

CHAPTER 606. OKLAHOMA POLLUTANT DISCHARGE ELIMINATION SYSTEM (OPDES) STANDARDS

SUBCHAPTER 1. INTRODUCTION

252:606-1-2. Definitions

In addition to terms defined in Title 27A of the Oklahoma Statutes, the following words or terms, when used in this Chapter, have the following meaning unless the context clearly indicates otherwise:

"Accredited laboratory" means a laboratory accredited through DEQ laboratory accreditation program.

"Acute WET testing" means WET testing which measures short-term lethality to a specific aquatic animal test species as specified in OAC 252:606-6-29.

"Arithmetic mean" means the sum of the values of individual data points in a data set divided by the number of data points. This term is synonymous with arithmetic average.

"Background concentration" means the concentration of a substance in receiving water immediately upstream of, but not influenced by, a wastewater discharge.

"Beneficial use" means the use of biosolids or wastewater through land application for the purpose of soil conditioning, or crop or vegetative fertilization, or erosion control, or the use of wastewater for dust suppression where fugitive dust control would otherwise be an air quality problem, in a manner which does not pollute or tend to pollute the waters of the State of Oklahoma, the environment or pose a risk to human health.

"Best professional judgment" or **"BPJ"** means the technical opinion developed by a permit drafter after consideration of all reasonably available and pertinent data or information which forms the basis for the terms and conditions of a discharge permit, and the use of sound engineering analysis of the industry, the nature and quantity of potential pollutants which may be produced and of the proposed treatment plant.

"Biosolids" means primarily organically treated wastewater materials from municipal wastewater treatment plants that are suitable for recycling as amendments. This term is within the meaning of "sludge" referenced in 27A O.S. § 2-6-101(11). Biosolids are divided into the following classes:

(A) Class A Biosolid meets the pathogen reduction requirements of 40 CFR § 503.32 (a);

(B) Class B Biosolid meets the pathogen reduction requirements of 40 CFR § 503.32 (b).

"CAFO" means Concentrated Animal Feeding Operation.

"Chronic WET testing" means WET testing which measures long term lethal and sublethal effects to a specific aquatic animal test species as specified in OAC 252:606-6-29.

"Coefficient of variation" or **"CV"** means, when used in the context of effluent data, the measure of an effluent distribution's variation relative to its mean. When used in the context of WET test acceptability, CV means the % variation among test replicates in either the control or the critical dilution.

"Compliance Testing" means any chemical, physical or bacteriological tests conducted in accordance with permit requirements.

"Control tests" means any chemical, physical or bacteriological tests, including visual observations, performed to aid in operational decisions and to control wastewater treatment system performance.

"CPP" means the Continuing Planning Process document, which describes present and planned water quality management programs and the strategy used by the State in conducting these programs.

"Critical dilution" means an effluent dilution, expressed as a percentage, representative of the dilution afforded a wastewater discharge according to the appropriate Q*-dependent chronic mixing zone equation for chronic WET testing. The critical dilution for acute WET testing is 100%.

"CWA" means the Clean Water Act and amendments thereto.

"Defensible analytical data" means data traceable to a laboratory certified for that pollutant by DEQ under OAC 252:301 or data accepted by EPA; data traceable to a municipal laboratory operated by a properly certified laboratory technician by OAC 252:710; or data generated by a state or federal agency laboratory with equivalent certification. Quality assurance procedures, including chain of custody records, shall be adequate and documentable. Quality control data required in the analytical method shall be available from the laboratory upon request.

"DEQ" means the Oklahoma Department of Environmental Quality.

"Detectable concentration" means a concentration greater than zero (0) using a ninety-nine percent (99%) probability basis.

"Dilution series" means a set of proportional effluent dilutions for acute or chronic WET testing based on a specified critical dilution, which is typically the next-to-highest dilution in the series.

"Discharge point" means the point at which pollutants, wastewater or stormwater enters waters of the state or become waters of the state.

"DMR" means "Discharge Monitoring Report".

"EPA" means the United States Environmental Protection Agency.

"Fish and Wildlife Propagation" means the WQS beneficial use designation for promoting fish and wildlife propagation for the fishery classifications of HLAC, WWAC, CWAC, and Trout Fishery (Put and Take).

"Fish Consumption" means the WQS beneficial use designation for the protection of human health for the consumption of fish flesh.

"Generator" or "operator" means authorized person under whose ownership or management authority, biosolids are used or disposed.

"Geometric mean" means the antilog of the arithmetic average of the natural logarithms of the individual points in a data set.

"Impoundment" or "Surface impoundment" have the same meaning used in OAC 252:616-1-2.

"Industrial user" means "industrial users subject to categorical pretreatment standards" and "significant industrial users" as those terms are used in 40 CFR, Part 403.

"Intermittent toxicity" means two or more lethal or sublethal effect test failures of a routine acute or chronic WET test within any 18-month period.

"Land application" means the application of biosolids onto a land surface; injection below land surface; or spreading biosolids onto land surface followed by incorporation into the soil. Land application does not include the disposal of biosolids in a municipal solid waste landfill permitted by DEQ, or the use of Class A biosolids whose production is permitted by DEQ.

"LC₅₀ (lethal concentration)" means the concentration of a toxicant in an external medium that is lethal to fifty percent of the test animals for a specified period of exposure.

"Life of the permit" means a specific time frame from the date of the issuance of a permit until a new or renewed permit is issued.

"Listed metal" means those metals listed in Tables I, II, and III of 40 CFR, Part 503.13.

"Loading rate" means the amount (concentration or mass) of constituents or parameters applied to a unit area per application.

"Log-normally distributed" means a distribution of effluent data which is positively skewed.

"Log transformation" means the mathematical transformation of an observed data set which results in a data set consisting of the natural logarithms of the individual data points in the observed data set.

"Major discharger" means an industrial facility which has a point rating greater than or equal to 80 according to the NPDES permit rating system for industrial discharges; a POTW with a design flow greater than or equal to 1.0 MGD; or any facility designated as such by EPA in conjunction with the state permitting authority.

"Measurable level" means a detectable concentration for which the analytical signal to noise ratio is significantly high to report a reliable single number. The measurable level corresponds to the lowest point at which the analytical calibration curve is determined based on analyses for the pollutant of concern.

"Mineral constituents" means chlorides, sulfates and total dissolved solids collectively.

"Municipal" means a publicly owned treatment works or facilities which are privately owned that generate only domestic waste including mobile home parks, homeowner's associations, etc.

"Narrative water quality criterion" means a statement or other qualitative expressions of chemical, physical, or biological parameters that is assigned to protect a beneficial use.

"No Observed Effect Concentration-Lethal" or "NOECL" means the greatest tested effluent dilution in a WET test at and below which lethality to test organisms does not occur that is statistically different from the control (0% effluent) at the 95% confidence level.

"No Observed Effect Concentration-Sublethal" or "NOECS" means the greatest tested effluent dilution in a WET test at and below which a sublethal effect to test organisms does not occur that is statistically different from the control (0% effluent) at the 95% confidence level.

"NRCS" means Natural Resources Conservation Service.

"Numerical water quality criterion" means a concentration or other quantitative measures of a chemical, physical, or biological parameters that is assigned to protect a beneficial use.

"OAC" means Oklahoma Administrative Code.

"Oklahoma Water Quality Standards" or "WQS" means DEQ rules (OAC 252:730) which classify waters of the state, designate beneficial uses for which the various waters of the state must be maintained and protected, and prescribe the water quality required to sustain designated uses.

"Once-through cooling water" means cooling water that is not recirculated.

"OPDES" means Oklahoma Pollutant Discharge Elimination System (see also NPDES).

"OPDES Act" means the Oklahoma Pollutant Discharge Elimination System Act.

"OPDES Permit" means a permit issued pursuant to the OPDES Act.

"O.S." means Oklahoma Statutes.

"Operating records and reports" means the daily record of data connected with the operation of the system compiled in a monthly report on forms approved by DEQ.

"Period of Record" means a continuous period for which a facility's effluent data is reviewed for the purposes of characterizing the effluent.

"Permit cycle" means the life of a permit from the date of issuance to the date of expiration as specifically stated on a permit, unless the expiration of the permit is extended by operation of statute, rule or agreement of the permittee and DEQ.

"Persistent toxicity" means the repeated failure of an acute or chronic WET test. If the required WET testing frequency is monthly, repeated failure occurs upon the failure of two of the three consecutive monthly tests for the same test species. If the required WET testing frequency is other than monthly, repeated failure occurs upon the failure of the required test plus one of the two monthly retests for the same test species in the ensuing two-month period.

"Point Source" means any discernible, confined and discrete conveyance or outlet, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or vessel or other floating craft, from which pollutants are or may be discharged into waters of the state. The term "point source" shall not include agricultural stormwater runoff and return flows from irrigated agriculture.

"Positively skewed" means a data distribution which is asymmetric about its arithmetic mean with a tail in the positive direction.

"POTW" means publicly owned treatment works.

"Reasonable potential" means causes, or has a reasonable potential to cause, or contribute to an exceedance of a water quality criterion.

"Receiving water" means the water of the state to which a wastewater is discharged.

"Regulatory effluent flow" means the effluent flow, which is water quality criterion-dependent, used in determining reasonable potential and wasteload allocations for a substance.

"Regulatory low flow" means a condition where the flow of the water in a stream is significantly reduced, often during prolonged dry weather. This phenomenon is characterized by a decrease in stream flow, which can be defined by specific statistics such as 7Q2 or 30Q2. Regulatory low flow is important for setting permit discharge limits and ensuring ecological protection, as it can lead to water quality issues and affect water resources. 30Q2 shall be used only for setting discharge permit limits for selenium.

"Robust Regression on Order Statistics" or "Robust ROS" means a statistical method that computes a regression line to estimate values for non-detect data and combines these estimates with detected observations to compute sample statistics.

"RPF₉₅" means the reasonable potential factor for an effluent distribution, based on a 95% probability basis, for the purpose of determining whether an effluent limitation is required.

"RPF_{95(M)}" means the reasonable potential factor for an effluent distribution, based on a 95% confidence interval and 95% probability basis, and accounting for the size of the effluent data set, for the purpose of determining whether further effluent monitoring is required.

"Standard deviation" or "**s_x**" means the standard deviation of an untransformed data set based on a sample of size N.

"Standard deviation of log-transformed x" or "**sln(x)**" means the standard deviation of a log-normally transformed data set based on a sample of size N.

"Sublethal test failure" means the statistically significant difference (at the 95% confidence level) between reproduction or growth of the test organism at or below the chronic critical dilution after completion of an EPA approved chronic test method.

"TDS" means total dissolved solids.

"Trigger Background concentration" means the background concentration necessary to trigger reasonable potential for a substance to exceed an applicable criterion given a specified mean effluent concentration.

"USC" means United States Code.

"Wasteload allocation" or "**WLA**" means the portion of a receiving water's that is allocated to one of its existing or future point sources of pollution.

"WET limit" means a WET testing limitation in the form of a NOEC_L, NOEC_S, or LC₅₀, the exceedance of which constitutes a permit violation.

"WET testing" means testing for whole effluent toxicity:

(A) using an effluent dilution series based on a critical dilution,

(B) with a specific aquatic animal species, and

(C) utilizing EPA-approved testing methods.

252:606-1-2.1. Technical Definitions

The following technical definitions, when used in this Chapter, shall have the following meaning:

"ΔT_{max}" means the maximum temperature increase in °C at the edge of the temperature mixing zone.

"7Q2" means the 7-day low flow of a stream likely to occur with a 50% probability each year. The procedure for determining a site-specific 7Q2 is described at OAC 252:740-1-6.

"30Q2" means the 30-day low flow of a stream likely to occur with a 50% probability each year. The procedure for determining a site-specific 30Q2 is described at OAC 252:740-1-6.

"ACD" means acute critical dilution.

"BOD₅" means 5-day biochemical oxygen demand.

"BT/C ratio" means the ratio of trigger background concentration to associated water quality criterion.

"(BT/C)_{max}" means the maximum BT/C ratio for a given criterion for which background monitoring is required as a permit condition.

"C₉₅" means the 95th percentile maximum likelihood effluent concentration of a substance. It is the product of CE_(mean) and RPF₉₅.

"C_{95(M)}" means the 95th percentile maximum likelihood effluent concentration of a substance, accounting for the size of the effluent data set. It is the product of C_{E(max)} and RPF_{95(M)}.

"C_A" means the acute numerical criterion for toxic substances.

"C_B" means background concentration.

"C_C" means the chronic numerical criterion for toxic substances.

"C_d" means the instream concentration of a substance resulting from a wastewater discharge.

"C_{d(A)}" means the instream concentration of a substance as determined by the acute mixing equation.

"C_{d(c)}" means the maximum instream concentration of a substance at the edge of the chronic mixing zone.

"C_{d(FF)}" means the instream concentration of a substance after complete mixing, as applied to determination of reasonable potential to exceed a human health criterion for the consumption of fish flesh.

"C_{d(FFW)}" means the instream concentration of a substance after complete mixing, as applied to determination of reasonable potential to exceed a human health criterion for the consumption of fish flesh and water.

"C_{d(NRWQC)}" means the instream concentration of a substance after complete mixing, as applied to determination of reasonable potential to exceed an EPA human health criterion for the consumption of fish flesh.

"C_{d(RAW)}" means the instream concentration of a substance after complete mixing, as applied to determination of reasonable potential to exceed a raw water column criterion.

"C_{d(SS)}" means the instream concentration of a substance after complete mixing, as applied to determination of reasonable potential to exceed an agriculture sample standard (SS).

"C_{d(YMS)}" means the instream concentration of a substance after complete mixing, as applied to determination of reasonable potential to exceed an agriculture yearly mean standard (YMS).

"C_{E(max)}" means the maximum concentration of a substance in an effluent data set.

"C_{E(mean)}" means mean effluent concentration.

"C_{FF}" means the numerical criterion for the protection of human health for the consumption of fish flesh.

"C_{FFW}" means the numerical criterion for the protection of human health for the consumption of fish flesh and water.

"C_{NRWQC}" means the EPA recommended national water quality criterion for the protection of human health for the consumption of fish flesh.

"C_{RAW}" means the numerical criterion for protection of the raw water column.

"C_{SS}" means agriculture sample standard numerical criterion, i.e., the historic segment averaged SS value from Appendix F of OAC 252:730, unless data more representative of the receiving stream are available.

"C_{YMS}" means agriculture yearly mean standard numerical criterion, i.e., the historic segment averaged YMS value from Appendix F of OAC 252:730, unless data more representative of the receiving stream are available.

"CBOD₅" means 5-day carbonaceous biochemical oxygen demand.

"CCD" means chronic critical dilution.

"CWAC" means cool water aquatic community.

"D" means, in the context of a discharge to a lake through a pipe, the pipe diameter in feet.

"DML" means daily maximum permit limitation.

"DML_{CL}" means agriculture criterion-based DML for chlorides.

"DML_{FF}" means the human health/fish flesh DML.

"DML_{FFW}" means the human health/fish flesh and water DML.

"DML_{HH}" means human health-based DML.

"DML_{RAW}" means the raw water column DML.

"DML_{SO4}" means agriculture criterion-based DML for sulfates.

"DML_T" means the temperature based DML.

"DML_{TDS}" means agriculture criterion-based DML for total dissolved solids (dried at 180°C).

"DML_{TOX}" means toxic substance-based DML.

"DO" means dissolved oxygen.

"HLAC" means habitat-limited aquatic community.

"LTA" means long-term average.

"LTA_A" means the toxic substance acute numerical criterion LTA.

"LTA_C" means the toxic substance chronic numerical criterion LTA.

"LTA_{FF}" means the fish flesh human health criterion LTA.

"LTA_{FFW}" means the fish flesh and water human health criterion LTA.

"LTA_{RAW}" means the raw water column criterion LTA.

"LTA_{SS}" means the agriculture sample standard LTA.

"LTA_T" means the temperature criterion LTA.

"LTA_{TOX}" means the limiting toxic substance-based LTA, i.e., the smallest of LTA_A or LTA_C, as applicable.

"LTA_{YMS}" means the agriculture yearly mean standard LTA.

"MAL" means monthly average permit limitation.

"MAL_A" means the toxic substance acute criterion MAL.

"MAL_C" means the toxic substance chronic criterion MAL.

"MAL_{CL}" means agriculture criterion-based MAL for chlorides.

"MAL_{FF}" means the human health/fish flesh MAL.

"MAL_{FFW}" means the human health/fish flesh and water MAL.

"MAL_{RAW}" means the raw water column MAL.

"MAL_{HH}" means human health-based MAL.

"MAL_{SO4}" means agriculture criterion-based MAL for sulfates.

"MAL_T" means temperature MAL.

"MAL_{TDS}" means agriculture criterion-based MAL for total dissolved solids (dried at 180°C).

"MAL_{TOX}" means toxic substance-based MAL.

"MGD" means million gallons per day.

"mg/L" means milligrams per liter.

"MQL" means minimum quantifiable level.

"N" means the number of individual data points, collected over time, in an effluent or background data set.

"N_m" means the per month monitoring frequency where a permit limitation is established. When used in the context of temperature limitations, N_m is equal to four times N_w (i.e., $N_m = 4 \times N_w$).

"N_w" means the per week monitoring frequency where a temperature permit limitation is established.

"NRWQC" means the National Recommended Water Quality Criteria, publication no. EPA 822-Z-99-001, April 1999.

"PBCR" means Primary Body Contact Recreation.

"Q*" means the ratio of the regulatory effluent flow to the regulatory receiving water flow.

"Q_e" means regulatory effluent flow.

"Q_{e(30)}" means the Q_e that is the highest monthly average flow over the ~~two-year~~ two-year period of record for an industrial facility. For intermittent discharges, Q_{e(30)} is calculated based on days when discharge actually occurs.

"Q_{e(D)}" means the Q_e that is the lesser of the design flow for a municipal POTW or the design flow listed in the Section 208 Areawide Basin Plan.

"Q_{e(LTA)}" means the Q_e that is the arithmetic (long term) average flow over the two year period of record for an industrial facility.

"Q_u" means regulatory receiving water flow upstream of a point of wastewater discharge.

"Q_{u(7Q2)}" means the same as 7Q2.

"Q_{u(30Q2)}" means the same as 30Q2.

"Q_{u(LTA)}" means the Q_u that is the mean annual (long term) receiving water flow.

"Q_{u(STA)}" means the Q_u that is the short term average receiving water flow and is equal to $Q_{u(LTA)} \times 0.68$.

"SBCR" means Secondary Body Contact Recreation

"SNC" means significant noncompliance.

"SS" means sample standard.

"T_a" means regulatory ambient temperature in °C.

"T₉₅" means the 95th percentile of the effluent temperature distribution (in °C) of sustained two-hour daily maximum effluent temperatures where effluent temperature is recorded continuously and the distribution of daily maximum effluent temperatures where temperature is recorded at discrete intervals of two hours or longer, provided that recording intervals for temperature do not exceed six hours.

"TIE" means toxicity identification evaluation.

"TRC" means total residual chlorine.

"TRO" means total residual (halogenated) oxidants.

"µg/L" means micrograms per liter.

"W" means, in the context of a discharge to a lake through an open channel (i.e., canal), the channel width in feet.

"WAL" means weekly average permit limitation.

"WAL_T" means temperature WAL.

"WET" means whole effluent toxicity.

"WLA_A" means a toxic substance acute criterion WLA.

"WLA_C" means a toxic substance chronic criterion WLA.

"WLA_{FF}" means a human health/fish flesh criterion WLA.
 "WLA_{FFW}" means a human health/fish flesh and water criterion WLA.
 "WLA_{RAW}" means a raw water column criterion WLA.
 "WLA_{SS}" means an agriculture sample standard WLA.
 "WLA_T" means a temperature criterion WLA.
 "WLA_{YMS}" means an agriculture yearly mean standard WLA.
 "WQMP" means the statewide Section 208 Water Quality Management Plan.
 "WWAC" means warm water aquatic community.
 "YMS" means yearly mean standard.

SUBCHAPTER 6. POINT SOURCE DISCHARGES

252:606-6-11. Receiving water background characterization requirements

- (a) **Long-term average.** Where required, DEQ will calculate a LTA background level of a substance as a geometric mean unless otherwise specified.
- (b) **Background data sources.** Background data must be defensible analytical data and be representative of the receiving water's current upstream conditions. DEQ will use data collected and reported in accordance with a background monitoring requirement in a previous permit where available.
- (c) **Unavailability of background data.** Where no background data is available, the background is assumed to be zero.
- (d) **Size of background data set.** At least ten data points are required for a background data set to be considered complete. DEQ may use a partial background data set for reasonable potential purposes if the data is the only defensible analytical data available. Where the use of a partial background data set results in demonstration of reasonable potential, the permit will include effluent limitations based on a zero background level, which may have a delayed effective date of no more than two years. The permit will require the permittee to complete the background monitoring, at which time DEQ will reopen the permit, if necessary, to adjust permit limitations according to the background level determined from a complete background data set.
- (e) **Alternative Method for Determination of ~~7Q2~~ Regulatory Low Flow.**
 - (1) A permittee may use an alternative method for determining a ~~7Q2~~ regulatory low flow as allowed by OAC 252:740-1-6(c). The ~~7Q2~~ regulatory low flow calculated from the historical record may be modified to incorporate anticipated upstream flow releases provided the source of water is owned or controlled by a federal governmental entity and the following information is submitted to DEQ:
 - (A) a determination that a reliable source of upstream flow exists;
 - (B) documentation that the upstream source of water:
 - (i) includes water quality improvement as an authorized use, or
 - (ii) includes allocated storage for water quality improvement;
 - (C) documentation that the upstream source of water is governed by a water control plan developed and implemented pursuant to 33 CFR § 222.5; and
 - (D) a demonstration that the alternative ~~7Q2~~ regulatory low flow is identified in the most recently published State Water Quality Management Plan.
 - (2) DEQ will include any approved alternative ~~7Q2~~ regulatory low flow as a permit limit in any discharge permit. Said limit shall be stated as a minimum daily flow measured at the nearest upstream flow gage.
 - (3) In the event that the alternative ~~7Q2~~ regulatory low flow is not consistently attained, DEQ may reopen the permit and re-calculate the effluent limitations using the actual receiving stream flows.

252:606-6-14. Requirements specific to numeric criteria for toxic substances for the Fish and Wildlife Propagation beneficial use

- (a) **Background assumed zero.** DEQ will assume zero background levels for direct discharges of once through cooling water.

- (b) **Hardness or pH dependent criteria.** Where a criterion for a pollutant is hardness or pH-dependent, DEQ will add hardness or pH monitoring, as appropriate, to the background monitoring requirements.
- (c) **Representative of low flow conditions in streams.** The permittee shall collect background samples as close to low flow conditions as possible in streams.
- (d) **Background data from a previous permit.** DEQ will not use background data referenced in the previous permit unless the data is defensible analytical data.
- (e) **Background monitoring.** Where toxicity-based effluent limitations for a substance are established in a permit and a complete background data set meeting the requirements of OAC 252:606-6-11 is not available, background monitoring of the limited substance is required. This requirement does not apply where the background shall be considered equal to zero in accordance with OAC 252:606-6-14(a), where $Q^* \geq 0.333$, or where the ~~7Q2-regulatory~~ low flow of the receiving stream is assumed to be 1 cfs.

252:606-6-31. WET test requirements

WET testing is required for all major dischargers and those minor dischargers identified by DEQ as posing a significant unaddressed toxic risk. Q^* is calculated as described in Appendix J.

- (1) The following requirements apply to all WET testing:
 - (A) **Acute testing only.** Acute testing only is required for all discharges to lakes and to streams where $Q^* < 0.054$.
 - (B) **Chronic testing only.** Chronic testing only is required where $Q^* > 0.3333$.
 - (C) **Acute and chronic testing, except for *Daphnia Magna*.** Both acute and chronic testing are required where $0.054 \leq Q^* \leq 0.3333$.
- (2) **Acute and/or chronic testing using *Daphnia magna*.** Acute and/or chronic testing using *Daphnia magna* may substitute for acute and/or chronic testing for *Daphnia pulex* or *Ceriodaphnia dubia* in the following circumstances:
 - (A) acute testing using *Daphnia magna* for streams where the instream concentration of TDS is less than or equal to 1000 mg/L after mixing using the ~~7Q2-regulatory~~ low flow, may be considered by DEQ on a case-by-case basis where the TDS level in an effluent has been demonstrated to cause WET test failures to *Daphnia pulex*.
 - (B) acute testing using *Daphnia magna* for streams where the instream concentration of TDS is greater than 1000 mg/L after mixing using the ~~7Q2-regulatory~~ low flow, may be considered on a case-by-case basis where the TDS level in an effluent has been demonstrated to cause WET test failures to *Daphnia pulex* and the background TDS level of the receiving stream causes toxicity to *Daphnia pulex* in a control dilution (0% effluent).
 - (C) chronic testing using *Daphnia magna* may be considered by DEQ on a case-by-case basis where the TDS level in the effluent has demonstrated WET test failures to *Ceriodaphnia dubia*, where the background TDS levels of the receiving stream causes toxicity to *Ceriodaphnia dubia*, in a control dilution (0% effluent), and where the permittee can demonstrate that the ionic ratios in the effluent are similar to the ionic ratios in the receiving stream.
- (3) **Mussels.** Acute and/or chronic testing of mussels shall be required if DEQ determines that the discharge may affect an indigenous population(s) of mussels.

252:606-6-52. Effluent regulatory flows for the implementation of numerical criteria for toxic substances to protect the Fish and Wildlife Propagation beneficial use

The following effluent regulatory flows apply for the implementation of numerical toxicity criteria for toxic substances to protect the Fish and Wildlife Propagation beneficial use:

- (1) **Industrial.** For industrial facilities, $Q_{e(30)}$ is used as the regulatory effluent flow.
- (2) **Municipal.** The treatment facility's design flow $Q_{e(D)}$ is used as the regulatory effluent flow. The design flow used for permitting purposes ~~will~~ shall not exceed the approved design flow in the WQMP.

252:606-6-53. Q* ratio for the implementation of numerical criteria for toxic substances to protect the Fish and Wildlife Propagation beneficial use

Use the following to determine Q* ratio for all toxic substances unless otherwise specified in this section:

- (1) The following are used to determine Q* ratios in streams:
 - (A) **Industrial effluent.** Q* is the ratio of $Q_{e(30)}$ to $Q_{u(7Q2)}$.
 - (B) **Municipal effluent.** Q* is the ratio of $Q_{e(D)}$ to $Q_{u(7Q2)}$.
- (2) Q* is not applicable to lakes.
- (3) For selenium only, $Q_{u(30Q2)}$ shall be used in place of $Q_{u(7Q2)}$.

252:606-6-55. Wasteload allocations for the implementation of numerical criteria for toxic substances to protect the Fish and Wildlife Propagation beneficial use

If a pollutant exhibits reasonable potential to exceed WQS, a water quality-based permit limit is required for that pollutant. Background levels used in calculating WLA_A and WLA_C are described in OAC 252:606-6-11 through 14. If a pollutant's background level alone exceeds a criterion, the WLA is set equal to that criterion. For WLA_C , where fish tissue data is evaluated, a conversion from fish tissue to water column numeric criteria following Equations L-12 and L-13 shall be required.

- (1) **Streams.** The following applies to streams:
 - (A) **WLA_A .** Where Q_e is expressed in cfs, Equation L-1 is used to determine ~~WLA_A~~ WLA_A . Where Q_e is expressed in MGD, Equation L-2 is used.
 - (B) **WLA_C .** Depending on the value of Q*, Equation L-3, L-4, or L-5 is used to determine WLA_C .
- (2) **Lakes.** Depending on whether the discharge conveyance is a pipe or canal, Equation L-6 or L-7 is used to determine WLA_C , or WLA_A , if an acute criterion applies, in the absence of a chronic criterion.

252:606-6-86. Implementation of bacterial criteria to protect the Primary Body Contact Recreation (PBCR) and the Secondary Body Contact Recreation (SBCR) beneficial use

(a) **PBCR waterbodies - May 1 through September 30.** When the use of a bacterial indicator is determined to be necessary, the following bacterial limitations shall apply from May 1 through September 30 to protect the PBCR beneficial use:

- (1) ***Escherichia coli* (~~*E. coli*~~) (*E. Coli*).** When ~~*E. coli*~~ *E. coli* is the bacterial indicator:
 - (A) The monthly geometric mean shall not exceed 126/100 mL.
 - (B) The daily maximum for lakes shall not exceed 235/100 mL.
 - (C) The daily maximum for all waterbodies other than lakes shall not exceed 406/100 mL.
- (2) ***Enterococci*.** When enterococci are the bacterial indicator:
 - (A) The monthly geometric mean shall not exceed 33/100 mL.
 - (B) The daily maximum for lakes shall not exceed 61/100 mL.
 - (C) The daily maximum for all waterbodies other than lakes shall not exceed 108/100 mL.

(b) **PBCR waterbodies - October 1 through April 30.** When the use of a bacterial indicator is determined to be necessary, the SBCR bacterial limitations listed in (c) of this Section, shall apply from October 1 through April 30 to protect the PBCR beneficial use when the receiving stream is on the 303(d) List for bacteria.

(c) **SBCR waterbodies.** One of the following bacterial limitations and monitoring requirements shall be used year-round for permittees that discharge fecal coliform to waterbodies on the 303(d) list for bacteria:

- (1) ***Escherichia coli* (~~*E. coli*~~) (*E. Coli*).** When ~~*E. coli*~~ *E. Coli* is the bacterial indicator:
 - (A) The monthly geometric mean shall not exceed ~~630~~242/100 mL.
 - (B) The daily maximum ~~for lakes~~ shall not exceed ~~1175~~781/100 mL.
 - ~~(C) The daily maximum for all waterbodies other than lakes shall not exceed 2030/100 mL.~~
- (2) ***Enterococci*.** When enterococci are the bacterial indicator:
 - (A) The monthly geometric mean shall not exceed ~~165~~63/100 mL.
 - (B) The daily maximum ~~for lakes~~ shall not exceed ~~305~~208/100 mL.
 - ~~(C) The daily maximum for all waterbodies other than lakes shall not exceed 540/100 mL.~~

(d) **Indicators used in WLA.** Regardless of which bacterial indicator was used in a permittee's WLA, the permit may contain either of the bacterial indicators listed in (c) of this Section.

(e) **Exception.** This Section does not apply to discharging lagoons that were permitted and are being operated in compliance with OAC 252:656-11-2(b), unless Water Quality Standards are violated.

252:606-6-91. Performance-based monitoring frequency reductions and increases

(a) When MALs have been established in a previous permit and a parameter(s) has been monitored for one complete permit cycle (five years), performance-based monitoring frequency reductions or increases will be considered. Performance-based monitoring frequency reductions for waterbodies with an impairment shall not be permitted for the impaired parameter.

(1) Except for ammonia, when a permittee has experienced:

(A) no permit limit violation of any kind for a limited parameter during the permit cycle, a performance-based monitoring frequency reduction may be granted according to Table O-1 in Appendix O.

(B) a non-SNC permit limit violation during the permit cycle, the permittee is ineligible for a performance-based monitoring frequency reduction for that parameter for the ensuing permit cycle.

(C) SNC violations for a parameter during the permit cycle, the permittee is:

(i) ineligible for a performance-based monitoring frequency reduction for that parameter for the ensuing permit cycle, and

(ii) a monitoring frequency increase is required in accordance with Table O-2 in Appendix O.

(2) Permittees may request toxicity-based ammonia limit monitoring frequency reductions according to 252:606-6-26 or WET testing frequency reductions according to 252:606-6-42.

(3) The monitoring frequency for a metal may be reduced below the levels stated in Table O-1 in Appendix O to once every six months if:

(A) the permit includes a long-term average effluent concentration for the permit cycle of less than ten percent (10%) of the Monthly Average Concentration Limit;

(B) it no longer exhibits reasonable potential (either from monitoring or effluent limit);

(C) there is a limit for that parameter in a previous permit that cannot be removed; and

(D) the parameter is not causing the receiving water body to be listed as a Category 5 water body in Oklahoma's Integrated Report.

(b) Performance-based monitoring frequency reductions shall not be based on a weekly average, a daily minimum or a daily maximum concentration limit.

(c) The permit frequency reductions stated in this Section and in Appendix O do not affect the need or number of control tests to be undertaken as required in Appendix A of 252:606.

(d) In accordance with 252:730-5-10 and 252:730-5-16, no frequency reduction shall be allowed for bacterial limitations.

(e) Any control test undertaken in accordance with OAC 252:606, Appendix A, shall be reported on the DMRs as required by 40 CFR § 122.41 (l)(4)(ii), provided the control test sample meets all the sample protocol requirements as contained in the OPDES permit.

APPENDIX L. EQUATIONS FOR IMPLEMENTATION OF NUMERICAL CRITERIA FOR TOXIC SUBSTANCES TO PROTECT THE FISH AND WILDLIFE PROPAGATION BENEFICIAL USE

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FOR TOXIC SUBSTANCES TO PROTECT THE FISH AND WILDLIFE
PROPAGATION BENEFICIAL USE**

(1) **General.** Acute and chronic toxicity numerical criteria are implemented according to OAC 252:740 and OAC 252:606-6-51 through 6-57. WLA, criterion LTA and permit limit development equations are described in this appendix.

(2) **Reasonable potential for discharges to streams.**

See OAC 252:740.

(3) **Reasonable potential for discharge to lakes**

See OAC 252:740

(4) **WLA_A and WLA_C for dischargers to streams.**

(A) **Acute criteria WLA.**

$$WLA_A = C_B + \frac{100(C_A - C_B)}{Q_C}, \text{ where } Q_C \text{ is expressed in cfs.} \quad [L-1]$$

$$WLA_A = C_B + \frac{64.63(C_A - C_B)}{Q_C}, \text{ where } Q_C \text{ is expressed in MGD.} \quad [L-2]$$

(B) **Chronic criteria WLA.**

$$WLA_C = C_B + \frac{(1+Q^*)(C_C - C_B)}{(1.94Q^*)}, \text{ Where } Q^* \leq 0.1823. \quad [L-3]$$

$$WLA_C = C_B(6.17 - 15.51Q^*)(C_C - C_B), \text{ where } 0.1823 < Q^* < 0.3333. \quad [L-4]$$

$$WLA_C = C_C, \text{ where } Q^* \geq 0.3333. \quad [L-5]$$

(5) **WLA_A and WLA_C for dischargers to lakes.** The chronic WLA is calculated if a chronic criterion applies. An acute WLA is used only in the absence of a chronic criterion.

$$WLA_{C,A} = C_B + \frac{20.15(C_{C,A} - C_B)}{D}, \text{ where the discharge is by pipe.} \quad [L-6]$$

$$WLA_{C,A} = C_B + \frac{4.2(C_{C,A} - C_B)}{\sqrt{W}}, \text{ where the discharge is by canal.} \quad [L-7]$$

(6) **LTA_A and LTA_C (99% probability basis).** Whether the receiving water is a stream of lake, criterion LTAs are calculated in the same fashion. LTA_{TOX} is the more stringent of the two toxicity LTAs.

$$LTA_A = WLA_A \times \text{EXP} \left(0.5 \ln(1 + CV^2) - 2.326 \sqrt{\ln(1 + CV^2)} \right) \quad [L-8]$$

$$LTA_C = WLA_C \times \text{EXP} \left(0.5 \ln \left(1 + \frac{CV^2}{4} \right) - 2.326 \sqrt{\ln \left(1 + \frac{CV^2}{4} \right)} \right) \quad [L-9]$$

$$LTA_C = WLA_C \times \text{EXP} \left(0.5 \ln \left(1 + \frac{CV^2}{30} \right) - 2.326 \sqrt{\ln \left(\frac{CV^2}{30} \right)} \right) \quad [L-9a]$$

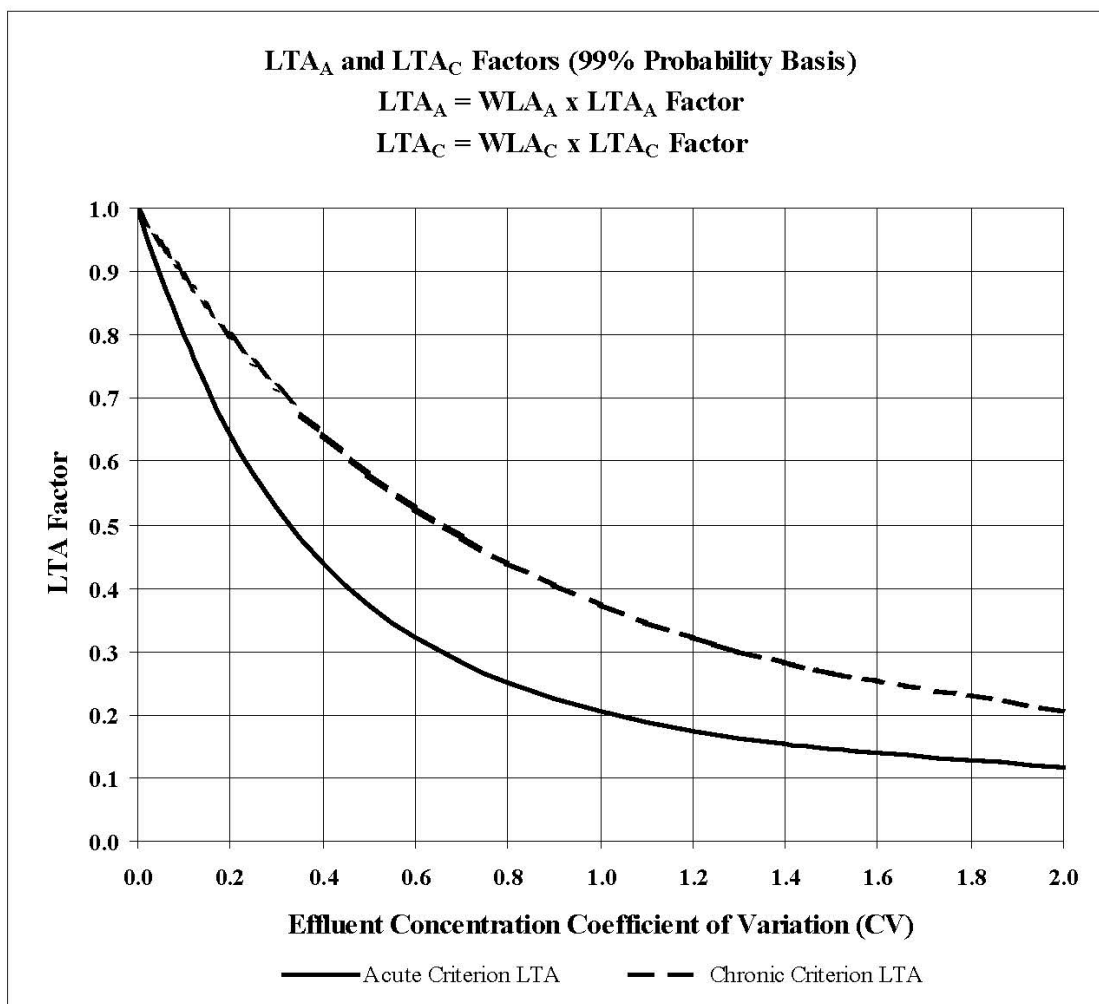


Figure L-1. Aquatic Toxicity LTA Factors vs. Effluent Coefficient of Variation

(7) Permit limitations

(A) MAL_{TOX} (95% probability basis).

$$MAL_{TOX} = LTA_{TOX} \times \exp \left(1.645 \sqrt{\ln \left(1 + \frac{CV^2}{N_m} \right)} - 0.5 \ln \left(1 + \frac{CV^2}{N_m} \right) \right) \quad [L-10]$$

(B) DML_{TOX} (99% probability basis).

$$DML_{TOX} = LTA_{TOX} \times \exp \left(2.326 \sqrt{\ln(1 + CV^2)} - 0.5 \ln(1 + CV^2) \right) \quad [L-11]$$

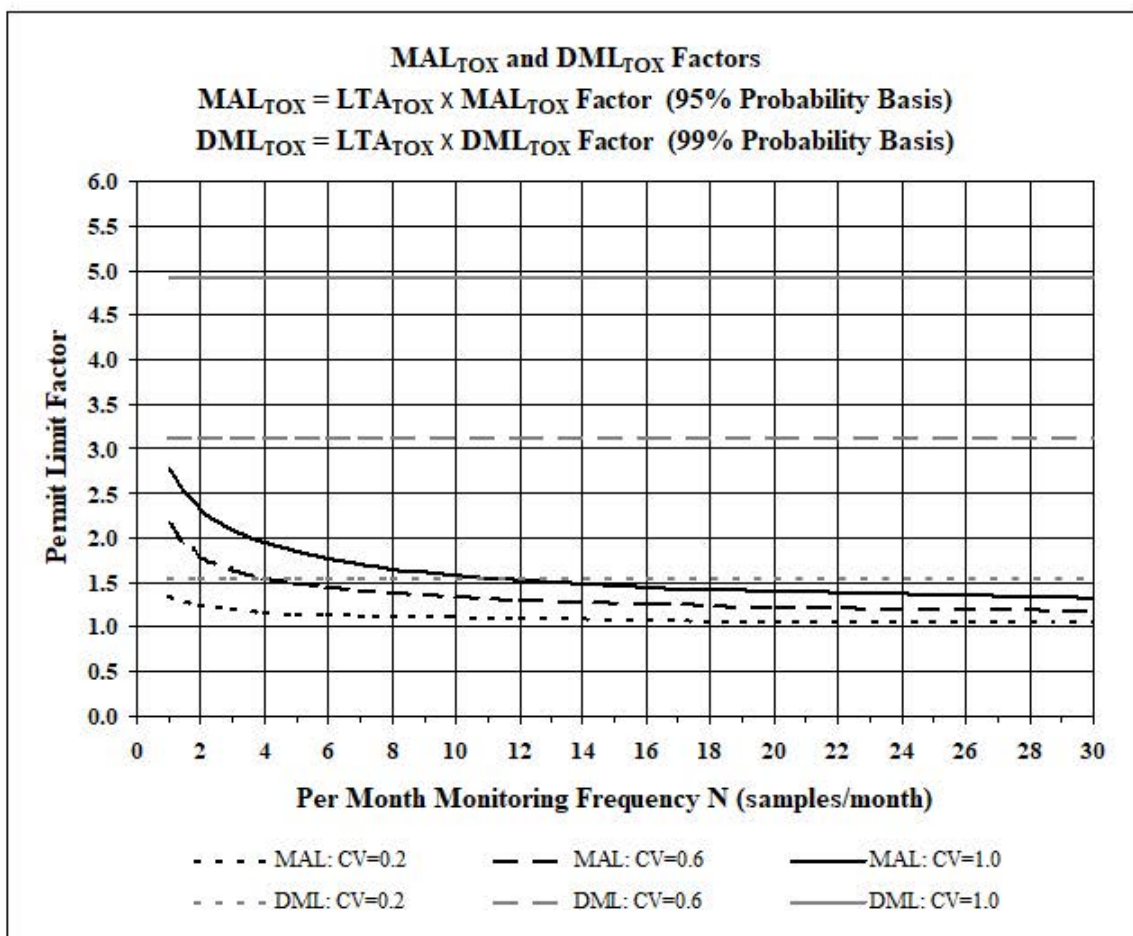


Figure L-2 Toxicity-Based MAL and DML Permit Limit Factors vs. Per Month Monitoring Frequency N_m .

(8) Fish tissue to water column conversion for WLAc.

$$BAF = \frac{C_{tissue}}{C_{water}}, \text{ where:} \quad [L-12]$$

BAF = bioaccumulation factor derived from site-specific field-collected samples of tissue and water (L/kg).

C_{tissue} = concentration of selenium in field-collected fish tissue (mg/kg dw).

C_{water} = ambient concentration of selenium in water (mg/L).

$$C_{target} = \frac{C_{tissue\ criterion\ element}}{BAF}, \text{ where:} \quad [L-13]$$

C_{target} = translated site-specific water column criterion element (mg/L).

$C_{tissue\ criterion\ element}$ = tissue criterion element (mg Se/kg dw).

BAF = bioaccumulation factor derived from site-specific field-collected samples of tissue and water (L/kg).