**Section 309.141 Terms and Conditions of NPDES Permits**

In establishing the terms and conditions of each issued NPDES Permit, the Agency must apply and ensure compliance with all of the following, whenever applicable:

a) Effluent limitations under sections 301 and 302 of the CWA;

b) Standards of performance for new sources under section 306 of the CWA;

c) Effluent standards, effluent prohibitions, and pretreatment standards under section 307 of the CWA;

d) Any more stringent limitations, including those:

1) necessary to meet water quality standards, treatment standards, or schedules of compliance, established under any Illinois statute or regulation (under authority preserved by section 510 of the CWA);

2) necessary to meet any other federal law or regulation; or

3) required to implement any applicable water quality standards, including any legally applicable requirements necessary to implement total maximum daily loads established under section 303(d) of the CWA and incorporated in the continuing planning process approved under section 303(e) of the CWA and any regulations or guidelines issued under that statute;

e) Any more stringent legally applicable requirements necessary to comply with a plan approved under section 208(b) of the CWA;

f) Before the Administrator of the U.S. Environmental Protection Agency promulgates applicable effluent standards and limitations under sections 301, 302, 306, and 307 of the CWA, any conditions that the Agency determines are necessary to carry out the CWA;

g) If the NPDES Permit is for the discharge of pollutants into navigable waters from a vessel or other floating craft (except that an NPDES Permit must not be issued for the discharge of pollutants from a vessel or other floating craft into Lake Michigan), any applicable regulations promulgated by the Secretary of the Department in which the Coast Guard is operating, establishing specifications for safe transportation, handling, carriage, storage and stowage of pollutants; and

h) If the NPDES Permit is for the discharge of pollutants from other than wet weather point sources into the Lake Michigan Basin as defined at 35 Ill. Adm. Code 303.443:

1) Total Maximum Daily Loads (TMDLs) and Waste Load Allocation (WLA) must be established through either the LaMP or a RAP for an Area of Concern. If a LaMP or RAP has not been completed and adopted, effluent limits must be established consistent with the other provisions of this Section, including Additivity, Intake Pollutants, Loading Limits, Level of Detection/Level of Quantification, and Compliance Schedules. When calculation of TMDLs or a WLA is incomplete and it is expected that limits established through other provisions will be superseded upon completion of the TMDL or WLA process, those limits must be identified as interim and the permit must include a reopener clause triggered by the completion of a TMDL or WLA determination. Any new limits brought about through the exercise of the reopener clause must be eligible for delayed compliance dates and compliance schedules consistent with Section 39(b) of the Act [415 ILCS 5/39(b)], Section 309.148, and 35 Ill. Adm. Code 352.Subpart H.

2) 35 Ill. Adm. Code 302.590 establishes an acceptable additive risk level of one in 100,000 (105) for establishing Tier I criteria and Tier II values for combinations of substances exhibiting a carcinogenic or another nonthreshold toxic mechanism. For discharges containing multiple nonthreshold substances, application of this additive standard must be consistent with this subsection (h).

A) For discharges in the Lake Michigan Basin containing one or more 2,3,7,8-substituted chlorinated dibenzo-p-dioxins or 2,3,7,8-substituted dibenzofurans, the tetrachloro dibenzo-p-dioxin 2,3,7,8-TCDD toxicity equivalence concentration (TECTCDD) must be determined as outlined in subsection (h)(2)(B).

B) The values listed in the following table must be used to determine the 2,3,7,8-TCDD toxicity equivalence concentrations using the following equation:

|  |  |  |
| --- | --- | --- |
| (TEC)TCDD | = | Σ (C)x (TEF)x (BEF)x |

|  |  |  |
| --- | --- | --- |
| WHERE: | | |
|  | | |
| (TEC)TCDD | = | 2,3,7,8-TCDD toxicity equivalence concentration in effluent |
| (C)x | = | Concentration of total chemical x in effluent |
| (TEF)x | = | TCDD toxicity equivalency factor for x |
| (BEF)x | = | TCDD bioaccumulation equivalency factor for x |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TABLE | | | | |
|  |  | | |  |
| Congener | | | TEF | BEF |
|  | | |  |  |
| 2,3,7,8-TCDD | | | 1.0 | 1.0 |
| 1,2,3,7,8-PeCDD | | | 0.5 | 0.9 |
| 1,2,3,4,7,8-HxCDD | | | 0.1 | 0.3 |
| 1,2,3,6,7,8-HxCDD | | | 0.1 | 0.1 |
| 1,2,3,7,8,9-HxCDD | | | 0.1 | 0.1 |
| 1,2,3,4,6,7,8-HpCDD | | | 0.01 | 0.0 |
| OCDD | | | 0.001 | 0.0 |
| 2,3,7,8-TCDF | | | 0.1 | 0.8 |
| 1,2,3,7,8-PeCDF | | | 0.05 | 0.2 |
| 2,3,4,7,8-PeCDF | | 0.5 | | 1.6 |
| 1,2,3,4,7,8-HxCDF | | 0.1 | | 0.0 |
| 1,2,3,6,7,8-HxCDF | | 0.1 | | 0.2 |
| 2,3,4,6,7,8-HxCDF | | 0.1 | | 0.7 |
| 1,2,3,7,8,9-HxCDF | | 0.1 | | 0.6 |
| 1,2,3,4,6,7,8-HpCDF | | 0.01 | | 0.0 |
| 1,2,3,4,7,8,9-HpCDF | | 0.01 | | 0.4 |
| OCDF | | 0.001 | | 0.0 |

C) Any combination of carcinogenic or otherwise nonthreshold toxic substances must be assessed on a case-by-case basis. The Agency must only consider such additivity for chemicals that exhibit the same type of effect and the same mechanism of toxicity, based on available scientific information that supports a reasonable assumption of additive effects.

3) Reasonable Potential to Exceed

A) The first step in determining if a reasonable potential to exceed the water quality standard exists for any particular pollutant parameter is estimating the maximum expected effluent concentration for that substance. That estimation must be completed for both acute and chronic exposure periods and is termed the PEQ. The PEQ must be derived from representative facility-specific data to reflect a 95 percent confidence level for the 95th percentile value. These data must be presumed to adhere to a lognormal distribution pattern unless the actual effluent data demonstrates a different distribution pattern. If facility-specific data with more than 10 data values are available, the Agency must calculate a coefficient of variation that is the ratio of the standard deviation to the arithmetic average. The PEQ is derived as the upper bound of a 95% confidence bracket around the 95th percentile value through a multiplier from the following table applied to the maximum value in the data set that has its quality assured consistent with 35 Ill. Adm. Code 352.410 as appropriate for acute and chronic data sets.

PEQ = (maximum data point)(statistical multiplier)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coefficient of Variation | | | | | | | | | | | | | |
| No. | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 |
| Samples |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 1.4 | 1.9 | 2.6 | 3.6 | 4.7 | 6.2 | 8.0 | 10.1 | 12.6 | 15.5 | 18.7 | 22.3 | 26.4 |
| 2 | 1.3 | 1.6 | 2.0 | 2.5 | 3.1 | 3.8 | 4.6 | 5.4 | 6.4 | 7.4 | 8.5 | 9.7 | 10.9 |
| 3 | 1.2 | 1.5 | 1.8 | 2.1 | 2.5 | 3.0 | 3.5 | 4.0 | 4.6 | 5.2 | 5.8 | 6.5 | 7.2 |
| 4 | 1.2 | 1.4 | 1.7 | 1.9 | 2.2 | 2.6 | 2.9 | 3.3 | 3.7 | 4.2 | 4.6 | 5.0 | 5.5 |
| 5 | 1.2 | 1.4 | 1.6 | 1.8 | 2.1 | 2.3 | 2.6 | 2.9 | 3.2 | 3.6 | 3.9 | 4.2 | 4.5 |
| 6 | 1.1 | 1.3 | 1.5 | 1.7 | 1.9 | 2.1 | 2.4 | 2.6 | 2.9 | 3.1 | 3.4 | 3.7 | 3.9 |
| 7 | 1.1 | 1.3 | 1.4 | 1.6 | 1.8 | 2.0 | 2.2 | 2.4 | 2.6 | 2.8 | 3.1 | 3.3 | 3.5 |
| 8 | 1.1 | 1.3 | 1.4 | 1.6 | 1.7 | 1.9 | 2.1 | 2.3 | 2.4 | 2.6 | 2.8 | 3.0 | 3.2 |
| 9 | 1.1 | 1.2 | 1.4 | 1.5 | 1.7 | 1.8 | 2.0 | 2.1 | 2.3 | 2.4 | 2.6 | 2.8 | 2.9 |
| 10 | 1.1 | 1.2 | 1.3 | 1.5 | 1.6 | 1.7 | 1.9 | 2.0 | 2.2 | 2.3 | 2.4 | 2.6 | 2.7 |
| 11 | 1.1 | 1.2 | 1.3 | 1.4 | 1.6 | 1.7 | 1.8 | 1.9 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 |
| 12 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.9 | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 |
| 13 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 | 2.1 | 2.2 | 2.3 |
| 14 | 1.1 | 1.2 | 1.3 | 1.4 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 | 2.1 | 2.2 |
| 15 | 1.1 | 1.2 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.8 | 1.9 | 2.0 | 2.1 |
| 16 | 1.1 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.6 | 1.7 | 1.8 | 1.9 | 1.9 | 2.0 |
| 17 | 1.1 | 1.1 | 1.2 | 1.3 | 1.4 | 1.4 | 1.5 | 1.6 | 1.7 | 1.7 | 1.8 | 1.9 | 1.9 |
| 18 | 1.1 | 1.1 | 1.2 | 1.3 | 1.3 | 1.4 | 1.5 | 1.6 | 1.6 | 1.7 | 1.7 | 1.8 | 1.9 |
| 19 | 1.1 | 1.1 | 1.2 | 1.3 | 1.3 | 1.4 | 1.5 | 1.5 | 1.6 | 1.6 | 1.7 | 1.8 | 1.8 |
| 20 | 1.1 | 1.1 | 1.2 | 1.2 | 1.3 | 1.4 | 1.4 | 1.5 | 1.5 | 1.6 | 1.6 | 1.7 | 1.7 |
| 30 | 1.0 | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.3 | 1.3 | 1.4 | 1.4 |
| 40 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 50 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 60 or | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| greater |  |  |  |  |  |  |  |  |  |  |  |  |  |

i) If the PEQ is less than or equal to the water quality standard, there is no reasonable potential and no limit will be established in the permit.

ii) If the PEQ is more than the water quality standard, the Agency must proceed to consider dilution and mixing under subsection (h)(4).

B) If facility-specific data of 10 or fewer data values are available, an alternative PEQ must be derived using the table in subsection (h)(3)(A) assuming a coefficient of variation of 0.6, applied to the maximum value in the data set that has its quality assured consistent with 35 Ill. Adm. Code 352.410.

i) If the PEQ is less than or equal to the water quality standard, there is no reasonable potential and no limit will be established in the permit.

ii) If the PEQ exceeds the water quality standard, an alternative PEQ must be calculated using the maximum value in the data set and a multiplier of 1.4. If the alternative PEQ also exceeds the water quality standard, the Agency must proceed to consider dilution and mixing under subsection (h)(4).

iii) If the PEQ exceeds the water quality standard but the alternative PEQ is less than or equal to the standard, the Agency must either proceed to consider dilution and mixing under subsection (h)(4) or incorporate a monitoring requirement and reopener clause to reassess the potential to exceed within a specified time schedule, not to exceed one year. In determining which of these options to use in any individual application, the Agency must consider the operational and economic impacts on the permittee and the effect, if any, deferral of a final decision would have on an ultimate compliance schedule if a permit limit were subsequently determined to be necessary.

C) The Agency must compare monthly average effluent data values, when available, with chronic aquatic life, human health, and wildlife standards to evaluate the need for monthly average water quality based effluent limitations (WQBELs). The Agency must use daily effluent data values to determine whether a potential exists to exceed acute aquatic life water quality standards.

D) The Agency may apply other scientifically defensible statistical methods for calculating PEQ for use in the reasonable potential analysis as provided for in Procedure 5.b.2 of appendix F to 40 CFR 132, incorporated by reference at 35 Ill. Adm. Code 301.106.

E) Regardless of the statistical procedure used, if the PEQ for the parameter is less than or equal to the water quality standard for that parameter, the Agency must deem the discharge not to have a reasonable potential to exceed, and a WQBEL must not be required unless otherwise required under 35 Ill. Adm. Code 352.430.

4) If the PEQ for a parameter is greater than the particular water quality standard, criterion, or value for that parameter, the Agency must assess the level of treatment being provided by the discharger. If the discharger is providing (or will be providing) a level of treatment consistent with the best degree of treatment required by 35 Ill. Adm. Code 304.102(a), the PEQ derived under subsection (h)(3) must be compared to a preliminary effluent limitation (PEL) determined by applying an appropriate mixing zone or a default mixing zone to the discharge. Mixing opportunity and dilution credit must be considered as follows:

A) Discharges to tributaries of the Lake Michigan Basin must be considered to have no available dilution for either acute or chronic exposures, and the PEL must be set equivalent to the water quality standard unless dilution is documented through a mixing zone study.

B) Bioaccumulative Chemicals of Concern (BCCs)

i) Mixing must not allowed be for new discharges of BCCs commencing on or after December 24, 1997. The PEL must be set equivalent to the water quality standard.

ii) Mixing must not allowed be for discharges of BCCs that existed as of December 24, 1997 under 35 Ill. Adm. Code 302.530.

C) Direct discharges to the Open Waters of Lake Michigan must have a default mixing allowance of 2:1 for acute standards, criteria, or values and 10:1 for chronic standards, criteria, or values if the discharge configuration indicates that the effluent readily and rapidly mixes with the receiving waters. If ready and rapid mixing is in doubt, the Agency must deny any default dilution or mixing allowance and require a mixing or dispersion study to determine the proper dilution allowance. If the discharger applies for more than the default dilution or mixing allowance, it must submit a mixing or dispersion study to justify its request. Whenever a mixing or dispersion study is available, it must be used to determine dilution or mixing allowance in lieu of the default allowance.

5) Preliminary Effluent Limitations Calculations

A) The preliminary effluent limitation (PEL) is calculated in a simple mass balance approach reflecting the dilution allowance established in subsection (h)(4):

|  |  |  |
| --- | --- | --- |
| WQS | = | [(Qe)(PEL) +(Qd)(Cd)] / [Qe + Qd] |

or

|  |  |  |
| --- | --- | --- |
| PEL | = | [WQS(Qe + Qd) - (Qd)(Cd)] / Qe |

|  |  |  |
| --- | --- | --- |
| WHERE: | | |
|  | | |
| WQS | = | applicable water quality standard, criterion, or value |
| Qe | = | effluent flowrate |
| Qd | = | allowable dilution flowrate |
| Cd | = | background pollutant concentration in dilution water |

B) The representative background concentration of pollutants to develop TMDLs and WLAs calculated in the absence of a TMDL must be established as follows:

i) "Background" represents all pollutant loadings, specifically loadings that flow from upstream waters into the specified watershed, water body, or water body segment for which a TMDL or WLA in the absence of a TMDL is being developed and enter the specified watershed, water body, or water body segment through atmospheric deposition, chemical reaction, or sediment release or resuspension.

ii) When determining what available data are acceptable for use in calculating background, the Agency must use its best professional judgment, including consideration of the sampling location and the reliability of the data through comparison, in part, to detection and quantification levels. When data in more than one of the data sets or categories described in subsection (h)(5)(B)(iii) exists, best professional judgment must be used to select the data that most accurately reflects or estimates background concentrations. Pollutant degradation and transport information may be considered when using pollutant loading data to estimate a water column concentration.

iii) The representative background concentration for a pollutant in the specified watershed, water body, or water body segment must be established on a case-by-case basis as the geometric mean of:

• acceptable water column data;

• water column concentrations estimated through the use of acceptable caged or resident fish tissue data; or

• water column concentrations estimated through the use of acceptable or projected pollutant loading data.

iv) When determining the geometric mean of the data for a pollutant that includes values both above and below the detection level, commonly accepted statistical techniques must be used to evaluate the data. If all of the acceptable data in a data set are below the detection level for a pollutant, then all the data for the pollutant in that data set must be assumed to be zero.

6) Water Quality Based Effluent Limitations (WQBELs)

A) If the PEQ is less than or equal to the PEL, it must be concluded that there is no reasonable potential to exceed. Under these circumstances, a permit limit for that contaminant must not be set unless otherwise justified under one or more provisions of 35 Ill. Adm. Code 352.430.

B) If the PEQ is equal to or greater than the PEL, and the PEQ was calculated using a data set of more than 10 values, a WQBEL must be included in the permit. If the PEQ was calculated using a data set with 10 or fewer values and the alternative PEQ calculated under subsection (h)(3)(B) also exceeds the PEL, a WQBEL must be included in the permit.

C) If the PEQ was calculated using a data set with 10 or fewer values, and the PEQ is greater than the PEL but the alternative PEQ is less than the PEL, the Agency must either establish a WQBEL in the permit or incorporate a monitoring requirement and reopener clause to reassess potential to exceed within a specified time schedule, not to exceed one year. In determining which of these options to use in any individual application, the Agency must consider the operational and economic impacts on the permittee and the effect, if any, deferral of a final decision would have on an ultimate compliance schedule if a permit limit were subsequently determined to be necessary.

D) The WQBEL must be set at the PEL unless the PEL is appropriately modified to reflect credit for intake pollutants when the discharged water originates in the same water body to which it is being discharged. Consideration of intake credit must be limited to the provisions of 35 Ill. Adm. Code 352.425.

E) The reasonable potential analysis must be completed separately for acute and chronic aquatic life effects. When WQBELs are based on acute impacts, the limit must be expressed as a daily maximum. When the WQBEL is based on chronic effects, the limit must be expressed as a monthly average. Human health and wildlife-based WQBELs must be expressed as monthly averages. If circumstances warrant, the Agency must consider alternatives to daily and monthly limits.

i) Best management practices (BMPs) to control or abate the discharge of chloride when:

1) Authorized under section 402(p) of the CWA for the control of stormwater discharges;

2) Numeric effluent limitations are infeasible; or

3) BMPs are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

(Source: Amended at 47 Ill. Reg. 5017, effective March 23, 2023)