

NOTICE OF INTENT

**Department of Environmental Quality
Office of the Secretary
Legal Affairs Division**

**Freshwater Ammonia Aquatic Life Criteria
(LAC 33:IX.1105, 1113, 1115, and 1117) (WQ114)**

Under the authority of the Environmental Quality Act, R.S. 30:2001 et seq., and in accordance with the provisions of the Administrative Procedure Act, R.S. 49:950 et seq., the secretary gives notice that rulemaking procedures have been initiated to amend the Water Quality regulations, LAC 33:IX.1105, 1113, 1115, and 1117 (Log #WQ114).

This rule will revise LAC 33:IX Chapter 11 of the Surface Water Quality Standards regulations to add freshwater ammonia criteria. LDEQ has the regulatory obligation to evaluate and adopt, where appropriate, federally recommended water quality criteria. See La. R.S. 30:2074(B)(1)(a). See also 40 C.F.R. § 131.20 and 40 C.F.R. § 131.22. This revision will adopt and clarify the applicability of freshwater ammonia criteria. This rule will give the agency the necessary amount of time to complete adoption of freshwater ammonia criteria.

This rule complies with the statutory law administered by LDEQ. See La. R.S. 30:2074(B)(1)(a). The basis and rationale for this proposed rule are to conform to Section 303 of the Clean Water Act and to maintain and protect state waters. In accordance with Section 304(a) of the Clean Water Act, the Environmental Protection Agency (EPA) publishes water quality criteria that accurately reflect the latest scientific knowledge. In 2013, EPA announced final nationally recommended criteria for the protection of aquatic life from the effects of ammonia in freshwater, and published the Section 304(a) document *Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater* (see 78 FR 52192 and Docket Number EPA-822-R-18002). The nationally recommended criteria incorporates the latest scientific knowledge on the toxicity of ammonia to freshwater aquatic life. Elevated concentrations of ammonia in freshwater have a direct toxic effect on aquatic life, exacerbated by elevated pH and temperature. Many effluents must be treated in order to keep concentrations of ammonia in surface waters from being unacceptably high. Freshwater mussels belonging to Family Unionidae are the primary aquatic organisms sensitive to ammonia and such freshwater mussels are widely distributed in Louisiana. Criteria are expressed in the form of a formula, in which temperature and pH are input to calculate the ammonia criterion. There are criteria formulas for situations in which mussels are either present or absent for a given site and criteria formulas for acute and chronic effects of ammonia. To provide for both the protection of water quality when mussels are either absent or present, LDEQ proposes to adopt a performance-based approach. See 65 FR 24641, Docket Number FRL-6571-7. A performance-based approach relies on the adoption of a process rather than a specific outcome and does not require site-specific decisions to be codified in the regulations, so long as the process is transparent, predictable, and repeatable and also provides the opportunity for public participation. The process is described in proposed revisions to the Water Quality Management Plan, Volume 3: Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards. See accompanying notice 2405Pot1. Based on this

review of information, the agency determined adoption of the freshwater ammonia criteria is appropriate.

The department has submitted a report to the Legislative Fiscal Office and the Joint Legislative Committee on the Budget demonstrating that the environmental and public health benefits outweigh the social and economic costs reasonably expected to result from the rule. These reports are published in the Potpourri Section of the May 20, 2024, issue of the *Louisiana Register*.

Title 33
ENVIRONMENTAL QUALITY
Part IX. Water Quality
Subpart 1. Water Pollution Control

Chapter 11. Surface Water Quality Standards

§1105. Definitions

1Q10 Flow—the minimum 1-day average stream flow with a recurrence level of once every 10 years.

30Q10 Flow—the minimum 30-day average stream flow with a recurrence level of once every 10 years.

* * *

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2074(B)(1).

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Water Resources, LR 10:745 (October 1984), amended LR 15:738 (September 1989), LR 17:264 (March 1991), LR 20:883 (August 1994), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 25:2401 (December 1999), LR 26:2545 (November 2000), LR 29:557 (April 2003), LR 30:1473 (July 2004), amended by the Office of the Secretary, Legal Affairs Division, LR 33:456 (March 2007), LR 33:827 (May 2007), LR 35:445 (March 2009), amended by the Office of the Secretary, Legal Division, LR 40:2243 (November 2014), LR 42:736 (May 2016), amended by the Office of the Secretary, Legal Affairs and Criminal Investigations Divisions, LR 46:1545 (November 2020), amended by the Office of the Secretary, Legal Affairs Division, LR 50:

§1113. Criteria

A. — C.6.f. ...

7. Ammonia

a. Water quality criteria for ammonia are for the protection of aquatic life. Toxic effects of ammonia are dependent on pH and temperature. Ammonia is expressed in terms of total ammonia nitrogen (TAN), which includes its un-ionized (ammonia) and ionized (ammonium) fractions. TAN is measured in units of mg/L and referenced with Chemical Abstracts Service (CAS) Registry Number 7664-41-7.

i. Freshwater criteria for ammonia are structured on the presence or absence of freshwater mussels at a site, and are expressed as formulas for both acute and chronic criteria. The reason is because mussels siphon water to filter pollutants and heavy metals. Due to the ubiquity of freshwater mussels of the family Unionidae in Louisiana waters, applying the mussel-present criteria formulas are considered protective of aquatic life. The mussels-present formulas apply to all freshwater water bodies, except as provided below. If Unionidae mussels are absent when conducting a mussel survey, per approval from the LDEQ Secretary, appointed authority, or administrative authority, then mussels absent criteria formulas may be applied on a site-specific and/or water body basis.

(a). Mussels Present

(i). Freshwater Acute Criterion

$$\text{mg (TAN)/L} = 0.7249 * \left(\frac{0.0114}{1 + 10^{7.204 - \text{pH}}} + \frac{1.6181}{1 + 10^{\text{pH} - 7.204}} \right) * \text{MIN}(51.93, 23.12 * 10^{0.036 * (20 - T)})$$

(ii). Freshwater Chronic Criterion

$$\text{mg (TAN)/L} = 0.8876 * \left(\frac{0.0278}{1 + 10^{7.688 - \text{pH}}} + \frac{1.1994}{1 + 10^{\text{pH} - 7.688}} \right) * (2.126 * 10^{0.028 * (20 - \text{MAX}(T, 7))})$$

(b). Mussels Absent

(i). Freshwater Acute Criterion

$$\text{mg (TAN)/L} = 0.7249 * \left(\frac{0.0114}{1+10^{7.204-\text{pH}}} + \frac{1.6181}{1+10^{\text{pH}-7.204}} \right) * \text{MIN}(51.93, 62.15 * 10^{0.036 * (20-T)})$$

(ii). Freshwater Chronic Criterion

$$\text{mg (TAN)/L} = 0.9405 * \left(\frac{0.0278}{1+10^{7.688-\text{pH}}} + \frac{1.1994}{1+10^{\text{pH}-7.688}} \right) * \text{MIN}(6.920, 7.547 * 10^{0.028 * (20-\text{MAX}(T, 7))})$$

ii. Formula Calculations

(a). All formulas require data inputs for pH and temperature to calculate a criterion. The minimum and maximum pH values used for criteria calculation are 6.5 to 9.0. The minimum and maximum temperature values used for criteria calculation are 7°C to 30°C.

Table 1. — Table 1A. ...

* * *

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2074(B)(1).

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Water Resources, LR 10:745 (October 1984), amended LR 15:738 (September 1989), LR 17:264 (March 1991), LR 17:967 (October 1991), repromulgated LR 17:1083 (November 1991), amended LR 20:883 (August 1994), LR 24:688 (April 1998), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 25:2402 (December 1999), LR 26:2547 (November 2000), LR 27:289 (March 2001), LR 30:1474 (July 2004), amended by the Office of the Secretary, Legal Affairs Division, LR 33:457 (March 2007), LR 33:829 (May 2007), LR 35:446 (March 2009), amended by the Office of the Secretary, Legal Division, LR 42:736 (May 2016), amended by the Office of the Secretary, Legal Affairs and Criminal Investigations Division, LR 45:1188 (September 2019), LR 46:1550 (November 2020), LR 48:1498 (June 2022), amended by the Office of the Secretary, Legal Affairs Division LR 50:

§1115. Application of Standards

A. — C.7.c. ...

d. For the application of ammonia aquatic life criteria, the following flows may be used.

i. Acute ammonia aquatic life criteria will be evaluated using the 1Q10 flow and the water body categorizations listed in Table 2a of this Section.

ii. Chronic ammonia aquatic life criteria will be evaluated using the 30Q10 flow and the water body categorizations listed in Table 2a of this Section.

8. — 13. ...

D. Ammonia Criteria Application

1. The application of the appropriate ammonia criteria formula in development of permit limitations will be determined using a performance-based approach as described in the state's Water Quality Management Plan (WQMP), Volume 3, Permitting Guidance Document for Implementing Surface Water Quality Standards, Appendix H. The mussel-present criteria formulas, as expressed in LAC 33:IX.1113.C.7.a.i.(a), will be the default formulas utilized in permit implementation. The mussels absent formulas, as expressed in LAC 33:IX.1113.C.7.a.i.(b), may be utilized in permit implementation after satisfactory completion of a mussels survey indicating no evidence of historical or current presence of mussels of the family Unionidae, and with approval from the administrative authority.

Table 2a. — Table 2b. ...

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2074(B)(1).

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Water Resources, LR 10:745 (October 1984), amended LR 15:738 (September 1989), LR 17:264 (March 1991), LR 17:967 (October 1991), repromulgated LR 17:1083 (November 1991), amended LR 20:883 (August 1994), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 25:2403 (December 1999), LR 26:2548 (November 2000), amended by the Office of the Secretary, Legal Affairs Division, LR 33:831 (May 2007), amended by the Office of the Secretary, Legal Affairs and Criminal Investigations Division, LR 46:1554 (November 2020), amended by the Office of the Secretary, Legal Affairs Division LR 50:

§1117. References

A. — A.16. ...

17. U.S. Environmental Protection Agency. April 2013. *Aquatic Life Ambient Water Quality Criteria for Ammonia-Freshwater 2013*. Office of Water. EPA 822-R-18002.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2074(B)(1).
HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Water Resources, LR 10:745 (October 1984), amended LR 15:738 (September 1989), LR 17:264 (March 1991), LR 20:883 (August 1994), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 25:2403 (December 1999), amended by the Office of the Secretary, Legal Affairs Division, LR 31:2507 (October 2005), LR 33:2163 (October 2007), amended by the Office of the Secretary, Legal Division, LR 42:737 (May 2016), LR 50:

Family Impact Statement

This Rule has no known impact on family formation, stability, and autonomy as described in R.S. 49:972.

Poverty Impact Statement

This Rule has no known impact on poverty as described in R.S. 49:973.

Small Business Analysis

This Rule may have an impact on small business as described in R.S. 49:974.1 - 974.8. Directly affected permittees may incur costs associated with monitoring, treatment of wastewater prior to discharge, and reporting.

Provider Impact Statement

This Rule has no known impact on providers as described in HCR 170 of 2014.

Public Comments

All interested persons are invited to submit written comments on the proposed regulation. Persons commenting should reference this proposed regulation by WQ114. Such comments must be received no later than July 2, 2024, at 4:30 p.m., and should be sent to William Little, Attorney Supervisor, Office of the Secretary Legal Affairs Division, P.O. Box 4302, Baton Rouge, LA 70821-4302, by FAX (225) 219-4068, or by E-mail to DEQ.Reg.Dev.Comments@la.gov. Copies of this proposed regulation can be purchased by contacting the DEQ Public Records Center at (225) 219-3168. Check or money order is required in advance for each copy of WQ114. This regulation is available on the Internet at <https://deq.louisiana.gov/page/monthly-regulation-changes-2024%20>.

Public Hearing

A public hearing will be held on June 25, 2024, at 1:30 p.m. in the Galvez Building, Oliver Pollock Conference Room, 602 N. Fifth Street, Baton Rouge, LA 70802. Interested persons are invited to attend in person or via Zoom at <https://deqlouisiana.zoom.us/j/9373792954?omn=84655071922> or by telephone by dialing (636) 651-3182 using the code 725573. Should individuals with a disability need an accommodation in order to participate, contact Doug Bordelon at the address given below, or at (225) 219-1325.

The proposed regulation is available for inspection at the following LDEQ office locations from 8 a.m. until 4:30 p.m.: 602 N. Fifth Street, Baton Rouge, LA 70802; 508 Downing Pines Road, West Monroe, LA 71292; State Office Building, 1525 Fairfield Avenue,

Shreveport, LA 71101; 1301 Gadwall Street, Lake Charles, LA 70615; 111 New Center Drive, Lafayette, LA 70508; 110 Barataria Street, Lockport, LA 70374; 201 Evans Road, Bldg. 4, Suite 420, New Orleans, LA 70123.

Aurelia S. Giacometto
Secretary

**FISCAL AND ECONOMIC IMPACT STATEMENT
FOR ADMINISTRATIVE RULES**

Person

Preparing Statement: Christy Clark.
Christy.Clark@la.gov Dept.: Environmental Quality
Jamie Phillippe
Jamie.phillippe@la.gov

Phone: (225) 219-3528 (C. Clark) Office: Environmental Services
(225) 219-0944 (J. Phillippe)

Return Address: 602 North Fifth Street Rule Title: Freshwater Ammonia Aquatic Life Criteria
Baton Rouge, LA 70802 LAC 33:IX.1105, LAC 33:IX.1113,
LAC 33: IX.1115, and LAC 33:IX.1117

Date Rule
Takes Effect: Upon promulgation

SUMMARY
(Use complete sentences)

In accordance with Section 961 of Title 49 of the Louisiana Revised Statutes, there is hereby submitted a fiscal and economic impact statement on the rule proposed for adoption, repeal or amendment. THE FOLLOWING STATEMENTS SUMMARIZE ATTACHED WORKSHEETS, I THROUGH IV AND WILL BE PUBLISHED IN THE LOUISIANA REGISTER WITH THE PROPOSED AGENCY RULE.

I. ESTIMATED IMPLEMENTATION COSTS (SAVINGS) TO STATE OR LOCAL GOVERNMENTAL UNITS (Summary)

There are no estimated implementation costs or savings to the state as a result of the proposed rule change. Local governments who operate a publicly owned treatment works may incur costs associated with monitoring, treatment of wastewater prior to discharge, and reporting. Although data is not available for every potentially affected facility, the Louisiana Department of Environmental Quality (LDEQ) has received information that indicates the costs for installing new treatment technology would be significant. Local governments may also be subject to additional testing costs to demonstrate compliance with ammonia-nitrogen limits.

The proposed rule change will revise Chapter 11 of the Water Quality regulations to add freshwater

ammonia criteria recommended by the U.S. Environmental Protection Agency (EPA) to protect aquatic species present in freshwater water bodies of Louisiana. The proposed rule changes will adopt and clarify the applicability of freshwater ammonia criteria.

II. ESTIMATED EFFECT ON REVENUE COLLECTIONS OF STATE OR LOCAL GOVERNMENTAL UNITS (Summary)

The proposed rule change is not anticipated to have any impact on the revenues of state or local governmental units.

III. ESTIMATED COSTS AND/OR ECONOMIC BENEFITS TO DIRECTLY AFFECTED PERSONS, SMALL BUSINESSES, OR NON-GOVERNMENTAL GROUPS (Summary)

Directly affected permittees may incur costs associated with monitoring, treatment of wastewater prior to discharge, and reporting. LDEQ expects costs to be incurred by publicly and privately owned treatment works that discharge 100,000 gallons per day (GPD) of treated wastewater or more and some industrial facilities with a Louisiana Pollutant Discharge Elimination System (LPDES) permit. Although data is not available for every potentially affected facility, LDEQ has received information that indicates the costs for installing new treatment technology would be significant. Facilities may also be subject to additional testing costs to demonstrate compliance with ammonia-nitrogen limits.

IV. ESTIMATED EFFECT ON COMPETITION AND EMPLOYMENT (Summary)

There is no estimated effect on competition and employment related to this rule change.

Signature of Head or Designee

Aurelia S. Giacometto, Secretary

Typed Name & Title of Agency Head or Designee

Date of Signature

Legislative Fiscal Officer or Designee

Date of Signature