**Section 302.212 Total Ammonia Nitrogen**

a) Total ammonia nitrogen (as N) must in no case exceed 15 mg/L.

b) The total ammonia nitrogen (as N) acute, chronic, and sub-chronic standards are determined by the equations given in subsections (b)(1) and (b)(2). Attainment of each standard must be determined by subsections (c) and (d) in mg/L.

1) The acute standard (AS) is calculated using the following equation:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AS | = | 0.411 | + | 58.4 |
| 1 + 107.204-pH | 1 + 10pH-7.204 |

2) The chronic standard (CS) is calculated using the following equations:

A) During the Early Life Stage Present period, as defined in subsection (e):

i) When the water temperature is less than or equal to 14.51 °C:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CS | = | { | 0.0577 | + | 2.487 | } | (2.85) |
| 1 + 107.688-pH | 1 + 10pH-7.688 |

ii) When the water temperature is above 14.51 °C:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CS | = | { | 0.0577 | + | 2.487 | } | (1.45\*100.028\*(25-T)) |
| 1 + 107.688-pH | 1 + 10pH-7.688 |

Where T = Water Temperature, degrees Celsius

B) During the Early Life Stage Absent period, as defined in subsection (e):

i) When the water temperature is less than or equal to 7 °C:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CS | = | { | 0.0577 | + | 2.487 | } | (1.45\*100.504) |
| 1 + 107.688-pH | 1 + 10pH-7.688 |

ii) When the water temperature is greater than 7 °C:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CS | = | { | 0.0577 | + | 2.487 | } | (1.45\*100.028\*(25-T)) |
| 1 + 107.688-pH | 1 + 10pH-7.688 |

Where T = Water Temperature, degrees Celsius

3) The sub-chronic standard is equal to 2.5 times the chronic standard.

c) Attainment of the Total Ammonia Nitrogen Water Quality Standards

1) The acute standard of total ammonia nitrogen (in mg/L) must not be exceeded at any time except in those waters for which the Agency has approved a ZID under Section 302.102.

2) The 30-day average concentration of total ammonia nitrogen (in mg/L must not exceed the chronic standard (CS) except in those waters in which mixing is allowed under Section 302.102. Attainment of the chronic standard (CS) is evaluated under subsection (d) by averaging at least four samples collected at weekly intervals or at other sampling intervals that statistically represent a 30-day sampling period. The samples must be collected in a manner that assures a representative sampling period.

3) The 4-day average concentration of total ammonia nitrogen (in mg/L) must not exceed the sub-chronic standard except in those waters in which mixing is allowed under Section 302.102. Attainment of the sub-chronic standard is evaluated under subsection (d) by averaging daily sample results collected over four consecutive days within the 30-day averaging period. The samples must be collected in a manner that assures a representative sampling period.

d) The water quality standard for each water body must be calculated based on the temperature and pH of the water body measured at the time of each ammonia sample. The concentration of total ammonia in each sample must be divided by the calculated water quality standard for the sample to determine a quotient. The water quality standard is attained if the mean of the sample quotients is less than or equal to one for the duration of the averaging period.

e) The Early Life Stage Present period occurs from March through October. In addition, during any other period when early life stages are present, and where the water quality standard does not provide adequate protection for these organisms, the water body must meet the Early Life Stage Present water quality standard. All other periods are subject to the Early Life Stage Absent period.

BOARD NOTE: Acute and chronic standard concentrations for total ammonia nitrogen (in mg/L) for different combinations of pH and temperature are shown in Appendix C.

(Source: Amended at 47 Ill. Reg. 4437, effective March 23, 2023)