



OFFICE OF THE SECRETARY OF STATE

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May 24, 2013

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CLERK'S OFFICE

MAY 29 2013

STATE OF ILLINOIS
Pollution Control Board

POLLUTION CONTROL BOARD
JOHN THERRIAULT ASSISTANT CLERK
100 W RANDOLPH ST, STE 11-500
CHICAGO, IL 60601

Dear JOHN THERRIAULT ASSISTANT CLERK

Your rules Listed below met our codification standards and have been published in Volume 37, Issue 22 of the Illinois Register, dated 5/31/2013.

ADOPTED RULES

| | |
|---|------|
| Water Quality Standards | |
| 35 Ill. Adm. Code 302 | 7493 |
| Point of Contact: Nancy Miller | |
| Tiered Approach to Corrective Action Objectives | |
| 35 Ill. Adm. Code 742 | 7506 |
| Point of Contact: Nancy Miller | |

OTHER INFORMATION REQUIRED BY LAW TO BE PUBLISHED IN THE ILLINOIS REGISTER

| | |
|--|------|
| Notice of Public Information On Proposed Amendment | |
| Point of Contact: Mike McCambridge | 7687 |

PROPOSED RULES

| | |
|------------------------------------|------|
| Air Quality Standards | |
| 35 Ill. Adm. Code 243 | 7316 |
| Point of Contact: Mike McCambridge | |

If you have any questions, you may contact the Administrative Code Division at (217) 782 - 7017.

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NOTICE OF ADOPTED AMENDMENT

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- 1) Heading of the Part: Water Quality Standards
- 2) Code Citation: 35 Ill. Adm. Code 302
- 3) Section Numbers: 302.208 Adopted Action: Amend
- 4) Statutory Authority: Implementing Sections 5, 10, 13, 21, 22, 22.01, and 22.2 and authorized by Sections 27 of the Environmental Protection Act [415 ILCS 5/5, 10, 13, 21, 22, 22.01, 22.2, and 27].
- 5) Effective Date of Amendments: MAY 16 2013
- 6) Does this rulemaking contain an automatic repeal date? No.
- 7) Do these amendments contain incorporations by reference? Yes.
- 8) The text of the adopted amendments is on file in the Board's Chicago office at the James R. Thompson Center, 100 W. Randolph Street, Suite 11-500, and is available there for public inspection.
- 9) Notice of Proposal Published in Illinois Register: February 22, 2013, 37 Ill. Reg. 2436.
- 10) Has JCAR issued a Statement of Objections to these amendments? No.
- 11) Differences between proposal and final version: These differences are limited to technical corrections noticed by the Agency, JCAR, and the Board. The differences occur in Section 302.208(e) of Title 35 of the Board's regulations. First, during the First Notice comment period, the Agency requested that an equal sign ("=") in the formulas for acute and chronic Numeric Water Quality Standards for Lead (dissolved) be replaced with a plus sign ("+"). Second, after acceptance of the Second Notice, JCAR commented that a division symbol ("/") in the formula for the acute Numeric Water Quality Standard for Lead (dissolved) should be replaced with the number one ("1"). Finally, in making the aforementioned change, the Board noticed an inconsistency between the hardness notation of the formulas for the acute and chronic standards for cadmium (dissolved) and those formulas for lead (dissolved). To correct this scrivener's error, a set of parenthesis was added to the hardness notations in the formulas for the acute and chronic standards for lead (dissolved), changing the hardness notation from "ln H" to "ln(H)".

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- 12) Have all the changes agreed upon by the agency and JCAR been made as indicated in the agreements letter issued by JCAR? Yes.
- 13) Will these amendments replace emergency amendments currently in effect? No.
- 14) Are there any amendments pending on this Part? No.
- 15) Summary and Purpose of Amendments: This subdocket was opened for the limited purpose of making two technical changes to Section 302.208(b) and (e), to correct scrivener's errors that occurred during the rulemaking process. The errors occurred in the reporting requirements for the water quality standards for fluoride (errant appearance of the word "metals" which should have been stricken throughout the section) and manganese (omission of the word "dissolved"). Additional scrivener's errors were corrected, as discussed above. A more detailed description of this rulemaking is contained in the Board's first notice opinion and order in this Technical Corrections to Triennial Review of Water Quality Standards Amendments for Fluoride and Manganese: Amendments to 35 Ill. Adm. Code 302.208(b) and (e), R11-18(B) (Feb. 7, 2013).
- 16) Information and questions regarding these adopted amendments shall be directed to:

Chad Kruse
Illinois Pollution Control Board
100 W. Randolph Street, Suite 11-500
Chicago, IL 60601

312-814-5053
Chad.Kruse@illinois.gov

Copies of the Board's opinions and orders may be requested from the Clerk of the Board at the address listed in #8 above or by calling 312/814-3620. Please refer to the docket number R11-18(b) in your request. The Board order is also available from the Board's Web site (www.ipcb.state.il.us).

The full text of the Adopted Amendment begins on the next page:

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TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE C: WATER POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD

PART 302
WATER QUALITY STANDARDS

SUBPART A: GENERAL WATER QUALITY PROVISIONS

| | |
|---------|---------------------------------------|
| Section | |
| 302.100 | Definitions |
| 302.101 | Scope and Applicability |
| 302.102 | Allowed Mixing, Mixing Zones and ZIDs |
| 302.103 | Stream Flows |
| 302.104 | Main River Temperatures |
| 302.105 | Antidegradation |

SUBPART B: GENERAL USE WATER QUALITY STANDARDS

| | |
|---------|---|
| Section | |
| 302.201 | Scope and Applicability |
| 302.202 | Purpose |
| 302.203 | Offensive Conditions |
| 302.204 | pH |
| 302.205 | Phosphorus |
| 302.206 | Dissolved Oxygen |
| 302.207 | Radioactivity |
| 302.208 | Numeric Standards for Chemical Constituents |
| 302.209 | Fecal Coliform |
| 302.210 | Other Toxic Substances |
| 302.211 | Temperature |
| 302.212 | Total Ammonia Nitrogen |
| 302.213 | Effluent Modified Waters (Ammonia) (Repealed) |

SUBPART C: PUBLIC AND FOOD PROCESSING WATER SUPPLY STANDARDS

| | |
|---------|--------------------------|
| Section | |
| 302.301 | Scope and Applicability |
| 302.302 | Algicide Permits |
| 302.303 | Finished Water Standards |

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| | |
|---------|-----------------------|
| 302.304 | Chemical Constituents |
| 302.305 | Other Contaminants |
| 302.306 | Fecal Coliform |
| 302.307 | Radium 226 and 228 |

SUBPART D: SECONDARY CONTACT AND
INDIGENOUS AQUATIC LIFE STANDARDS

| | |
|---------|----------------------------------|
| Section | |
| 302.401 | Scope and Applicability |
| 302.402 | Purpose |
| 302.403 | Unnatural Sludge |
| 302.404 | pH |
| 302.405 | Dissolved Oxygen |
| 302.406 | Fecal Coliform (Repealed) |
| 302.407 | Chemical Constituents |
| 302.408 | Temperature |
| 302.409 | Cyanide |
| 302.410 | Substances Toxic to Aquatic Life |

SUBPART E: LAKE MICHIGAN BASIN WATER QUALITY STANDARDS

| | |
|---------|---|
| Section | |
| 302.501 | Scope, Applicability, and Definitions |
| 302.502 | Dissolved Oxygen |
| 302.503 | pH |
| 302.504 | Chemical Constituents |
| 302.505 | Fecal Coliform |
| 302.506 | Temperature |
| 302.507 | Thermal Standards for Existing Sources on January 1, 1971 |
| 302.508 | Thermal Standards for Sources Under Construction But Not In Operation on January 1, 1971 |
| 302.509 | Other Sources |
| 302.510 | Incorporations by Reference |
| 302.515 | Offensive Conditions |
| 302.520 | Regulation and Designation of Bioaccumulative Chemicals of Concern (BCCs) |
| 302.521 | Supplemental Antidegradation Provisions for Bioaccumulative Chemicals of Concern (BCCs) |
| 302.525 | Radioactivity |
| 302.530 | Supplemental Mixing Provisions for Bioaccumulative Chemicals of Concern |

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- (BCCs)
- 302.535 Ammonia Nitrogen
 - 302.540 Other Toxic Substances
 - 302.545 Data Requirements
 - 302.550 Analytical Testing
 - 302.553 Determining the Lake Michigan Aquatic Toxicity Criteria or Values – General Procedures
 - 302.555 Determining the Tier I Lake Michigan Acute Aquatic Toxicity Criterion (LMAATC): Independent of Water Chemistry
 - 302.560 Determining the Tier I Lake Michigan Basin Acute Aquatic Life Toxicity Criterion (LMAATC): Dependent on Water Chemistry
 - 302.563 Determining the Tier II Lake Michigan Basin Acute Aquatic Life Toxicity Value (LMAATV)
 - 302.565 Determining the Lake Michigan Basin Chronic Aquatic Life Toxicity Criterion (LMCATC) or the Lake Michigan Basin Chronic Aquatic Life Toxicity Value (LMCATV)
 - 302.570 Procedures for Deriving Bioaccumulation Factors for the Lake Michigan Basin
 - 302.575 Procedures for Deriving Tier I Water Quality Criteria and Values in the Lake Michigan Basin to Protect Wildlife
 - 302.580 Procedures for Deriving Water Quality Criteria and Values in the Lake Michigan Basin to Protect Human Health – General
 - 302.585 Procedures for Determining the Lake Michigan Basin Human Health Threshold Criterion (LMHHTC) and the Lake Michigan Basin Human Health Threshold Value (LMHHTV)
 - 302.590 Procedures for Determining the Lake Michigan Basin Human Health Nonthreshold Criterion (LMHHNC) or the Lake Michigan Basin Human Health Nonthreshold Value (LMHHNV)
 - 302.595 Listing of Bioaccumulative Chemicals of Concern, Derived Criteria and Values

SUBPART F: PROCEDURES FOR DETERMINING WATER QUALITY CRITERIA

- Section
- 302.601 Scope and Applicability
- 302.603 Definitions
- 302.604 Mathematical Abbreviations
- 302.606 Data Requirements
- 302.612 Determining the Acute Aquatic Toxicity Criterion for an Individual Substance – General Procedures
- 302.615 Determining the Acute Aquatic Toxicity Criterion – Toxicity Independent of Water Chemistry

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| | |
|----------------|--|
| 302.618 | Determining the Acute Aquatic Toxicity Criterion – Toxicity Dependent on Water Chemistry |
| 302.621 | Determining the Acute Aquatic Toxicity Criterion – Procedure for Combinations of Substances |
| 302.627 | Determining the Chronic Aquatic Toxicity Criterion for an Individual Substance – General Procedures |
| 302.630 | Determining the Chronic Aquatic Toxicity Criterion – Procedure for Combinations of Substances |
| 302.633 | The Wild and Domestic Animal Protection Criterion |
| 302.642 | The Human Threshold Criterion |
| 302.645 | Determining the Acceptable Daily Intake |
| 302.648 | Determining the Human Threshold Criterion |
| 302.651 | The Human Nonthreshold Criterion |
| 302.654 | Determining the Risk Associated Intake |
| 302.657 | Determining the Human Nonthreshold Criterion |
| 302.658 | Stream Flow for Application of Human Nonthreshold Criterion |
| 302.660 | Bioconcentration Factor |
| 302.663 | Determination of Bioconcentration Factor |
| 302.666 | Utilizing the Bioconcentration Factor |
| 302.669 | Listing of Derived Criteria |
| 302.APPENDIX A | References to Previous Rules |
| 302.APPENDIX B | Sources of Codified Sections |
| 302.APPENDIX C | Maximum total ammonia nitrogen concentrations allowable for certain combinations of pH and temperature |
| 302.TABLE A | pH-Dependent Values of the AS (Acute Standard) |
| 302.TABLE B | Temperature and pH-Dependent Values of the CS (Chronic Standard) for Fish Early Life Stages Absent |
| 302.TABLE C | Temperature and pH-Dependent Values of the CS (Chronic Standard) for Fish Early Life Stages Present |
| 302.APPENDIX D | Section 302.206(d): Stream Segments for Enhanced Dissolved Oxygen Protection |

AUTHORITY: Implementing Section 13 and authorized by Sections 11(b) and 27 of the Environmental Protection Act [415 ILCS 5/13, 11(b), and 27].

SOURCE: Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 44, p. 151, effective November 2, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 3 Ill. Reg. 25, p. 190, effective June 21, 1979; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg. 11161, effective September 7, 1982; amended at 6 Ill. Reg. 13750, effective October 26,

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1982; amended at 8 Ill. Reg. 1629, effective January 18, 1984; peremptory amendments at 10 Ill. Reg. 461, effective December 23, 1985; amended at R87-27 at 12 Ill. Reg. 9911, effective May 27, 1988; amended at R85-29 at 12 Ill. Reg. 12082, effective July 11, 1988; amended in R88-1 at 13 Ill. Reg. 5998, effective April 18, 1989; amended in R88-21(A) at 14 Ill. Reg. 2899, effective February 13, 1990; amended in R88-21(B) at 14 Ill. Reg. 11974, effective July 9, 1990; amended in R94-1(A) at 20 Ill. Reg. 7682, effective May 24, 1996; amended in R94-1(B) at 21 Ill. Reg. 370, effective December 23, 1996; expedited correction at 21 Ill. Reg. 6273, effective December 23, 1996; amended in R97-25 at 22 Ill. Reg. 1356, effective December 24, 1997; amended in R99-8 at 23 Ill. Reg. 11249, effective August 26, 1999; amended in R01-13 at 26 Ill. Reg. 3505, effective February 22, 2002; amended in R02-19 at 26 Ill. Reg. 16931, effective November 8, 2002; amended in R02-11 at 27 Ill. Reg. 166, effective December 20, 2002; amended in R04-21 at 30 Ill. Reg. 4919, effective March 1, 2006; amended in R04-25 at 32 Ill. Reg. 2254, effective January 28, 2008; amended in R07-9 at 32 Ill. Reg. 14978, effective September 8, 2008; amended in R11-18 at 36 Ill. Reg. 18871, effective December 12, 2012; amended in R11-18(B) at 37 Ill. Reg. _____ effective _____.

SUBPART B: GENERAL USE WATER QUALITY STANDARDS

Section 302.208 Numeric Standards for Chemical Constituents

- a) The acute standard (AS) for the chemical constituents listed in subsection (e) shall not be exceeded at any time except for those waters for which a zone of initial dilution (ZID) has been approved by the Agency pursuant to Section 302.102.
- b) The chronic standard (CS) for the chemical constituents listed in subsection (e) shall not be exceeded by the arithmetic average of at least four consecutive samples collected over any period of at least four days, except for those waters in which the Agency has approved a mixing zone or in which mixing is allowed pursuant to Section 302.102. The samples used to demonstrate attainment or lack of attainment with a CS must be collected in a manner that assures an average representative of the sampling period. For the chemical constituents that have water quality based standards dependent upon hardness, the chronic water quality standard will be calculated according to subsection (e) using the hardness of the water body at the time the sample was collected. To calculate attainment status of chronic ~~metals~~ standards, the concentration of the chemical constituent in each sample is 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.

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- c) The human health standard (HHS) for the chemical constituents listed in subsection (f) shall not be exceeded when the stream flow is at or above the harmonic mean flow pursuant to Section 302.658 nor shall an annual average, based on at least eight samples, collected in a manner representative of the sampling period, exceed the HHS except for those waters in which the Agency has approved a mixing zone or in which mixing is allowed pursuant to Section 302.102.
- d) The standard for the chemical constituents of subsections (g) and (h) shall not be exceeded at any time except for those waters in which the Agency has approved a mixing zone or in which mixing is allowed pursuant to Section 302.102.
- e) Numeric Water Quality Standards for the Protection of Aquatic Organisms

| Constituent | AS (µg/L) | CS (µg/L) |
|---------------------------------------|--|--|
| Arsenic (trivalent, dissolved) | $360 \times 1.0^* = 360$ | $190 \times 1.0^* = 190$ |
| Boron (total) | 40,100 | 7,600 |
| Cadmium (dissolved) | $e^{A+B \ln(H)} \times \left\{ \frac{1.138672 -}{[(\ln(H))(0.041838)]} \right\}^*$ | $e^{A+B \ln(H)} \times \left\{ \frac{1.101672 -}{[(\ln(H))(0.041838)]} \right\}^*$ |
| | where $A = -2.918$ and $B = 1.128$ | where $A = -3.490$ and $B = 0.7852$ |
| Chromium (hexavalent, total) | 16 | 11 |
| Chromium (trivalent, dissolved) | $e^{A+B \ln(H)} \times 0.316^*$ | $e^{A+B \ln(H)} \times 0.860^*$ |
| | where $A = 3.688$ and $B = 0.8190$ | where $A = 1.561$ and $B = 0.8190$ |

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| Copper (dissolved) | $e^{A+B \ln(H)} \times 0.960 *$ where $A = -1.464$ and $B = 0.9422$ | $e^{A+B \ln(H)} \times 0.960 *$ where $A = -1.465$ and $B = 0.8545$ |
| Cyanide** | 22 | 5.2 |
| Fluoride (total) | $e^{A+B \ln(H)}$ where $A = 6.7319$ and $B = 0.5394$ | $e^{A+B \ln(H)}$, but shall not exceed 4.0 mg/L where $A = 6.0445$ and $B = 0.5394$ |
| Lead (dissolved) | $e^{-A+B \ln(H)}$ $\{1.46203 -$ $[(\ln H)(0.1457/2)]\}*$ $\frac{e^{A+B \ln(H)}}{e^{A+B \ln(H)}} \times$ $\{1.46203 -$ $[(\ln(H))(0.145712)]\}*$ where $A = -1.301$ and $B = 1.273$ | $e^{-A+B \ln(H)}$ $\{1.46203 -$ $[(\ln H)(0.145712)]\}*$ $\frac{e^{A+B \ln(H)}}{e^{A+B \ln(H)}} \times$ $\{1.46203 -$ $[(\ln(H))(0.145712)]\}*$ where $A = -2.863$ and $B = 1.273$ |
| Manganese (dissolved) | $e^{A+B \ln(H)} \times 0.9812*$ where $A = 4.9187$ and $B = 0.7467$ | $e^{A+B \ln(H)} \times 0.9812*$ where $A = 4.0635$ and $B = 0.7467$ |
| Mercury (dissolved) | $2.6 \times 0.85* = 2.2$ | $1.3 \times 0.85* = 1.1$ |
| Nickel (dissolved) | $e^{A+B \ln(H)} \times 0.998 *$ where $A = 0.5173$ and $B = 0.8460$ | $e^{A+B \ln(H)} \times 0.997 *$ where $A = -2.286$ and $B = 0.8460$ |
| TRC | 19 | 11 |

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| Zinc (dissolved) | $e^{A+B\ln(H)} \times 0.978 *$ | $e^{A+B\ln(H)} \times 0.986 *$ |
| | where $A = 0.9035$ and $B = 0.8473$ | where $A = -0.4456$ and $B =$ 0.8473 |
| Benzene | 4200 | 860 |
| Ethylbenzene | 150 | 14 |
| Toluene | 2000 | 600 |
| Xylene(s) | 920 | 360 |

where:

- $\mu\text{g/L}$ = microgram per liter
- e^x = base of natural logarithms raised to the x-power
- $\ln(H)$ = natural logarithm of Hardness
- * = conversion factor multiplier for dissolved metals
- ** = standard to be evaluated using either of the following USEPA approved methods, incorporated by reference at 35 Ill. Adm. Code 301.106: Method OIA-1677, DW: Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry, January 2004, Document Number EPA-821-R-04-001 or Cyanide Amenable to Chlorination, Standard Methods 4500-CN-G (40 CFR 136.3)

f) Numeric Water Quality Standard for the Protection of Human Health

| Constituent | ($\mu\text{g/L}$) |
|-----------------|---------------------|
| Mercury (total) | 0.012 |
| Benzene | 310 |

where:

$\mu\text{g/L}$ = micrograms per liter

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g) Single-value standards apply at the following concentrations for these substances:

| Constituent | Unit | | Standard |
|------------------|------|-------|----------|
| Barium (total) | mg/L | | 5.0 |
| Chloride (total) | mg/L | | 500 |
| Iron (dissolved) | mg/L | 01046 | 1.0 |
| Phenols | mg/L | | 0.1 |
| Selenium (total) | mg/L | | 1.0 |
| Silver (total) | µg/L | | 5.0 |

where:

mg/L = milligram per liter and

µg/L = microgram per liter

h) Water quality standards for sulfate are as follows:

- 1) At any point where water is withdrawn or accessed for purposes of livestock watering, the average of sulfate concentrations must not exceed 2,000 mg/L when measured at a representative frequency over a 30 day period.
- 2) The results of the following equations provide sulfate water quality standards in mg/L for the specified ranges of hardness (in mg/L as CaCO₃) and chloride (in mg/L) and must be met at all times:
 - A) If the hardness concentration of receiving waters is greater than or equal to 100 mg/L but less than or equal to 500 mg/L, and if the chloride concentration of waters is greater than or equal to 25 mg/L but less than or equal to 500 mg/L, then:

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$$C = [1276.7 + 5.508 (\text{hardness}) - 1.457 (\text{chloride})] * 0.65$$

where:

C = sulfate concentration

- B) If the hardness concentration of waters is greater than or equal to 100 mg/L but less than or equal to 500 mg/L, and if the chloride concentration of waters is greater than or equal to 5 mg/L but less than 25 mg/L, then:

$$C = [-57.478 + 5.79 (\text{hardness}) + 54.163 (\text{chloride})] * 0.65$$

where:

C = sulfate concentration

- 3) The following sulfate standards must be met at all times when hardness (in mg/L as CaCO₃) and chloride (in mg/L) concentrations other than specified in (h)(2) are present:
- A) If the hardness concentration of waters is less than 100 mg/L or chloride concentration of waters is less than 5 mg/L, the sulfate standard is 500 mg/L.
- B) If the hardness concentration of waters is greater than 500 mg/L and the chloride concentration of waters is 5 mg/L or greater, the sulfate standard is 2,000 mg/L.
- C) If the combination of hardness and chloride concentrations of existing waters are not reflected in subsection (h)(3)(A) or (B), the sulfate standard may be determined in a site-specific rulemaking pursuant to section 303(c) of the Federal Water Pollution Control Act of 1972 (Clean Water Act), 33 USC 1313, and Federal Regulations at 40 CFR 131.10(j)(2).

(Source: Amended at 37 Ill. Reg. _____, effective _____)