

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENT

- 1) Heading of the Part: Introduction
- 2) Code Citation: 35 Ill. Adm. Code 301
- 3) Section Number: 301.106 Proposed Action: Amend
- 4) Statutory Authority: Implementing Sections 22.12 and 57 - 57.19 and authorized by Sections 27 and 28 of the Environmental Protection Act [415 ILCS 5/22.12, 27, 28, and 57 - 57.19]
- 5) A Complete Description of the Subjects and Issues Involved: A lengthy description is contained in the Board's March 15, 2012 first notice opinion and order in Board Docket R11-18 Triennial Review of Water Quality Standards for Boron, Fluoride and Manganese: Amendments to 35 Ill. Adm. Code 301.106, 302.Subparts B, C, E, F and 303.312 (Mar. 15, 2012). The Illinois Environmental Protection Agency (IEPA) filed this.

The Board proposes to amend the materials incorporated by reference in Section 301.06 to include an updated methodology concerning cyanide used to determine compliance with the water quality standards in 35 Ill. Adm. Code Part 302 (described elsewhere in this issue of the Illinois Register). No one has objected to the proposed update at the two public hearings held, or in written public comment.
- 6) Published studies or reports, and sources of underlying data, used to compose this rulemaking: The rulemaking includes amendments to 35 Ill. Adm. Code Parts 301, 302, and 303. The list of documents used by IEPA to prepare this proposal is quite lengthy. As the bulk of the proposed amendments are to the Part 302 water quality standards, the Board is including that list only in the notice pages for Part 302.
- 7) Will this rulemaking replace any emergency rulemaking currently in effect? No
- 8) Does this rulemaking contain an automatic repeal date? No
- 9) Does this rulemaking contain incorporations by reference? Yes. Section 301.106 is the central incorporations by reference Section for 35 Ill. Adm. Code. Subchapter C at 35 Ill. Adm. Code 301.106.
- 10) Are there any other proposed rulemakings pending on this Part? No

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STATE OF ILLINOIS
Pollution Control Board

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENT

- 11) Statement of Statewide Policy Objectives: This proposed rule does not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act [30 ILCS 805/3(b) (2010)].
- 12) Time, Place, and Manner in which interested persons may comment on this proposed rulemaking: Interested persons may download copies of the Board's opinion and order in R11-18 from the Board's Web site at www.ipcb.state.il.us and may also request copies by calling the Clerk's office at 312-814-3620.

The Board will accept written public comment on this proposal for 45 days after the date of publication in the Illinois Register. Comments should refer to Docket R11-18 and be addressed to:

John Therriault
Clerk's Office
Illinois Pollution Control Board
100 W. Randolph St., Suite 11-500
Chicago, IL 60601

- 13) Initial Regulatory Flexibility Analysis: Part 301 itself imposes no requirements; it contains general provisions applicable to the enforcement of water quality standards in Part 302 (described elsewhere in this issue of the Illinois Register).
 - A) Types of small businesses, small municipalities and not for profit corporations affected: None
 - B) Reporting, bookkeeping or other procedures required for compliance: None
 - C) Types of Professional skills necessary for compliance: None
- 14) Regulatory Agenda on which this rulemaking was summarized: July 2011

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

JCAR350301-1205713r01

1 TITLE 35: ENVIRONMENTAL PROTECTION
2 SUBTITLE C: WATER POLLUTION
3 CHAPTER I: POLLUTION CONTROL BOARD
4

5 PART 301
6 INTRODUCTION
7

8	Section	
9	301.101	Authority
10	301.102	Policy
11	301.103	Repeals
12	301.104	Analytical Testing
13	301.105	References to Other Sections
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16	301.108	Adjusted Standards
17	301.200	Definitions
18	301.205	Act
19	301.210	Administrator
20	301.215	Agency
21	301.220	Aquatic Life
22	301.221	Area of Concern
23	301.225	Artificial Cooling Lake
24	301.230	Basin
25	301.231	Bioaccumulative Chemicals of Concern
26	301.235	Board
27	301.240	CWA
28	301.245	Calumet River System
29	301.247	Chicago Area Waterway System
30	301.250	Chicago River System
31	301.255	Combined Sewer
32	301.260	Combined Sewer Service Area
33	301.265	Construction
34	301.267	Conversion Factor
35	301.270	Dilution Ratio
36	301.275	Effluent
37	301.280	Hearing Board
38	301.282	Incidental Contact Recreation
39	301.285	Industrial Wastes
40	301.290	Institute
41	301.295	Interstate Waters
42	301.300	Intrastate Waters
43	301.301	Lake Michigan Lakewide Management Plan

44	301.305	Land Runoff
45	301.307	Lower Des Plaines River
46	301.310	Marine Toilet
47	301.311	Method Detection Level
48	301.312	Minimum Level
49	301.313	Metals Translator
50	301.315	Modification
51	301.320	New Source
52	301.323	Primary Contact Recreation
53	301.324	Non-contact Recreation and Non-recreational
54	301.325	NPDES
55	301.330	Other Wastes
56	301.331	Outlier
57	301.335	Person
58	301.340	Pollutant
59	301.341	Pollutant Minimization Program
60	301.345	Population Equivalent
61	301.346	Preliminary Effluent Limitation
62	301.350	Pretreatment Works
63	301.355	Primary Contact
64	301.356	Projected Effluent Quality
65	301.360	Public and Food Processing Water Supply
66	301.365	Publicly Owned Treatment Works
67	301.370	Publicly Regulated Treatment Works
68	301.371	Quantification Level
69	301.372	Reasonable Potential Analysis
70	301.373	Same Body of Water
71	301.375	Sanitary Sewer
72	301.380	Secondary Contact
73	301.385	Sewage
74	301.390	Sewer
75	301.395	Sludge
76	301.400	Standard of Performance
77	301.405	STORET
78	301.410	Storm Sewer
79	301.411	Total Maximum Daily Load
80	301.413	Total Metal
81	301.415	Treatment Works
82	301.420	Underground Waters
83	301.421	Wasteload Allocation
84	301.425	Wastewater
85	301.430	Wastewater Source
86	301.435	Watercraft

- 87 301.440 Waters
- 88 301.441 Water Quality Based Effluent Limitation
- 89 301.442 Wet Weather Point Source
- 90 301.443 Whole Effluent Toxicity
- 91 301.APPENDIX A References to Previous Rules

92
93 AUTHORITY: Implementing Section 13 and authorized by Section 27 of the Environmental
94 Protection Act [415 ILCS 5/13 and 27].
95

96 SOURCE: Filed with the Secretary of State January 1, 1978; amended at 3 Ill. Reg. 25, p. 190,
97 effective June 21, 1979; amended at 5 Ill. Reg. 6384, effective May 28, 1981; codified at 6 Ill.
98 Reg. 7818; amended in R88-1 at 13 Ill. Reg. 5984, effective April 18, 1989; amended in R88-
99 21(A) at 14 Ill. Reg. 2879, effective February 13, 1990; amended in R99-8 at 23 Ill. Reg. 11277,
100 effective August 26, 1999; amended in R02-11 at 27 Ill. Reg. 158, effective December 20, 2002;
101 amended in R08-9(A) at 35 Ill. Reg. 15071, effective August 23, 2011; amended in R11-18 at 36
102 Ill. Reg. _____, effective _____.
103

104 **Section 301.106 Incorporations by Reference**
105

106 a) Abbreviations. The following abbreviated names are used for materials
107 incorporated by reference:

108 "ASTM" means American Society for Testing and Materials.
109

110 "GPO" means Superintendent of Documents, U.S. Government Printing
111 Office.
112

113 "NTIS" means National Technical Information Service.
114

115 "Standard Methods" means "Standard Methods for the Examination of
116 Water and Wastewater", available from the American Public Health
117 Association.
118

119 "USEPA" means United States Environmental Protection Agency.
120

121 b) The Board incorporates the following publications by reference:
122

123 American Public Health Association et al., 800 I-015 Fifteenth Street, N.W.,
124 Washington, D.C. 20001-3710, (202)777-2742~~20005~~.
125

126 Standard Methods for the Examination of Water and Wastewater, 21st~~16th~~
127 Edition, 2005~~1985~~.
128
129

130 ASTM. American Society for Testing and Materials, 100 Barr Harbor Drive,
131 West Conshohocken, PA 19428-2959, (610)832-9585
132
133 ASTM Standard E 724-80 "Standard Practice for Conducting Static Acute
134 Toxicity Tests with Larvae of Four Species of Bivalve Molluscs",
135 approved 1980.
136
137 ASTM Standard E 729-80 "Standard Practice for Conducting Static Acute
138 Toxicity Tests with Fishes, Macroinvertebrates, and Amphibians",
139 approved 1980.
140
141 ASTM Standard E 857-81 "Standard Practice for Conducting Subacute
142 Dietary Toxicity Tests with Avian Species", approved 1981.
143
144 ASTM Standard E 1023-84 "Standard Guide for Assessing the Hazard of a
145 Material to Aquatic Organisms and Their Uses", approved 1984.
146
147 ASTM Standard E 1103-86 "Method for Determining Subchronic Dermal
148 Toxicity", approved 1986.
149
150 ASTM Standard E 1147-87 "Standard Test Method for Partition
151 Coefficient (n-Octanol/Water) Estimation by Liquid Chromatography",
152 approved February 27, 1987.
153
154 ASTM Standard E 1192-88 "Standard Guide for Conducting Acute
155 Toxicity Tests on Aqueous Effluents with Fishes, Macroinvertebrates and
156 Amphibians", approved 1988.
157
158 ASTM Standard E 1193-87 "Standard Guide for Conducting Renewal
159 Life-Cycle Toxicity Tests with Daphnia Magna", approved 1987.
160
161 ASTM Standard E 1241-88 "Standard Guide for Conducting Early Life-
162 Stage Toxicity Tests with Fishes", approved 1988.
163
164 ASTM Standard E 1242-88 "Standard Practice for Using Octanol-Water
165 Partition Coefficients to Estimate Median Lethal Concentrations for Fish
166 due to Narcosis", approved 1988.
167
168 ASTM Standard E 4429-84 "Standard Practice for Conducting Static
169 Acute Toxicity Tests on Wastewaters with Daphnia", approved 1984.
170
171 NTIS. National Technical Information Service, 5285 Port Royal Road,
172 Springfield, VA 22161, (703)487-4600

173
174 SIDES: STORET Input Data Editing System, January 1973, Document
175 Number PB-227 052/8.
176

177 Water Quality Data Base Management Systems, February 1984,
178 Document Number AD-P004 768/8.
179

180 USEPA. United States Environmental Protection Agency, Office of Health and
181 Environmental Assessment, Washington, D.C. 20460
182

183 Mutagenicity and Carcinogenicity Assessment for 1,3-Butadiene,
184 September 1985, Document Number EPA/600/8-85/004A.
185

186 Method OIA-1677, DW: Available Cyanide by Flow Injection, Ligand
187 Exchange, and Amperometry, January 2004, Document Number EPA-
188 821-R-04-001.
189

190 c) The Board incorporates the following federal regulations by reference. Available
191 from the Superintendent of Documents, U.S. Government Printing Office,
192 Washington, D.C. 20402, (202)783-3238:
193

194 Procedure 5.b.2 of Appendix F of 40 CFR 132 (1995)

195 40 CFR 136 (1996)

196 40 CFR 141 (1988)

197 40 CFR 302.4 (1988)

201
202 d) The Board incorporates the following federal regulations by reference, available
203 from the Superintendent of Documents, U.S. Government Printing Office,
204 Washington, D.C. 20402, (202)783-3238:
205

206 USEPA 1996: The Metals Translator: Guidance for Calculating a Total
207 Recoverable Permit Limit from a Dissolved Criterion. EPA 823-B-96-007
208 (1996).
209

210 e) This Section incorporates no future editions or amendments.

211
212 (Source: Amended at 36 Ill. Reg. _____, effective _____)

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

PART 301
INTRODUCTION

Section	
301.101	Authority
301.102	Policy
301.103	Repeals
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301.105	References to Other Sections
301.106	Incorporations by Reference
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301.108	Adjusted Standards
301.200	Definitions
301.205	Act
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301.330	Other Wastes
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301.340 Pollutant
 301.341 Pollutant Minimization Program
 301.345 Population Equivalent
 301.346 Preliminary Effluent Limitation
 301.350 Pretreatment Works
 301.355 Primary Contact
 301.356 Projected Effluent Quality
 301.360 Public and Food Processing Water Supply
 301.365 Publicly Owned Treatment Works
 301.370 Publicly Regulated Treatment Works
 301.371 Quantification Level
 301.372 Reasonable Potential Analysis
 301.373 Same Body of Water
 301.375 Sanitary Sewer
 301.380 Secondary Contact
 301.385 Sewage
 301.390 Sewer
 301.395 Sludge
 301.400 Standard of Performance
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 301.APPENDIX A References to Previous Rules

AUTHORITY: Implementing Section 13 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/13 and 27].

SOURCE: Filed with the Secretary of State January 1, 1978; amended at 3 Ill. Reg. 25, p. 190, effective June 21, 1979; amended at 5 Ill. Reg. 6384, effective May 28, 1981; codified at 6 Ill. Reg. 7818; amended in R88-1 at 13 Ill. Reg. 5984, effective April 18, 1989; amended in R88-21(A) at 14 Ill. Reg. 2879, effective February 13, 1990; amended in R99-8 at 23 Ill. Reg. 11277, effective August 26, 1999; amended in R02-11 at 27 Ill. Reg. 158, effective December 20, 2002; amended in R08-099(A) at 35 Ill. Reg. 15071, effective August 23, 2011; amended in R11-18 at 36 Ill. Reg. _____, effective _____.

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Standard Methods for the Examination of Water and Wastewater, 21st Edition, ~~2005~~2005.

ASTM. American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-~~29592959~~, (610) 832-9585

ASTM Standard E 724-80 "Standard Practice for Conducting Static Acute Toxicity Tests with Larvae of Four Species of Bivalve Molluscs", approved 1980.

ASTM Standard E 729-80 "Standard Practice for Conducting Static Acute Toxicity Tests with Fishes, Macroinvertebrates, and Amphibians", approved 1980.

ASTM Standard E 857-81 "Standard Practice for Conducting Subacute Dietary Toxicity Tests with Avian Species", approved 1981.

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ASTM Standard E 1103-86 "Method for Determining Subchronic Dermal Toxicity", approved 1986.

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NTIS. National Technical Information Service, 5285 Port Royal Road, Springfield, VA ~~22161~~22161, (703) 487-4600

SIDES: STORET Input Data Editing System, January 1973, Document Number PB-227 052/8.

Water Quality Data Base Management Systems, February 1984, Document Number AD-P004 768/8.

USEPA. United States Environmental Protection Agency, Office of Health and Environmental Assessment, Washington, D.C. 20460

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Method OIA-1677, DW: Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry, January 2004, Document Number EPA-821-R-04-001.

c) The Board incorporates the following federal regulations by reference. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. ~~20402~~20402. (202) 783-3238:

Procedure 5.b.2 of Appendix F of 40 CFR 132 (1995)

40 CFR 136 (1996)

40 CFR 141 (1988)

40 CFR 302.4 (1988)

d) The Board incorporates the following federal regulations by reference, available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. ~~20402~~20402. (202) 783-3238:

USEPA 1996: The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion. EPA 823-B-96-007 (1996).

e) This Section incorporates no future editions or amendments.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

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~~ILLINOIS REGISTER~~

~~POLLUTION CONTROL BOARD~~

~~NOTICE OF PROPOSED AMENDMENT~~

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Legend:	
<u>Insertion</u>	
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Deleted cell	
Moved cell	
Split/Merged cell	
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Moved from	0
Moved to	0
Style change	0
Format changed	0
Total changes	24

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENT

1) Heading of the Part: Water Use Designations and Site-Specific Water Quality Standards

2) Code Citation: 35 Ill. Adm. Code 303

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3) Section Number: 303.312
Proposed Action: Repeal

APR 12 2012

4) Statutory Authority: Implementing Sections 22.12 and 57 - 57.19 and authorized by Sections 27 and 28 of the Environmental Protection Act [415 ILCS 5/22.12, 27, 28, and 57 - 57.19.]

STATE OF ILLINOIS
Pollution Control Board

5) A Complete Description of the Subjects and Issues Involved: A lengthy description is contained in the Board's March 15, 2012 first notice opinion and order in Board Docket R11-18 Triennial Review of Water Quality Standards for Boron, Fluoride and Manganese: Amendments to 35 Ill. Adm. Code 301.106, 302.Subparts B, C, E, F and 303.312 (Mar. 15, 2012).

Section 303.312 sets forth fluoride standards for waters receiving fluorspar mine drainage. The Board adopted Section 303.312 in 1975 to provide site-specific relief from the general use fluoride standard for two companies: Ozark-Mahoning and Minerva Oil. At the time, these companies performed fluorspar mining in Pope and Hardin Counties. The Illinois Environmental Protection Agency reported that both companies ceased production and terminated their discharge permits. IEPA also added that the Illinois State Geologic Survey confirmed that there are currently no companies conducting fluorspar mining in Illinois or anywhere in the United States. Consequently, the Board proposes to repeal the Section as no longer necessary.

6) Published studies or reports, and sources of underlying data, used to compose this rulemaking: The rulemaking includes amendments to 35 Ill. Adm. Code Parts 301, 302, and 303. The list of documents used by IEPA to prepare this proposal is quite lengthy. As the bulk of the proposed amendments are to the Part 302 water quality standards, the Board is including that list only in the Notice pages for Part 302.

7) Will this rulemaking replace any emergency rulemaking currently in effect? No

8) Does this rulemaking contain an automatic repeal date? No

9) Does this rulemaking contain incorporations by reference? No

10) Are there any other proposed rulemakings pending on this Part? No

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENT

- 11) Statement of Statewide Policy Objectives: This proposed rulemaking does not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act [30 ILCS 805/3(b) (2010)].
- 12) Time, Place, and Manner in which interested persons may comment on this proposed rulemaking: Interested persons may download copies of the Board's opinion and order in R11-18 from the Board's Web site at www.ipcb.state.il.us and may also request copies by calling the Clerk's office at 312-814-3620.

The Board will accept written public comment on this proposal for 45 days after the date of publication in the Illinois Register. Comments should refer to Docket R11-18 and be addressed to:

John Therriault
Clerk's Office
Illinois Pollution Control Board
100 W. Randolph St., Suite 11-500
Chicago, IL 60601

- 13) Initial Regulatory Flexibility Analysis:
- A) Types of small businesses, small municipalities and not for profit corporations affected: None
- B) Reporting, bookkeeping or other procedures required for compliance: None
- C) Types of Professional skills necessary for compliance: None
- 14) Regulatory Agenda on which this rulemaking was summarized: January 2012

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

1 TITLE 35: ENVIRONMENTAL PROTECTION
2 SUBTITLE C: WATER POLLUTION
3 CHAPTER I: POLLUTION CONTROL BOARD
4

5 PART 303
6 WATER USE DESIGNATIONS AND SITE-SPECIFIC
7 WATER QUALITY STANDARDS
8

9 SUBPART A: GENERAL PROVISIONS
10

11 Section

- 12 303.100 Scope and Applicability
13 303.101 Multiple Designations
14 303.102 Rulemaking Required (Repealed)
15

16 SUBPART B: NONSPECIFIC WATER USE DESIGNATIONS
17

18 Section

- 19 303.200 Scope and Applicability
20 303.201 General Use Waters
21 303.202 Public and Food Processing Water Supplies
22 303.203 Underground Waters
23 303.204 Chicago Area Waterway System and Lower Des Plaines River
24 303.205 Outstanding Resource Waters
25 303.206 List of Outstanding Resource Waters
26 303.220 Primary Contact Recreation Waters
27 303.225 Incidental Contact Recreation Waters
28 303.227 Non-Contact Recreation Waters and Non-Recreational Waters
29

30 SUBPART C: SPECIFIC USE DESIGNATIONS AND SITE
31 SPECIFIC WATER QUALITY STANDARDS
32

33 Section

- 34 303.300 Scope and Applicability
35 303.301 Organization
36 303.311 Ohio River Temperature
37 303.312 Waters Receiving Fluorspar Mine Drainage (Repealed)
38 303.321 Wabash River Temperature
39 303.322 Unnamed Tributary of the Vermilion River
40 303.323 Sugar Creek and Its Unnamed Tributary
41 303.326 Unnamed Tributary of Salt Creek, Salt Creek, and Little Wabash River
42 303.331 Mississippi River North Temperature
43 303.341 Mississippi River North Central Temperature

- 44 303.351 Mississippi River South Central Temperature
- 45 303.352 Unnamed Tributary of Wood River Creek
- 46 303.353 Schoenberger Creek; Unnamed Tributary of Cahokia Canal
- 47 303.361 Mississippi River South Temperature
- 48 303.400 Bankline Disposal Along the Illinois Waterway/River
- 49 303.430 Unnamed Tributary to Dutch Creek
- 50 303.431 Long Point Slough and Its Unnamed Tributary
- 51 303.441 Secondary Contact Waters (Repealed)
- 52 303.442 Waters Not Designated for Public Water Supply
- 53 303.443 Lake Michigan Basin
- 54 303.444 Salt Creek, Higgins Creek, West Branch of the DuPage River, Des Plaines River
- 55 303.445 Total Dissolved Solids Water Quality Standard for the Lower Des Plaines River
- 56 303.446 Boron Water Quality Standard for Segments of the Sangamon River and the
- 57 Illinois River
- 58 303.447 Unnamed Tributary of the South Branch Edwards River and South Branch
- 59 Edwards River
- 60 303.448 Mud Run Creek

SUBPART D: THERMAL DISCHARGES

- 63
- 64 Section
- 65 303.500 Scope and Applicability
- 66 303.502 Lake Sangchris Thermal Discharges
- 67
- 68 303.APPENDIX A References to Previous Rules
- 69 303.APPENDIX B Sources of Codified Sections
- 70

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

73

74 SOURCE: Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 27, p. 221,
 75 effective July 5, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 5 Ill.
 76 Reg. 11592, effective October 19, 1981; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg.
 77 11161, effective September 7, 1982; amended at 7 Ill. Reg. 8111, effective June 23, 1983;
 78 amended in R87-27 at 12 Ill. Reg. 9917, effective May 27, 1988; amended in R87-2 at 13 Ill.
 79 Reg. 15649, effective September 22, 1989; amended in R87-36 at 14 Ill. Reg. 9460, effective
 80 May 31, 1990; amended in R86-14 at 14 Ill. Reg. 20724, effective December 18, 1990; amended
 81 in R89-14(C) at 16 Ill. Reg. 14684, effective September 10, 1992; amended in R92-17 at 18 Ill.
 82 Reg. 2981, effective February 14, 1994; amended in R91-23 at 18 Ill. Reg. 13457, effective
 83 August 19, 1994; amended in R93-13 at 19 Ill. Reg. 1310, effective January 30, 1995; amended
 84 in R95-14 at 20 Ill. Reg. 3534, effective February 8, 1996; amended in R97-25 at 22 Ill. Reg.
 85 1403, effective December 24, 1997; amended in R01-13 at 26 Ill. Reg. 3517, effective February
 86 22, 2002; amended in R03-11 at 28 Ill. Reg. 3071, effective February 4, 2004; amended in R06-

87 24 at 31 Ill. Reg. 4440, effective February 27, 2007; amended in R09-8 at 33 Ill. Reg. 7903,
88 effective May 29, 2009; amended in R09-11 at 33 Ill. Reg. 12258, effective August 11, 2009;
89 amended in R08-9(A) at 35 Ill. Reg. 15078, effective August 23, 2011; amended in R11-18 at 36
90 Ill. Reg. _____, effective _____.

91
92 SUBPART C: SPECIFIC USE DESIGNATIONS AND SITE
93 SPECIFIC WATER QUALITY STANDARDS

94
95 **Section 303.312 Waters Receiving Fluorspar Mine Drainage (Repealed)**

- 96
- 97 a) ~~The fluoride standard of Section 302.208 shall not apply to waters which:~~
- 98
- 99 1) ~~receive effluent from the mines and mills of the fluorspar mining and~~
- 100 ~~concentrating industry, and~~
- 101
- 102 2) ~~have been designated by the Illinois State Water Survey as streams which~~
- 103 ~~once in ten years have an average minimum seven day low flow of zero.~~
- 104
- 105 b) ~~Such waters shall meet the following standard with regard to fluoride:~~
- 106

CONSTITUENT	STORET NUMBER	CONCENTRATION mg/l
Fluoride	0095	5

107
108 (Source: Repealed at 36 Ill. Reg. _____, effective _____)

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

PART 303
WATER USE DESIGNATIONS AND SITE-SPECIFIC
WATER QUALITY STANDARDS

SUBPART A: GENERAL PROVISIONS

Section
303.100 Scope and Applicability
303.101 Multiple Designations
303.102 Rulemaking Required (Repealed)

SUBPART B: NONSPECIFIC WATER USE DESIGNATIONS

Section
303.200 Scope and Applicability
303.201 General Use Waters
303.202 Public and Food Processing Water Supplies
303.203 Underground Waters
~~303.204 Secondary Contact and Indigenous Aquatic Life Waters~~
303.204 Chicago Area Waterway System and Lower Des Plaines River
303.205 Outstanding Resource Waters
303.206 List of Outstanding Resource Waters
303.220 Primary Contact Recreation Waters
303.225 Incidental Contact Recreation Waters
303.227 Non-Contact Recreation Waters and Non-Recreational Waters

SUBPART C: SPECIFIC USE DESIGNATIONS AND SITE
SPECIFIC WATER QUALITY STANDARDS

Section
303.300 Scope and Applicability
303.301 Organization
303.311 Ohio River Temperature
303.312 Waters Receiving Fluorspar Mine Drainage (Repealed)
303.321 Wabash River Temperature
303.322 Unnamed Tributary of the Vermilion River
303.323 Sugar Creek and Its Unnamed Tributary
303.326 Unnamed Tributary of Salt Creek, Salt Creek, and Little Wabash River
303.331 Mississippi River North Temperature
303.341 Mississippi River North Central Temperature
303.351 Mississippi River South Central Temperature
303.352 Unnamed Tributary of Wood River Creek
303.353 Schoenberger Creek; Unnamed Tributary of Cahokia Canal
303.361 Mississippi River South Temperature
303.400 Bankline Disposal Along the Illinois Waterway/River
303.430 Unnamed Tributary to Dutch Creek
303.431 Long Point Slough and Its Unnamed Tributary
303.441 Secondary Contact Waters (Repealed)
303.442 Waters Not Designated for Public Water Supply
303.443 Lake Michigan Basin
303.444 Salt Creek, Higgins Creek, West Branch of the DuPage River, Des
Plaines River

- 303.445 Total Dissolved Solids Water Quality Standard for the Lower Des Plaines River
- 303.446 Boron Water Quality Standard for Segments of the Sangamon River and the Illinois River
- 303.447 Unnamed Tributary of the South Branch Edwards River and South Branch Edwards River
- ~~303.444~~ 303.448 Mud Run Creek

SUBPART D: THERMAL DISCHARGES

Section

- 303.500 Scope and Applicability ~~303.501~~
- 303.502 Lake Sangchris Thermal Discharges

- 303.APPENDIX A References to Previous Rules
- 303.APPENDIX B Sources of Codified Sections

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. 27, p. 221, effective July 5, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 5 Ill. Reg. 11592, effective October 19, 1981; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg. 11161, effective September 7, 1982; amended at 7 Ill. Reg. 8111, effective June 23, 1983; amended in R87-27 at 12 Ill. Reg. 9917, effective May 27, 1988; amended in R87-2 at 13 Ill. Reg. 15649, effective September 22, 1989; amended in R87-36 at 14 Ill. Reg. 9460, effective May 31, 1990; amended in R86-14 at 14 Ill. Reg. 20724, effective December 18, 1990; amended in R89-14(C) at 16 Ill. Reg. 14684, effective September 10, 1992; amended in R92-17 at 18 Ill. Reg. 2981, effective February 14, 1994; amended in R91-23 at 18 Ill. Reg. 13457, effective August 19, 1994; amended in R93-13 at 19 Ill. Reg. 1310, effective January 30, 1995; amended in R95-14 at 20 Ill. Reg. 3534, effective February 8, 1996; amended in R97-25 at 22 Ill. Reg. 1403, effective December 24, 1997; amended in R01-13 at 26 Ill. Reg. 3517, effective February 22, 2002; amended in R03-11 at 28 Ill. Reg. 3071, effective February 4, 2004; amended in R06-24 at 31 Ill. Reg. 4440, effective February 27, 2007; amended in R09-8 at 33 Ill. Reg. ~~7903~~7903, effective May 29, 2009; amended in R09-11 at 33 Ill. Reg. 12258, effective August 11, 2009; amended in R08-9(A) at 35 Ill. Reg. 15078, effective August 23, 2011; amended in R11-18 at 36 Ill. Reg. _____, effective _____.

SUBPART C: SPECIFIC USE DESIGNATIONS AND SITE
SPECIFIC WATER QUALITY ~~STANDARD~~STANDARDS

Section 303.312 Waters Receiving Fluorspar Mine Drainage (Repealed)

- ~~a) The fluoride standard of Section 302.208 shall not apply to waters which:~~
 - ~~1) receive effluent from the mines and mills of the fluorspar mining and concentrating industry, and~~
 - ~~2) have been designated by the Illinois State Water Survey as streams which once in ten years have an average minimum seven day low flow of zero.~~
- ~~b) Such waters shall meet the following standard with regard to fluoride:~~

~~CONSTITUENT STORE NUMBER CONCENTRATION mg/l Fluoride 009505~~

(Source: Repealed at 36 Ill. Reg. _____, effective

JCAR350303-1205756r01

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~~POLLUTION CONTROL BOARD~~

~~NOTICE OF PROPOSED AMENDMENT~~

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POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

- 1) Heading of the Part: Water Quality Standards
- 2) Code Citation: 35 Ill. Adm. Code 302
- 3)

<u>Section Numbers:</u>	<u>Proposed Action:</u>
302.208	Amend
302.303	Amend
302.304	Amend
302.504	Amend
302.510	Amend
302.553	Amend
302.595	Amend
302.648	Amend
302.657	Amend
302.669	Amend
- 4) Statutory Authority: Implementing Sections 22.12 and 57 - 57.19 and authorized by Sections 27 and 28 of the Environmental Protection Act [415 ILCS 5/22.12, 27, 28, and 57 - 57.19]
- 5) A Complete Description of the Subjects and Issues Involved: A lengthy description is contained in the Board's March 15, 2012 first notice opinion and order in Board Docket R11-18 Triennial Review of Water Quality Standards for Boron, Fluoride and Manganese: Amendments to 35 Ill. Adm. Code 301.106, 302.Subparts B, C, E, F and 303.312 (Mar. 15, 2012). The Board's proposal is based on the December 2, 2010 proposal filed by the Illinois Environmental Protection Agency (Agency or IEPA) under Section 27 of the Illinois Environmental Protection Act (Act), 415 ILCS 5/27 (2010) and the Board's procedural rules at 35 Ill. Adm. Code 102. IEPA's proposal was the culmination of a recent "triennial review" of standards required by the Federal Water Pollution Control Act (FWPCA or Clean Water Act), 33 USC 1313.

The Board's first notice proposal includes IEPA's proposed updates to the boron, fluoride, and manganese water quality standards under the General Use standards in 35 Ill. Adm. Code 302.Subpart B, the Public and Food Processing Water Supply standards in 35 Ill. Adm. Code 302.Subpart C, and the Lake Michigan Basin Water Quality Standards in 35 Ill. Adm. Code 302.Subpart E. The proposal also makes other clean-up amendments and updates, including the correction of the chronic zinc standard and the repeal of a site-specific fluoride standard at 35 Ill. Adm. Code 303.312. The Board is adding cyanide test methods to the incorporations by reference in Parts 301 and 302. Finally, the Board is also amending the requirements in Sections 302.595 and 302.669 that the Agency

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publish the derived water quality criteria in the *Illinois Register*, to require annual rather than quarterly publication (to better reflect the rate of updates to the criteria).

- 6) Published studies or reports, and sources of underlying data, used to compose this rulemaking: The rulemaking includes amendments to 35 Ill. Adm. Code Parts 301, 302, and 303. The list of documents used by IEPA to prepare this proposal is quite lengthy. As the bulk of the proposed amendments are to the Part 302 water quality standards, the Board is including that list here only:

Guidance Documents

Method OIA-1677 Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry, 821-R-99-013, United States Environmental Protection Agency (August, 1999).

Standard Methods for the Examination of Water and Wastewater: Centennial Edition. 21st Edition. Eaton, AD, LS Clesceri, EW Rice, AE Greenberg, and MAR Franson (editors). ISBN: 0875530478. American Public Health Association. 2005. Washington, D.C.

Pollution Control Board Opinions: Rulemakings of General Applicability

In the Matter of Water Quality Triennial Review: Amendments to 35 Adm. Code 302.105, 302.208(e)-(g), 302.504(a), 302.575(d), 309.141 (h), - and Proposed 35 Ill. Adm. Code 301.267, 301.313, 301.413, 304.120, and 309.157, R02-11 (December 19, 2002).

In the Matter of Conforming Amendments/or the Great Lakes Initiative: 35 Ill. Adm. Code Part 302.101; 302.105; 302. Subpart E; 303.443, and 304.222, R97-25.

In the Matter of Proposed Amendments to Title 35, Subtitle C (Toxins Control), R88-21 - Docket A (January 25, 1990).

In the Matter of Water Quality Standards Revisions, R71-14 (Consolidated with R70-8 and R71-20) (March 7, 1972).

Pollution Control Board Opinions: Site Specific Rulemakings and Adjusted Standards Boron

In the Matter of: City of Galva Site Specific Water Quality Standard for Boron Discharges to Edwards River and Mud Run Creek: 35 Ill. Adm. Code 303.447 and

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303.448, R09-11 (August 6, 2009).

In the Matter of: Proposed Site Specific Rule for City of Springfield, Illinois, Office of Public Utilities, City, Water, Light and Power and Springfield Metro Sanitary District from 35 Ill. Adm. Code 302.208(g): New 35 Ill. Adm. Code 303.446, R09-8 (May 21, 2009).

In the Matter of: Petition of Central Illinois Light Company (Duck Creek Station) for Adjusted Standard from 35 Ill. Adm. Code 302.208 and 35 Ill. Adm. Code 304.105 Regarding the Parameter Boron, AS96-8 (June 20, 1996).

In the Matter of: Petition of Illinois Power Company (Baldwin Power Plant) for Adjusted Standard from 35 Ill. Adm. Code 302.208 and 35 Ill. Adm. Code 304.105 Regarding the Parameter Boron, AS96-1 (May 2, 1996).

In the Matter of: Petition of the City of Springfield, Office of Public Utilities for an Adjusted Standard from 35 Ill. Adm. Code 302.208(e), AS94-9 (December 1, 1994).

In the Matter of: Petition of Akzo Chemicals, Inc. for an Adjusted Standard from 35 Ill. Adm. Code 304.105 and 302.208, AS93-8 (September 1, 1994).

In the Matter of: Petition of South Illinois Power Cooperative (Marion Power) for Adjusted Standard from 35 Ill. Adm. Code 302.208(e), AS92-10 (July 1, 1993).

In the Matter of: The Proposed Amendment to Rule 203 of the Water Pollution Regulations. R76-18 (May 25, 1978) (Illinois Power Wood River Station).

Fluoride

In the Matter of: Granite City Division of National Steel Petition for Adjusted Standard from 35 Ill. Adm. Code 302.208: Numeric Standard for Fluoride, AS 90-4 (April 8, 1993).

In the Matter of: Petition of General Motors Corporation to Amend 35 Ill. Adm. Code 303.222 (Site Specific Regulation for Fluoride), R93-13 (January 11, 1995).

In the Matter of: Site-Specific Limitation for the Modine Manufacturing Company Facility, Ringwood, Illinois, R87-36 (May 24, 1990)

In the Matter of: Site Specific Rule for City of Effingham Treatment Plant Fluoride

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Discharge, 35 Ill. Adm. Code 304.233, R03-11 (December 18,2003).

Toxicity Studies and Data used in Derivation of Proposed Water Quality standards and summarized in Attachment 1, Exhibits G, H, O, P, Q and R:

Beleau, MH and JA Bartosz. 1982. Acute toxicity of selected chemicals: data base. U.S. Fish and Wildlife Service, Colorado River Fishery Project, Report No.6. Salt Lake City, Utah. 3:242-254.

Biesinger, KE and OM Christensen. 1972. Effects of various metals on survival, growth, reproduction, and metabolism of *Daphnia magna*. Journal of the Fisheries Research Board of Canada 29:1691-1700.

Buikema, AL, CL See, and J Cairns, Jr. 1977. Rotifer sensitivity to combinations of inorganic water pollutants. OWRT Project A-071-VA. Virginia Water Resources Research Center Bulletin No. 92. Blackburg, VA; 42 p.

Calleja, MC, G Persoone, and P Geladi. 1994. Comparative acute toxicity of the first 50 multicentre evaluation of *in vitro* cytotoxicity chemicals to aquatic non-vertebrates. Archives of Environmental Contamination and Toxicology 26:69-78.

Camargo, JA and JV Tarazona 1990. Acute toxicity to freshwater benthic macroinvertebrates of fluoride ion (F-) in soft water. Bulletin of Environmental Contamination and Toxicology 45:883-887.

Camargo, JA and JV Tarazona. 1991. Short-term toxicity of fluoride ion (F-) in soft water to rainbow trout (*Salmo gairdneri*) and brown trout (*Salmo trutta fario*). Fluoride 24(2):76-83.

Camargo, JA, JV Ward, and KL Martin. 1992. The relative sensitivity of competing hydropsychid species to fluoride toxicity in the Cache la Poudre River (Colorado). Archives of Environmental Contamination and Toxicology 22:107-113.

Couillard Y, P Ross, and B Pinel-Alloul. 1989. Acute toxicity of six metals to the rotifer *Brachionus calyciflorus*, with comparisons to other freshwater organisms. Toxicity Assessment 4:451-462.

Davies, PH and SF Brinkman. 1994. Acute and chronic toxicity of manganese to exposed and unexposed rainbow and brown trout. Federal Aid in Fish and Wildlife Restoration Job Progress Report, Colorado Division of Wildlife, Fish Research Section.

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Fort Collins, CO, USA. Federal Aid Project #F-243R-1.

Davies, PH and SF Brinkman. 1995. Acute and chronic toxicity of manganese to brown trout (*Salmo trutta*) in hard water. Federal Aid in Fish and Wildlife Restoration Job Progress Report, Colorado Division of Wildlife, Fish Research Section. Fort Collins, CO, USA. Federal Aid Project #F-243R-2.

Davies, PH, SF Brinkman, and M McIntyre. 1998a. Toxicity of manganese and zinc to Boreal toad tadpoles (*Bufo boreas*). In: Federal Aid in Fish and Wildlife Restoration Job Progress Final.

Report, Colorado Division of Wildlife, Fish Research Section. Fort Collins, CO, USA. Federal Aid Project #F-243R-5.

Davies, PH, SF Brinkman, and M McIntyre. 1998b. Toxicity of manganese to early-life stage and fry of brook trout (*Salvelinus fontinalis*) and rainbow trout (*Oncorhynchus mykiss*) in water hardnesses of 30 and 150 mg/L. In: Federal Aid in Fish and Wildlife Restoration Job Progress Final Report, Colorado Division of Wildlife, Fish Research Section. Fort Collins, CO, USA. Federal Aid Project #F-243R-5.

Dethloff, GM, WA Stubblefield, and CE Schlekat. 2009. Effects of water quality parameters on boron toxicity to *Ceriodaphnia dubia*. Archives of Environmental Contamination and Toxicology 57:60-67.

ENSR. 1990. Unpublished in-house data.

ENSR. 1992a. Acute toxicity of manganese to *Pimephales promelas* under static-renewal test conditions at four levels of water hardness. June 1992.

ENSR. 1992b. Acute toxicity of manganese to *Ceriodaphnia dubia* under static-renewal test conditions at four levels of water hardness. June 1992.

ENSR. 1992c. Chronic toxicity of manganese to *Ceriodaphnia dubia* under static-renewal test conditions at four levels of water hardness. July 1992.

ENSR. 1996e. Early life stage toxicity of manganese to the fathead minnow (*Pimephales promelas*) under flow-through test conditions. March 1996.

Fieser, AH. 1985. Toxicity of fluorides to aquatic organisms: modeling for water hardness and temperature. Dissertation. University of Pittsburgh.

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Hamilton, SJ. 1995. Hazard assessment of inorganics to three endangered fish in the Green River, Utah. *Ecotoxicology and Environmental Safety* 30:134-142.

Hamilton, SJ and KJ Buhl. 1990. Acute toxicity of boron, molybdenum and selenium to fry of chinook salmon and coho salmon. *Archives of Environmental Contamination and Toxicology* 19(6):366-373.

Hamilton, SJ and KJ Buhl. 1997. Hazard evaluation of inorganics, singly and in mixtures to Flannelmouth Sucker, *Catostomus lalipinnis*, in the San Juan River, New Mexico. *Ecotoxicology and Environmental Safety* 38:296-308.

Harding ESE, Inc. 2001. Acute toxicity of strontium to *Oncorhynchus mykiss*, and manganese to *Physa integra*, under static test conditions. Laboratory Project ID: 311213.0100. September 2001.

Herbert, DWM and DS Shurben. 1964. The toxicity of fluoride to rainbow trout. *Water and Waste Treatment*. Sept/Oct 1964, pp.141 - 142.

Hickey, CWo 1989. Sensitivity of four New Zealand cladoceran species and *Daphnia magna* to aquatic toxicants. *New Zealand Journal of Marine and Freshwater Research* 23:131-137.

Keller, AE and T Augspurger. 2005. Toxicity of fluoride to the endangered unionid mussel, *Alasmidonta raveneliana*, and surrogate species. *Bulletin of Environmental Contamination and Toxicology* 74:242-249.

Khengarot, BS. 1991. Toxicity of metals to a freshwater tubificid worm, *Tubifex tubi/ex* (Muller). *Bulletin of Environmental Contamination and Toxicology*. 46:906-912.

Lasier PJ, PV Winger, and K.J Bogenrieder. 2000. Toxicity of manganese to *Ceriodaphnia dubia* and *Hyalella azteca*. *Archives of Environmental Contamination and Toxicology* 38(3):298-304.

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Lewis, M. 1978. Acute toxicity of copper, zinc, and manganese in single and mixed salt solutions to juvenile longfin dace, *Agosia chrysogaster*. *Journal of Fish Biology* 13:695-700.

Lewis, MA and LC Valentine. 1981. Acute and chronic toxicities of boric acid to *Daphnia magna* Straus. *Bulletin of Environmental Contamination and Toxicology* 27:309-315.

Maier, KJ and AW Knight. 1991. The toxicity of waterborne boron to *Daphnia magna* and *Chironomus decorus* and the effects of water hardness and sulfate on boron toxicity. *Archives of Environmental Contamination and Toxicology* 20:282-287.

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Reimer, PS. 1999. Environmental effects of manganese and proposed guidelines to protect freshwater life in British Columbia. Unpubl. Master's Thesis, Univ. British Columbia.

Sanders and Associates, LLC. 2007. Toxicity of boron to the aquatic organisms - *Hyalella azteca* (benthic crustacean), *Dugesia tigrina* (flatworm), *Ceriodaphnia dubia* (water flea) and *Pimephales promelas* (fathead minnow). Report to Michigan Department of Environmental Quality. April 30, 2007.

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Soucek, DJ and A Dickinson. 2010. Acute and Chronic Toxicity of Boron, Fluoride, and Manganese to Freshwater Organisms. Illinois Natural History Survey, Institute of Natural Resource Sustainability. University of Illinois, Urbana-Champaign. Champaign, IL. Report to Illinois Environmental Protection Agency. October 5, 2010.

The Advent Group, Inc. 2000. Toxicity Test Results: Fluoride Water Quality Criteria. Prepared for U.S. Steel, Gary Works, by The Advent Group, Inc. Unpublished data.

Other Documents Relied On

Casale, RJ, MW LeChevallier, and FW Pontius. Review of Manganese Control and Related Manganese Issues. American Water Works Association (AWWA) Research Foundation and AWWA. Denver, CO, 2002.

East Fork LaMoine River Watershed TMDL Report. Illinois Environmental Protection Agency, IEPAIBOW/07-016. August, 2007.

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Hamann, PE Jr., JB McEwen, and AG Meyers. 1990. Guide to Selection of Water Treatment Processes. In *Water Quality and Treatment: A Handbook of Community Water Supplies*. 4th Edition. American Water Works Association, McGraw-Hill, USA, pp 157-187.

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Rowe, RI, C Bouzan, S Nabili, and CD Eckhert. 1998. The response of trout and zebrafish embryos to low and high boron concentrations is U-shaped. *Biological Trace Element Research* 66:261-270.

U.S. Environmental Protection Agency Legacy STORET Data Center Database at <http://www.epa.gov/storpublllegacy/gateway.htm>.

- 7) Will this rulemaking replace any emergency rulemaking currently in effect? No
- 8) Does this rulemaking contain an automatic repeal date? No
- 9) Does this rulemaking contain incorporations by reference? Yes. The materials incorporated by reference are listed in the central incorporations by reference section for this Subchapter C at 35 Ill. Adm. Code 301.106.
- 10) Are there any other proposed rulemaking pending on this Part? No
- 11) Statement of Statewide Policy Objectives: This proposed rulemaking does not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act [30 ILCS 805/3(b) (2010)]
- 12) Time, Place, and Manner in which interested persons may comment on this proposed rulemaking: Interested persons may download copies of the Board's opinion and order in R11-18 from the Board's Web site at www.ipcb.state.il.us and may also request copies by calling the Clerk's office at 312-814-3620.

The Board will accept written public comment on this proposal for 45 days after the date of publication in the *Illinois Register*. Comments should refer to Docket R11-18 and be addressed to:

John Therriault
Clerk's Office
Illinois Pollution Control Board
100 W. Randolph St., Suite 11-500
Chicago, IL 60601

- 13) Initial Regulatory Flexibility Analysis:

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- A) Types of small businesses, small municipalities and not for profit corporations affected: Any small businesses, small municipalities and not for profit corporations that discharge wastewaters into "waters of the State" (usually under their National Pollutant Discharge and Elimination System (NPDES) permits).
 - B) Reporting, bookkeeping or other procedures required for compliance: Those needed to comply with current permit requirements.
 - C) Types of Professional skills necessary for compliance: Wastewater treatment plant staff, possibly an environmental engineer.
- 14) Regulatory Agenda on which this rulemaking was summarized: July 2011

The full text of the Proposed Amendments begins on the next page:

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
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

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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 (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
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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, 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. _____, 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) applies pursuant to Section ~~302.102as provided in subsection (d).~~ 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 allowed mixing pursuant to Section ~~302.102as provided in subsection (d).~~ 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 ~~metals~~ 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 ~~metals~~ sample was collected. To calculate attainment status of chronic metals standards, the concentration of the chemical constituent ~~metal~~ 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.

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 allowed mixing pursuant to Section ~~302.102as provided in subsection (d).~~ 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 allowed mixing pursuant to Section 302.102. ~~In waters where mixing is allowed pursuant to Section 302.102, the following apply:~~

1) ~~The AS shall not be exceeded in any waters except for those waters for which the Agency has approved a zone of initial dilutions (ZID) pursuant to Section 302.102.~~

2) ~~The CS shall not be exceeded outside of waters in which mixing is allowed pursuant to Section 302.102.~~

3) ~~The MHS shall not be exceeded outside of waters in which mixing is allowed pursuant to Section 302.102.~~

e) Numeric Water Quality Standards for the Protection of Aquatic Organisms

~~Constituent STORET
Number AS~~

Constituent AS (µg/L) CS (µg/L)
Arsenic (trivalent, dissolved)

360 X 1.0* = 360

~~22680~~ 190 X 1.0* = 190 Boron (total) 40,1007,600 Cadmium (dissolved) ~~01025~~

~~**where A = -2.918 and~~

B = 1.128 ~~where and Chromium A = -3.490 and~~

B = 0.7852 Chromium (hexavalent, total) ~~0103216111611~~ Chromium (trivalent, dissolved) ~~80357~~

where A = 3.688 and

~~τ~~
B = 0.8190

where A = 1.561 and

B = 0.8190 Copper (dissolved) ~~01040~~

where A = -1.464 and ~~τ~~

B = 0.9422

where A = -1.465 and

B = 0.8545 Cyanide** ~~0071822 5.2 225.2~~ Fluoride (total)

~~where A = 6.7319 and B = 0.5394~~, but shall not exceed 4.0 mg/L

where A = 6.0445 and

B = 0.5394

~~where A = 6.7319 and~~

B = 0.5394 Lead (dissolved) ~~01049~~ ~~**where A = -1.301 and~~

B = 1.273 ~~where A = -2.863 and~~

B = 1.273 Manganese (dissolved) ~~X - 0.9812* - 0.9812*~~ ~~where A = 4.9187 and~~

B = 0.7467 ~~X - 0.9812*~~ ~~where A = 4.0635 and~~

B = 0.7467 Mercury (dissolved) ~~71890 - 2.6 X 0.85* = 2.21.3 X 0.85* = 1.1~~ Nickel (dissolved) ~~01065~~, where A = 0.5173 and

~~τ~~
B = 0.8460 where A = -2.286 and

B = 0.8460 TRC ~~50060019111911~~ Zinc (dissolved) ~~01090~~, where A = 0.9035 and

~~τ~~
~~where and Benzene 781244200860 Ethyl-~~

~~benzene 7811315014 Toluene 781312000600 Xylene(s) 81551920360~~ B = 0.8473 where A = -

0.4456 and B =

0.8473 Benzene 4200860 Ethylbenzene 15014 Toluene 2000600 Xylene(s) 920360

where: µg/L = ~~micrograms~~ = microgram per liter literex = base of natural logarithms raised to the x- power ln(H) = natural logarithm of Hardness (~~STORET 00900~~) * = conversion factor multiplier for dissolved metals ~~** Standard **~~ = standard to be evaluated using

either of the following U.S. EPA 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 ~~C.F.R.~~ CFR 136.3) ~~†~~

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

~~Constituent~~ STORET

~~Number~~

Constituent (µg/L) Mercury (total) ~~719000.0120.012~~ Benzene ~~78124310310~~

where: µg/L = micrograms per liter

g) Single-value standards apply at the following concentrations for these substances: ~~Concentrations of the following chemical constituents shall not be exceeded except in waters for which mixing is allowed pursuant to Section 302.102.~~

~~Constituent~~

~~Unit~~ STORET

~~Number~~

Constituent Unit Standard Barium (total) mg/L ~~01007~~ ~~5.0~~ Boron (total) mg/L ~~01022~~ ~~1.0~~

~~5.0~~ Chloride (total) mg/L ~~00940~~ ~~500~~ Fluoride mg/L ~~00951~~ ~~1.4~~ Iron

(dissolved) mg/L ~~01046~~ ~~1.0~~ Manganese (total) mg/L ~~01055~~ ~~1.0~~

~~01046~~ ~~1.0~~ Phenols mg/L ~~32730~~ ~~0.1~~ Selenium (total) mg/L ~~01147~~ ~~1.0~~ Silver

(total) µg/L ~~01077~~ ~~5.0~~

where: mg/L = ~~milligrams~~ milligram per liter and µg/L = ~~micrograms~~ microgram per liter

h) Water quality standards for sulfate are as follows: ~~The following concentrations for sulfate must not be exceeded except in receiving waters for which mixing is allowed pursuant to Section 302.102.~~ ;

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:

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

where C

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:

~~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 36 Ill. Reg. _____, effective _____)

SUBPART C: PUBLIC AND FOOD PROCESSING WATER SUPPLY STANDARDS

Section 302.303 Finished Water Standards

Water shall be of such quality that with treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment processes, the treated water shall meet in all respects the requirements of Part ~~611604.611.~~

(Note: Prior to codification, Table I, Rule 304 of Ch 6: Public Water Supplies)

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 302.304 Chemical Constituents

The following levels of chemical constituents shall not be exceeded:

CONSTITUENT	STREET NUMBER	CONCENTRATION (mg/l)	CONCENTRATION	CONSTITUENT (mg/l)
Arsenic (total)	010020.050.05	0.05	010071.01.0	Boron (total) 1.0
Cadmium (total)	010270.010.0.010	0.010	00940250.250	Chromium 010340.050.05
Fluoride (total)	1.4	1.4	010460.30.3	Lead (total) 010510.050.05
Manganese (total)	010551.00.151.0	0.151	0062010.10	Oil (hexane-solubles or equivalent) 00550, 00556 or 005600.1
Organics Pesticides Chlorinated Hydrocarbon Insecticides Aldrin	393300.001	0.001	Chlordane	393500.003
DDT	393700.05	0.05	Dieldrin	393800.001
Endrin	393900.0002	0.0002	Heptachlor	394100.0001
Heptachlor Epoxide	394200.0001	0.0001	Lindane	397820.004
Methoxychlor	394800.1	0.1	Toxaphene	394000.005
Organophosphate Insecticides Parathion	395400.1	0.1	Chlorophenoxy Herbicides 2,4-Dichlorophenoxyacetic acid (2,4-D)	397300.1
2-(2,4,5-Trichlorophenoxy)-propionic acid (2,4,5-TP or or equivalent)	0.1	0.1	Organics Pesticides Chlorinated Hydro-carbon Insecticides Aldrin	0.001
Chlordane	0.003	0.003	DDT	0.05
Dieldrin	0.001	0.001	Endrin	0.0002
Heptachlor	0.0001	0.0001	Heptachlor Epoxide	0.0001
Lindane	0.004	0.004	Methoxychlor	0.1
Toxaphene	0.0005	0.0005	Organophosphate Insecticides Parathion	0.1
Chlorophenoxy Herbicides 2,4-Dichlorophenoxy-acetic acid (2,4-D)	0.12	0.12	(2,4,5-Trichloro-phenoxy)-propionic acid (2,4,5-TP or	
Silvex)	397600.010.01	0.01	Phenols	327300.001
Selenium	0.001	0.001	Selenium	

(total) ~~011470.01Sulfates00945250.0.01Sulphates250~~ Total Dissolved Solids ~~70300500.500~~

(Source: Amended at 36 Ill. Reg. _____, effective _____)

SUBPART E: LAKE MICHIGAN BASIN WATER QUALITY STANDARDS

Section 302.504 Chemical Constituents

The following concentrations of chemical constituents must not be exceeded, except as provided in Sections 302.102 and 302.530:

a) The following standards must be met in all waters of the Lake Michigan Basin. Acute aquatic life standards (AS) must not be exceeded at any time except for those waters for which the Agency has approved a zone of initial dilution (ZID) pursuant to Sections 302.102 and 302.530. Chronic aquatic life standards (CS) and human health standards (HHS) must not be exceeded outside of waters in which mixing is allowed pursuant to ~~Section~~ Sections 302.102 and 302.530 by the arithmetic average of at least four consecutive samples collected over a period of at least four days. The samples used to demonstrate compliance with the CS or HHS must be collected in a manner which assures an average representation of the sampling period.

~~Constituent STORET Number Unit ASCSHHS Arsenic~~

~~Constituent Unit ASCSHHS Arsenic (Trivalent, dissolved) 22680mg/L340 X 1.0*-340148-~~

~~X 1.0*-148NA Boron ug/LNABoron (total)mg/L40.17.6NACadmium (dissolved)-~~

~~01025mg/Lexp[A+Bln(H)] X {1.138672-[(lnH)ug/LNA(0.041838)]}*,-~~

~~(0.041838)]*where A = -3.6867 and B = 1.128exp[A+Bln(H)] X {1.101672-~~

~~[(lnH)(0.041838)]*,- where A = -2.715 and B = 0.7852NACromiumChromium~~

~~(Hexavalent, total)01032mgug/L1611NACromium (Trivalent, dissolved)-~~

~~80357mg/Lexp[A+Bln(H)] X ug/LNA0.316*,-0.860*where A = 3.7256 and B =~~

~~0.819exp[A+Bln(H)] X 0.860*,- where A = 0.6848 and B = 0.819NACopperCopper~~

~~(dissolved)01040mg/Lexp[A+Bln(H)] X ug/LNA0.960*,-0.960*where A = -1.700 and B =~~

~~= 0.9422exp[A+Bln(H)] X 0.960*,- where A = -1.702 and B = 0.8545~~

~~NA Cyanide**~~

~~(Weak acid dissociable)00718mgCyanide**ug/L225.2NAFluoride (total)ug/L~~

~~mg/Lexp[A+Bln(H)]~~

where A = 6.7319 and B = ~~0.5394exp[A+Bln(H)]~~, 0.5394, but shall not exceed 4.0 mg/L LNA

where A = 6.0445 and B = 0.5394

~~NA LeadLead (dissolved)01049mg/Lexp[A+Bln(H)] X {1.46203-~~

~~[(lnH)ug/LNA(0.145712)]}*,-(0.145712)]*where A = -1.055 and B = 1.273exp[A-~~

~~+Bln(H)] X {1.46203-[(lnH)(0.145712)]}*,- where A = -4.003 and B = 1.273~~

~~NA ManganeseManganese (dissolved)mg/Lexp[A+Bln(H)] X~~

~~0.9812*whereug/LNAwhere A = 4.9187 and B = 0.7467exp[A+Bln(H)] X~~

~~0.9812*where A = 4.0635 and B = 0.7467~~

~~NaNickelNickel (dissolved)01065mg/Lexp[A+Bln(H)] X ug/LNA0.998*,-0.997*where A~~

~~= 2.255 and B = 0.846exp[A+Bln(H)] X 0.997*,- where A = 0.0584 and B =~~

~~0.846NASeleniumSelenium (dissolved)01145mgug/LNA5.0NATRC50060mgug/L1911NAZinc~~

~~(dissolved)01090mg/Lexp[A+Bln(H)] X ug/LNA0.978*,- where~~

~~A=0.884 and B=0.8473exp[A+Bln(H)] X 0.986*,- where A = 0.884 and B = 0.8473~~

~~NA Benzene~~

~~-78124 mg/L3900 800 310Chlorobenzene 34301mg/LNANA3.2~~

~~2,4-Dimethylphenol34606mgwhere A = 0.884 and B =~~

~~0.8473Benzeneug/L3900800310Chlorobenzeneug/LNANA3.22.4-~~

~~Dimethylphenolmg/LNANA8.72,4-Dinitrophenol03756mgDinitrophenolmg/LNANA2.8Endrin-~~

~~39390mgug/L0.0860.036NAEthylbenzene78113ug/L15014NAHexachloroethane34396mgug/LNA~~

NA6.7Methylene chloride 34423mgchloridmg/LNANA2.6Parathion
39540mgug/L0.0650.013NAPentachlorophenol
03761mg/Lexp B - ([pH] +A), whereA=ug/L NAwhere A = -4.869 and B = 1.005exp B -
([pH] +A), where A = -5.134 and B =1.005NAToluene78131mg/Lmg/L2000 610 51.0
1.005Tolueneug/L 200061051.0Trichloroethylene

39180mgug/LNANA370Xylene(s) 81551mgug/L1200490NA

Wherewhere: NA = Not Applied ExpAppliedExp [x] = base of
natural logarithms raised to the x-power lnpowerln (H) =
natural logarithm of Hardness *
(STORET 00900)

* = conversion factor multiplier for dissolved metals** Standard
**=standard to be evaluated using either of the following U.S. EPAUSEPA approved
methods, incorporated by reference at 35 Ill. Adm. Code 302.510: 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 C.F.R. CFR 136.3).

b) The following water quality standards must not be exceeded at any time in
any waters of the Lake Michigan Basin, unless a different standard is specified
under subsection (c) of this Section.

Constituent STORET

Number	Unit	Water	Constituent	Unit	Water	Quality Standard
	(total)	01007mg/L5.0	Boron (total)	01022mg/L1.0	Chloride (total)	
	00940mg/L500	Fluoride	00951mg/L1.4	Iron (dissolved)	01046mg/L1.0	Manganese (total)
	01055mg/L1.0	Phenols				
	32730mg/L0.1	Sulfate	00945mg	Phenols	mg/L0.1	Sulfate
	mg/L500	Total Dissolved				
	Solids	70300mg	Solids	mg/L1000		

c) In addition to the standards specified in subsections (a) and (b) of this
Section, the following standards must not be exceeded at any time in the Open
Waters of Lake Michigan as defined in Section 302.501.

Constituent	STORET	Number	Unit	Water	Constituent	Unit	Water	Quality Standard
	(total)	01002mg	ug/L50.0	Boron (total)	mg/L1.0	Barium (total)		
	01007mg/L1.0	Chloride (total)						
	00940mg/L12.0	Fluoride (total)	mg/L1.4	Iron (dissolved)				
	01046mg/L0.30	Lead (total)						
	01051mg	ug/L50.0	Manganese (total)					
	01055mg/L0.15	Nitrate-Nitrogen						
	00620mg	Nitrogen	mg/L10.0	Phosphorus				
	00665mg	ug/L7.0	Selenium (total)					
	01147mg	ug/L10.0						
	Sulfate							
	00945mg	Sulfate	mg/L24.0	Total Dissolved Solids				
	70300mg	Solids	mg/L180.0	Oil (hexane solubles or equivalent)				
	00550, 00556 or 00560	mg/L0.10	Phenols					
	32730mg	ug/L1.0						

d) In addition to the standards specified in subsections (a), (b) and (c) of
this Section, the following human health standards (HHS) must not be exceeded in
the Open Waters of Lake Michigan as defined in Section 302.501 by the arithmetic
average of at least four consecutive samples collected over a period of at least
four days. The samples used to demonstrate compliance with the HHS must be
collected in a manner which assures an average representation of the sampling
period.

Constituent	STORET	Number	Unit	Water	Constituent	Unit	Water	Quality Standard
	Benzene							

34030mgStandardBenzene ug/L12.0 Chlorobenzene

34301

mg/L

470.02,4ug/L470.02,4-Dimethylphenol

34606

mg/L

450.02,4ug/L450.02,4-Dinitrophenol

03757mgug/L55.0Hexachloroethane (total)

34396mgug/L5.30Lindane

39782mgug/L0.47Methylene chloride

34423mgug/L47.0

Toluene

78131

mg/L

5.60Trichloroethylene

39180mgug/L29.0

e) For the following bioaccumulative chemicals of concern (BCCs), acute aquatic life standards (AS) must not be exceeded at any time in any waters of the Lake Michigan Basin and chronic aquatic life standards (CS), human health standards (HHS), and wildlife standards (WS) must not be exceeded in any waters of the Lake Michigan Basin by the arithmetic average of at least four consecutive samples collected over a period of at least four days subject to the limitations of Sections 302.520 and 302.530. The samples used to demonstrate compliance with the HHS and WS must be collected in a manner that assures an average representation of the sampling period.

ConstituentSTORETNumberUnitASCSSHHSWSMercuryConstituentUnitAS_CSHHSWSMercury
(total)-71900ng/L1,7009103.11.3

Chlordane-

39350

ng/L

NA

NA0.25

NA

DDT and metabolites-

39370

pg/L

NA

NA

150

11.0

Dieldrin-

39380

ng/L

240

56

0.0065

NA

Hexachlorobenzene-

39700

ng/L

NA

NA

0.45

NA

Lindane-

39782mg/L0.95NA0.5

~~NAPCBs (class)~~
~~79819pg/LChlordaneng/LNANA0.25NADDT and~~
~~metabolitespg/LNANA15011.0Dieldrinng/L240560.0065NAHexachlorobenzeneg/LNANA0.45~~
~~NALindaneug/L0.95NA0.5NAPCBs (class)pg/LNANA261202.3,7,8-~~
~~TCDDfg/LNANA8.63.1Toxaphenepg/LNANA68NA~~

NA

NA

26

120

~~2,3,7,8-TCDD~~

03556

fg/L

NA

NA

8.6

3.1

~~Toxaphene~~

39400

pg/L

NA

NA

68

NA

~~Where~~where: mg/L = milligrams per liter (10-3 grams per liter) _____

~~mg~~ug/L = micrograms per liter (10-6 grams per liter) ng/L =

nanograms per liter (10-9 grams per liter) pg/L = picograms per

liter (10-12 grams per liter) fg/L = femtograms per liter (10-15

grams per liter) NA = Not Applied

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 302.510 Incorporations by Reference

a) The Board incorporates the following publications by reference:

American Public Health Association et al., ~~800-I1015 Fifteenth~~ Street, N.W.,
Washington, D. C. ~~20001-3710, 20005~~. Standard Methods for the Examination of
Water and Wastewater, ~~21st~~18th Edition, ~~2005-1996~~. Available from the American
Public Health Association, ~~800-I Street~~1015 Fifteenth St., NW, Washington, D.C.
~~20001-3710-20005~~ (202) ~~789-5600, 777-2742~~.

USEPA. United States Environmental Protection Agency, Office of Health and
Environmental Assessment, Washington, D.C. 20460, Method OIA-1677, DW:
Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry, January
2004, Document Number EPA-821-R-04-001.

b) The Board incorporates the following federal regulations by reference.
Available from the Superintendent of Documents, U.S. Government Printing Office,
Washington, D.C. 20402 (202) 783-3238:

40 CFR 136 (1996)

40 CFR 141 (1988)

40 CFR 302.4 (1988)

The Sections of 40 CFR 132 (1996) listed below:

~~APPENDIX A~~

Appendix A

Section I A

Section II

Section III C

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Section VIII

~~APPENDIX C~~

Appendix C

Section II

Section III A (1 through 6 and 8), B (1 and 2)

~~APPENDIX D~~

Appendix D

Section III C, D, and E

Section IV

ec) This Section incorporates no future editions or amendments.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 302.553 Determining the Lake Michigan Aquatic Toxicity Criteria or Values - General Procedures

The Lake Michigan Aquatic Life Criteria and Values are those concentrations or levels of a substance at which aquatic life is protected from adverse effects resulting from short or long term exposure in water.

a) Tier I criteria and Tier II values to protect against acute effects in aquatic organisms will be calculated according to procedures listed at Sections 302.555, 302.560 and 302.563. The procedures of Section 302.560 shall be used as necessary to allow for interactions with other water quality characteristics such as hardness, pH, temperature, etc. Tier I criteria and Tier II values to protect against chronic effects in aquatic organisms shall be calculated according to the procedures listed at Section 302.565.

b) Minimum data requirements. In order to derive a Tier I acute or chronic criterion, data must be available for at least one species of freshwater animal in at least eight different families such that the following taxa are included:

- 1) The family Salmonidae in the class Osteichthyes;
- 2) One other family in the class Osteichthyes;
- 3) A third family in the phylum Chordata;
- 4) A planktonic crustacean;
- 5) A benthic crustacean;
- 6) An insect;
- 7) A family in a phylum other than Arthropoda or Chordata; and
- 8) A family from any order of insect or any phylum not already represented.

c) Data for tests with plants, if available, must be included in the data set.

d) If data for acute effects are not available for all the eight families listed above, but are available for the family Daphnidae, a Tier II value shall be derived according to procedures in Section 302.563. If data for chronic effects are not available for all the eight families, but there are acute and chronic data available according to Section 302.565(b) so that three acute to chronic ratios (ACRs) can be calculated, then a Tier I chronic criterion can be derived according to procedures in Section 302.565. If three ACRs are not available, then a Tier II chronic value can be derived according to procedures in Section 302.565 ~~(be)-b)~~.

e) Data must be obtained from species that have reproducing wild populations in North America except that data from salt water species can be used in the derivation of an ACR.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 302.595 Listing of Bioaccumulative Chemicals of Concern, Derived Criteria and Values

a) The Agency shall maintain a listing of toxicity criteria and values derived pursuant to this Subpart. This list shall be made available to the

public and updated whenever a new criterion or value is derived ~~periodically~~ but no less frequently than ~~annually~~~~quarterly~~annually, and shall be published when updated in the Illinois Register and the Agency's website at <http://www.iepa.state.il.us>.

b) A criterion or value published pursuant to subsection (a) of this Section may be proposed to the Board for adoption as a numeric water quality standard.

c) The Agency shall maintain for inspection all information including, but not limited to, assumptions, toxicity data and calculations used in the derivation of any toxicity criterion or value listed pursuant to subsection (a) of this Section until adopted by the Board as a numeric water quality standard.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

SUBPART F: PROCEDURES FOR DETERMINING WATER QUALITY CRITERIA

Section 302.648 Determining the Human Threshold Criterion

The HTC is calculated according to the equation:

$$HTC = ADI/[W + (F \times BCF)]$$

~~Where:~~
where:

HTC = Human health protection criterion in milligrams per liter (mg/L); ADI = Acceptable daily intake of substance in milligrams per day (mg/d) as specified in Section 302.645; W = Per capita daily water consumption equal to 2 liters per day (L/d) for surface waters at the point of intake of a public or food processing water supply, or equal to 0.01 liters per day (L/d) which represents incidental exposure through contact or ingestion of small volumes of water while swimming or during other recreational activities for areas which are determined to be public access areas pursuant to Section ~~302.102~~~~302.201~~302.102 (b) (3), or 0.001 liters per day (L/d) for other General Use waters; F = Assumed daily fish consumption in the United States equal to 0.020 kilograms per day (kg/d); ~~and BCF~~
and BCF = Aquatic organism Bioconcentration Factor with units of liter per kilogram (L/kg) as derived in Sections 302.660 through 302.666.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 302.657 Determining the Human Nonthreshold Criterion

The HNC is calculated according to the equation:

$$HNC = RAI/[W + (F \times BCF)]$$

~~Where:~~
where:

HNC = Human Nonthreshold Protection Criterion in milligrams per liter (mg/L); RAI = Risk Associated Intake of a substance in milligrams per day (mg/d) which is associated with a lifetime cancer risk level equal to a ratio of one to 1,000,000 as derived in Section 302.654; W = Per capita daily water consumption equal to 2 liters per day (L/d) for surface waters at the point of intake of a

public or food processing water supply, or equal to 0.01 liters per day (L/d) which represents incidental exposure through contact or ingestion of small volumes of water while swimming or during other recreational activities for areas which are determined to be public access areas pursuant to Section ~~302.102302.201~~302.102 (b) (3), or 0.001 liters per day (L/d) for other General Use waters; F = Assumed daily fish consumption in the United States equal to 0.020 kilograms per day (kg/d); ~~andBCF~~andBCF = Aquatic Life Bioconcentration Factor with units of liter per kilogram (L/kg) as derived in Section 302.663.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 302.669 Listing of Derived Criteria

a) The Agency shall develop and maintain a listing of toxicity criteria pursuant to this Subpart. This list shall be made available to the public and updated whenever a new criterion is derived ~~periodically~~ but no less frequently than ~~annually~~quarterly or annually, and shall be published when updated in the Illinois Register and the Agency's website at <http://www.iepa.state.il.us>.

b) A criterion published pursuant to subsection (a) may be proposed to the Board for adoption as a numeric water quality standard.

c) The Agency shall maintain for inspection all information including, but not limited to, assumptions, toxicity data and calculations used in the derivation of any toxicity criterion listed pursuant to subsection (a) until adopted by the Board as a water quality standard.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

JCAR350302-1205721r01

~~ILLINOIS REGISTER~~

~~POLLUTION CONTROL BOARD~~

~~NOTICE OF PROPOSED AMENDMENTS~~

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1ST NOTICE VERSION

JCAR350302-1205721r01

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2 SUBTITLE C: WATER POLLUTION
3 CHAPTER I: POLLUTION CONTROL BOARD

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 154 **AUTHORITY:** Implementing Section 13 and authorized by Sections 11(b) and 27 of the
 155 Environmental Protection Act [415 ILCS 5/13, 11(b), and 27].
 156

157 **SOURCE:** Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 44, p. 151,
 158 effective November 2, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended
 159 at 3 Ill. Reg. 25, p. 190, effective June 21, 1979; codified at 6 Ill. Reg. 7818; amended at 6 Ill.
 160 Reg. 11161, effective September 7, 1982; amended at 6 Ill. Reg. 13750, effective October 26,
 161 1982; amended at 8 Ill. Reg. 1629, effective January 18, 1984; peremptory amendments at 10 Ill.
 162 Reg. 461, effective December 23, 1985; amended at R87-27 at 12 Ill. Reg. 9911, effective May
 163 27, 1988; amended at R85-29 at 12 Ill. Reg. 12082, effective July 11, 1988; amended in R88-1 at
 164 13 Ill. Reg. 5998, effective April 18, 1989; amended in R88-21(A) at 14 Ill. Reg. 2899, effective
 165 February 13, 1990; amended in R88-21(B) at 14 Ill. Reg. 11974, effective July 9, 1990; amended
 166 in R94-1(A) at 20 Ill. Reg. 7682, effective May 24, 1996; amended in R94-1(B) at 21 Ill. Reg.
 167 370, effective December 23, 1996; expedited correction at 21 Ill. Reg. 6273, effective December
 168 23, 1996; amended in R97-25 at 22 Ill. Reg. 1356, effective December 24, 1997; amended in
 169 R99-8 at 23 Ill. Reg. 11249, effective August 26, 1999; amended in R01-13 at 26 Ill. Reg. 3505,
 170 effective February 22, 2002; amended in R02-19 at 26 Ill. Reg. 16931, effective November 8,
 171 2002; amended in R02-11 at 27 Ill. Reg. 166, effective December 20, 2002; amended in R04-21
 172 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. _____, 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) applies pursuant to Section 302.102as provided in subsection (d).
- 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 allowed mixing pursuant to Section 302.102as provided in subsection (d). 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 metals 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 metals-sample was collected. To calculate attainment status of chronic metals standards, the concentration of the chemical constituentmetal 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.
- 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 allowed mixing pursuant to Section 302.102as provided in subsection (d).
- 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 allowed mixing pursuant to Section 302.102.~~In waters where mixing is allowed pursuant to Section 302.102, the following apply:~~
 - 1) ~~The AS shall not be exceeded in any waters except for those waters for which the Agency has approved a zone of initial dilutions (ZID) pursuant to Section 302.102.~~

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 217 2) ~~The CS shall not be exceeded outside of waters in which mixing is~~
 218 ~~allowed pursuant to Section 302.102.~~
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 220 3) ~~The HHS shall not be exceeded outside of waters in which mixing is~~
 221 ~~allowed pursuant to Section 302.102.~~
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e) Numeric Water Quality Standards for the Protection of Aquatic Organisms

Constituent	STORET Number	AS (µg/L)	CS (µg/L)
Arsenic (trivalent, dissolved)	22680	360 X 1.0* = 360	190 X 1.0* = 190
<u>Boron (total)</u>		<u>40,100</u>	<u>7,600</u>
Cadmium (dissolved)	01025	$e^{A+B\ln(H)} \times \left\{ \frac{1.138672 - [(\ln(H))(0.041838)]}{[(\ln(H))(0.041838)]} \right\}^{*_{\frac{1}{5}}}$ <p>where A = -2.918 and B = 1.128</p>	$e^{A+B\ln(H)} \times \left\{ \frac{1.101672 - [(\ln(H))(0.041838)]}{[(\ln(H))(0.041838)]} \right\}^{*_{\frac{1}{5}}}$ <p>where A = -3.490 and B = 0.7852</p>
Chromium (hexavalent, total)	01032	16	11
Chromium (trivalent, dissolved)	80357	$e^{A+B\ln(H)} \times 0.316^{*_{\frac{1}{5}}}$ <p>where A = 3.688 and B = 0.8190</p>	$e^{A+B\ln(H)} \times 0.860^{*_{\frac{1}{5}}}$ <p>where A = 1.561 and B = 0.8190</p>
Copper (dissolved)	01040	$e^{A+B\ln(H)} \times 0.960^{*_{\frac{1}{5}}}$ <p>where A = -1.464 and B = 0.9422</p>	$e^{A+B\ln(H)} \times 0.960^{*_{\frac{1}{5}}}$ <p>where A = -1.465 and B = 0.8545</p>
Cyanide**	00718	22	5.2
<u>Fluoride (total)</u>		<u>$e^{A+B\ln(H)}$</u>	<u>$e^{A+B\ln(H)}$, but shall not</u>

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			<u>exceed 4.0 mg/L</u>
		<u>where A = 6.7319 and B = 0.5394</u>	<u>where A = 6.0445 and B = 0.5394</u>
Lead (dissolved)	01049	$e^{A=B\ln(H)} \times \left\{ 1.46203 - \left[\frac{1.46203}{[(\ln H)(0.1457/2)]} \right] \right\}^*$	$e^{A=B\ln(H)} \times \left\{ 1.46203 - \left[\frac{1.46203}{[(\ln H)(0.145712)]} \right] \right\}^*$
		where A = -1.301 and B = 1.273	where A = -2.863 and B = 1.273
<u>Manganese</u>		<u>$e^{A+B\ln(H)} \times 0.9812^*$</u>	<u>$e^{A+B\ln(H)} \times 0.9812^*$</u>
		<u>where A = 4.9187 and B = 0.7467</u>	<u>where A = 4.0635 and B = 0.7467</u>
Mercury (dissolved)	71890	2.6 X 0.85* = 2.2	1.3 X 0.85* = 1.1
Nickel (dissolved)	01065	$e^{A+B\ln(H)} \times 0.998^*$	$e^{A+B\ln(H)} \times 0.997^*$
		where A = 0.5173 and B = 0.8460	where A = -2.286 and B = 0.8460
TRC	500600	19	11
Zinc (dissolved)	01090	$e^{A+B\ln(H)} \times 0.978^*$	$e^{A+B\ln(H)} \times 0.986^*$
		where A = 0.9035 and B = 0.8473	where A = -0.44564 0.8165 and B = 0.8473
Benzene	78124	4200	860
Ethylbenzene	78113	150	14
Toluene	78131	2000	600
Xylene(s)	81551	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 (STORET 00900)
- *
 = 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)

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

Constituent	STORET Number	($\mu\text{g/L}$)
Mercury (total)	71900	0.012
Benzene	78124	310

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where:

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

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g) Single-value standards apply at the following concentrations for these substances: Concentrations of the following chemical constituents shall not be exceeded except in waters for which mixing is allowed pursuant to Section 302.102.

Constituent	Unit	STORET Number	Standard
Barium (total)	mg/L	01007	5.0
Boron (total)	mg/L	01022	1.0
Chloride (total)	mg/L	00940	500
Fluoride	mg/L	00951	1.4
Iron (dissolved)	mg/L	01046	1.0
Manganese (total)	mg/L	01055	1.0

Phenols	mg/L	32730	0.1
Selenium (total)	mg/L	01147	1.0
Silver (total)	µg/L	01077	5.0

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where:

mg/L = milligram per liter and

µg/L = microgram per liter

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h) Water quality standards for sulfate are as follows~~The following concentrations for sulfate must not be exceeded except in receiving waters for which mixing is allowed pursuant to Section 302.102:~~

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:

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

where:~~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:~~Where~~

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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 36 Ill. Reg. _____, effective _____)

SUBPART C: PUBLIC AND FOOD PROCESSING WATER SUPPLY STANDARDS

Section 302.303 Finished Water Standards

Water shall be of such quality that with treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment processes, the treated water shall meet in all respects the requirements of Part 611604.

(Note: Prior to codification, Table I, Rule 304 of Ch 6: Public Water Supplies)

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 302.304 Chemical Constituents

The following levels of chemical constituents shall not be exceeded:

CONSTITUENT	STORET NUMBER	CONCENTRATION (mg/l)
Arsenic (total)	01002	0.05

Barium (total)	01007	1.0
<u>Boron (total)</u>		<u>1.0</u>
Cadmium (total)	01027	0.010
Chloride (total)	00940	250-
Chromium	01034	0.05
<u>Fluoride (total)</u>		<u>1.4</u>
Iron (dissolved)	01046	0.3
Lead (total)	01051	0.05
Manganese (total)	01055	<u>1.00-15</u>
Nitrate-Nitrogen	00620	10-
Oil (hexane-solubles or equivalent)	00550, 00556 or 00560	0.1
Organics		
Pesticides		
Chlorinated Hydro- carbon Insecticides		
Aldrin	39330	0.001
Chlordane	39350	0.003
DDT	39370	0.05
Dieldrin	39380	0.001
Endrin	39390	0.0002
Heptachlor	39410	0.0001
Heptachlor Expoxide	39420	0.0001
Lindane	39782	0.004
Methoxychlor	39480	0.1
Toxaphene	39400	0.0005
Organophosphate Insecticides		
Parathion	39540	0.1
Chlorophenoxy Herbicides		
2,4-Dichlorophenoxy- acetic acid (2,4-D)	39730	0.1
2-(2,4,5-Trichloro- phenoxy)-propionic acid (2,4,5-TP or Silvex)	39760	0.01
Phenols	32730	0.001
Selenium (total)	01147	0.01
Sulphates	00945	250-
Total Dissolved Solids	70300	500-

(Source: Amended at 36 Ill. Reg. _____, effective _____)

SUBPART E: LAKE MICHIGAN BASIN WATER QUALITY STANDARDS

Section 302.504 Chemical Constituents

The following concentrations of chemical constituents must not be exceeded, except as provided in Sections 302.102 and 302.530:

- a) The following standards must be met in all waters of the Lake Michigan Basin. Acute aquatic life standards (AS) must not be exceeded at any time except for those waters for which the Agency has approved a zone of initial dilution (ZID) pursuant to Sections 302.102 and 302.530. Chronic aquatic life standards (CS) and human health standards (HHS) must not be exceeded outside of waters in which mixing is allowed pursuant to Sections 302.102 and 302.530 by the arithmetic average of at least four consecutive samples collected over a period of at least four days. The samples used to demonstrate compliance with the CS or HHS must be collected in a manner which assures an average representation of the sampling period.

<u>Constituent</u>	<u>STORET Number</u>	<u>Unit</u>	<u>AS</u>	<u>CS</u>	<u>HHS</u>
Arsenic (Trivalent, dissolved)	22680	µg/L	$340 \times 1.0^* = 340$	$340 \times 1.0^* = 148$	NA
<u>Boron (total)</u>		<u>mg/L</u>	<u>40.1</u>	<u>7.6</u>	<u>NA</u>
Cadmium (dissolved)	01025	µg/L	$\exp[A + B \ln(H)] \times \{1.138672 - [(1nH) (0.041838)]\}^*$; where $A = -3.6867$ and $B = 1.128$	$\exp[A + B \ln(H)] \times \{1.101672 - [(1nH) (0.041838)]\}^*$; where $A = -2.715$ and $B = 0.7852$	NA
Chromium (Hexavalent, total)	01032	µg/L	16	11	NA
Chromium (Trivalent, dissolved)	80357	µg/L	$\exp[A + B \ln(H)] \times 0.316^*$; where $A = 3.7256$ and $B = 0.819$	$\exp[A + B \ln(H)] \times 0.860^*$; where $A = 0.6848$ and $B = 0.819$	NA
Copper (dissolved)	01040	µg/L	$\exp[A + B \ln(H)] \times$	$\exp[A + B \ln(H)] \times$	NA

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			0.960* ₅ ;	0.960* ₅ ;	
			where $A = -1.700$ and $B = 0.9422$	where $A = -1.702$ and $B = 0.8545$	
Cyanide** (Weak acid dissociable)	00718	µg/L	22	5.2	NA
<u>Fluoride (total)</u>		<u>µg/L</u>	<u>$\exp[A + B \ln(H)]$</u> <u>where $A = 6.7319$ and $B = 0.5394$</u>	<u>$\exp[A + B \ln(H)]$</u> , <u>but shall not exceed 4.0 mg/L</u> <u>where $A = 6.0445$ and $B = 0.5394$</u>	<u>NA</u>
Lead (dissolved)	01049	µg/L	$\exp[A + B \ln(H)] \times$ $\{1.46203 - [(\ln H)$ $(0.145712)]\}^*$;	$\exp[A + B \ln(H)] \times$ $\{1.46203 - [(\ln H)$ $(0.145712)]\}^*$;	NA
			where $A = -1.055$ and $B = 1.273$	where $A = -4.003$ and $B = 1.273$	
<u>Manganese (dissolved)</u>		<u>µg/L</u>	<u>$\exp[A + B \ln(H)] \times$</u> <u>0.9812*</u>	<u>$\exp[A + B \ln(H)] \times$</u> <u>0.9812*</u>	<u>NA</u>
			<u>where $A = 4.9187$ and $B = 0.7467$</u>	<u>where $A = 4.0635$ and $B = 0.7467$</u>	
Nickel (dissolved)	01065	µg/L	$\exp[A + B \ln(H)] \times$ 0.998* ₅ ;	$\exp[A + B \ln(H)] \times$ 0.997* ₅ ;	NA
			where $A = 2.255$ and $B = 0.846$	where $A = 0.0584$ and $B = 0.846$	
Selenium (dissolved)	01145	µg/L	NA	5.0	NA
TRC	50060	µg/L	19	11	NA
Zinc (dissolved)	01090	µg/L	$\exp[A + B \ln(H)] \times$ 0.978* ₅ ;	$\exp[A + B \ln(H)] \times$ 0.986* ₅ ;	NA

			where $A = 0.884$ and $B = 0.8473$	where $A = 0.884$ and $B = 0.8473$	
Benzene	78124	µg/L	3900	800	310
Chlorobenzene	34301	mg/L	NA	NA	3.2
2,4-Dimethylphenol	34606	mg/L	NA	NA	8.7
2,4-Dinitrophenol	03756	mg/L	NA	NA	2.8
Endrin	39390	µg/L	0.086	0.036	NA
Ethylbenzene	78113	µg/L	150	14	NA
Hexachloroethane	34396	µg/L	NA	NA	6.7
Methylene chloride	34423	mg/L	NA	NA	2.6
Parathion	39540	µg/L	0.065	0.013	NA
Pentachlorophenol	03761	µg/L	$\exp B([pH] + A)$; where $A = -4.869$ and $B = 1.005$	$\exp B([pH] + A)$; where $A = -5.134$ and $B = 1.005$	NA
Toluene	78131	µg/L mg/L	2000	610	51.0
Trichloroethylene	39180	µg/L	NA	NA	370
Xylene(s)	81551	µg/L	1200	490	NA

whereWhere:

NA = Not Applied

Exp[x] = base of natural logarithms raised to the x-power

ln(H) = natural logarithm of Hardness (STORET 00900)

* = 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 302.510: 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).

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- b) The following water quality standards must not be exceeded at any time in any waters of the Lake Michigan Basin, unless a different standard is specified under subsection (c) of this Section.

<u>Constituent</u>	<u>STORET Number</u>	<u>Unit</u>	<u>Water Quality Standard</u>
Barium (total)	01007	mg/L	5.0
Boron (total)	01022	mg/L	1.0
Chloride (total)	00940	mg/L	500
Fluoride	00951	mg/L	1.4
Iron (dissolved)	01046	mg/L	1.0
Manganese (total)	01055	mg/L	1.0
Phenols	32730	mg/L	0.1
Sulfate	00945	mg/L	500
Total Dissolved Solids	70300	mg/L	1000

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- c) In addition to the standards specified in subsections (a) and (b) of this Section, the following standards must not be exceeded at any time in the Open Waters of Lake Michigan as defined in Section 302.501.

<u>Constituent</u>	<u>STORET Number</u>	<u>Unit</u>	<u>Water Quality Standard</u>
Arsenic (total)	01002	µg/L	50.0
Boron (total)		mg/L	1.0
Barium (total)	01007	mg/L	1.0
Chloride (total)	00940	mg/L	12.0
Fluoride (total)		mg/L	1.4

Iron (dissolved)	01046	mg/L	0.30
Lead (total)	01051	µg/L	50.0
Manganese (total)	01055	mg/L	0.15
Nitrate-Nitrogen	00620	mg/L	10.0
Phosphorus	00665	µg/L	7.0
Selenium (total)	01147	µg/L	10.0
Sulfate	00945	mg/L	24.0
Total Dissolved Solids	70300	mg/L	180.0
Oil (hexane solubles or equivalent)	00550, 00556 or 00560	mg/L	0.10
Phenols	32730	µg/L	1.0

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d) In addition to the standards specified in subsections (a), (b) and (c) of this Section, the following human health standards (HHS) must not be exceeded in the Open Waters of Lake Michigan as defined in Section 302.501 by the arithmetic average of at least four consecutive samples collected over a period of at least four days. The samples used to demonstrate compliance with the HHS must be collected in a manner which assures an average representation of the sampling period.

<u>Constituent</u>	<u>STORET Number</u>	<u>Unit</u>	<u>Water Quality Standard</u>
Benzene	34030	µg/L	12.0
Chlorobenzene	34301	µg/L	470.0
2,4-Dimethylphenol	34606	µg/L	450.0
2,4-Dinitrophenol	03757	µg/L	55.0
Hexachloroethane (total)	34396	µg/L	5.30
Lindane	39782	µg/L	0.47
Methylene chloride	34423	µg/L	47.0
Toluene	78131	mg/L	5.60
Trichloroethylene	39180	µg/L	29.0

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351 e) For the following bioaccumulative chemicals of concern (BCCs), acute aquatic
 352 life standards (AS) must not be exceeded at any time in any waters of the Lake
 353 Michigan Basin and chronic aquatic life standards (CS), human health standards
 354 (HHS), and wildlife standards (WS) must not be exceeded in any waters of the
 355 Lake Michigan Basin by the arithmetic average of at least four consecutive
 356 samples collected over a period of at least four days subject to the limitations of
 357 Sections 302.520 and 302.530. The samples used to demonstrate compliance with
 358 the HHS and WS must be collected in a manner that assures an average
 359 representation of the sampling period.
 360

<u>Constituent</u>	<u>STORET</u> <u>Number</u>	<u>Unit</u>	<u>AS</u>	<u>CS</u>	<u>HHS</u>	<u>WS</u>
Mercury (total)	71900	ng/L	1,700	910	3.1	1.3
Chlordane	39350	ng/L	NA	NA	0.25	NA
DDT and metabolites	39370	pg/L	NA	NA	150	11.0
Dieldrin	39380	ng/L	240	56	0.0065	NA
Hexachlorobenzene	39700	ng/L	NA	NA	0.45	NA
Lindane	39782	µg/L	0.95	NA	0.5	NA
PCBs (class)	79819	pg/L	NA	NA	26	120
2,3,7,8-TCDD	03556	fg/L	NA	NA	8.6	3.1
Toxaphene	39400	pg/L	NA	NA	68	NA

361 whereWhere:

- mg/L = milligrams per liter (10⁻³ grams per liter)
- µg/L = micrograms per liter (10⁻⁶ grams per liter)
- ng/L = nanograms per liter (10⁻⁹ grams per liter)
- pg/L = picograms per liter (10⁻¹² grams per liter)
- fg/L = femtograms per liter (10⁻¹⁵ grams per liter)
- NA = Not Applied

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 363 (Source: Amended at 36 Ill. Reg. _____, effective _____)
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365 **Section 302.510 Incorporations by Reference**
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a) The Board incorporates the following publications by reference:

American Public Health Association et al., 1015 Fifteenth Street, N.W., Washington, D.C. 20005, Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1996. Available from the American Public Health Association, 1015 Fifteenth St., NW, Washington, D.C. 20005 (202)789-5600.

USEPA. United States Environmental Protection Agency, Office of Health and Environmental Assessment, Washington, D.C. 20460, Method OIA-1677, DW: Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry, January 2004, Document Number EPA-821-R-04-001.

b) The Board incorporates the following federal regulations by reference. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (202) 783-3238:

40 CFR 136 (1996)

40 CFR 141 (1988)

40 CFR 302.4 (1988)

The Sections of 40 CFR 132 (1996) listed below:

Appendix A

Section I A

Section II

Section III C

Section IV D, E, F, G, H, and I

Section V C

Section VI A, B, C, D, E, and F

Section VIII

Section XI

410 Section XVII

411
412 Appendix B

413
414 Section III

415
416 Section VII B and C

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418 Section VIII

419
420 Appendix C

421
422 Section II

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424 Section III A (1 through 6 and 8), B (1 and 2)

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426 Appendix D

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428 Section III C, D, and E

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430 Section IV

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432 cd) This Section incorporates no future editions or amendments.

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434 (Source: Amended at 36 Ill. Reg. _____, effective _____)

435
436 **Section 302.553 Determining the Lake Michigan Aquatic Toxicity Criteria or Values –**
437 **General Procedures**

438
439 The Lake Michigan Aquatic Life Criteria and Values are those concentrations or levels of a
440 substance at which aquatic life is protected from adverse effects resulting from short or long term
441 exposure in water.

442
443 a) Tier I criteria and Tier II values to protect against acute effects in aquatic
444 organisms will be calculated according to procedures listed at Sections 302.555,
445 302.560 and 302.563. The procedures of Section 302.560 shall be used as
446 necessary to allow for interactions with other water quality characteristics such as
447 hardness, pH, temperature, etc. Tier I criteria and Tier II values to protect against
448 chronic effects in aquatic organisms shall be calculated according to the
449 procedures listed at Section 302.565.

450
451 b) Minimum data requirements. In order to derive a Tier I acute or chronic criterion,
452 data must be available for at least one species of freshwater animal in at least

453 eight different families such that the following taxa are included:
 454

- 455 1) The family Salmonidae in the class Osteichthyes;
- 456
- 457 2) One other family in the class Osteichthyes;
- 458
- 459 3) A third family in the phylum Chordata;
- 460
- 461 4) A planktonic crustacean;
- 462
- 463 5) A benthic crustacean;
- 464
- 465 6) An insect;
- 466
- 467 7) A family in a phylum other than Arthropoda or Chordata; and
- 468
- 469 8) A family from any order of insect or any phylum not already represented.
- 470

- 471 c) Data for tests with plants, if available, must be included in the data set.
- 472
- 473 d) If data for acute effects are not available for all the eight families listed above, but
 474 are available for the family Daphnidae, a Tier II value shall be derived according
 475 to procedures in Section 302.563. If data for chronic effects are not available for
 476 all the eight families, but there are acute and chronic data available according to
 477 Section 302.565(b) so that three acute to chronic ratios (ACRs) can be calculated,
 478 then a Tier I chronic criterion can be derived according to procedures in Section
 479 302.565. If three ACRs are not available, then a Tier II chronic value can be
 480 derived according to procedures in Section 302.565(be).
- 481
- 482 e) Data must be obtained from species that have reproducing wild populations in
 483 North America except that data from salt water species can be used in the
 484 derivation of an ACR.
- 485

486 (Source: Amended at 36 Ill. Reg. _____, effective _____)
 487

488 **Section 302.595 Listing of Bioaccumulative Chemicals of Concern, Derived Criteria and**
 489 **Values**

- 490
- 491 a) The Agency shall maintain a listing of toxicity criteria and values derived
 492 pursuant to this Subpart. This list shall be made available to the public and
 493 updated whenever a new criterion or value is derived periodically but no less
 494 frequently than annually quarterly, and shall be published when updated in the
 495 Illinois Register and the Agency's website at <http://www.iepa.state.il.us>.

- 496
- 497 b) A criterion or value published pursuant to subsection (a) of this Section may be
- 498 proposed to the Board for adoption as a numeric water quality standard.
- 499
- 500 c) The Agency shall maintain for inspection all information including, but not
- 501 limited to, assumptions, toxicity data and calculations used in the derivation of
- 502 any toxicity criterion or value listed pursuant to subsection (a) of this Section until
- 503 adopted by the Board as a numeric water quality standard.
- 504

(Source: Amended at 36 Ill. Reg. _____, effective _____)

SUBPART F: PROCEDURES FOR DETERMINING WATER QUALITY CRITERIA

Section 302.648 Determining the Human Threshold Criterion

The HTC is calculated according to the equation:

$$HTC = ADI/[W + (F \times BCF)]$$

whereWhere:

- HTC = Human health protection criterion in milligrams per liter (mg/L);
- ADI = Acceptable daily intake of substance in milligrams per day (mg/d) as specified in Section 302.645;
- W = Per capita daily water consumption equal to 2 liters per day (L/d) for surface waters at the point of intake of a public or food processing water supply, or equal to 0.01 liters per day (L/d) which represents incidental exposure through contact or ingestion of small volumes of water while swimming or during other recreational activities for areas which are determined to be public access areas pursuant to Section 302.102 ~~302.201~~(b)(3), or 0.001 liters per day (L/d) for other General Use waters;
- F = Assumed daily fish consumption in the United States equal to 0.020 kilograms per day (kg/d); and
- BCF = Aquatic organism Bioconcentration Factor with units of liter per kilogram (L/kg) as derived in Sections 302.660 through 302.666.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

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Section 302.657 Determining the Human Nonthreshold Criterion

The HNC is calculated according to the equation:

$$HNC = RAI/[W + (F \times BCF)]$$

whereWhere:

- HNC = Human Nonthreshold Protection Criterion in milligrams per liter (mg/L);
- RAI = Risk Associated Intake of a substance in milligrams per day (mg/d) which is associated with a lifetime cancer risk level equal to a ratio of one to 1,000,000 as derived in Section 302.654;
- W = Per capita daily water consumption equal to 2 liters per day (L/d) for surface waters at the point of intake of a public or food processing water supply, or equal to 0.01 liters per day (L/d) which represents incidental exposure through contact or ingestion of small volumes of water while swimming or during other recreational activities for areas which are determined to be public access areas pursuant to Section ~~302.102302.201~~302.201(b)(3), or 0.001 liters per day (L/d) for other General Use waters;
- F = Assumed daily fish consumption in the United States equal to 0.020 kilograms per day (kg/d); and
- BCF = Aquatic Life Bioconcentration Factor with units of liter per kilogram (L/kg) as derived in Section 302.663.

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(Source: Amended at 36 Ill. Reg. _____, effective _____)

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Section 302.669 Listing of Derived Criteria

- a) The Agency shall develop and maintain a listing of toxicity criteria pursuant to this Subpart. This list shall be made available to the public and updated whenever a new criterion is derived~~periodically~~ but no less frequently than annually~~quarterly~~, and shall be published when updated in the Illinois Register and the Agency's website at <http://www.iepa.state.il.us>.
- b) A criterion published pursuant to subsection (a) may be proposed to the Board for adoption as a numeric water quality standard.
- c) The Agency shall maintain for inspection all information including, but not

543 limited to, assumptions, toxicity data and calculations used in the derivation of
544 any toxicity criterion listed pursuant to subsection (a) until adopted by the Board
545 as a water quality standard.
546

547 (Source: Amended at 36 Ill. Reg. _____, effective _____)