, are approved by both the Board and permitting authority.

(d) **Additional rules for 7Q2 and seasonal 7Q2 determinations.**

(1) Any 7Q2 or seasonal 7Q2 determined with a period of record less than 20 years shall be invalid for any purpose except the issuance of the permit or establishment of the site-specific criteria based upon and developed contemporaneously with such 7Q2 or seasonal 7Q2. Any subsequent renewal of such permit must be based upon a fresh determination of the 7Q2 or seasonal 7Q2 until the pertinent period of record equals or exceeds 20 years.

(2) Any subsequent renewal of a permit based upon a 7Q2 or seasonal 7Q2 determined pursuant to (c)(3) or (c)(4) of this Section must be based upon a fresh determination of the 7Q2 or seasonal 7Q2 that takes into account all discharge and flow data from the time the 7Q2 or seasonal 7Q2 was previously determined.

(3) Any subsequent renewal of a permit based upon a 7Q2 or seasonal 7Q2 determined pursuant to (c)(1) of this Section must be based upon a fresh determination of the 7Q2 or seasonal 7Q2 that takes into account whether the hydrological modification continues to exist.

(e) **Alternative method for determination of regulatory low flow**. In stream segments where dams or other structures have substantially affected the historic flow regime of the stream segment, including but not limited to the portions of the Verdigris and Arkansas Rivers constituting the McClellan-Kerr Arkansas River Navigation System, on a site-specific basis a properly designed and implemented hydrologic study approved by the permitting authority and the Board may be used to determine the appropriate regulatory low flow.

SUBCHAPTER 3. IMPLEMENTATION OF NARRATIVE TOXICS CRITERIA TO PROTECT AQUATIC LIFE USING WHOLE EFFLUENT TOXICITY (WET) TESTING

Section

785:46-3-1. Applicability and Scope
785:46-3-2. Dilutions for Whole Effluent Toxicity Testing
785:46-3-3. Sampling for Whole Effluent Toxicity Testing

785:46-3-4. Toxicity Reduction Evaluation [Revoked]
785:46-3-5. Reasonable Potential to Exceed Narrative Toxicity Criterion for Fish and Wildlife Propagation
785:46-3-6. Regulation Flow Determination

785:46-3-1. Applicability and Scope

(a) The rules in this Subchapter provide a portion of the framework for implementing narrative criteria in OAC 785:45 which prohibit toxicity to aquatic life in waters of the state. This framework is based upon a testing method known as whole effluent toxicity (WET) testing. WET testing is to be used to address point source activities which have the potential for persistent effluent toxicity. The rules in this Subchapter prescribe the method for determining regulatory flow, dilutions required for WET tests, and the method for determining whether there is a reasonable potential to exceed the narrative criteria for the Fish and Wildlife Propagation beneficial use.

(b) If it is determined that toxicity is related to a particular chemical constituent, a numerical permit limit may be imposed for that toxicant.

(c) Toxicity from halogens (e.g. chlorine, bromine and bromo-chloro compounds) will be controlled by dehalogenation rather than WET testing. However, use of dehalogenation shall not exempt an effluent from the WET testing requirements of this Subchapter.

785:46-3-2. Dilutions for Whole Effluent Toxicity Testing

(a) **General.** Generally, two whole effluent toxicity tests shall be used to implement the narrative criteria to protect fish and wildlife propagation. The 48 hour acute test will be used to protect against acute toxicity in receiving water, and the 7 or 21 day chronic test will be used to protect against chronic toxicity outside the chronic regulatory mixing zone.

(b) **Differing requirements for WET tests.**

(1) Three different toxicity testing requirements exist. Each is based upon dilution capacity, represented by Q*.

(2) When Q* is less than 0.054, acute testing only shall be required.

(3) When Q* is greater than 0.33, chronic testing only shall be required.

(4) When Q* is greater than or equal to 0.054 and less than or equal to 0.33, both acute and chronic testing shall be required.

(5) For a discharge directly to a lake, acute testing only shall be required.

(c) **Dilutions for chronic WET tests for streams.** Whole effluent chronic toxicity testing requires that test organisms be subjected to various effluent dilutions. The dilution series for chronic toxicity testing is based on the critical dilution (CD). The chronic critical dilution equations are as follows: $CD = (1.94Q^*) / (1 + Q^*)$ when Q^* is less than or equal to 0.1823, or $CD = 1 / (6.17 - 15.51Q^*)$ when Q^* is greater than 0.1823 and less than 0.3333, or $CD = 1$ when Q^* is greater than or equal to 0.3333. $Q^* = Q_e/Q_u$. Q_e is the largest thirty day average flow for an industrial discharge, if known, and the design flow otherwise. Q_u is 1 cfs or the 7Q2 receiving stream flow, if known to be larger.

(d) **Dilutions for acute WET tests.** The acute critical dilution is 100%.

785:46-3-3. Sampling for Whole Effluent Toxicity Testing

(a) Discharges with overlapping mixing zones may be combined, at the discretion of the permitting agency, and whole effluent toxicity tests may be required on the combined effluent. Samples shall be combined in proportion to the flow for each outfall. If some of the discharges are not toxic, combining discharges may allow intermittent instream toxicity if the discharge rates fluctuate. In these cases combined discharge testing will be disallowed. If the outfall originates from a lagoon with a retention time greater than 24 hours, composite samples may

not be necessary. The permitting agency may determine that a grab sample near the discharge is sufficient.
(b) The toxicity test must be initiated within 36 hours after sample collection. No sample may be held for more than 72 hours prior to use.

785:46-3-4. Toxicity Reduction Evaluation [Revoked]

785:46-3-5. Reasonable Potential to Exceed Narrative Toxicity Criterion for Fish and Wildlife Propagation

Reasonable potential to exceed the narrative criterion to protect the beneficial use of Fish and Wildlife Propagation against toxicity exists whenever persistent lethality is demonstrated. A permitting authority may deem reasonable potential to be demonstrated whenever intermittent lethality or persistent sublethality occurs. Reasonable potential is assumed to exist when a known toxicant is present, or expected to be present, in a discharge in toxic amounts.

785:46-3-6. Regulatory Flow Determination
(a) The regulatory flow for a receiving stream is determined according to OAC 785:45-5-12(f)(6)(G) and 785:46-1-6.
(b) No regulatory flow determination is required for a lake.

SUBCHAPTER 5. IMPLEMENTATION OF NUMERICAL CRITERIA TO PROTECT FISH AND WILDLIFE FROM TOXICITY DUE TO CONSERVATIVE SUBSTANCES

Section
785:46-5-1. Applicability and Scope
785:46-5-2. Regulatory Flow Determination
785:46-5-3. Reasonable Potential
785:46-5-4. Wasteload Allocations [Revoked]
785:46-5-5. Long-Term Average to Protect Against Chronic Toxicity [Revoked]
785:46-5-6. Long-term Average to Protect Against Acute Toxicity [Revoked]
785:46-5-7. Obtaining Permit Limits from Long-Term Averages [Revoked]
785:46-5-8. pH and Hardness Dependent Toxicity
785:46-5-9. Consideration of Background Concentration [Revoked]

785:46-5-1. Applicability and Scope

Rules in this Subchapter prescribe the method for determining regulatory flow and the method for determining whether there is a reasonable potential to exceed the criteria, all in order to implement numerical criteria identified in OAC 785:45-5-12(f)(6)(G) and Table 2 of 785:45 Appendix G for protection of the beneficial use of Fish and Wildlife Propagation.

785:46-5-2. Regulatory Flow Determination
(a) **Regulatory receiving stream flow.** Section 785:45-5-12(f)(6)(G) of the OAC defines the regulatory receiving stream flow upstream of the discharge, Q_u, to be used in implementing fish and wildlife propagation criteria. The $\underline{Q_u}$ is the greater of the 7Q2 or 1 cfs. 7Q2 shall be determined according to 785:46-1-6. Q_u is assumed to be 1 cfs if the 7Q2 is unknown or the permittee chooses not to develop an actual 7Q2.
(b) **Regulatory flow for lakes.** No regulatory flow determination is required for lakes.
(c) **Regulatory effluent flows.** The regulatory effluent flow, Q_e, is the highest monthly averaged flow over the previous two years for industrial discharges if the permitting authority determines that sufficient data are available. For other dischargers (e.g. municipalities), Q_e is

the design flow. If a significant daily or seasonal variability in effluent flow is present, a regulatory effluent flow should take this variability into account.

785:46-5-3. Reasonable Potential

(a) **General.** The need for a permit limit will be determined, on a pollutant by pollutant basis, after determination of reasonable potential, which considers assimilation capacity of the receiving water and effluent variability.

(b) **Use of reasonable potential factor; relationship with wasteload allocation process.**

(1) The technical report produced by the Oklahoma Water Resources Board entitled "The Incorporation Of Ambient Concentration With That Due To Effluent For Wasteload Allocation" shall be used to determine if there is a reasonable potential for a criterion exceedance outside the mixing zone. $C_{95} = 2.13C_{mean}$ is used for effluent concentration in the reasonable potential calculation. C_{mean} is the geometric mean of all effluent concentrations analyzed for the toxicant. If the geometric mean cannot be determined, an arithmetic mean may be substituted. If a large dataset of effluent concentrations is available, the permitting authority may not need to estimate C_{95}; the 95th percentile value can be calculated from the data.

(2) The wasteload allocation process is used to determine reasonable potential. C is the reasonable potential concentration on the chronic regulatory mixing zone boundary. C is calculated for chronic criteria in streams as: $C = C_b + (1.94Q^*(C_{95} - C_b)) / (1 + Q^*)$ when Q* is less than or equal to 0.1823, or $C = C_b + (C_{95} - C_b) / (6.17 - 15.51Q^*)$ when Q* is greater than 0.1823 and less than 0.3333, or $C = C_{95}$ when Q* is greater than or equal to 0.3333. $Q^* = Q_e/Q_u$. Q* is the dilution capacity. C is calculated for lakes as: *pipe:* $C = C_b + (D(C_{95} - C_b)) / 20.15$ when D is greater than or equal to 3 feet, or *canal:* $C = C_b + (W^{1/2}(C_{95} - C_b)) / 4.2$ when W is greater than or equal to 3 feet. D is the diameter of the discharge pipe in feet and W is the width of the canal in feet. D and W shall not be less than three feet for implementation purposes. When C is the concentration on the acute regulatory mixing zone boundary it is calculated as $C = C_b + (Q_e (C_{95} - C_b) / 100)$. If Q_e is greater than 100 cfs, then 100 cfs shall be substituted for Q_e.

(3) For regulatory purposes, there is a reasonable potential for chronic toxicity if concentrations of ammonia outside the chronic regulatory mixing zone exceed 6 mg/L.

785:46-5-4. Wasteload Allocations [Revoked]

785:46-5-5. Long-Term Average to Protect Against Chronic Toxicity [Revoked]

785:46-5-6. Long-Term Average to Protect Against Acute Toxicity [Revoked]

785:46-5-7. Obtaining Permit Limits from Long-Term Averages [Revoked]

785:46-5-8. pH and Hardness Dependent Toxicity

The criteria for some of the substances listed in 785:45-5-12(f)(6) are hardness or pH dependent. The segment-averaged pH in Appendix B of this Chapter shall be used to determine the criterion if there is insufficient site-specific data to determine receiving stream pH. The mean hardness of the receiving stream, collected near the outfall but not affected by the discharge (as $CaCO_3$) may be used if at least 10 monthly samples were collected over a ten month period. The segment-averaged hardness in Appendix B of this Chapter shall be used in the determination of the criterion if there is insufficient site-specific data to determine receiving stream hardness. If the required pH or hardness is not specified for a particular waterbody segment, appropriate data from surrounding waterbody segments may be used.

785:46-5-9. Consideration of Background Concentration [Revoked]

SUBCHAPTER 7. IMPLEMENTATION OF NUMERICAL CRITERIA TO PROTECT HUMAN HEALTH FROM TOXICITY DUE TO CONSERVATIVE SUBSTANCES

Section
785:46-7-1. Applicability and Scope
785:46-7-2. Determination and Use of Regulatory Flow
785:46-7-3. Reasonable Potential
785:46-7-4. Performance of Wasteload Allocation; Implementation into Permitting [Revoked]

785:46-7-1. Applicability and Scope

(a) **General.** Rules in this Subchapter prescribe the method for determining regulatory flow and to determine whether there is a reasonable potential to exceed the criteria, all in order to implement numerical criteria to protect human health for consumption of fish flesh and/or water.

(b) **Applicable Public and Private Water Supply criteria.** Applicable criteria for waters designated Public and Private Water Supplies are found in OAC 785:45-5-10(1) and OAC 785:45-5-10(6) and OAC 785:45 Appendix G.

(c) **Applicable Fish Consumption criteria.** Applicable criteria for waters designated Warm Water Aquatic Community and/or Cool Water Aquatic Community and/or Trout Fisheries are found in 785:45-5-20 and OAC 785:45 Appendix G.

(d) **Appropriate criterion.** If several criteria apply to human health implementation, the most stringent is used for implementation purposes.

(e) **Applicable receiving waters.** The human health criteria apply in receiving waters designated as Public and Private Water Supplies and certain designated sub-categories of Fish and Wildlife Propagation. Some streams in Appendix A of OAC 785:45 are designated Habitat Limited Aquatic Communities, and are not designated for the Public and Private Water Supply beneficial use. Therefore, human health criteria do not apply to these streams. For implementation purposes these streams are considered conduits to the downstream water body. Human health criteria must be implemented on the first downstream water body to which they apply.

785:46-7-2. Determination and Use of Regulatory Flow

(a) **General.** OAC 785:45-5-10(1), 785:45-5-10(6)(B) and 785:45-5-20(b) require that long term average receiving stream flows shall be used to implement water column numerical criteria to protect human health.

(b) **Long-term average flow on gaged receiving streams.** Mean annual average flow as determined in the technical report produced by the Oklahoma Water Resources Board entitled "Estimation Of Mean Annual Average Flows" shall be used for long-term average flow in receiving streams which are or have been measured by USGS gages.

(c) **Mean annual average flows on ungaged receiving streams.** Mean annual average flow may be estimated on streams where flow is not routinely measured. This method for estimation is demonstrated in the technical report produced by the Oklahoma Water Resources Board entitled "Estimation Of Mean Annual Average Flows". Other scientifically defensible methods of long-term average flow estimation are permissible if approved by the permitting authority.

(d) **Long-term average flow in lakes.** Q_u cannot be estimated in a lake as easily as it can be for a stream. Therefore, mean annual average discharge from the lake shall be used for Q_u.

(e) **Long-term effluent flow.** The regulatory effluent flow, Q_e, is long-term average effluent flow over the previous two years for industrial discharges if the permitting authority determines

that sufficient data are available. For other discharges, Q_e is the design flow.

785:46-7-3. Reasonable Potential

(a) **General.** Complete mixing of effluent and receiving water shall be used to determine appropriate permit limits. A mass balance model shall be used for implementation purposes.

(b) **Determination of reasonable potential factor**

(1) The mass balance equation will be used in the determination of human health reasonable potential: $C = (C_e Q^* + C_b) / (Q^* + 1)$. $Q^* = Q_e/Q_u$, where Q_e is the regulatory effluent flow. C must be considered a long-term average concentration after complete mixing. C_b is the background concentration. To determine if there is a reasonable potential to exceed the criterion after complete mixing, choose $C_e = 2.13C_{mean}$, where C_{mean} is a geometric mean of all effluent concentrations analyzed for the toxicant. If the geometric mean cannot be determined, an arithmetic mean may be used instead.

(2) Representative background concentrations will be used if available. Such representative data should reflect long-term average pollutant concentrations for implementation purposes. Otherwise, C_b is assumed zero.

(3) C must be compared with the applicable water quality criterion to determine if there is a reasonable potential for the pollutant discharge to cause a criterion exceedance. If concentration after complete mixing is greater than the human health criterion, a permit limit will be required.

785:46-7-4. Performance of Wasteload Allocation; Implementation into Permitting [Revoked]

SUBCHAPTER 9. IMPLEMENTATION OF CRITERIA TO PROTECT THE AGRICULTURE BENEFICIAL USE

Section

785:46-9-1. Applicability and Scope
785:46-9-2. Applicable Mineral Criteria
785:46-9-3. Regulatory Flows
785:46-9-4. Background Concentration [Revoked]
785:46-9-5. Reasonable Potential
785:46-9-6. Wasteload Allocations [Revoked]
785:46-9-7. Long-Term Average [Revoked]
785:46-9-8. Obtaining Permit Limits from Long-Term Averages [Revoked]

785:46-9-1. Applicability and Scope

Rules in this Subchapter prescribe the method for determining whether there is a reasonable potential to exceed the criteria identified in OAC 785:45-5-13(h) and OAC 785:45 Appendix F for protection of the beneficial use of Agriculture. Included are criteria for chlorides, sulfates and total dissolved solids.

785:46-9-2. Applicable Mineral Criteria

(a) **General.** OAC 785:45 Appendix F contains yearly mean standards and sample standards for protection of the Agriculture beneficial use. Historical values for chlorides, sulfates and TDS for water quality segments identified in OAC 785:45 Appendix F will not be updated. Data from surrounding segments shall be used by the permitting authority to develop yearly mean standards and sample standards for those segments with inadequate historical data.

(b) **Segment averages.** Segment averages of yearly mean standards and sample standards

or more appropriate determinations as prescribed in (e) and (f) of OAC 785:45-5-13 or (a) of 785:46-9-2 shall be the criteria for chlorides, sulfates and TDS to protect the Agriculture beneficial use.

785:46-9-3. Regulatory Flows

(a) **General.** Six regulatory flows are required for implementation of yearly mean standards and sample standards. They include stream flows, regulatory flows for lakes and regulatory effluent flows.

(b) **Long-term average flows for streams.** The greater of 1.47 cfs or mean annual average flow, A, will be used by the permitting authority for long-term average flows to implement yearly mean standards. Mean annual average flows may be obtained from the USGS publication entitled "Statistical Summaries of Streamflow in and near Oklahoma Through 2007". They may also be estimated on streams without gages using the Oklahoma Water Resources Board publication entitled "Estimation of Mean Annual Average Flows" (OWRB Technical Report 96-2).

(c) **Long-term average flow for lakes.** Mean annual average discharge from the lake, A, shall be used to implement the Agriculture beneficial use.

(d) **Regulatory long-term effluent flows.** If the permitting authority determines that sufficient data is available to calculate the mean annual effluent discharge, then such discharge shall be the long term effluent flow, Q_{el}. If the permitting authority determines insufficient data is available to calculate the mean annual effluent discharge, then the design flow shall be the long term effluent flow, Q_{el}.

(e) **Short-term average flow for streams.** OAC 785:45-5-4(d) requires that short-term average flow, Qs, be used to implement sample standards. The short-term average flow is determined so that short-term and long-term wasteload allocations are equally likely to be more stringent, depending on the historical concentration distribution for a particular segment. Q_s shall equal the greater of 1.0 cfs or 0.68 A, where A is mean annual average stream flow.

(f) **Short-term average flows for lakes.** Short-term average flows for lakes are also determined by the formula in OAC 785:46-9-3(e). In this case A is the mean annual average lake discharge.

(g) **Short-term average effluent flows.** If the permitting authority determines that sufficient data is available to calculate the highest monthly average discharge for industrial discharges, then such discharge shall be the short-term average effluent flow, Q_{es}. If the permitting authority determines insufficient data is available to calculate the highest monthly average discharge for industrial discharges, then the design flow shall be the short-term average effluent flow, Q_{es}.

785:46-9-4. Background Concentration [Revoked]

785:46-9-5. Reasonable Potential

(a) **General.** The need for a permit limit will be determined on a mineral constituent basis, after application of the reasonable potential equation specified in (b) of this Section, which considers assimilation capacity of the receiving water and effluent variability.

(b) **Reasonable potential equation.** OAC 785:45-5-13(d) requires that complete mixing of effluent and receiving water be taken into account in the reasonable potential equation. The use of mass balance to obtain wasteload allocations for complete mixing is codified at OAC 785:46-7-3(a). Therefore, the reasonable potential equation for mineral constituents is $C = (Q_uBC + Q_eC_{95}) / Q_u + Q_e)$, where $C_{95} = 2.13\ C_{mean}$, where C_{mean} is the geometric mean of all effluent concentrations analyzed for the mineral. If the geometric mean cannot be determined, an arithmetic mean may be used. If sufficient effluent concentration observations exist as determined by the permitting authority, then the permitting authority may compute the 95th

percentile concentration and use it as C_{95}, in accordance with OAC 785:46-5-3(b)(1).
(c) **Reasonable potential to exceed yearly mean standard.** Q_u = A and Q_e = Q_{el} in OAC 785:46-9-5(b) to obtain a long-term average concentration in-stream after complete mixing. If C is greater than the higher of the YMS or 700 milligrams per liter for TDS or 200 milligrams per liter for chlorides and sulfates, there is a reasonable potential to exceed an Agriculture beneficial use criterion, and a permit limit is required.
(d) **Reasonable potential to exceed sample standard.** Q_u =0.68A and Q_e = Q_{es} in OAC 785:46-9-5(b) to obtain a short-term average concentration in-stream after complete mixing. If C is greater than the higher of the SS or 700 milligrams per liter for TDS or 200 milligrams per liter for chlorides and sulfates, there is a reasonable potential to exceed an Agriculture beneficial use criterion, so a permit limit is required.

785:46-9-6. Wasteload Allocations [Revoked]

785:46-9-7. Long-Term Average [Revoked]

785:46-9-8. Obtaining Permit Limits from Long-Term Averages [Revoked]

SUBCHAPTER 11. IMPLEMENTATION OF TEMPERATURE CRITERIA TO PROTECT FISH AND WILDLIFE PROPAGATION

Section
785:46-11-1. Applicability and Scope
785:46-11-2. Applicable Temperatures
785:46-11-3. Regulatory Flows
785:46-11-4. Permitting Strategy to Protect Temperature Criteria [Revoked]
785:46-11-5. Reasonable Potential
785:46-11-6. Reasonable Potential Equations
785:46-11-7. Wasteload Allocation [Revoked]

785:46-11-1. Applicability and Scope
(a) OAC 785:45-5-12(f)(2) provides that at no time shall heat be added in excess of the amount that will raise receiving water temperature more that 2.8 C outside the mixing zone. Therefore, the temperature criterion will be implemented with respect to regulatory flow and reasonable potential at the maximum temperature on the edge of the mixing zone.
(b) OAC 785:45-5-26 provides generally to the effect that in streams the mixing zone encompasses 25% of the total flow. The mixing zone in lakes may be designated by the permitting authority on a case by case basis. To be consistent, the mixing zone used for numerical criteria implementation to protect fish and wildlife propagation from toxicity will be employed for temperature implementation in lakes. This mixing zone is defined to extend 100 feet into the lake from the source.
(c) Temperature implementation does not apply to privately owned cooling water reservoirs. Such reservoirs are specifically exempted in OAC 785:45-5-12(f)(2)(F) from implementation of temperature criteria to protect aquatic life. However, implementation of the antidegradation policy includes a maximum temperature (52C) which applies to all waters of the state including privately owned cooling water reservoirs. Privately owned cooling water reservoirs, however, that demonstrate no reasonable potential to exceed the antidegradation temperature shall not be limited in permits by such temperature.
(d) All calculations to implement temperature criteria shall be done in C at critical temperature conditions.

785:46-11-2. Applicable Temperatures

(a) **General.** OAC 785:45-5-12(f)(2) governs what the applicable temperature criteria are.

(b) **Habitat Limited and Warm Water Aquatic Community.**

(1) In waters which are designated in OAC 785:45 to be Habitat Limited Aquatic Community and/or Warm Water Aquatic Community, no heat of artificial origin shall be added that causes the receiving water to exceed the critical temperature plus 2.8C outside the mixing zone.

(2) The temperature criterion for Habitat Limited Aquatic Community and/or Warm Water Aquatic Community, T_c, is the critical temperature plus 2.8C. In the absence of data, T_c is 32.24 C. Where data exist, the critical temperature is the higher of 29.44C or the seven-day maximum temperature likely to occur with a 50% probability each year, 7T2. The 7T2 is calculated using a moving average of seven consecutive days for each year in a given record. These seven day receiving stream temperature values are ranked in descending order. An order number, m, is calculated based on the number of years of record, n, with a recurrence interval of 2 years, as m = (n+1)/2. The mth highest average temperature is the 7T2. Provided, in the segment of the Arkansas River from Red Rock Creek to the headwaters of Keystone Reservoir, the maximum temperature outside the mixing zone shall not exceed 34.4C.

(3) To implement the temperature criterion for Habitat Limited Aquatic Community and/or Warm Water Aquatic Community protection, the critical temperature also is the regulatory ambient temperature, T_a.

(c) **Cool Water Aquatic Communities.** In waters designated in OAC 785:45 to be Cool Water Aquatic Community, T_c is 28.9C. To be consistent with implementation for Warm Water and Habitat Limited Aquatic Communities, the regulatory ambient temperature must be 2.8C less than T_c. Therefore, T_a = 26.1 C for Cool Water Aquatic Communities.

(d) **Trout Fisheries.** In waters designated in OAC 785:45 to be Trout Fishery, no artificial heat shall be added such that the temperature in the receiving water exceeds 20C outside the mixing zone. However, water temperatures regularly reach in excess of 20C in Oklahoma's summers. When background levels exceed this criterion, the effluent level should equal the criterion. Therefore, the wasteload allocation for Trout Fisheries is 20C.

785:46-11-3. Regulatory Flows

(a) Regulatory receiving stream flow to protect the Fish and Wildlife Propagation beneficial use, Q_u, is the greater of the 7Q2 or 1 cfs. Q_u is assumed to be 1 cfs if the 7Q2 is unknown.

(b) The regulatory effluent flow, Q_e, is defined as the highest monthly averaged flow in cfs over the past two years for industrial discharges with adequate data. Q_e is the design flow in cfs for other dischargers.

785:46-11-4. Permitting Strategy to Protect Temperature Criteria [Revoked]

785:46-11-5. Reasonable Potential

A permit limit for temperature is required if there is a reasonable potential that the temperature increase at the edge of the mixing zone is greater than 2.8C. EPA Region 6 uses a reasonable potential factor to determine if there is a reasonable potential that concentration of a given substance will exceed the criterion. An analogous reasonable potential factor, T_f, will be used to determine if there is a reasonable potential that temperature will exceed the criterion by 2.8C at the edge of the mixing zone. T_f is determined such that only approximately 5% of the observed temperatures are higher. Therefore, T_f is the upper 95th percentile of the effluent temperature distribution.

785:46-11-6. Reasonable Potential Equations

(a) The maximum temperature difference on the mixing zone boundary must be computed using the following equation to determine if there is a reasonable potential to exceed 2.8C outside the mixing zone:

$$T' = (T_f - T_a) / df.$$

The dilution factor, df, must be that which yields the maximum temperature difference on the mixing zone boundary.

(b) Substituting for df, the following equations shall be used for discharges to streams:

$$T' = (1.94Q^* (T_f – T_a)) / (1 + Q^*)$$

when Q* is less than or equal to 0.1823, or

$$T' = (T_f - T_a) / (6.17 - 15.51Q^*)$$

when Q* is greater than 0.1823 and less than 0.3333, or

$$T' = T_f - T_a$$

when Q* is greater than or equal to 0.3333. $Q^* = Q_e/Q_u$ (the dilution capacity).

(c) The following equations shall be used for discharges to lakes:

$$T' = (D(T_f - T_a)) / 20.15$$

when D is greater than or equal to 3 feet. D is pipe diameter, and

$$T' = (W^{1/2}(T_f - T_a)) / 4.2$$

when W is greater than or equal to 3 feet. W is canal width.

(d) There is a reasonable potential that the effluent may cause a criterion exceedance at the maximum concentration on the mixing zone boundary if T' > 2.8C.

785:46-11-7. Wasteload Allocation [Revoked]

SUBCHAPTER 13. IMPLEMENTATION OF ANTIDEGRADATION POLICY

Section

785:46-13-1. Applicability and Scope
785:46-13-2. Definitions
785:46-13-3. Tier 1 Protection; Attainment or Maintenance of an Existing or Designated Beneficial Use
785:46-13-4. Tier 2 Protection; Maintenance and Protection of High Quality Waters and Sensitive Water Supplies
785:46-13-5. Tier 3 Protection; Prohibition Against Degradation of Water Quality in Outstanding Resource Waters
785:46-13-6. Protection for Appendix B Areas

785:46-13-1. Applicability and Scope

(a) The rules in this Subchapter provide a framework for implementing the antidegradation policy stated in OAC 785:45-3-2 for all waters of the state. This policy and framework includes three tiers, or levels, of protection.

(b) The three tiers of protection are as follows:

(1) Tier 1. Attainment or maintenance of an existing or designated beneficial use.

(2) Tier 2. Maintenance or protection of High Quality Waters and Sensitive Public and Private Water Supply waters.

(3) Tier 3. No degradation of water quality allowed in Outstanding Resource Waters.

(c) In addition to the three tiers of protection, this Subchapter provides rules to implement the protection of waters in areas listed in Appendix B of OAC 785:45. Although Appendix B areas are not mentioned in OAC 785:45-3-2, the framework for protection of Appendix B areas is similar to the implementation framework for the antidegradation policy.

(d) In circumstances where more than one beneficial use limitation exists for a waterbody, the most protective limitation shall apply. For example, all antidegradation policy implementation rules applicable to Tier 1 waterbodies shall be applicable also to Tier 2 and Tier 3 waterbodies or areas, and implementation rules applicable to Tier 2 waterbodies shall be applicable also to Tier 3 waterbodies.

(e) Publicly owned treatment works may use design flow, mass loadings or concentration, as appropriate, to calculate compliance with the increased loading requirements of this section if those flows, loadings or concentrations were approved by the Oklahoma Department of Environmental Quality as a portion of Oklahoma's Water Quality Management Plan prior to the application of the ORW, HQW or SWS limitation.

785:46-13-2. Definitions

The following words and terms, when used in this Subchapter, shall have the following meaning, unless the context clearly indicates otherwise:

"Specified pollutants" means

(A) Oxygen demanding substances, measured as Carbonaceous Biochemical Oxygen Demand (CBOD) and/or Biochemical Oxygen Demand (BOD);

(B) Ammonia Nitrogen and/or Total Organic Nitrogen;

(C) Phosphorus;

(D) Total Suspended Solids (TSS); and

(E) Such other substances as may be determined by the Oklahoma Water Resources Board or the permitting authority.

785:46-13-3. Tier 1 Protection; Attainment or Maintenance of an Existing or Designated Beneficial Use

(a) **General.**

(1) Beneficial uses which are existing or designated shall be maintained and protected.

(2) The process of issuing permits for discharges to waters of the state is one of several means employed by governmental agencies and affected persons which are designed to attain or maintain beneficial uses which have been designated for those waters. For example, Subchapters 3, 5, 7, 9 and 11 of this Chapter are rules for the permitting process. As such, the latter Subchapters not only implement numerical and narrative criteria, but also implement Tier 1 of the antidegradation policy.

(b) **Thermal pollution.** Thermal pollution shall be prohibited in all waters of the state. Temperatures greater than 52 degrees Centigrade shall constitute thermal pollution and shall be prohibited in all waters of the state.

(c) **Prohibition against degradation of improved waters.** As the quality of any waters of the

state improves, no degradation of such improved waters shall be allowed.

785:46-13-4. Tier 2 Protection; Maintenance and Protection of High Quality Waters and Sensitive Water Supplies

(a) **General rules for High Quality Waters.** New point source discharges of any pollutant after June 11, 1989, and increased load or concentration of any specified pollutant from any point source discharge existing as of June 11, 1989, shall be prohibited in any waterbody or watershed designated in Appendix A of OAC 785:45 with the limitation "HQW". Any discharge of any pollutant to a waterbody designated "HQW" which would, if it occurred, lower existing water quality shall be prohibited. Provided however, new point source discharges or increased load or concentration of any specified pollutant from a discharge existing as of June 11, 1989, may be approved by the permitting authority in circumstances where the discharger demonstrates to the satisfaction of the permitting authority that such new discharge or increased load or concentration would result in maintaining or improving the level of water quality which exceeds that necessary to support recreation and propagation of fishes, shellfishes, and wildlife in the receiving water.

(b) **General rules for Sensitive Public and Private Water Supplies.** New point source discharges of any pollutant after June 11, 1989, and increased load of any specified pollutant from any point source discharge existing as of June 11, 1989, shall be prohibited in any waterbody or watershed designated in Appendix A of OAC 785:45 with the limitation "SWS". Any discharge of any pollutant to a waterbody designated "SWS" which would, if it occurred, lower existing water quality shall be prohibited. Provided however, new point source discharges or increased load of any specified pollutant from a discharge existing as of June 11, 1989, may be approved by the permitting authority in circumstances where the discharger demonstrates to the satisfaction of the permitting authority that such new discharge or increased load will result in maintaining or improving the water quality in both the direct receiving water, if designated SWS, and any downstream waterbodies designated SWS.

(c) **Stormwater discharges.** Regardless of subsections (a) and (b) of this Section, point source discharges of stormwater to waterbodies and watersheds designated "HQW" and "SWS" may be approved by the permitting authority.

(d) **Nonpoint source discharges or runoff.** Best management practices for control of nonpoint source discharges or runoff should be implemented in watersheds of waterbodies designated "HQW" or "SWS" in Appendix A of OAC 785:45.

785:46-13-5. Tier 3 Protection; Prohibition Against Degradation of Water Quality in Outstanding Resource Waters

(a) **General.** New point source discharges of any pollutant after June 11, 1989, and increased load of any pollutant from any point source discharge existing as of June 11, 1989, shall be prohibited in any waterbody or watershed designated in Appendix A of OAC 785:45 with the limitation "ORW" and/or "Scenic River", and in any waterbody located within the watershed of any waterbody designated with the limitation "Scenic River". Any discharge of any pollutant to a waterbody designated "ORW" or "Scenic River" which would, if it occurred, lower existing water quality shall be prohibited.

(b) **Stormwater discharges.** Regardless of 785:46-13-5(a), point source discharges of stormwater from temporary construction activities to waterbodies and watersheds designated "ORW" and/or "Scenic River" may be permitted by the permitting authority. Regardless of 785:46-13-5(a), discharges of stormwater to waterbodies and watersheds designated "ORW" and/or "Scenic River" from point sources existing as of June 25, 1992, whether or not such stormwater discharges were permitted as point sources prior to June 25, 1992, may be permitted by the permitting authority; provided, however, increased load of any pollutant from

such stormwater discharge shall be prohibited.
(c) **Nonpoint source discharges or runoff.** Best management practices for control of nonpoint source discharges or runoff should be implemented in watersheds of waterbodies designated "ORW" in Appendix A of OAC 785:45, provided, however, that development of conservation plans shall be required in sub-watersheds where discharges or runoff from nonpoint sources are identified as causing or significantly contributing to degradation in a waterbody designated "ORW".
(d) **LMFO's.** *No licensed managed feeding operation* (LMFO) *established after* June 10, 1998 *which applies for a new or expanding license* from the State Department of Agriculture *after March 9, 1998 shall be located...[w]ithin three (3) miles of any designated scenic river area as specified by the Scenic Rivers Act* in 82 O.S. Section 1451 and following, or *[w]ithin one (1) mile of a waterbody* [2:9-210.3(D)] designated in Appendix A of OAC 785:45 as "ORW".

785:46-13-6. Protection for Appendix B Areas
(a) **General.** Appendix B of OAC 785:45 identifies areas in Oklahoma with waters of recreational and/or ecological significance. These areas are divided into Table 1, which includes national and state parks, national forests, wildlife area, wildlife management areas and wildlife refuges; and Table 2, which includes areas which contain threatened or endangered species listed as such by the federal government pursuant to the federal Endangered Species Act as amended.
(b) **Protection for Table 1 areas.** New discharges of pollutants after June 11, 1989, or increased loading of pollutants from discharges existing as of June 11, 1989, to waters within the boundaries of areas listed in Table 1 of Appendix B of OAC 785:45 may be approved by the permitting authority under such conditions as ensure that the recreational and ecological significance of these waters will be maintained.
(c) **Protection for Table 2 areas.** Discharges or other activities associated with those waters within the boundaries listed in Table 2 of Appendix B of OAC 785:45 may be restricted through agreements between appropriate regulatory agencies and the United States Fish and Wildlife Service. Discharges or other activities in such areas shall not substantially disrupt the threatened or endangered species inhabiting the receiving water.
(d) **Nonpoint source discharges or runoff.** Best management practices for control of nonpoint source discharges or runoff should be implemented in watersheds located within areas listed in Appendix B of OAC 785:45.

SUBCHAPTER 15. USE SUPPORT ASSESSMENT PROTOCOLS

Section
785:46-15-1. Scope and Applicability
785:46-15-2. Definitions
785:46-15-3. Data Requirements
785:46-15-4. Default Protocols
785:46-15-5. Assessment of Fish and Wildlife Propagation Support
785:46-15-6. Assessment of Primary Body Contact Recreation Support
785:46-15-7. Assessment of Public and Private Water Supply Support
785:46-15-8. Assessment of Agriculture Support
785:46-15-9. Assessment of Fish Consumption Support
785:46-15-10. Nutrients
785:46-15-11. Assessment of Hydroelectric Power Generation Support [REVOKED]
785:46-15-12. Assessment of Industrial and Municipal Process and Cooling Water Support [REVOKED]

785:46-15-13. Assessment of Navigation Support [REVOKED]
785:46-15-13.1 Assessment of Navigation Support
785:46-15-14. Assessment of Aesthetics Support

785:46-15-1. Scope and Applicability

(a) **General.** The rules in this Subchapter provide protocols which shall be used on and after October 1, 2000 to determine whether certain beneficial uses of waters of the state designated in OAC 785:45 are being supported. Such determinations shall be made only to the extent that pertinent provisions of OAC 785:45 apply to a waterbody or its designated uses. The rules in this Subchapter are not intended and should not be construed to limit any actions by federal or state agencies or citizens to prevent pollution or to limit remedies to abate pollution from a single incident or activity or series of incidents or activities.

(b) **Significance of assessment that a use is other than fully supported.** A determination based upon application of the rules in this Subchapter that a waterbody's beneficial use is not supported or is partially supported creates a presumption that the use is impaired or not attained for that waterbody and that the waterbody segment is a water quality limited segment.

(c) **Agency discretion to consider additional data.** An agency with jurisdiction may consider other relevant data meeting the requirements of this Subchapter in addition to that required by the rules in this Subchapter for any particular parameter to determine full support or non-support.

785:46-15-2. Definitions

The following words and terms, when used in this Subchapter, shall have the following meaning, unless the context clearly indicates otherwise:

"Ecoregion" means a geographical area within which ecosystems and the type, quality and quantity of environmental resources are generally similar, as more specifically described in EPA's 1997 revision of Omernick, "Ecoregions of the Conterminous United States", Annals of the Association of American Geographers.

"Impaired" means one or more designated beneficial uses are not being attained.

"MQL" means minimum quantification level.

"Non-wadable" means a stream which is not wadable.

"Rolling average" means the mathematical average of data values across a fixed length of time that incrementally changes its starting point but retains a fixed length of time by also incrementally changing its end point for each recalculation of the average. This term is also known as "moving average".

"Screening level" means an evaluation threshold based upon criteria prescribed in OAC 785:45 to protect a designated beneficial use.

"Seasonal base flow" means the sustained or fair-weather runoff, which includes but is not limited to groundwater runoff and delayed subsurface runoff.

"303(d) List" means the list of waterbodies with uses that are either threatened or impaired, developed for the State of Oklahoma in accordance with Section 303(d) of the federal Clean Water Act.

"303(b) Report" means the report of water quality in the State of Oklahoma developed in accordance with Section 305(b) of the federal Clean Water Act.

"Trophic State Index" means the results of the calculation for chlorophyll-a concentration using both Carlson, R.E. 1977, A Trophic State Index For Lakes, Limnology and Oceanography, 22:361-369 and the methods outlined in the Board guidance document "Guidance For Determining Lake Trophic State For Determination Of Nutrient Limited Waters Status".

"Wadable" means a stream or segment thereof, at least 10 percent of which under seasonal base flow conditions is:

(1) less than 1.25 meters deep at its thalweg, and

(2) has an instantaneous discharge of less than 10 cubic feet per second, or has a velocity of less than 10 centimeters per second.

"Waterbody" means a body of waters of the state.

785:46-15-3. Data Requirements

(a) **General**. In order to determine whether a given beneficial use of a waterbody is supported, scientific data from the waterbody shall be used as prescribed in this Section. Data shall be collected and analyzed in a manner consistent with testing procedures provided in 785:45-1-4 or practices that are institutionally recognized and appropriate for the parameter of concern and documented in accordance with 785:46-15-3(g). All existing data available for a waterbody shall be used in the analysis, subject to the spatial, temporal and other requirements of this Section.

(b) **Spatial coverage.**

(1) **General for streams**. The spatial extent of assessment of use support in terms of stream miles shall be determined after taking into account existing data, spatial distribution of monitoring sites, sources of pollution and influence of tributaries. Major hydrological features, such as the confluence of a major tributary or a dam, may limit the spatial extent of an assessment based on one station.

(2) **Non-wadable streams**. Unless it is demonstrated to the contrary, a single monitoring site shall be considered representative of no more than 25 stream miles for non-wadable streams.

(3) **Wadable streams.** Unless it is demonstrated to the contrary, a single monitoring site shall be considered representative of no more than 10 stream miles for wadable streams.

(4) **Lakes**. The spatial extent of assessment of use support in terms of lake surface acres shall be estimated based on the spatial distribution of monitoring sites having the requisite number of samples, sources of pollution, influence of tributaries and best professional judgment. Arms or portions of lake may be treated separately from the main body of a lake. Unless it is demonstrated to the contrary, a single site shall be considered representative of an entire lake or an arm of no more than two hundred and fifty surface acres in size.

(5) **Spatial limitation for sampling sites**. For purposes of this Subchapter, observations, samples, and other data shall not be taken within any regulatory mixing zone.

(c) **Temporal coverage.**

(1) **General**. Observations, samples or other data collected for purposes of assessing use support shall be taken to avoid temporal bias, and seasonality shall be represented in the sampling scheme.

(2) **Streams.** Data no older than five years old shall be utilized in assessing use support for a stream unless

(A) the data available from the preceding five year period is insufficient to satisfy the requirements of 785:46-15-3(d) or other more specific minimum requirements provided in this Subchapter, in which case data older than five years old may be utilized, or

(B) the provisions of 785:46-15-4(b)(3) or 785:46-15-4(c)(3) apply.

(3) **Lakes**. Data no older than ten years old shall be utilized in assessing use support for a lake unless

(A) the data available from the preceding ten year period is insufficient to satisfy the requirements of 785:46-15-3(d) or other more specific minimum requirements provided in this Subchapter, in which case data older than ten years old may be utilized, or

(B) the provisions of 785:46-15-4(b)(3) or 785:46-15-4(c)(3) apply.

(d) **Minimum number of samples.**

(1) **Streams**. Except when (f) of this Section or any of subsections (e), (h), (i), (j), (k), (l), or (m) of 785:46-15-5 applies, a minimum of 10 samples shall be required to assess beneficial use support due to field parameters including but not limited to DO, pH and temperature, and due to routine water quality constituents including but not limited to coliform bacteria, dissolved solids and salts. Analyses may be aggregated to meet the 10 sample minimum requirements in non-wadable stream reaches that are 25 miles or less in length, and in wadable stream reaches that are 10 miles or less in length, if water quality conditions are similar at all sites. Provided, a minimum of 10 samples shall not be necessary if the existing samples already assure exceedance of the applicable percentage of a prescribed screening level.

(2) **Lakes**. Except when (f) of this Section applies, a minimum of 20 samples shall be required on lakes of more than 250 surface acres to assess beneficial use support due to water quality parameters including but not limited to DO, pH and temperature. A minimum of 20 samples shall likewise be required on such lakes for other routine water quality constituents including but not limited to coliform bacteria, chlorophyll a, and dissolved solids. A minimum of 10 samples shall be required on lakes or arms of 250 surface acres of less. Samples may be aggregated to meet the minimum requirements of this paragraph.

(3) **Toxicants**. Notwithstanding any other provision of this Subchapter, a minimum of five samples shall be required to determine that a beneficial use is supported with respect to all toxicants in water. A determination that a beneficial use is partially supported or not supported with respect to toxicants may be made upon less than five samples. Samples may be aggregated consistent with the spatial and temporal requirements prescribed in (b) and (c) of this Section in order to satisfy the minimum sample requirement of this paragraph. Additional samples for the calculation of pH and hardness dependent acute and chronic criteria shall be collected as required by OAC 785:46-5-8.

(e) **Application of PQL**.

(1) **Criteria above PQL.**

(A) If sample values are below the PQL for a parameter whose criterion is above the PQL, appropriate nonparametric statistical measures shall be used to determine the reporting value.

(B) For waterbodies identified as impaired on the current 303(d) List or 305(b) Report, if sample values are nondetectable for a parameter whose criterion is above the PQL, then such value shall be deemed to be one-half (1/2) of the parameter PQL.

(C) All sample values that are above the PQL shall be the reported values.

(2) **Criteria equal to or below PQL.**

(A) If sample values are below the PQL for a criterion which is less than one-half (1/2) of the PQL, then the values shall be deemed to be zero (0) until the first test result above the PQL appears. After that time, sample values which are below the PQL shall be deemed to be equal to the criterion value until four (4) subsequent contiguous samples are shown to be below the PQL. Any subsequent sample values which are nondetectable may be treated as zero (0) until the next test result appears above the PQL.

(B) For those parameters whose criteria are at least two (2) orders of magnitude below the PQL, evidence considered with respect to assessment of use support shall include fish tissue analysis, biological community analysis, biological thresholds wherever available, or other holistic indicators which are appropriate for the beneficial use in question.

(C) If sample values are below the PQL for a criterion which is greater than or equal to one-half (1/2) of the PQL but less than the PQL, then the values shall be deemed to be one-half (1/2) of the criterion value until the first test result above the PQL appears.

After that time, sample values which are below the PQL shall be deemed to be equal to the criterion value until four (4) subsequent contiguous samples are shown to be below the PQL. Any subsequent sample values which are nondetectable may be treated as equal to one-half (1/2) of the criterion value until the next test result appears above the PQL.

(D) For waterbodies identified as impaired on the current 303(d) List or 305(b) Report, if sample values are nondetectable for a parameter whose criterion is below the PQL, then such value shall be deemed to be one-half (1/2) of the criterion value.

(E) All sample values that are above the PQL shall be the reported values.

(f) **Magnitude of criteria exceedance.**

(1) **General.** The magnitude of exceedance, as well as frequency of exceedances, shall be used in determining beneficial use support. Samples shall be taken only during conditions when criteria apply.

(2) **Toxicants.** If two or more concentrations of toxicants exceed criteria or screening levels to protect human health or aquatic life by two orders of magnitude or more, the associated beneficial use shall be deemed to be not supported.

(3) **Dissolved oxygen.** If more than two concentrations of DO in a stream are observed to be below 2 mg/L in any given year, the Fish and Wildlife Propagation beneficial use shall be deemed to be not supported.

(4) **Other parameters**. The magnitude and frequency of exceedances to be used for determining beneficial use support for parameters other than toxicants and DO shall be as prescribed in the rules elsewhere in this Subchapter.

(g) **Quality assurance**. On and after July 1, 2002, data collected for purposes of use support assessment shall be collected using documented programmatic quality assurance and quality control methods substantially in accordance with those required by "EPA Requirements for Quality Assurance Project Plans", EPA publication no. EPA/240/B-01/003 (March 2001). The sampling and testing methods used shall protect the integrity of the sample and provide detailed documentation of analysis.

785:46-15-4. Default Protocols

(a) **General**. The protocols prescribed in this Section shall apply whenever the more specific protocols prescribed elsewhere in this Subchapter do not apply.

(b) **Short-term average numerical parameters.**

(1) Short-term average numerical parameters are based upon exposure periods of less than seven days. Short-term average parameters to which this Section applies include, but are not limited to, sample standards and turbidity.

(2) A beneficial use shall be deemed to be fully supported for a given parameter whose criterion is based upon a short-term average if 10% or less of the samples for that parameter exceed the applicable screening level prescribed in this Subchapter.

(3) A beneficial use shall be deemed to be fully supported but threatened if the use is supported currently but the appropriate state environmental agency determines that available data indicate that during the next five years the use may become not supported due to anticipated sources or adverse trends of pollution not prevented or controlled. If data from the preceding two year period indicate a trend away from impairment, the appropriate agency shall remove the threatened status.

(4) A beneficial use shall be deemed to be not supported for a given parameter whose criterion is based upon a short-term average if at least 10% of the samples for that parameter exceed the applicable screening level prescribed in this Subchapter.

(c) **Long-term average numerical parameters.**

(1) Long-term average numerical parameters are based upon exposure periods of seven

days or longer. Assessment decisions shall be based upon the mean of all data meeting the temporal and spatial data requirements described elsewhere in this Subchapter.

(2) A beneficial use shall be deemed to be fully supported for a given parameter whose criterion is based upon a long-term average if the mean of the sample results does not exceed the long-term criterion.

(3) A beneficial use shall be deemed to be fully supported but threatened if the use is supported currently but the appropriate state environmental agency determines that available data indicate that during the next five years the use may become not supported due to anticipated sources or adverse trends of pollution not prevented or controlled. If data from the preceding two year period indicate a trend away from impairment, the appropriate agency shall remove the threatened status.

(4) A beneficial use shall be deemed to be not supported for a given parameter whose criterion is based upon a long-term average if the mean of the sample results exceeds the criterion or screening level.

785:46-15-5. Assessment of Fish and Wildlife Propagation Support

(a) **Scope.** The provisions of this Section shall be used to determine whether the beneficial use of Fish and Wildlife Propagation or any subcategory thereof designated in OAC 785:45 for a waterbody is supported.

(b) **Dissolved oxygen.** For purposes of assessment, listing and reporting under sections 303(d) and 305(b) of the federal Clean Water Act as amended, the procedure for determining use support of the Fish and Wildlife Propagation beneficial use or any subcategory thereof with respect to dissolved oxygen shall be as follows:

(1) **Support tests for HLAC streams.**

(A) The HLAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be fully supported with respect to the DO criterion if 10% or less of the samples across all life stages and seasons exhibit DO concentration below the following season-specific thresholds:

(i) April 1 through June 15: 4.0 mg/L

(ii) June 16 through March 31: 3.0 mg/L

(B) The HLAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be not supported with respect to the DO criterion if more than 10% of the samples across all seasons exhibit DO concentrations below the following season-specific thresholds due to other than naturally occurring conditions:

(i) April 1 through June 15: 4.0 mg/L

(ii) June 16 through March 31: 3.0 mg/L

(2) **Support tests for WWAC streams.**

(A) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be fully supported with respect to the DO criterion if 10% or less of the samples across all life stages and seasons exhibit DO concentration below the following season-specific thresholds:

(i) April 1 through June 15: 6.0 mg/L

(ii) June 16 through March 31: 5.0 mg/L

(B) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be undetermined with respect to the DO criterion if more than 10% of the samples across all life stages and seasons exhibit DO concentrations below the upper DO threshold and 10% or less of the samples across all seasons exhibit DO concentrations below the lower DO threshold considering the following season-specific ranges:

(i) April 1 through June 15: 5.0 mg/L to 6.0 mg/L
(ii) June 16 through October 15: 4.0 mg/L to 5.0 mg/L

(C) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be not supported with respect to the DO criterion if more than 10% of the samples across all life stages and seasons exhibit DO concentrations below the following season-specific thresholds due to other than naturally occurring conditions:

(i) April 1 through June 15: 5.0 mg/L
(ii) June 16 through October 15: 4.0 mg/L
(iii) October 16 through March 31: 5.0 mg/L

(3) **Support tests for CWAC and Trout streams.**

(A) The CWAC or Trout subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be fully supported with respect to the DO criterion if 10% or less of the samples across all life stages and seasons exhibit DO concentrations below the following season-specific thresholds:

(i) March 1 through May 31: 7.0 mg/L
(ii) June 1 through last day of February: 6.0 mg/L

(B) The CWAC or Trout subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be undetermined with respect to the DO criterion if more than 10% of the samples across all life stages and seasons exhibit DO concentrations below the upper DO threshold and 10% or less of the samples across all seasons exhibit DO concentrations below the lower DO threshold considering the following season-specific ranges:

(i) March 1 through May 31: 7.0 mg/L to 6.0 mg/L
(ii) June 1 through October 15: 6.0 mg/L to 5.0 mg/L

(C) The CWAC or Trout subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be not supported with respect to the DO criterion if more than 10% of the samples across all life stages and seasons exhibit DO concentrations below the following season-specific thresholds due to other than naturally occurring conditions:

(i) March 1 through May 31: 6.0 mg/L
(ii) June 1 through October 15: 5.0 mg/L
(iii) October 16 through the last day of February: 6.0 mg/L

(4) **Support tests for WWAC lakes.** The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be fully supported with respect to the DO criterion if both the Surface and Water Column criteria prescribed in (5)(A) and (6)(A) of this subsection (b) are satisfied. If either of the Surface or Water Column criteria prescribed in (5)(B) or (6)(B) produce a result of undetermined, then the WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be undetermined with respect to the DO criterion; provided, if either of the Surface or Water Column criteria prescribed in (5)(C) or (6)(C) produce a result of not supported, then the WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be not supported with respect to the DO criterion.

(5) **Surface criteria for WWAC lakes.**

(A) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be fully supported with respect to the DO criterion if 10% or less of the surface samples across life stages and all seasons exhibit DO concentrations below the following season-specific thresholds:

(i) April 1 through June 15: 6.0 mg/L
(ii)June 16 through March 31: 5.0 mg/L

(B) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be undetermined with respect to the DO criterion if more than 10% of the surface samples across all life stages and seasons exhibit DO concentrations below the upper DO threshold and 10% or less of the surface samples across all seasons exhibit DO concentrations below the lower DO threshold considering the following season-specific ranges:

(i) April 1 through June 15: 5.0 mg/L to 6.0 mg/L

(ii) June 16 through October 15: 4.0 mg/L to 5.0 mg/L

(C) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be not supported with respect to the DO criterion if more than 10% of the surface samples across all life stages and seasons exhibit DO concentrations below the following season-specific thresholds due to other than naturally occurring conditions:

(i) April 1 through June 15: 5.0 mg/L

(ii) June 16 through October 15: 4.0 mg/L

(iii) October 16 through March 31: 5.0 mg/L

(D) "Surface", when used in this Section, means surface waters or the mixed surface layer, typically represented by a sample taken at least 0.5 m below the surface.

(6) **Water column criteria for WWAC lakes.**

(A) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be fully supported with respect to the DO criterion if less than 50% of the volume (if volumetric data is available) or 50% or less of the water column (if no volumetric data is available) of all sample sites in the lake are less than 2.0 mg/L.

(B) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be undetermined with respect to the DO criterion (if no volumetric data is available) if 50% or more, but not greater than 70%, of the water column at any given sample site in the lake is less than 2.0 mg/L due to other than naturally occurring conditions.

(C) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be not supported with respect to the DO criterion if 50% or more of the water volume (if volumetric data is available) or more than 70% of the water column (if no volumetric data is available) at any given sample site is less than 2.0 mg/L.

(D) If a lake specific study including historical analysis produces a support status which is contrary to an assessment obtained from the application of (A), (B) or (C) of (b)(6) of this section, then that lake specific result will control.

(7) **Additional application/exercise when support undetermined.** In instances where application of the tests in this subsection (b) initially produce a result that the pertinent subcategory is undetermined with respect to the DO criterion, such shall be subject to additional investigation that considers diurnal data for further application of such tests in order to resolve the determination of use support.

(c) **Toxicants.**

(1) **Test for Full Support.**

(A) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be fully supported with respect to any individual toxicant parameter if no more than one of the sample concentrations from the waterbody exceeds the acute criterion for that toxicant prescribed in the numerical criteria for toxic substances in OAC 785:45-5-12(f)(6)(D) and (E) and 785:45 Appendix G, Table 2.

(B) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall

be deemed to be fully supported with respect to any individual toxicant parameter if not more than 1 sample concentration or not more than 10% of the sample concentrations from the waterbody exceeds the chronic criterion for that toxicant prescribed in the numerical criteria for toxic substances in OAC 785:45-5-12(f)(6)(D), (E) and 785:45 Appendix G, Table 2.

(2) **Test for Non-Support.**

(A) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be not supported with respect to any individual toxicant parameter if more than one of the sample concentrations from the waterbody exceed the acute criterion for that toxicant prescribed in the numerical criteria for toxic substances in OAC 785:45-5-12(f)(6)(D) and (E) and 785:45 Appendix G, Table 2.

(B) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be not supported with respect to any individual toxicant parameter if more than 10 % of the sample concentrations from the waterbody exceed chronic criterion for that toxicant prescribed in the numerical criteria for toxic substances in OAC 785:45-5-12(f)(6)(D) and (E) and 785:45 Appendix G, Table 2

(d) **pH.**

(1) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be fully supported with respect to pH occurring other than by naturally occurring conditions if no more than 10% of the sample concentrations from that waterbody fall outside the criteria range prescribed in 785:45-5-12(f)(3).

(2) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be not supported with respect to pH occurring other than by naturally occurring conditions if greater than 10% of the sample concentrations from that waterbody fall outside the criteria range prescribed in 785:45-5-12(f)(3).

(e) **Turbidity.** The criteria for turbidity stated in 785:45-5-12(f)(7) shall constitute the screening levels for turbidity. The tests for use support shall follow the default protocol in 785:46-15-4(b).

(f) **Oil and grease.**

(1) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be fully supported with respect to oil and grease if a visible sheen or bottom deposits of oil or grease are observed on that waterbody in 10% or less of the observations.

(2) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be not supported with respect to oil and grease if a visible sheen or bottom deposits of oil or grease are observed on that waterbody in more than 10% of the observations.

(g) **Suspended and bedded sediments.**

(1) If a stream is supporting the biological criteria assigned to that stream as provided in (e) and (i) through (n) of this section, then that stream will be deemed to be supporting its assigned Fish and Wildlife Propagation beneficial use with respect to suspended and bedded sediments.

(2) If a stream is not supporting the biological criteria assigned to that stream as provided in (e) and (i) through (n) of this section, then a habitat assessment must be conducted using the habitat assessment protocols found in OWRB Technical Report TRWQ2001-1, "Unified Protocols for Beneficial Use Assignment for Oklahoma Wadable Streams." The results of the habitat assessment shall then be compared to either historical conditions or regional reference conditions in order to determine attainment with respect to suspended and bedded sediments in that stream.

(3) The method for establishing reference conditions shall meet the following requirements:

(A) a minimum of five (5) reference streams or reaches shall be assessed;

(B) all of the reference streams or reaches must be within the same ecoregion as

the test stream;

(C) all of the reference streams or reaches must be streams with similar flow regimes no more than two (2) stream orders removed from the test stream; and

(D) the reference streams shall be selected from the least impacted streams in the ecoregion whose watersheds contain soils, vegetation, land uses, and topography typical of the watershed of the test stream(s).

(4) The Fish and Wildlife Propagation beneficial use will be considered to be not supported with respect to suspended and bedded sediments if any of the following habitat parameters deviate from the reference conditions by the specified amount:

(A) The total percent of clay, silt, and loose sand in the pool bottom substrate of the test stream is increased by more than 30% over the reference condition;

(B) Cobble embeddedness in the test stream is increased by 15% or more over the reference condition;

(C) The percentage of the length of the reach containing fresh (non-vegetated) point bars and/or islands in the test stream is 20 or more percentage points above that of the reference condition; or

(D) The percentage of the length of the reach dominated by pools of a depth of 0.5 meters or more in the test stream is less than 70% of that of the reference condition.

(5) If all of the habitat parameters identified in (h)(4) of this section deviate from the reference conditions by less than the amounts specified in (h)(4) of this section, then the Fish and Wildlife Propagation beneficial use is not impaired due to suspended and bedded sediments.

(h) **Metals.** The Fish and Wildlife Propagation beneficial use designated for a waterbody may be assessed using either total recoverable or dissolved metals. When available, the concentrations of dissolved metals shall be compared following the provisions of (c) of this subsection to the criteria in OAC 785:45 Appendix G converted to dissolved criteria by multiplying the total metal criterion listed in table 2 by the appropriate conversion factor listed in Table 3. Preference shall be given to the beneficial use determinations based upon dissolved metals. For those metals criteria requiring a hardness component, individual assessment results may be calculated using the average of all hardness data meeting the requirements of OAC 785:46-15-3. The segment-averaged hardness in Appendix B of this Chapter shall be used in the determination of the criterion if there is insufficient site-specific data to determine stream hardness.

(i) **Biological criteria.**

(1) If data demonstrate that an assemblage of fish or macro invertebrates from a waterbody is significantly degraded, according to 785:45-5-12(f)(5), from that expected for the subcategory of Fish and Wildlife Propagation designated in OAC 785:45 for that waterbody, then that subcategory may be deemed by the appropriate state environmental agency to be not supported.

(2) All physical assessments and biological collections shall be performed in accordance with the requirements set forth in OWRB Technical Report No. 99-3 entitled "Standard Operating Procedures for Stream Assessments and Biological Collections Related to Biological Criteria in Oklahoma".

(3) Evaluation of the biological collections shall include identification of fish samples to species level. Determinations of tolerance level shall be made according to Jester et al. 1992, "The Fishes of Oklahoma, Their Gross Habitats, and Their Tolerance of Degradation in Water Quality and Habitat", Proceedings of Oklahoma Academy of Sciences, 72:7-19.

(4) The determination of whether the use of Fish and Wildlife Propagation is supported in wadable streams in Oklahoma ecoregions shall be made according to all of the

requirements of this subsection (e), the application of Appendix C of this Chapter, and the special provisions in subsections (i) through (o), where applicable, of this Section. Streams with undetermined use support status shall be subject to additional investigation that considers stream order, habitat factors and local reference streams before the use support determination is made. A finding of impairment for biocriteria due to any one of the parameters listed in this section shall trigger an evaluation of all likely causes, not precluding monitoring, assessment, and subsequent support determination of the Fish and Wildlife beneficial use for any of the other parameters in this section

(j) **Special provisions for Ouachita Mountains wadable streams**. The determination of whether the use of Fish and Wildlife Propagation is supported for wadable streams located in the Ouachita Mountains ecoregion shall be made according to the application of Appendix C of this Chapter, together with this subsection, as follows:

(1) Where designated, the subcategory of Warm Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 35 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 24 or less. If a score is 25 to 34 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(2) Where designated, the subcategory of Habitat Limited Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 27 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 18 or less. If a score is 19 to 26 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(k) **Special provisions for Arkansas Valley wadable streams.** The determination of whether the use of Fish and Wildlife Propagation is supported for wadable /streams located in the Arkansas Valley ecoregion shall be made according to the application of Appendix C of this Chapter, together with this subsection, as follows:

(1) Where designated, the subcategory of Warm Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 35 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 24 or less. If a score is 25 to 34 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(2) Where designated, the subcategory of Habitat Limited Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 27 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 18 or less. If a score is 19 to 26 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(l) **Special provisions for Boston Mountains and Ozark Highlands wadable streams.** The determination of whether the use of Fish and Wildlife Propagation is supported for wadable streams located in the Boston Mountains and Ozark Highlands ecoregions shall be made according to the application of Appendix C of this Chapter, together with this subsection, as follows:

(1) Where designated, the subcategory of Cool Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 37 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 29 or less. If a score is 30 to 36 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(2) Where designated, the subcategory of Warm Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 31 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 22 or less. If a score is 23 to 30 inclusive, the issue of whether this subcategory

is supported shall be deemed undetermined.

(m) **Special provisions for Central Irregular Plains wadable streams.** The determination of whether the use of Fish and Wildlife Propagation is supported for wadable streams located in the Central Irregular Plains ecoregion shall be made according to the application of Appendix C of this Chapter, together with this subsection, as follows:

(1) Where designated, the subcategory of Cool Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 35 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 28 or less. If a score is 29 to 34 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(2) Where designated, the subcategory of Warm Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 30 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 22 or less. If a score is 23 to 29 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(3) Where designated, the subcategory of Habitat Limited Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 25 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 16 or less. If a score is 17 to 24 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(n) **Special provisions for Central Oklahoma - Texas Plains wadable streams.** The determination of whether the Warm Water Aquatic Community subcategory of the Fish and Wildlife Propagation beneficial use is supported for wadable streams located in the Central Oklahoma - Texas Plains ecoregion shall be made according to the application of Appendix C of this Chapter, together with this subsection, as follows:

(1) Such subcategory shall be deemed fully supported if the application of Appendix C produces a score of 26 or more.

(2) Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 19 or less.

(3) If the application of Appendix C produces a score of 20 to 25 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(o) **Special provisions for Central Great Plains wadable streams**. The subcategory of Warm Water Aquatic Community of the beneficial use of Fish and Wildlife Propagation in the wadable streams located in the Central Great Plains ecoregion shall be deemed fully supported if the application of Appendix C of this Chapter produces a score of 22 or more. Such subcategory shall be deemed not supported for the streams in the ecoregion of the application of Appendix C produces a score of 18 or less. If the application of Appendix C produces a score of 19 to 21 inclusive, the issue of whether this subcategory is supported for the streams in this ecoregion shall be deemed undermined. Provided, however, this subsection does not apply to the area bounded by State Highway 54 on the west, U.S. Highway 62 on the south, U.S. Highway 281 on the east and State Highway 19 on the north.

785:46-15-6. Assessment of Primary Body Contact Recreation Support

(a) **Scope.** The provisions of this Section shall be used to determine whether the subcategory of Primary Body Contact of the beneficial use of Recreation designated in OAC 785:45 for a waterbody is supported during the recreation season from May 1 through September 30 each year. Where data exist for multiple bacterial indicators on the same waterbody or waterbody segment, the determination of use support shall be based upon the use and application of all applicable tests and data.

(b) **Escherichia coli (*E.coli*).**

(1) The Primary Body Contact Recreation subcategory designated for a waterbody shall be deemed to be fully supported with respect to *E. coli* if the geometric mean of 126 colonies per 100 ml is met. These values are based upon all samples collected over the recreation period in accordance with OAC 785:46-15-3(c).

(2) The Primary Body Contact Recreation subcategory designated for a waterbody shall be deemed to be not supported with respect to *E. coli* if the geometric mean of 126 colonies per 100 ml is not met. These values are based upon all samples collected over the recreation period in accordance with OAC 785:46-15-3(c).

(c) **Enterococci.**

(1) The Primary Body Contact Recreation subcategory designated for a waterbody shall be deemed to be fully supported with respect to enterococci if the geometric mean of 33 colonies per 100 ml is met. These values are based upon all samples collected over the recreation period in accordance with OAC 785:46-15-3(c).

(2) The Primary Body Contact Recreation subcategory designated for a waterbody shall be deemed to be not supported with respect to enterococci if the geometric mean of 33 colonies per 100 ml is not met. These values are based upon all samples collected over the recreation period in accordance with OAC 785:46-15-3(c).

785:46-15-7. Assessment of Public and Private Water Supply Support

(a) **Scope.** The provisions of this Section shall be used to determine whether the beneficial use of Public and Private Water Supply or any subcategory thereof designated in OAC 785:45 for a waterbody is supported.

(b) **Toxicants.**

(1) The Public and Private Water Supply beneficial use designated for a waterbody shall be deemed to be fully supported with respect to any substance with criteria for such use listed in OAC 785:45 Appendix G if the sample concentrations from that waterbody do not exceed the criterion for that substance prescribed in OAC 785:45 Appendix G more than 10% of the measurements, or drinking water use restrictions are not in effect.

(2) The Public and Private Water Supply beneficial use designated for a waterbody shall be deemed to be not supported with respect to any substance with criteria for such use listed in OAC 785:45 Appendix G if the sample concentrations from that waterbody exceed the criterion for that substance prescribed in OAC 785:45 Appendix G more than 10% of the measurements, or drinking water use restrictions imposed by an agency with jurisdiction in effect require closure of the water supply.

(c) **Bacteria.** The screening level for total coliform bacteria shall be 5000 colonies per 100 ml. The tests for use support shall follow the default protocol in 785:46-15-4.

(d) **Threatened water supplies.** Waters of the state designated in OAC 785:45 as Public and Private Water Supply shall be presumed to be threatened when toxicants are detected but do not exceed the applicable criteria prescribed in OAC 785:45 Appendix G, or some drinking water use restrictions have been put into effect by an agency with jurisdiction, or the potential for adverseimpacts to water quality exists, or more than one such conditions exist.

(e) **Oil and grease.**

(1) The Public and Private Water Supply beneficial use designated for a waterbody shall be deemed to be fully supported with respect to oil and grease if a visible sheen or bottom deposits of oil or grease are observed on that waterbody in 10% or less of the observations, and drinking water use restrictions that require more than conventional treatment related to oil and grease have not been put into effect by an agency with jurisdiction.

(2) The Public and Private Water Supply beneficial use designated for a waterbody shall be deemed to be not supported with respect to oil and grease if a visible sheen or bottom deposits of oil or grease are observed on that waterbody in more than 10% of the

observations, or drinking water use restrictions that require more than conventional treatment related to oil and grease have been put into effect by an agency with jurisdiction.

785:46-15-8. Assessment of Agriculture Support

(a) **Scope.** The provisions of this Section shall be used to determine whether the beneficial use of Agriculture designated in OAC 785:45 for a waterbody is supported.

(b) **General support tests for chlorides, sulfates and TDS.**

(1) The Agriculture beneficial use designated for a waterbody shall be deemed to be fully supported with respect to chloride if the mean of all chloride sample concentrations from that waterbody do not exceed the yearly mean standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45 and no more than 10% of the sample concentrations from that waterbody exceed the sample standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45.

(2) The Agriculture beneficial use designated for a waterbody shall be deemed to be not supported with respect to chloride if the mean of all chloride sample concentrations from that waterbody exceeds the yearly mean standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45, or greater than 10% of the sample concentrations from that waterbody exceed the sample standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45. Provided, if the chloride sample concentrations are each less than 250 mg/L, then the Agriculture beneficial use shall be deemed to be fully supported with respect to chloride.

(3) The Agriculture beneficial use designated for a waterbody shall be deemed to be fully supported with respect to sulfate if the mean of all sulfate sample concentrations from that waterbody do not exceed the yearly mean standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45 and no more than 10% of the sample concentrations from that waterbody exceed the sample standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45.

(4) The Agriculture beneficial use designated for a waterbody shall be deemed to be not supported with respect to sulfate if the mean of all sulfate sample concentrations from that waterbody exceeds the yearly mean standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45, or greater than 10% of the sample concentrations from that waterbody exceed the sample standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45. Provided, if the sulfate sample concentrations are each less than 250 mg/L, then the Agriculture beneficial use shall be deemed to be fully supported with respect to sulfate.

(5) The Agriculture beneficial use designated for a waterbody shall be deemed to be fully supported with respect to TDS if the mean of all TDS sample concentrations from that waterbody do not exceed the yearly mean standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45 and no more than 10% of the sample concentrations from that waterbody exceed the sample standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45.

(6) The Agriculture beneficial use designated for a waterbody shall be deemed to be not supported with respect to TDS if the mean of all TDS sample concentrations from that waterbody exceeds the yearly mean standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45, or greater than 10% of the sample concentrations from that waterbody exceed the sample standard prescribed in Appendix F or site-specific criteria promulgated in Appendix E of OAC 785:45. Provided, if the TDS sample concentrations are each less than 700 mg/L, then the Agriculture beneficial use shall be deemed to be fully supported with respect to TDS.

(c) **Use of site-specific data.** If the appropriate state environmental agency determines that the stream segment averages prescribed in Appendix F of OAC 785:45 are not appropriate for the entirety of a given stream segment or there is no value listed in Appendix F or site-specific criteria_promulgated in Appendix E for the stream segment average for the parameter of concern, then yearly mean standards and sample standards developed from site-specific data may be used to assess whether the use of Agriculture is supported for that waterbody.

(d) **Use of data for lakes.**

(1) **Lakes with one WBID segment.** For support assessment in lakes with a single WBID segment, the segment averaged value prescribed in Appendix F to that same WQM segment shall be used.

(2) **Lakes with multiple WBID segments.** For support assessment in lakes with multiple WBID segments, each segment shall use the segment averaged value prescribed in Appendix F to that same WQM segment when available. If a WBID segment in a lake has no corresponding WQM segment data available in Appendix F, the segment averaged value prescribed in Appendix F to the WQM segment immediately downstream of the lake shall be used.

785:46-15-9. Assessment of Fish Consumption Support

(a) **Scope.** The provisions of this Section shall be used to determine whether the beneficial use of Fish Consumption designated in OAC 785:45 for a waterbody is supported.

(b) **Support tests.**

(1) The Fish Consumption beneficial use designated for a waterbody shall be deemed to be partially supported if restricted consumption as imposed by an agency with jurisdiction is in effect or if a fish or shellfish ban is in effect for a sub-population thereof.

(2) The Fish Consumption beneficial use designated for a waterbody shall be deemed to be not supported if an aquatic life closure or if a "no consumption" advisory imposed by an agency with jurisdiction is in effect.

(3) The water column criteria for protection of the Fish Consumption beneficial use stated in 785:45 Appendix G Table 2 shall be used according to the default protocol in 785:46-15-4(c) to determine use support.

785:46-15-10. Nutrients

(a) **General.** OAC 785:45-3-2(c) prohibits water quality degradation by nutrients which will interfere with the attainment or maintenance of any existing or designated beneficial use. OAC 785:46-13-3(a)(1) requires maintenance of any existing or designated beneficial use. This Section provides a framework which shall be used in assessing threats or impairments to beneficial uses and waterbodies and watersheds caused by nutrients, and the consequences of such assessments.

(b) **Determining whether a stream is nutrient-threatened.** The dichotomous process stated in this subsection shall be used in the determination of whether a stream is nutrient-threatened.

(1) The stream order shall be identified. If the stream order is 1, 2 or 3, then proceed to paragraph (2). If the stream order is not 1, 2 or 3, then proceed to paragraph (9).

(2) The stream slope shall be identified. If the stream slope is greater than or equal to 17 feet per mile, then proceed to paragraph (3). If the stream slope is less than 17 feet per mile, then proceed to paragraph (4).

(3) Subject to the application of the foregoing paragraphs of this subsection, if phosphorus concentrations in the stream are greater than 0.24 mg/L or if nitrite plus nitrate concentrations in the stream are greater than 4.95 mg/L, then proceed to paragraph (5). If such nutrient concentrations are less than the levels specified in this paragraph, then the stream is not threatened by nutrients.

(4) Subject to the application of the foregoing paragraphs of this subsection, if phosphorus concentrations in the stream are greater than 0.15 mg/L or if nitrite plus nitrate concentrations in the stream are greater than 2.4 mg/L, then proceed to paragraph (5). If such nutrient concentrations are less than the levels specified in this paragraph, then the stream is not threatened by nutrients.

(5) Subject to the application of the foregoing paragraphs of this subsection, if the percentage of canopy shading is greater than or equal to 80%, then the stream is not threatened by nutrients. If the percentage of canopy shading is less than 80%, then proceed to paragraph (6).

(6) Subject to the application of the foregoing paragraphs of this subsection, if the stream's turbidity is organic, then proceed to paragraph (7). If the stream's turbidity is inorganic, then proceed to paragraph (8).

(7) Subject to the application of the foregoing paragraphs of this subsection, if turbidity measured at seasonal base flow conditions is less than 20 NTU, then the stream is not threatened by nutrients. If turbidity measured at seasonal base flow conditions is 20 or more NTU, then the stream is threatened by nutrients.

(8) Subject to the application of the foregoing paragraphs of this subsection, if turbidity measured at seasonal base flow conditions is less than 20 NTU, then the stream is threatened by nutrients. If turbidity measured at seasonal base flow conditions is 20 or more NTU, then the stream is not threatened by nutrients.

(9) Subject to the application of the foregoing paragraphs of this subsection, if the stream slope is greater than or equal to 17 feet per mile, then proceed to paragraph (10). If the stream slope is less than 17 feet per mile, then proceed to paragraph (11).

(10) Subject to the application of the foregoing paragraphs of this subsection, if phosphorus concentrations in the stream are greater than 1.00 mg/L, or if nitrite plus nitrate concentrations in the stream are greater than 4.65 mg/L, then proceed to paragraph (12). If such nutrient concentrations are less than the levels specified in this paragraph, then the stream is not threatened by nutrients.

(11) Subject to the application of the foregoing paragraphs of this subsection, if phosphorus concentrations in the stream are greater than 0.36 mg/L, or if nitrite plus nitrate concentrations in the stream are greater than 5.0 mg/L, then proceed to paragraph (12). If such nutrient concentrations are less than the levels specified in this paragraph, then the stream is not threatened by nutrients.

(12) Subject to the application of the foregoing paragraphs of this subsection, if the stream's inorganic turbidity measured at seasonal base flow conditions is greater than or equal to 20 NTU, then the stream is not threatened by nutrients. If the stream's inorganic turbidity measured at seasonal base flow conditions is less than 20 NTU, then the stream is threatened.

(c) **Alternative to dichotomous process for streams.**

(1) A wadable stream shall be deemed threatened by nutrients if the arithmetic mean of benthic chlorophyll-a data exceeds 100 mg per square meter under seasonal base flow conditions, or if two or more benthic chlorophyll-a measurements exceed 200 mg per square meter under seasonal base flow conditions. A non-wadable stream shall be deemed threatened by nutrients if planktonic chlorophyll-a values in the water column indicate it has a Trophic State Index (TSI) of 62 or greater.

(2) If clear and convincing evidence indicates a result for a stream different from that obtained from application of the dichotomous process in (b) of this Section, then the appropriate state environmental agency may, after completing the public participation process developed by the Secretary of Environment pursuant to 27A O.S. 1-2-101, accordingly identify the stream as threatened or not threatened by nutrients.

(d) **Demonstration that nutrients may be adversely impacting a beneficial use.** If it is demonstrated by the Trophic State Index or by other relevant data as provided in 785:46-15-1(c) that nutrient loading in a waterbody may be adversely impacting a beneficial use designated for that waterbody, then the Board may determine that the waterbody and its watershed is an NLW, and shall identify the waterbody and watershed as NLW in Appendix A of OAC 785:45.

(e) **Consequence of identification as NLW.** If a waterbody or its watershed is identified as NLW in Appendix A of OAC 785:45, then the Board or other appropriate state environmental agency may cause an impairment study to be performed. Provided, if an impairment study demonstrates that the uses are not threatened, then the Board shall consider deleting the NLW identification.

(f) **Consequence of assessment that use is threatened by nutrients.** If it is determined that one or more beneficial uses designated for a waterbody are threatened by nutrients, then that waterbody shall be presumed to be nutrient-threatened. If it is determined or presumed, in accordance with this Section, that a waterbody is nutrient-threatened, then before the waterbody is determined to be nutrient-impaired, an impairment study must be completed by the appropriate state environmental agency.

(g) **Result of impairment study.**

(1) **Impaired.** If, independent of or in addition to the process set forth in this Section, an impairment study of a waterbody demonstrates that any beneficial use designated for a waterbody is impaired by nutrients, then the appropriate state environmental agency shall initiate the appropriate listing procedure in accordance with the public participation process developed by the Secretary of Environment pursuant to 27A O.S. 1-2-101 for each such beneficial use.

(2) **Not impaired.** If, independent of or in addition to the process set forth in this Section, an impairment study of a waterbody demonstrates that all beneficial uses designated for that waterbody are not impaired by nutrients, then the appropriate state environmental agency shall initiate the appropriate de-listing procedure in accordance with the public participation process developed by the Secretary of Environment pursuant to 27A O.S. 1-2-101.

785:46-15-11. Assessment of Hydroelectric Power Generation Support [Revoked]

785:46-15-12. Assessment of Industrial and Municipal Process and Cooling Water Support [Revoked]

785:46-15-13.1. Assessment of Navigation Support

The beneficial use of Navigation designated for a waterbody shall be deemed to be fully supported for the purpose of water quality reporting.

785:46-15-14. Assessment of Aesthetics Support

(a) **General provisions for all waterbodies other than Scenic Rivers.** The tests prescribed in OAC 785:46-15-4 may be used to determine whether the beneficial use of Aesthetics designated in OAC 785:45 for a waterbody other than the Scenic Rivers is supported.

(b) **Special provisions for Scenic Rivers.**

(1) **Scope and applicability.** This subsection shall be used to determine whether the beneficial use of Aesthetics designated in OAC 785:45 for a segment of a Scenic River is supported with respect to the criterion of total phosphorus.

(2) **Data and procedure.**

(A) The data used shall satisfy all of the requirements of 785:46-15-3 except subsection (f) thereof. Notwithstanding such requirements, the data shall include

samples collected from stream flow of at least six (6) storm events per calendar year or, if fewer than nine (9) storm events occurred in that year, then the majority of the storm events that occurred that year.

(B) Whenever multiple samples are taken from a single storm event, the event mean concentration shall be determined and used as representative of that storm event.

(C) A three-calendar-month geometric mean concentration shall be determined each month using the total phosphorus data from that month together with such data from the preceding two calendar months.

(3) **Support tests.**

(A) The Aesthetics beneficial use designated for a segment of a Scenic River shall be deemed to be supported with respect to total phosphorus if less than 25% of the monthly determinations made in accordance with (b)(2)(C) of this Section exceed 0.037 mg/L total phosphorus.

(B) The Aesthetics beneficial use designated for a segment of a Scenic River shall be deemed to be not supported with respect to total phosphorus if 25% or greater of the monthly determinations made in accordance with (b)(2)(C) of this Section exceed 0.037 mg/L total phosphorus.

SUBCHAPTER 17. OWRB WATER QUALITY STANDARDS IMPLEMENTATION PLAN

Section

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785:46-17-1. Purpose and Scope

According to Title 27A O.S., §§ 1-1-202 and 1-3-101, the Board is required to promulgate a Water Quality Standards Implementation Plan for its jurisdictional areas of environmental responsibility. The elements of the Plan are dictated by Title 27A O.S. § 1-1-202. The rules in this Subchapter prescribe the elements of the Board's Plan.

785:46-17-2. Definitions

In addition to terms defined in Title 27A O.S. § 1-1-201 and Title 82 O.S. § 1084.2, the following words or terms, when used in this Subchapter, shall have the following meanings unless the context clearly indicates otherwise:

"CWA" means Clean Water Act.

"DEQ" means the Department of Environmental Quality.

"NPDES" means National Pollutant Discharge Elimination System.

"NPS" means nonpoint source.

"OWRB" means the Oklahoma Water Resources Board.

"Plan" means the Water Quality Standards Implementation Plan, or portion thereof,

promulgated by the Board in this Subchapter for the programs that affect water quality within the Board's jurisdictional areas of environmental responsibility.

"SRF" means a fund or program used for loans to eligible entities for qualified projects in accordance with Federal law, rules and guidelines administered by the U.S. Environmental Protection Agency and state law and rules administered by the Board. "SRF" is a Federal term referring to a state revolving fund. There are two separate SRF programs administered in Oklahoma: one is for the purpose of controlling water pollution (the Clean Water SRF) and the other is for the purpose of providing safe drinking water (the Drinking Water SRF).

"USAP" means use support assessment protocols promulgated by the Board and codified at OAC 785:46 Subchapter 15.

"WQS" means the water quality standards promulgated by the Board in OAC 785:45.

"WQSIP" means Water Quality Standards Implementation Plan.

785:46-17-3. Processes to Ensure Compliance with Antidegradation Standards and Leading to Maintenance of, Removal of Threats to, and Restoration of Beneficial Uses

(a) In the course of determining applications for stream water permits, the Board evaluates or calculates runoff data, available stream gage data, lake storage volumes and dependable yield data for reservoirs, and the watershed above the proposed diversion point. The Board protects against degradation by appropriating no more than the mean annual flow of a stream. After July 1, 2000, the Board will also evaluate whether an application will cause a potential impact on beneficial uses.

(b) In the course of determining maximum annual yields of groundwater basins, the Board assumes 100 percent development within the basin; this ensures a longer basin life because current basin development is typically less than 20 percent of the entire basin. The maximum annual yield procedure also identifies potential sources of contamination within the basin. The basin studies will further determine the level of decline in storage in the basin which could impact historic low base flow discharge such that flow in that stream could potentially begin to be reduced due to groundwater withdrawals. In the course of determining applications for groundwater permits where the maximum annual yield has been determined, the Board protects against degradation by limiting the permitted withdrawal to the maximum annual yield allocated to the land covered by the permit, and avoiding withdrawal that would cause contaminated groundwater or surface water to be moved into groundwater that is not already contaminated.

(c) The Board's Clean Water SRF loans for construction of projects comply with antidegradation standards and lead to maintaining water quality where beneficial uses are supported, removal of threats to water quality where beneficial uses are in danger of not being supported, and restoration of water quality where beneficial uses are not being supported, based upon the following procedures:

(1) In the course of determining eligibility of applications, the Board reviews the proposed project's consistency with water quality management plans developed under sections 205(j), 208, 303(e), 319 and 320 of the Clean Water Act. The Clean Water SRF Integrated Priority Ranking System ranks projects for funding based on human health protection, the "fishable/swimmable" goals of the Clean Water Act, the WQS, and Oklahoma's Nonpoint Source Management Program led by the Oklahoma Conservation Commission. All projects are placed on a five-year Clean Water SRF Project Priority List and funded in priority order. Proposed projects receive points based on the four major factors of project type, water quality restoration, water quality protection, and readiness to proceed, all as provided in 785:50-9-23.

(2) Wastewater projects under Section 212 of the Clean Water Act are reviewed by Board staff engineers for compliance with applicable DEQ rules, including but not limited to the Public Water Supply Construction Standards in OAC 252:626 and the Water Pollution

Control Facility Construction rules in OAC 252:656; and consistency with the system owner's 208 water quality management plan, NPDES permit, and sludge management plans, if required by DEQ, all designed to protect the beneficial uses of the receiving waters. Approval of preliminary engineering design is made by the Board following approval by DEQ. Additional preventative measures may include, but are not limited to, design measures to prevent erosion during construction and to prevent wastewater bypasses during construction.

(3) Recipients of loans for Section 212 wastewater projects are required to construct the projects in accordance with plans and specifications approved by DEQ and the Board. The recipients are required to employ a full time resident inspector. The projects are periodically inspected by the Board staff during construction. Upon completion, the project is placed into operation, at which time it is evaluated by the consulting engineer and DEQ for compliance with construction and discharge standards.

(4) Recipients of loans for Section 319 NPS pollution control projects are required to implement the projects in accordance with State-approved BMP to control pollution for various NPS categories in accordance with TMDLs or other plans established to control NPS runoff.

(d) The Board's loans from revenue bond proceeds for construction of projects comply with antidegradation standards and lead to maintaining water quality where beneficial uses are supported, removal of threats to water quality where beneficial uses are in danger of not being supported, and restoration of water quality where beneficial uses are not being supported, based upon the following procedures :

(1) **Pre-approval procedures.** Sections 785:50-7-1 and 785:50-7-2 of the OAC provide general rules and criteria for review and approval of proposed bond loan projects. Among other requirements, the project is reviewed for feasibility and identification of water quality mitigative measures necessary to protect the beneficial uses of receiving waters. These measures may include, but are not limited to, design measures to prevent erosion during construction and to prevent wastewater bypasses during construction. Additionally, all projects are reviewed by Board staff engineers for compliance with applicable rules of the DEQ, including but not limited to the Public Water Supply Construction Standards in OAC 252:626 and the Water Pollution Control Facility Construction rules in OAC 252:656; and for consistency with the system owner's 208 water quality management plan, NPDES permit, and sludge management plans issued by DEQ, all designed to protect the beneficial uses of receiving waters. Approval of preliminary engineering design is made by the Board following approval by DEQ.

(2) **Procedures following approval.** After a revenue bond loan project is approved by the Board, it is monitored to assure it is constructed in accordance with planning documents and plans and specifications approved by the Board and DEQ. Loan recipients are required to employ a full time resident inspector to oversee construction progress. In addition, construction projects receive periodic oversight from a consulting engineer and the Board staff engineer. Upon completion, the project is placed into operation, at which time it is evaluated by the consulting engineer and DEQ for compliance with construction and discharge standards.

(e) The Board’s emergency grants for construction of projects comply with antidegradation standards and lead to maintaining water quality where beneficial uses are supported, removal of threats to water quality where beneficial uses are in danger of not being supported, and restoration of water quality where beneficial uses are not being supported, based upon the following procedures:

(1) **Pre-approval procedures.** Section 785:50-7-5 of the OAC provides a priority system which ranks proposed emergency grant projects for review and approval according to

certain factors and criteria. Among other requirements, the project is reviewed for feasibility and identification of water quality mitigative measures necessary to protect the beneficial uses of receiving waters. These measures may include, but are not limited to, design measures to prevent erosion during construction and to prevent wastewater bypasses during construction. Additionally, all projects are reviewed by Board staff engineers for compliance with applicable rules of the DEQ, including but not limited to the Public Water Supply Construction Standards in OAC 252:626 and the Water Pollution Control Facility Construction rules in OAC 252:656; and for consistency with the system owner's 208 water quality management plan, NPDES permit, and sludge management plans issued by DEQ, all designed to protect the beneficial uses of receiving waters. Approval of preliminary engineering design is made by the Board following approval by DEQ.

(2) **Procedures following approval.** After an emergency grant project is approved by the Board, it is monitored to assure it is constructed in accordance with plans and specifications approved by the Board and DEQ. Emergency grant recipients are required to employ a full time resident inspector to oversee construction progress. In addition, construction projects receive periodic oversight from a consulting engineer and the Board staff engineer. Upon completion, the project is placed into operation, at which time it is evaluated by the consulting engineer and DEQ for compliance with construction and discharge standards.

(f) The Board's Rural Economic Action Plan (REAP) Grant Program for construction of projects complies with antidegradation standards and leads to maintaining water quality where beneficial uses are supported, removal of threats to water quality where beneficial uses are in danger of not being supported, and restoration of water quality where beneficial uses are not being supported, based upon the following procedures:

(1) **Pre-approval procedures.** Sections 785:50-8-3 and 785:50-8-4 of the OAC provide general rules and criteria for review and approval of proposed REAP projects, while Section 785:50-8-5 provides a priority system which ranks proposed REAP grant projects according to certain factors and criteria. Among other requirements, the project is reviewed for feasibility and identification of water quality mitigative measures necessary to protect the beneficial uses of receiving waters. These measures may include, but are not limited to, design measures to prevent erosion during construction and to prevent wastewater bypasses during construction. Additionally, all projects are reviewed by Board staff engineers for compliance with applicable rules of the DEQ, including but not limited to the Public Water Supply Construction Standards in OAC 252:626 and the Water Pollution Control Facility Construction rules in OAC 252:656; and for consistency with the system owner's 208 water quality management plan, NPDES permit, and sludge management plans issued by DEQ, all designed to protect the beneficial uses of receiving waters. Approval of preliminary engineering design is made by the Board following approval by DEQ.

(2) **Procedures following approval.** After a REAP grant project is approved by the Board, it is monitored to assure it is constructed in accordance with plans and specifications approved by the Board and DEQ. REAP grant recipients are required to employ a full time resident inspector to oversee construction progress. In addition, construction projects receive periodic oversight from a consulting engineer and the Board staff engineer. Upon completion, the project is placed into operation, at which time it is evaluated by the consulting engineer and DEQ for compliance with construction and discharge standards

(g) In carrying out its various clean lakes programs, the Board complies with antidegradation standards, and leads to maintenance of water quality where beneficial uses are supported,

removal of threats to water quality where beneficial uses are in danger of not being supported, and restoration of water quality where beneficial uses are not being supported, in the following ways:

(1) The Board participates with municipalities and federal agencies in conducting lake water quality assessments and studying the problems causing impairment or pollution.

(2) The Board makes recommendations for removal of pollutants, watershed restoration and management activities, and controlling nonpoint source pollution through implementation of best management practices.

(3) In some instances the Board enters into contracts for implementation of pollution control measures on threatened or impaired waterbodies.

785:46-17-4. Procedures to be Utilized in Application of USAP

The procedures to be utilized by the Board in the application of USAP are prescribed in Subchapter 15 of this Chapter.

785:46-17-5. List and Description of Programs Affecting Water Quality

(a) **List of programs.** The Board's programs affecting water quality may be referred to as the Stream Water Rights Program, the Groundwater Quantity Program, the Dam Safety Program, the Revenue Bond Loan Program, the Emergency Grant Program, the REAP Grant Program, the Drinking Water SRF Loan Program, the Clean Water SRF Loan Program, the Well Drillers Program, and the Clean Lakes Restoration Program. These programs are described in their respective subsections in this Section.

(b) **Stream Water Rights Program.** The program referred to in this Subchapter as the Stream Water Rights Program is the Board's program for administration of rights to use water from streams as provided in Title 82 O.S. § 105.1 and following, and OAC 785:20. This program includes the process of determining applications for stream water permits, the review of usage of existing stream water rights, the process of declaring reduction or cancellation of stream water rights due to nonuse, and the administration of competing stream water rights during periods of shortages.

(c) **Groundwater Quantity Program.** The program referred to in this Subchapter as the Groundwater Quantity Program is the Board's program for administration of rights to use groundwater as provided in Title 82 O.S. § 1020.1 and following, and OAC 785:30. It includes the process of determining applications for groundwater permits and amendments thereof, the administration of groundwater rights, the study of groundwater basins, and the process of determining the maximum annual yield of groundwater basins.

(d) **Dam Safety Program.** The program referred to in this Subchapter as the Dam Safety Program is the Board's program for maintenance of safety of dams and reservoir structures as provided in Title 82 O.S. § 110.1 and following, and OAC 785:25. It includes the process of determining applications for construction or modification of dams; inspection of dams; and regulating the construction, modification, operation, maintenance and repair of dams.

(e) **Revenue Bond Loan Program.** The program referred to in this Subchapter as the Revenue Bond Loan Program is the Board's program for making loans from revenue bond proceeds to eligible public entities for water and sewer projects and refinancings as provided in Title 82 O.S. § 1085.31 and following, and OAC 785:50. It includes the issuance of obligations to provide funds for loans; the review and determination of applications for loans; the closing of loans and the administration of the loan agreements; and the evaluation of proposed water and sewer projects and inspection of finished projects.

(f) **Emergency Grant Program.** The program referred to in this Subchapter as the Emergency Grant Program is the Board's program for making grants for water and sewer projects to assist eligible public entities in emergency situations as provided in Title 82 O.S. § 1085.31 and

following, and OAC 785:50. It includes the review and determination of applications for emergency grants; the funding of grants and the administration of the grant agreements; and the evaluation of proposed water and sewer projects and inspection of finished projects.

(g) **REAP Grant Program.** The program referred to in this Subchapter as the REAP Grant Program is the Board's program for making grants to eligible public entities for water and sewer projects as provided in Title 62 O.S. § 2003 and OAC 785:50. It includes the review and determination of applications for REAP grants; the funding of grants and the administration of the grant agreements; and the evaluation of proposed water and sewer projects and inspection of finished projects.

(h) **Drinking Water SRF Loan Program.** The program referred to in this Subchapter as the Drinking Water SRF Loan Program is the Board's program for making loans from the Drinking Water SRF account in the State Treasury to eligible public entities for projects and refinancings as provided in Title 82 O.S. § 1085.71 and following, and OAC 785:50. It includes the issuance of obligations to make federal and state funds available for loans; the review and determination of certain criteria in applications for loans; and the closing of loans and the administration of the loan agreements.

(i) **Clean Water SRF Loan Program.** The program referred to in this Subchapter as the Clean Water SRF Loan Program is the Board's program for making loans from the Clean Water SRF account in the State Treasury to eligible public entities for projects and refinancings as provided in Title 82 O.S. § 1085.51 and following, and OAC 785:50. It includes the issuance of obligations to make federal and state funds available for loans; the review and determination of applications for loans; and the closing of loans and the administration of the loan agreements; and the evaluation of proposed projects and inspection of finished projects.

(j) **Well Drillers Program.** The program referred to in this Subchapter as the Well Drillers Program is the Board's program for licensing and regulating persons engaged in the commercial drilling or plugging of wells, monitoring wells, observation wells, wells for heat exchange purposes, and geotechnical borings, and the commercial installation of water well pumps, as provided in Title 82 O.S. § 1020.16 and OAC 785:35.

(k) **Clean Lakes Restoration Program.** The program referred to in this Subchapter as the Clean Lakes Restoration Program is the Board's program for assessing, monitoring, studying and restoring Oklahoma lakes as provided in Title 27A O.S. § 1-3-101.

785:46-17-6. Technical Information and Procedures to Implement Plan

In implementing its Plan, the Board will utilize stream gage data from the U.S. Geological Survey, U.S. Army Corps of Engineers, and the Board itself; watershed delineation and runoff estimation model; Informix and Oracle databases for water rights and well logs; Optika eMedia software for review of images of water rights files; ArcInfo and ArcView GIS software and associated hydrologic development tools for data analysis and mapping; precipitation and evaporation data from the National Weather Service and Oklahoma Climatological Survey; MODFLOW modeling software; ACCESS database for groundwater quality data; analytical models such as capture zone analysis, TWODAN or other models to determine well interference, potential capture of stream water or movement of contaminated groundwater; National Inventory of Dams database; DOS based QuickRoute software for the evaluation of spillway and freeboard adequacy and overtopping failure analysis of dam impoundments; data collected by the Clean Lakes Diagnostic Studies Program, Oklahoma Water Watch Program, Beneficial Use Monitoring Program, Oklahoma Conservation Commission, Oklahoma Department of Mines, Oklahoma Corporation Commission, DEQ, and local and county cooperators.

785:46-17-7. Plan Integration into Water Quality Management Activities

Many of the operative portions of this Plan are already integrated into the Board's water quality management activities through codification as rules in other Chapters. As this Plan changes from time to time, rules in the pertinent Chapters will be added or amended as appropriate. Other methods to integrate the Plan will be through internal policies and guidance to be utilized by Board staff in carrying out its programs.

785:46-17-8. Compliance with Other Agencies' Mandatory Statewide Requirements

(a) The Board ensures that applicants who seek stream water or groundwater permits will obtain any permits or approvals which may be necessary from other state environmental agencies, including but not limited to public water supply system permits from DEQ and waste management and disposal permits or licenses from DEQ or the Oklahoma Department of Agriculture, Food and Forestry.

(b) The Board requires wastewater projects financed through the Clean Water SRF Loan Program to be planned, designed and constructed to comply with the Section 208 Water Quality Management Plan, any applicable total maximum daily loads, and discharge permit requirements developed by DEQ. The Board requires water projects funded through any of its other loan or grant programs to be permitted by DEQ as required by law for public water supply systems.

785:46-17-9. Summary of Written Comments Received

Appendix D of this Chapter contains a summary of the written comments and testimony received by the Board in the course of all public meetings held or sponsored for providing the public and other state agencies an opportunity to comment on the Board's Plan.

785:46-17-10. Evaluation of Effectiveness

The Board may utilize discharge monitoring reports submitted to DEQ, and may compare previous effluent limits with effluent produced after project completion and operation, to evaluate the effectiveness of wastewater projects constructed with funding from the Board. The Board may also utilize pertinent data from its Beneficial Use Monitoring Program to evaluate the effectiveness of these projects.

SUBCHAPTER 19. IMPLEMENTATION OF DISSOLVED OXYGEN CRITERIA TO PROTECT FISH AND WILDLIFE PROPAGATION

Section

785:46-19-1. Applicability and Scope
785:46-19-2. Regulatory Flows
785:46-19-3. Reasonable Potential Determination

785:46-19-1. Applicability and Scope

Rules in this Subchapter are designed to implement the criteria for dissolved oxygen prescribed in OAC 785:45 Appendix G Table 1 for protection of the beneficial use of Fish and Wildlife Propagation.

785:46-19-2. Regulatory Flows

(a) The flow in the receiving stream, Q_u, shall be deemed to be the greater of the 7Q2 or 1 cfs. If the 7Q2 is unknown, then Q_u shall be deemed to be 1 cfs.

(b) For industrial dischargers with adequate data as determined by the permitting authority, the

effluent flow, Q_e, shall be deemed to be the highest monthly averaged flow over the previous two years. For all other discharges, the effluent flow shall be deemed to be the design flow.
(c) Provided, in stream segments where dams or other structures have substantially affected the historic flow regime of the stream segment, including but not limited to the portions of the Verdigris and Arkansas Rivers constituting the McClellan-Kerr Arkansas River Navigation System, the appropriate regulatory low flow in the receiving stream, Q_u, shall be as determined on a site-specific basis pursuant to properly designed and implemented hydrologic study approved by the permitting authority and the Board.

785:46-19-3. Reasonable Potential Determination
(a) A permit limit for oxygen demanding substances is required if there is a reasonable potential that the dissolved oxygen criteria will not be satisfied. Such a reasonable potential is demonstrated whenever an existing discharger proposes to increase the concentration or load of oxygen demanding substances, a new discharge of oxygen demanding substances is created, or a receiving waterbody is reclassified to a subcategory of the Fish and Wildlife Propagation beneficial use with a more stringent dissolved oxygen criterion.
(b) The permitting authority may base its determination of the reasonable potential upon meeting the dissolved oxygen standard at the applicable regulatory low flow and at the applicable seasonal temperatures prescribed in Table 1 of Appendix G of OAC 785:45.

APPENDIX A. DILUTIONS FOR TOXICITY TESTING [REVOKED]

APPENDIX B. MEAN HARDNESS ($CaCO_3$) AND pH BY STREAM SEGMENT

SEGMENT	MEAN pH	MEAN HARDNESS
120400	7.87	197.40
120410	8.02	262.00
120420	7.77	267.83
121300	7.50	153.00
121400	7.62	170.41
121500	7.47	162.38
121510	7.67	186.00
121600	7.52	169.27
121610	7.40	133.65
121700	7.46	106.55
220100	6.96	25.76
220200	7.74	165.00
220600	7.66	253.48
250510	7.81	294.00
310800	7.89	532.00
310810	7.90	756.44
310830	7.84	924.35
310840	7.96	1137.00
311100	7.86	593.20
311200	7.78	532.94
311210	7.67	470.00
311300	7.65	268.33
311310	7.77	296.00
311500	8.04	838.12
311510	7.95	1041.00
311600	7.95	1540.00

SEGMENT	MEAN pH	MEAN HARDNESS
311800	7.81	2095.00
331510	8.03	1147.00
410200	6.82	32.00
410210	6.89	18.76
410300	7.17	28.42
410400	7.62	192.98
410600	7.84	234.00
520500	7.97	282.00
520520	7.70	344.00
520530	8.07	454.43
520600	8.04	380.00
520610	8.22	442.00
520620	8.08	612.00
520700	7.82	276.16
520710	7.80	272.00
520800	7.69	332.99
620900	8.10	506.01
620910	7.85	802.56
620920	7.99	1297.07
621000	8.08	512.06
621010	8.02	865.00
621100	7.80	367.00
621200	7.83	264.55
720500	8.16	622.00

APPENDIX C. INDEX OF BIOLOGICAL INTEGRITY

		5	3	1	SCORE
Sample Composition	Total no. of species	See figure 1			
	Shannon's diversity* based upon numbers	>2.50	2.49-1.50	<1.50	
	No. of sunfish species	>3	2-3	<2	
	No. of species comprising 75% of sample	>5	4-3	<3	
	No. of intolerant species <100mi^2 area	>5	3-5	<3	
	>100mi^2 area	See figure 2			
	Percentage of tolerant species	See figure 3			
Fish Condition	Percentage of lithophils	>36	18-36	<18	
	Percentage of DELT anomalies**	<0.1	0.1-1.3	>1.3	
	Fish numbers (total individuals)	>200	200-75	<75	

* $d = -\sum \frac{n_i}{N} \ln \frac{n_i}{N}$

** DELT = deformities, eroded fins, lesions, tumors

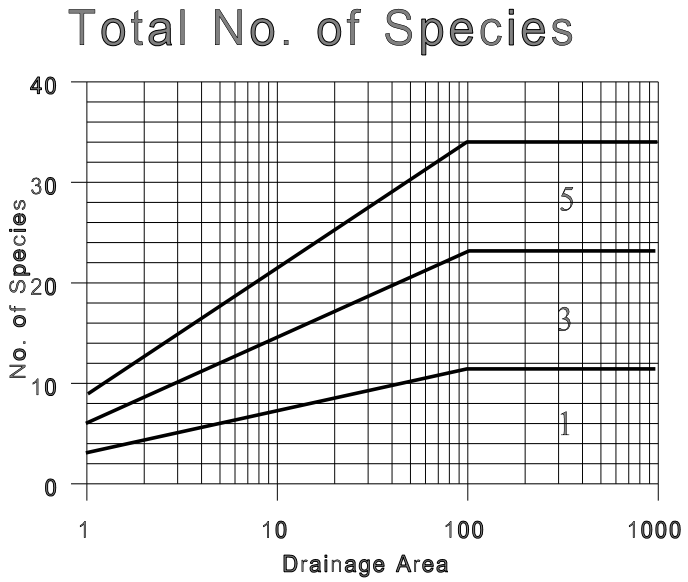

FIGURE 1. Total No. of Species

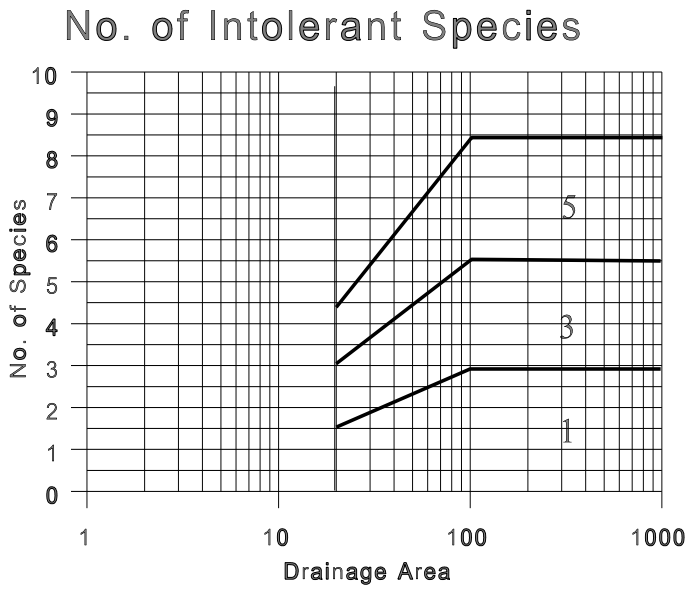

FIGURE 2. No. of Intolerant Species

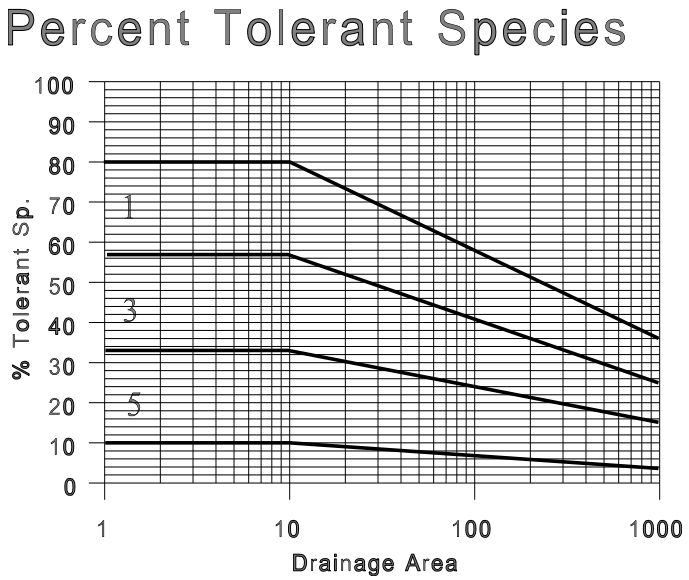

FIGURE 3. Percent Tolerant Species

APPENDIX D. SUMMARY OF COMMENTS ON OWRB'S WATER QUALITY STANDARDS IMPLEMENTATION PLAN

Title 27A O.S. § 1-1-202(B)(3)(g) provides that *each Water Quality Standards Implementation Plan shall...include a brief summary of the written comments and testimony received pursuant to all public meetings held or sponsored by the...agency for the purpose of providing the public and other state environmental agencies an opportunity to comment on the plan*.

I. Summary of Comments Received During 2000-2001 Rulemaking

The OWRB proposed new rules prescribing its Water Quality Standards Implementation Plan as described in a notice of rulemaking intent published at 18 Ok Reg 333 on January 2, 2001. During the January 2 through February 5, 2001 comment period on those new rules, the OWRB received written comments which are summarized or quoted below.

Ron Suttles, Oklahoma Department of Wildlife Conservation, submitted written comments which stated:

> "Our last comment deals with language in Chapter 46 Subchapter 17-3. There is new wording specifying that, 'The Board protects against degradation by appropriating no more than the mean annual flow of a stream.' We believe that this will not provide sufficient protection for 'waters of the state' and baring [sic] clarification to the contrary must object to what appears to be an appropriation provision that will cause WQS to be violated."

Kelly Burch, Assistant Attorney General in the Oklahoma Attorney General's Office, submitted written comments which stated:

> "Senate Bill 549 requires the OWRB to promulgate an implementation plan which includes the 'processes, procedures and methodologies' that will be utilized to ensure that the surface water permitting program will comply with anti-degradation standards and lead to maintenance of water quality, removal of threats to water quality and restoration of water quality. Stream water appropriations can degrade water quality and impair beneficial uses if not managed properly. The OWRB is required to develop an implementation plan demonstrates [sic] how the standards will be used in the program to prevent these impacts.
> "The current proposal does not meet the requirements of Senate Bill 549. The proposal simply states that compliance with anti-degradation standards is already assured because the OWRB only appropriates the mean annual flow of a stream. As your recent study of the Baron Fork Creek demonstrates, the current system of appropriating the mean annual flow of a stream does not necessarily protect against degradation of water quality. There are several methods available to evaluating flow necessary to prevent degradation which you may want to consider using for permitting decisions.
> "It is also insufficient to say that the OWRB will begin looking at impacts on beneficial uses without any clarification of which 'processes, procedures and methodologies' will be used to assess these impacts. It is already clear that the

OWRB is required to ensure that beneficial uses are protected when issuing permits. The question is how is the agency going to comply with that requirement. The current proposal needs to be amended in order to meet the mandates of Senate Bill 549."

Margaret Ruff, Oklahoma Wildlife Federation, submitted written comments which stated:

"785-46-17. Overall, the OWF does not see that this language assures in any way that OWRB's implementation plans will uphold water quality standards. In (a), stating the Board 'protects against degradation by appropriating no more than the mean annual flow of a stream' is not necessarily protective of Oklahoma's water quality standards. Further, if a potential impact on beneficial uses is found, there is no language mandating any action taken to rectify the situation; this needs to be added. In (b), there needs to be language mandating that actual affects [sic] to water quality from groundwater allocation is assessed and specifying action is taken if such an assessment finds withdrawals are negatively affecting water quality. In (c), language states that the program complies with antidegradation standards but does not say how - this needs to be included.

"For does this section overall address antidegradation in High Quality Waters of Oklahoma. This is a higher standard than beneficial use attainment, and antidegradation should mean no backsliding is allowed in those waters.

"785-46-17-5. The list is missing language spelling out how these programs meet Water Quality Standards.

"785-46-17-7. Should spell out what links are there to assure the plan is integrated into management activities.

"785-46-17-8.(a) Such permits from other agencies have not assured compliance with water quality standards and OWF does not believe that OWRB should assume this. In fact, the Oklahoma Supreme Court has suggested that in at least some areas, the OWRB should <u>not</u> assume another agency's permit means compliance.

"785-46-17-10. OWF recommends changing the 'mays' to 'shalls'. Also, OWF recommends adding all the other sources as cited in 785-46-17-6." (Emphasis in original.)

Upon consideration of these comments, the OWRB staff concurred that the appropriate implementation of water quality standards into the process of stream water permitting is in its infancy. The staff expects to be working over the next several years to evolve all agency programs to assure that the Oklahoma Water Quality Standards are protected.

II. Summary of Comments Received During 2007-2008 Rulemaking

No comments on the OWRB's Water Quality Standards Implementation Plan were received during the 2007-2008 rulemaking.