

ILLINOIS POLLUTION CONTROL BOARD
June 18, 2015

IN THE MATTER OF:)
)
WATER QUALITY STANDARDS AND) R08-9 (Subdocket D)
EFFLUENT LIMITATIONS FOR THE) (Rulemaking - Water)
CHICAGO AREA WATERWAY SYSTEM)
AND LOWER DES PLAINES RIVER:)
PROPOSED AMENDMENTS TO 35 ILL.)
ADM. CODE 301, 302, 303, and 304)

Adopted Rule. Final Notice.

OPINION AND ORDER OF THE BOARD (by D. Glosser):

SUMMARY OF TODAY’S ACTION¹

The Board today adopts water quality standards for the Chicago Area Waterway System (CAWS) and the Lower Des Plaines River (LDPR) that are necessary to protect the aquatic life uses for those waterways as designated in Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(C), (Feb. 6, 2014). The Board is proceeding with the standards as proposed at second notice, including a site specific chloride water quality standard for the Chicago Sanitary and Ship Canal (CSSC). As to the remaining segments of the CAWS and LDPR, while the Board adopts a year-round chloride standard of 500 mg/L, the standard will have a three year delayed effective date. In the interim, the Board leaves in place the Total Dissolved Solids (TDS) standard during the winter months of December 1 through April 30 and applies the 500 mg/L chloride standard during the summer months of May 1

¹ As this rulemaking spanned over seven years and included a record setting number of hearing days and public comments, the completed rule reflects the hard work and dedication of several former Board Members. The Board wishes to thank former Board Members, the late Nicholas Melas, Andrea Moore, Thomas E. Johnson, Gary Blankenship, and Dr. Shundar Lin for the hours devoted to hearings, reviewing testimony and contributions on opinions and orders in the many subdockets. A special thanks to Dr. G. Tanner Girard, who served as presiding Board Member for the docket until the appointment of Dr. Deanna Glosser. Dr. Girard is the author of Subdocket A and served as an invaluable advisor during the development of Subdockets B and C.

The Board also recognizes the contributions of staff members Anand Rao and Alisa Liu from the technical unit. Mr. Rao and Ms. Liu attended nearly every hearing, contributed to every draft, and assisted the Board in developing the standards we adopt today. Finally, the Board notes that Marie Tipsord served as the hearing officer throughout this rulemaking and as attorney assistant to both former Chairman Dr. Girard and current Chairman, Dr. Glosser.

through November 30 for CAWS and LDPR, except for the CSSC. The interim TDS standard will sunset three years after the effective date of the rules.

In addition, the Board adopts the temperature standards as proposed at first-notice, except the Board will delay the effective date of the temperature standards until three years after the effective date of the rules.

PROCEDURAL BACKGROUND

On October 26, 2007, Illinois Environmental Protection Agency (IEPA) filed a proposal under the general rulemaking provisions of Sections 27 and 28 of the Environmental Protection Act (Act) (415 ILCS 5/27, 28 (2014)). Generally, the proposal amends the Board's rules for Secondary Contact and Indigenous Aquatic Life Use to update the designated uses and standards necessary to protect the existing uses of CAWS and LDPR. On November 1, 2007, the Board accepted the proposal for hearing. On November 15, 2007, the Board granted a motion to hold hearings in Chicago and Joliet.

On June 12, 2008, the Metropolitan Water Reclamation District of Greater Chicago (District) filed a motion to stay the rulemaking proceeding, which was supported by: 1) Midwest Generation L.L.C (Midwest Generation), 2) Chemical Industry Council of Illinois, and 3) Stepan Company (Stepan). On June 25, 2008, the Environmental Law and Policy Center, Friends of the Chicago River, Sierra Club Illinois Chapter, Natural Resources Defense Council, and Openlands (Environmental Groups) filed a response in opposition to the motion. Joining in opposition to the motion were Southeast Environmental Task Force, the People of the State of Illinois (People), and IEPA. On July 21, 2008, the Board denied the motion to stay and directed the parties to proceed with additional hearings already scheduled.

On March 18, 2010, the Board granted a motion filed by CITGO Petroleum Corporation and PDV Midwest, LLC. (Citgo/PDV) for an additional hearing on Asian carp but delayed that hearing until later in 2010. The Board also granted a motion filed by the Environmental Groups to sever the dockets. The Board severed the dockets as follows: 1) Subdocket A dealt with the issues related to recreational use designations, and the final rule was adopted on August 18, 2011; 2) Subdocket B addressed issues relating to disinfection and whether or not disinfection may be necessary to meet the recreational use designations, and the final rule was adopted on February 2, 2012; 3) Subdocket C addressed aquatic life use, designations, and the final rule was adopted on February 6, 2014; and 4) Subdocket D addresses the issues dealing with water quality standards and criteria that are necessary to meet the aquatic life use designations. On February 21, 2013, the Board added Subdocket E to address Bubbly Creek.

The Board held 39 days of hearing as of March 18, 2010, when the docket was divided, and additional hearings proceeded in each of the Subdockets. During the first 39 days of hearings, hearings were held in Chicago, Joliet, and Des Plaines.

Not all the testimony received during the 39 days of hearing held prior to March 18, 2010, is relevant to this Subdocket. Those whose testimony is relevant are the following:

Rob Sulski of IEPA (Exhibit 1)
 Scott Twait of IEPA (Exhibit 2)
 Roy Smogor of IEPA (Exhibit 3)
 Chris O. Yoder on behalf of IEPA (Exhibit 13)
 Adrienne D. Nemura on behalf of the District (Exhibit 116)
 Stephen F. McGowan on behalf of the District (Exhibit 133, 211)
 Charles S. Melching on behalf of the District (Exhibit 169)
 Jennifer Wasik on behalf of the District (Exhibit 187, 230)
 Samuel G. Dennison on behalf of the District (Exhibit 191, 209)
 Paul L. Freedman on behalf of the District (Exhibit 204)
 David R. Zenz on behalf of the District (Exhibit 217)
 John Mastracchio on behalf of the District (Exhibit 223)
 James E. Huff on behalf of Citgo/PDV (Exhibit 285)
 Joseph V. Idaszak on behalf of Corn Products² (Exhibit 305)
 James E. Huff on behalf of Corn Products (Exhibit 304)
 Carl E. Adams Jr. and Robin Garibay on behalf of Stepan Company (Exhibit 318)
 Julia Wozniak on behalf of Midwest Generation (Exhibit 364)
 Greg Seegert on behalf of Midwest Generation (Exhibit 366)
 Dr. G. Allen Burton on behalf of Midwest Generation (Exhibit 369)

In addition to hearing testimony, the Board received over 381 exhibits and over 500 public comments prior to the dockets being divided on March 18, 2010. Many of the comments and exhibits are not relevant to a determination of aquatic life use or the associated water quality standards, and therefore will not be discussed.

Proceedings Since March 18, 2010

The Board held an additional five days of hearings in Chicago for Subdocket D. The first of those on November 9 and 10, 2010, was devoted to the issue of the impact of Asian carp prevention measures on the aquatic life uses and water quality standards. The Board held hearings on issues regarding aquatic life water quality standards on July 29, September 23 and December 17, 2013.

By hearing officer order, the pre-first notice comment period closed on April 30, 2014, with responsive comments to be filed by May 14, 2014.

The following individuals representing industry, environmental organizations, and state agencies testified during the five additional days of hearings held on Subdocket D:

Scott Twait on behalf of IEPA (Exhibit 480)
 Lial F. Tischler on behalf of ExxonMobil Oil Corporation (ExxonMobil) (Exhibit 488)
 Bruce Nelson on behalf of Citgo/PDV (Exhibit 489)
 Roger Klocek on behalf of Citgo/PDV (Exhibit 491)
 Larry Tyler on behalf of Citgo/PDV (Exhibit 492)

² Corn Products International, Inc. changed its name to Ingredion Incorporated.

James E. Huff on behalf of Citgo/PDV (Exhibit 493)

In addition to hearing testimony, the Board received 493 exhibits and over 1,400 public comments in all the dockets combined. Not all comments and exhibits are relevant to a determination of aquatic life water quality standards, and therefore will not be listed. Further, many public comments consist of one page or less from numerous individuals. Those comments are: PC 306-483, 485-494, 501-504, 507-510, 1258-1274, 1294-1329, 1330-1336, 1339-1354, 1355-1365, 1369-1371, 1400. Those comments express support for cleaning up the waters. The public comments from participants are:

IEPA PC 286, 1396, 1401, 1409
 Honorable John Fritchey of the 11th District, Illinois House of Representatives PC 289
 The Environmental Groups PC 1407, 1412
 The District PC 1292, 1366
 Citgo/PDV PC 1394, 1395, 1399, 1402, 1410
 Stepan Company PC 1405, 1411
 ExxonMobil Oil Corporation PC 1397, 1398, 1406, 1413
 Midwest Generation PC 1403, 1408a and 1408b
 United States Environmental Protection Agency (USEPA) PC 1337, 1338, 1367, 1404

On May 24, 2013, IEPA filed a motion to amend the proposal (AmProp.) and supported the amendment with testimony by Scott Twait (Exh. 480). The Board granted the motion to amend the proposal on September 18, 2014.

First Notice

On September 18, 2014, the Board adopted a first-notice opinion and order. The first notice was published in the *Illinois Register* on October 3, 2014. Since adoption of the first notice, the Board received 14 public comments. Those comments are from:

USEPA (PC 1414)
 IEPA (PC 1415)
 District (PC 1416, PC 1424)
 Citgo/PDV (PC 1417, PC 1423)
 Midwest Generation (PC 1418, PC 1427)
 Stepan (PC 1419, PC 1426)
 ExxonMobil (PC 1420, PC 1425)
 Ingredient Incorporated (PC 1421)
 Environmental Groups (PC 1422, PC 1428)

No additional hearings were requested and none were held during first notice.

Department of Commerce and Economic Opportunity

On November 16, 2007, in accordance with Section 27(b) of the Act (415 ILCS 5/27(b) (2014)), the Board requested that the Department of Commerce and Economic Opportunity

(DCEO) conduct an economic impact study for this rulemaking. The Board did not receive a response to that letter, and the Board received no comment on DCEO's decision to not respond at the Board's hearing on December 17, 2013. 12/17/13Tr. at 4.

Second Notice

On March 19, 2015, the Board adopted a second-notice opinion and order. The Board filed the rule with the Joint Committee on Administrative Rules (JCAR) pursuant to the Illinois Administrative Procedure Act (IAPA) (5 ILCS 100/5-40 (2014)). On May 12, 2015, the Board agreed with JCAR to extend the second notice period for this rulemaking in order to allow the Board to seek additional public comment on "temperature".

On May 21, 2015, the Board reopened the public comment period to allow participants to provide additional public comment on "temperature" to the Board until June 1, 2015. At the Board's May 21, 2015, Board meeting, the Board heard comments from John Quail, Director, Watershed Policy for Friends of the Chicago River; Robert Hirschfeld, Prairie Rivers Network; and Katrina Phillips, Clean Water Organizer, Sierra Club, Illinois Chapter.

The Board received four comments from participants by the June 1, 2015 deadline. Those comments are from: Exxon Mobil Oil Corporation (ExxonMobil), PC 1517; Stepan Company (Stepan), PC 1518; Midwest Generation, L.L.C (Midwest Generation), PC 1519³; and, Environmental Law and Policy Center, Friends of the Chicago River, Sierra Club Illinois Chapter, Natural Resources Defense Council, and Openlands (Environmental Groups), PC 1520. In addition, 271 single page comments expressing support for the Board's rule were received.

On June 4, 2015, the Board summarized the comments and agreed to seek one change from JCAR in response to the comments. However, the Board determined that no other changes should be sought from JCAR.

On June 16, 2015, JCAR issued a certificate of no objection to the rule and also included several agreements between the Board and JCAR. The Board will discuss the agreements below.

SUMMARY OF BOARD'S FIRST NOTICE

The Board designated aquatic life uses for CAWS and LDPR in Subdocket C. Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(C), (Feb. 6, 2014). After reviewing the record and examining the Clean Water Act (CWA) goal of "water quality which provides for the protection and propagation of fish, shellfish, and wildlife. . ." (33 U.S.C. § 1251(a)(2)), the Board adopted three aquatic life use designations and

³ Effective April 1, 2014, NRG Energy, Inc. (NRG) purchased certain subsidiaries of Midwest Generation including the Will County Station and Joliet Station, Units 9 and 29. The Will County Station discharges to the Chicago Sanitary and Ship Canal, and the Joliet Stations discharges to the Upper Dresden Island Pool. PC 1418 at 2.

developed definitions of those aquatic life use designations. The Board adopted a CAWS Aquatic Life Use (ALU) A, CAWS and Brandon Pool Aquatic Life Use (ALU) B, and Upper Dresden Island Pool (UDIP) Aquatic Life Use (ALU). As a result of designating aquatic life uses, the Board needed to address water quality standards to protect those uses. At first notice in this Subdocket, the Board proposed water quality standards necessary to protect the designated aquatic life uses.

Generally, in adopting the first notice, the Board proceeded with the standards for many constituents as proposed by IEPA, with two notable exceptions. The Board found that the 500 mg/L chloride standard must be adapted for the Chicago Sanitary and Ship Canal (CSSC) from December 1 until April 30. Therefore, the Board proposed for the CSSC a numeric standard of 620 mg/L as a chronic water quality standard and 990 mg/L as an acute water quality standard for chloride from December 1 until April 30.

The Board also found that the temperature water quality standards proposed by IEPA as well as those suggested by other participants were not appropriate. Therefore, the Board proposed that the General Use temperature standards apply to these waterways.

The Board also made changes to the proposal in other areas as result of the Board's review of the record, comments, and testimony. In some instances the Board sought additional input from participants. The specific provisions proposed by the Board are discussed generally below.

Bubbly Creek

The South Fork of the South Branch of the Chicago River, known as Bubbly Creek, was removed from consideration of Aquatic Life Uses in Subdocket C. See Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(C), (Feb. 6, 2014). As a result, concerns were raised that if Secondary Contact water quality standards were repealed, Bubbly Creek would not have standards. *See e.g.* PC 1404 at 8. Therefore, IEPA recommended that Indigenous Aquatic Life water quality standards remain in place for Bubbly Creek until Subdocket E issues are resolved. PC 1401 at 38. USEPA recommended the Board either retain the existing standards that apply to Bubbly Creek or temporarily place Bubbly Creek into one of the new aquatic life use designations until such time as site-specific uses and standards are justified. *Id.*

The Board agreed that proposing to repeal Indigenous Aquatic Life standards would pose an issue for Bubbly Creek as no water quality standards would then apply. Therefore, the Board proposed language that establishes Indigenous Aquatic Life standards for Bubbly Creek and includes those standards with the standards proposed for ALU A, ALU B, and UDIP ALU waters. However, in continuing the application of the Indigenous Aquatic Life standards, the Board expressed concern that Bubbly Creek would be subject to an "anytime" dissolved oxygen (DO) standard of 4.0 mg/L, which appears to be more protective than the "anytime" DO standard of 3.5 mg/L applicable to CAWS ALU A, ALU B, and UDIP waters. While the Board recognized that higher use designation waters are subject to additional DO limitations, the Board

sought comments from the participants on whether the proposed DO standard for Bubbly Creek needs to be changed to reflect the “anytime” standard applicable to remaining portions of CAWS and LDPR.

Repeal of Water Quality Standards

IEPA proposed the removal of standards for barium, oil/fat/grease, phenols, and TDS as unnecessary. PC 1401 at 10. USEPA took issue with the removal of phenol and barium water quality standards and recommended that “if the proposed water quality standards are revised to include protection of human health,” IEPA should “consider revising (rather than deleting) the water quality criteria for phenol and barium to be as protective as [USEPA]’s current human health water quality criteria recommendations for these parameters (860 mg/L and 1 mg/L, respectively).” PC 286 at 10. In response to USEPA’s concerns, IEPA suggested including human health standards for phenol. Barium and oils will be protected by the effluent standard found in 35 Ill. Adm. Code 304.124. SR at 79. USEPA did not specifically address the issue of barium and phenol in its final comment; however, in a later comment USEPA indicated that IEPA’s revisions follow national guidance. *See* PC 1404 at Enclosure 1 at 1.

The Board was convinced that IEPA’s addition of a human health standard for phenol and corresponding effluent standards are sufficient to protect the aquatic life uses for the CAWS and LDPR. Therefore, the Board proposed the repeal of barium, oil/fat/grease, and TDS water quality standards and proposed a human health standard for phenol.

Water Quality Standards With Little Controversy

IEPA proposed several standards based either on the national criteria documents or the current General Use water quality standards. Those proposed water quality standards are for: pH, lead, chromium (hexavalent, total), benzene, ethylbenzene, toluene, xylene, nickel (dissolved), iron, and zinc (dissolved). After a careful review of the record, the Board found that proceeding to first notice with IEPA’s proposed water quality standards for pH, lead, chromium (hexavalent, total), benzene, ethylbenzene, toluene, xylene, nickel (dissolved), iron, zinc (dissolved), arsenic, chromium (trivalent, total), silver, and the aquatic life standard for mercury was warranted. While concerns were raised by participants regarding pH and silver, no suggestions were offered for alternative standards. Additionally, the record supports a finding that the proposed standards are either equivalent to the current General Use water quality standards or are based on the national criteria. Therefore, the Board proposed at first notice IEPA’s proposed water quality standards for pH, lead, chromium (hexavalent, total), benzene, ethylbenzene, toluene, xylene, nickel (dissolved), iron, zinc (dissolved), arsenic, chromium (trivalent, total), silver, and the aquatic life standard for mercury.

Total Ammonia Nitrogen

IEPA added Section 302.412, a stand-alone provision to address the water quality standard for ammonia. IEPA proposed standards based on the most recent national criteria document at the time of the proposal. PC 1401 at 5. IEPA stated that USEPA adopted a new ammonia criterion in April 2013; however, because IEPA will address the new standards on a

statewide basis, its current proposal remains the same as originally proposed. *Id.* USEPA insisted that IEPA's proposed ammonia standards are not consistent with the most recent 304(a) criteria toxicity data sets, and the standards do not comply with 40 C.F.R. §131.11(b)(1). USEPA indicated that the standards should be updated with the newest 304(a) Guidance. PC 1404, Enclosure 1 at 2.

At first notice, the Board shared USEPA's concern that the proposed ammonia standard does not comport with the 2013 national criteria; however, the Board noted that IEPA indicated it plans to address any changes based on the 2013 national criteria document on a statewide basis. The Board found IEPA's approach to be acceptable because the proposed standards are based on the General Use ammonia standards. Additionally, the proposed ammonia standards at Section 302.412 afford early life stage protection for all CAWS and LDPR waters with the exception of CAWS and Brandon Pool ALU B waters, for which conditions to support early life stages do not exist. Therefore, the Board proposed IEPA's total ammonia standard for first notice. The Board sought input from participants including IEPA regarding the applicability of the 2013 national criteria.

Cadmium

For cadmium, IEPA considered using the 2001 national guidance to develop a standard. However, IEPA determined that the derived standard needed adjustment, so IEPA proposed the General Use water quality standard for cadmium for ALU A, ALU B, and UDIP ALU waters. IEPA investigated causes for exceedances of the national criteria for cadmium and found that contaminated sediment is the likely reason for the exceedances. PC 1401 at 7. IEPA was concerned with the data used in the national criteria document and has raised those concerns with USEPA. *Id.* at 8. IEPA determined that at this time the dissolved cadmium water quality standard in the General Use water quality standards will protect the aquatic life uses of CAWS and LDPR. *Id.*

USEPA and Stepan raised concerns regarding IEPA's proposed cadmium standards. The Board acknowledged these concerns; however, the Board expressed reluctance to update the cadmium standard based on USEPA's preliminary analysis. As stated with regard to the total ammonia standard, any changes to the cadmium standard must be done on a statewide basis after a comprehensive evaluation of USEPA's guidance by IEPA. IEPA stated that the current General Use water quality standard for cadmium is protective of the designated aquatic life uses in CAWS and LDPR. Further IEPA understands that contaminated sediments are the likely reason for the existing exceedances. Therefore, the Board proposed at first notice IEPA's cadmium standard.

Copper

The acute and chronic copper water quality standards are based on the recalculation procedure established in the 1995 national criteria document and not the 2007 update. IEPA choose not to incorporate the 2007 criteria document as the new methodology was complex and a departure from the way copper water quality standards had been developed in the past. USEPA suggested that IEPA "conduct a review of whether or not it is necessary to adopt

numeric criteria for recently published 304(a) recommended criteria” including copper. PC 286 at 10. USEPA argues that the copper standard is not consistent with the national criteria and therefore contrary to the CWA. PC 1404, Enclosure 1 at 2. ExxonMobil’s testifier indicated that the General Use water quality standards being proposed for the UDIP are of concern especially regarding temperature, chloride, copper, DO, and mercury and suggested that variances are essential to assure that permittees can continue to operate their facilities in compliance. Exh. 488 at 15.

The Board shared USEPA’s concern that the proposed copper standard may be insufficient to meet the national criteria, although IEPA indicated that the latest national criteria may not be workable in Illinois. The Board found that the record supported proposing for first notice IEPA’s recommended copper water quality standard. However, the Board sought comment from IEPA and other participants to more fully explain why the 2007 national criterion is not workable, and why IEPA’s proposal is correct.

Cyanide

IEPA amended the original proposal and recalculated the chronic value for cyanide. IEPA removed rainbow trout from the species list when considering a cyanide standard, as rainbow trout are not found in Illinois outside Lake Michigan. As a result, the remaining four most sensitive species used in the recalculation are brook trout, yellow perch, bluegill, and black crappie. *Id.* The recalculated chronic value for cyanide then becomes 9.799 µg/L, which IEPA recommends rounding up to 10 µg/L. *Id.* IEPA also proposed moving cyanide to the tables in Section 302.407 from its own section in Section 302.410.

The Board found that the record supported IEPA’s recommended cyanide water quality standards, and the Board proposed those standards for first notice.

Fluoride and Manganese

IEPA originally withdrew the fluoride and manganese standards but reinserted the standards in the amended proposal. Exh. 481 at 15-16. IEPA added these standards in response to concerns raised by USEPA. IEPA noted that fluoride and manganese have no national criteria developed for the protection of aquatic life uses. *Id.* The Board proposed for first notice water quality standards for fluoride and manganese. Because the Board adopted water quality standards for General Use waters, the Board found that adopting standards for General Use waters supported adding fluoride and manganese water quality standards to protect aquatic life in CAWS and LDPR.

Selenium

IEPA proposed no changes in the selenium (total) water quality standard from that in the existing Secondary Contact and Indigenous Aquatic Life standard. SR at 74. The current standard is 1.0 mg/L. IEPA explained that it did not use USEPA’s criteria for selenium as there is “uncertainty surrounding the science used in developing” the most recent draft rules. PC 1401 at 29. USEPA recommended that IEPA “consider revising [them] to be consistent with either the

current chronic criteria recommendation of 5 µg/L or the draft fish tissue-based selenium criteria.” PC 286 at 9-10. As with copper, USEPA argues that the selenium standard is not consistent with the national criteria and therefore contrary to the CWA. PC 1404, Enclosure 1 at 2.

As with copper, the Board shares USEPA’s concern regarding IEPA’s proposed selenium standard. However, the Board was equally concerned that the science used in developing USEPA’s draft criterion may be in question. Therefore, the Board found that the record supports proceeding to first notice with the selenium standard proposed by IEPA. The Board sought input from the participants in order to more fully understand why USEPA’s proposed national criteria for selenium should not be adopted by the Board.

Human Health Standards

USEPA noted that CAWS and LDPR are both used for fishing, and it is presumed that fish are “then eaten.” PC 286 at 10. USEPA therefore recommended that IEPA “determine if additional human health criteria are warranted to adequately protect human health from the consumption of contaminated fish caught in CAWS and LDPR based upon review of all [USEPA] recommended criteria for the protection of human health (for consumption of organism only).”

Benzene

The Board found that there is evidence to support proceeding to first notice with IEPA’s proposed human health standard for benzene. However, the Board invited additional comment from participants on whether or not this criterion is appropriate.

Mercury

IEPA proposed a human health standard for mercury that mirrors the human health standard found in the General Use water quality standards. IEPA suggested amending the original proposal to allow for a 12-month rolling average versus an annual average and removing the reference to harmonic mean flow. This change was suggested in response to questions raised by Citgo/PDV at hearings. PC 1401 at 21.

Citgo/PDV raised concerns and suggested that the references to harmonic mean flow be removed. ExxonMobil noted that while the UDIP is listed as impaired for mercury, that impairment is based on fish tissue data and not actual water column data. Because of the impairment, ExxonMobil expressed concern that mixing zones will not be allowed for mercury, and the 12 ng/L standard will have to be met in the discharge. Because of its concerns, ExxonMobil proposed a “streamlined regulatory relief mechanism for addressing mercury.” PC 1406 at 17-18.

Although initially expressing concerns with IEPA’s proposed mercury human health criterion, USEPA concluded that IEPA’s proposed 12 ng/L mercury criterion could potentially be scientifically defensible and protective of the use designations. PC 1404 at 3. USEPA

recommended that, when Illinois submits its water column criterion to USEPA, it should include information addressing the feasibility of site-specific bioaccumulation factors, conversion factors, and bioaccumulation models, as well as documentation of CAWS-LDPR characteristics and the applicability of the 12 ng/L criterion. *Id.* at 4.

The Board found that IEPA's amended proposal for the human health standard for mercury is supported by the record. IEPA addressed concerns by Citgo/PDV by removing references to the harmonic mean flow and allowing a 12-month rolling average. Further, USEPA appears to be willing to approve the 12 ng/L standard, if more information is provided by IEPA when IEPA submits the rule for USEPA's final review. Therefore, the Board proceeded to first notice with a mercury human health standard of 12 ng/L.

The Board expressed reluctance to establish a regulatory relief mechanism for a bioaccumulative chemical of concern, such as mercury, in this record. The Board invited ExxonMobil to provide more information during first-notice on this issue, and sought comment from other participants on this proposed standard.

Dissolved Oxygen

IEPA proposed different DO standards for each of the three aquatic life uses, with different aquatic life use designations. IEPA proposed standards for UDIP ALU that are identical to those recommended for General Use waters. SR at 58. For CAWS ALU A waters, IEPA proposed a standard that reflects the lower biological potential of these waters as compared to UDIP ALU. SR at 59. The District and Environmental Groups filed an agreement stating, "The DO criteria proposed by IEPA are appropriate to protect the 'A' and 'B' uses for which they are proposed." PC 1366 at 3. The agreement also stated, "A 5-year variance allowing the District time to work towards compliance with the proposed DO criteria is appropriate." PC 1366 at 2.

USEPA expressed concerns that the site-specific DO standard for the Lower North Shore Channel was inadvertently removed in the amendments made in Subdocket A (Water Quality Standards and Effluent Limitations for the Chicago Area Waterways System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(A) (Aug. 18, 2011)). USEPA recommended that the DO standard be restored.

The Board noted that IEPA's proposal includes standards for DO in all stream segments, including the Lower North Shore Channel. Therefore, USEPA's concern regarding DO appears to have been addressed. As to the agreement by the District and the Environmental Groups, the Board took no position on whether or not a variance will be granted. Given the current status of variances, and USEPA's position, the Board cannot predict whether or not a variance from the DO standards will be supported by IEPA and USEPA. Further, the Board cannot prejudge the request.

The Board found that the proposed DO standards are supported by the record. The Board proceeded to first-notice with the DO standards originally proposed by IEPA and as amended by

IEPA in subsequent filings. The Board noted that the proposed standards are consistent with the General Use water quality standards.

Chloride Water Quality Standards

Another key issue in this subdocket is determining appropriate chloride water quality standards for CAWS and LDPR. The Board will not reiterate the comments from first notice, but rather will summarize the Board's decision on chloride standards as proposed at first notice. The Board proposed for first notice a year-round, single-value 500 mg/L chloride water quality standard for the UDIP ALU, ALU A, and ALU B waters as well as a site-specific rule for the CSSC applicable during the winter months of December 1 through April 30. The Board also proposed for first notice amendments to the national pollutant discharge elimination system (NPDES) permitting rules to incorporate federal provisions pertaining to the application of best management practices (BMPs) to achieve effluent limitations and standards.

More specifically, the Board observed that the single-value 500 mg/L chloride water quality standard as proposed by IEPA at first notice was supported by IEPA, Citgo/PDV, and ExxonMobil for the summer months, while USEPA states the 500 mg/L standard would be sufficient, specifying no seasonal timeframe. PC 1401 at 28-30, PC 1404 Enc. 1 at 1, 4-5, Exh. 493 at 5, PC 1413 at 2. As to which months would be considered "summer", the Board found that based on the 2001-2012 data from the District presented by IEPA showing no exceedances from May 1 through November 30, the appropriate timeframe for a summer chloride water quality standard would be May 1 through November 30. PC 1401 at 30-31, 12/17/13 Tr. at 171.

For the "winter" months of December 1 through April 30, the Board noted that, besides the single-value 500 mg/L standard for chloride, IEPA did not address what other standards IEPA and USEPA are considering that would apply during the winter. Other than Citgo/PDV's proposal for the CSSC, no party proposed any other specific standard to apply during the winter. The Board found that the record contained sufficient information to proceed with adoption of chloride water quality standards for UDIP, ALU A and ALU B.

The Board found that Citgo/PDV properly employed USEPA's 2013 recalculation procedures to derive scientifically defensible site-specific acute and chronic water quality standards for chloride in the CSSC as USEPA stated could be done. Those standards are 620 mg/L as a chronic water quality standard and 990 mg/L as an acute water quality standard. The Board observed that Citgo/PDV's site-specific standards derivation was specific to the CSSC during the winter months and did not apply to all waters designated ALU B, in particular Brandon Pool. For all other segments in CAWS and LDPR, the Board noted that no other site-specific standards were proposed or derived consistent with USEPA's 2013 recalculation procedures.

The Board proceeded to first notice with a year-round 500 mg/L water quality standard for CAWS and LDPR except for the CSSC. The Board proposed Citgo/PDV's standards of 620 mg/L as a chronic water quality standard and 990 mg/L as an acute water quality standard for the months of December 1 through April 30 for the CSSC.

Compliance Mechanisms for Chloride Water Quality Standard

Prior to first notice, the Board received suggestions, testimony, and public comment from IEPA, USEPA, and NPDES permitted dischargers on compliance mechanisms for any chloride water quality standard adopted under the proposed rule revisions. The suggested compliance mechanisms include multiple discharger variances, water body variances, revisions to the mixing zone rules, and use of BMPs. After considering each of the alternatives, the Board proposed for first notice amendments to the NPDES permitting rules to incorporate federal provisions pertaining to the application of BMPs to achieve effluent limitations and standards for chloride.

Concerning the multiple discharger variance or water body variance, the Board observed that a time-limited water body variance or multiple discharger variance as suggested by USEPA and IEPA assumes by its very nature that the situation is temporary. Such a variance also assumes that a compliance plan could be implemented by the NPDES permitted dischargers to achieve a standard considered protective of the designated use or to eventually attain uses specified in the CWA. Although Citgo/PDV has provided information in the record indicating that measures are being taken by various applicators to reduce the quantity of road salt for deicing, such as anti-icing techniques and use of beet juice as an alternative to road salt, there is no information in the record that demonstrates such sources are planning to reduce the use of road salt to the point of compliance with the 500, 620, or 990 mg/L chloride water quality standards during the winter in the foreseeable future. With no feasible alternative to chloride deicing salts on the horizon, the Board noted that temporary relief does not reflect the enduring reality that as long as it snows and water freezes on the roadways in this highly urbanized watershed, chloride will continue to be used for road safety in the foreseeable future.

USEPA explains that states can adopt water body variances “where it is not feasible to immediately attain criteria necessary to protect a designated use”. PC 1404 Enc. 1 at 5. The Board stated that it understands that IEPA is still working with USEPA on an approvable water body variance and BMPs for point sources and non-point sources. PC 1401 at 28-30. At first notice, the record contained USEPA’s current national criteria document for chloride, and IEPA’s rationale for relying on a different methodology using the 500 mg/L value for evaluating the toxicity of chloride, as well as other relevant studies introduced in connection with Citgo/PDV’s proposal. Although USEPA is planning for a release of an updated national chloride criteria document, USEPA recommended that the Board move forward without waiting. PC 1404 at 5. Therefore, the Board proceeded with the only information available in the record, noting that anyone may file a new rulemaking or a site-specific rulemaking with the Board to establish different chloride water quality standards that would be protective of the designated uses as further scientifically defensible information is brought to bear.

It was suggested in testimony that one of the recommendations presented involved amending the mixing zone rule at 35 Ill. Adm. Code 302.102 to provide the opportunity for a mixing zone even when the applicable water quality standards are exceeded if the NPDES-permitted discharger employs a BMP plan for the particular pollutant. Citgo/PDV reasoned that with BMPs offsetting the contribution, the discharger would be eligible for a mixing zone because it would no longer be causing or contributing to water quality exceedances. Exh 492 at 12, Exh. 492 at 13.

The Board noted that its current rules state, “No mixing zone is allowed where the water quality standard for the constituent in question is already violated in the receiving water.” 35 Ill. Adm. Code 302.102(b)(9). In addition, IEPA’s proposal includes the following provision for CAWS/LDPR: “The CS [chronic standard] shall not be exceeded outside of waters in which mixing is allowed pursuant to Section 302.102 of this Part.” See proposed 35 Ill. Adm. Code 302.407(d)(2), see also proposed 35 Ill. Adm. Code 307.410(d). The Board believed that the December 1 to April 30 standard for the CSSC may be sufficient to address Citgo/PDV’s concerns. Additionally, while ExxonMobil supported Citgo/PDV’s proposed mixing zone revisions, as with the request for a different chloride standard for UDIP, the Board found that the record lacks support for a mixing zone change in the UDIP. Therefore, the Board declined to propose Citgo/PDV’s suggested revisions to the mixing zone. The Board encouraged participants to provide additional comment, including specific language and data to support a change in the rule at second notice.

The Board did find that the record indicated the major cause and contributor to winter chloride levels in CAWS and LDPR are the storm water discharges from road salting activities through the nonpoint sources and municipal separate storm sewer systems. SR at 76, PC 1401 at 29. The Board noted that municipal separate storm sewer systems are being addressed through the NPDES General Permit to reduce discharge of pollutants like chloride over time. However, with major point source dischargers like Citgo/PDV contributing on the order of 0.2% of the quantity of chloride in the CSSC when concentrations are above 500 mg/L (PC 1410 at 6), the high chloride concentrations that occur in the winter will continue to occur into the foreseeable future even without the input of chloride by these point source dischargers.

The Board noted that in Illinois, NPDES permitting rules incorporate the federal provision of 40 C.F.R. §122.44(d)(1)(ii) at 35 Ill. Adm. Code 309.143(a):

In determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.

However, the federal provision describing the use of BMPs in NPDES permitting under 40 C.F.R. §122.44(k) does not appear in the Board’s NPDES permitting rules under Part 309. To facilitate the use of BMPs in the context of the NPDES permitting rules for not only municipal separate storm sewer systems, the Board proposed for first notice the addition of the substantive language 40 C.F.R. §122.44(k) to Part 309. This language provides that NPDES permits may contain BMPs “to control or abate the discharge of pollutants when... (2) Authorized under section 402(p) of the CWA for the control of storm water discharges;... or (4) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.” 40 C.F.R. §122(k)(2). This provision allows the use of BMPs to

achieve effluent limitations. In order to achieve effluent limitations, Citgo/PDV proposed a BMP plan as part of an NPDES compliance plan that would use verifiable monitoring to quantify the waste load reduction of their BMPs by quantifying how much deicing salt was used at the facility and the mass in their effluent. 12/17/13 Tr. at 183.

The Board invited comments on the proposed first notice language for 35 Ill. Adm. Code 309. In particular, the Board requested comments on how the provisions of 40 C.F.R. §122.44(k) can be used to achieve chloride effluent limitations and standards, especially when water quality standards are exceeded, to address compliance and mixing zone issues for dischargers such as Citgo/PDV, ExxonMobil, the District, and entities that discharge once through cooling water.

Temperature Standards

Prior to proceeding with first notice, the Board received proposals for temperature standards for CAWS and LDPR from IEPA, Midwest Generation, and the Environmental Groups. While the proposals from IEPA and the Environmental Groups addressed temperature standards for UDIP, CAWS ALU A, and ALU B, Midwest Generation proposals focused on UDIP and CAWS ALU B. While appreciative of the time and effort devoted by the participants in developing the various proposals, the Board declined to move forward with the participants' thermal standards proposals, but instead proposed the General Use temperature standards for all three aquatic life use designations in CAWS and LDPR.

Regarding IEPA and the Environmental Groups proposals, the adoption of either proposal would result in the application of more stringent standards to waters designated for the protection of lower aquatic life use than the General Use waters. Because there is no proposal before the Board to update the General Use thermal standards to be more stringent than the current General Use standards, the Board found that it would be inappropriate to adopt thermal standards for CAWS and LDPR that are more stringent than the current General Use standards.

In addition to the conceptual problems with adopting more stringent standards than General Use standards for lower aquatic life use waters, the Board noted that the participants, including Midwest Generation, Stepan, and ExxonMobil raised significant concerns regarding the methodology and the science used by MBI in developing the thermal standards options relied upon by IEPA and the Environmental Groups. In this regard, the Board agreed with Midwest Generation that adopting thermal standards based on questionable methodology would set an untenable precedent for any review of the current General Use standards. Thus, the Board determined it would be premature to adopt IEPA's or the Environmental Groups' more stringent thermal standards for CAWS and LDPR without first addressing the General Use waters.

As to the proposal by Midwest Generation, the Board, cognizant of misgivings raised by IEPA and the Environmental Groups and having its own concerns, declined to adopt the alternate proposals put forth by Midwest Generation for first notice. First, the Board found that the proposal based on Petition of Commonwealth Edison Company for Adjusted Standard from 35 Ill. Adm. Code 302.211(d) and (e), AS 96-10 (Oct. 3, 1996) is not appropriate for CAWS and LDPR without further evaluation of the current conditions in CAWS and LDPR. The Board

believed that more current data reflecting recent changes in thermal regime are needed before considering a standard adopted almost 20 years ago.

Next, the Board found that while the methodology used in the EA proposals may have some merits, the proposed thermal standards may not be protective of the aquatic life expected to be in the UDIP waters. While the Board noted in Subdocket C that the “UDIP may not fully meet the CWA aquatic life goal” and noted that “[t]he Board is mindful that, particularly in the area of temperature, water quality standards may need to be adapted for the UDIP”, the Board was unconvinced that the EA proposals will be protective of aquatic life expected to be present in UDIP waters. *See Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, And 304, R08-9(C)*, slip op. at 10-11 (Feb. 6, 2014).

Board’s First Notice Proposal

The Board proposed for first notice the General Use temperature standards for UDIP, CAWS ALU A, and CAWS and Brandon Pool ALU B waters. As discussed above, the Board found that the thermal standards proposed by IEPA and the Environmental Groups are inappropriate for CAWS and UDIP since they are more stringent than General Use standards. Further, Midwest Generation’s proposals may not be protective of the designated aquatic life use of UDIP waters. Additionally, the Board found that the existing Secondary Contact and Indigenous ALU standards are inadequate to protect the new aquatic life use designations adopted by the Board in Subdocket C. Given the significant issues associated with the various alternate proposals in the record, the Board found that the existing General Use temperature standards provide the most appropriate alternative for protecting aquatic life in UDIP, CAWS ALU A, and CAWS ALU B waters.

The existing General Use thermal standards, which have been in effect since the Board adopted them early in the 1970s, provide a federally-approved alternative to the various proposals in the record. In this regard, the Board noted that when faced with a similar situation regarding bacterial water quality standards in Subdocket B, USEPA recommended the Board use existing federally-approved fecal coliform standards in Subdocket B:

U.S. EPA also recommends that the Board clarify in its second notice opinion, order and rule that Illinois’ existing, federally-approved fecal coliform criteria for protection of primary contact recreation, 35 Ill. Adm. Code 302.209, apply to these five segments. PC 994.

In R08-9(B), the Board stated,

Therefore, because the General Use water quality standard has been adopted by the Board and approved by the USEPA for statewide implementation, the Board will adopt the fecal coliform water quality standard for protected waters found in Section 302.209, for the protection of Primary Contact Recreation waters. Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower

Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(B), slip op. at 7 (Feb. 2, 2012).

While the Board recognized that the General Use fecal coliform standard was adopted for Primary Contact Recreational Use waters, the application of General Use thermal standards to lesser use designations is justified due to the lack of viable alternative options. Further, the Board noted that most of the other water quality standards proposed for CAWS and UDIP waters are the same as General Use, with the exceptions of DO and total ammonia standards for ALU A and ALU B waters; and arsenic, chromium, mercury, phenols, and silver, which reflect more current National Criteria Documents than what was considered for General Use.

The Board noted that the excursion hours provision allows for occasional exceedances of thermal limits. The Board retained the excursion hours provision in the first notice temperature standards for CAWS and UDIP. That provision allows an increase of up to 2.8° F to occur for 1% of the hours in a 12-month period. However, the Board invited comments from IEPA and other participants on this issue.

Given that the General Use standards do not include a cold shock standard and the lack of any documented incidents of cold shock in CAWS and LDPR, the Board declined to propose a cold shock provision at first notice. However, the Board invited IEPA and other participants to specifically address: whether the proposed General Use standard is protective of cold shock in CAWS and LDPR; if a cold shock standard is necessary; whether such a standard be based on a narrative standard like the one proposed by IEPA or a numeric standard similar to the one proposed by Midwest Generation; and if a numeric standard is appropriate, whether the standard proposed by Midwest Generation provides protection against cold shock.

Compliance Alternatives

Midwest Generation, ExxonMobil, and Stepan asked that the Board consider relief mechanisms such, as a multi-discharger variance, or delay the effective date to allow additional time for dischargers to attain compliance with or seek relief from the proposed thermal standards. PC 1403 at 3, 1413 at 4-6, and 1405 at 20. The Board appreciated participants' concerns regarding immediate compliance with the proposed thermal standards upon final adoption by the Board. The record is clear that thermal dischargers to CAWS and LDPR may need some type of short-term or long-term relief to achieve compliance with the temperature standards. The Board found that delaying the effective date of the thermal standards would allow time for dischargers to achieve compliance or seek relief. The Board proposed to delay the effective date of the thermal standards by eighteen months for CAWS and Brandon Pool ALU B and UDIP waters. The Board did not extend the delayed effective date of thermal standards to CAWS ALU A waters, because the Board was not aware of any thermal discharger to those waters that may be impacted by the proposed standards. The Board believed that the proposed eighteen-month delay provides sufficient time for dischargers to achieve compliance or seek relief from the proposed standards. The Board invited participants to comment on the proposed delayed effective date of the thermal standards.

Miscellaneous Changes to IEPA's Proposal

The Board indicated in Subdocket C that when proceeding in Subdocket D, the Board would move each aquatic life use to its own section. *See Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, And 304, R08-9(C)*, slip op. at 61 (Nov. 21, 2013). Therefore, the proposed rule moved ALU B from Section 303.235 to its own section at Section 303.240. As a result references to Section 303.240 have been added where appropriate.

In Section 302.408, IEPA in its amended proposal removed the phrase “on an average basis” from the subsection dealing with temperature in the ALU A waters. IEPA did not propose removal from the subsections dealing with ALU B waters or UDIP waters. The Board proceeds to first notice removing that language from all the subsections.

SUMMARY OF SECOND NOTICE PROPOSAL

During first notice, participants renewed concerns about the Board’s proposal in several areas and offered comments on several issues raised at first notice by the Board. Those issues included the overall economic reasonableness and technical feasibility of complying with the new water quality standards and requests for additional subdockets.

Economic Reasonableness and Technical Feasibility

The Board’s rulemaking authority is a “general grant of very broad authority and encompasses that which is necessary to achieve the broad purposes of the Act.” *Granite City Division of National Steel Co. v. IPCB*, 155 Ill. 2d 149, 182 (1993). Under the Act, the Board is required to take into account “the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of the existing air quality or receiving body of water, as the case may be, and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution.” 415 ILCS 5/27(a) (2014). In fulfilling this statutory responsibility, the Board need not conclude that compliance with a regulation is economically reasonable and technically feasible before adopting a regulation. *Id.* The Board may in fact promulgate rules that the Board found technically infeasible, if the Board determines the proposed regulation is necessary to carry out the purposes of the Act. *Granite City*, 155 Ill. 2d at 182-83.

In *Granite City*, the Illinois Supreme Court reminded:

[I]t is not necessarily arbitrary and capricious conduct for the Board to set a standard which a petitioner *cannot adhere to at the present time* or, if absolutely necessary to protect the public, *set a standard with which there can be no foreseeable compliance by petitioner* (Emphasis added.) *Granite City* 155 Ill. 2d at 182, quoting *Monsanto Co. v. PCB*, 67 Ill. 2d 276, 293 (1977).

The Court went on to note that the Act includes variance and adjusted standard procedures for relief from environmental control standards upon a showing of unreasonable economic or individual hardship. Granite City 155 Ill. 2d at 182. The Court concluded:

that section 27(a) does not impose specific evidentiary requirements on the Board, thereby limiting its authority to promulgate only regulations that it has determined to be technically feasible and economically reasonable. Rather, section 27(a) requires only that the Board consider or take into account the factors set forth therein. The Board must then use its technical expertise and judgment in balancing any hardship that the regulations may cause to dischargers against its statutorily mandated purpose and function of protecting our environment and public health. *Id.*

As stated above, Section 27 of the Act requires the Board to consider “the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of the existing air quality or receiving body of water, as the case may be, and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution.” 415 ILCS 5/27(a) (2014). In this rulemaking these considerations are particularly unique. The record is replete with evidence of the unique character and history of both CAWS and LDPR, and the economic importance of these waters is also clear.

Arguments were made that the Board’s proposed rules, especially for chloride and temperature, are not supported by the record and may not be necessary to protect the public. The arguments continued that absent relief mechanisms such as a variance, the Board’s authority to adopt technically infeasible regulations is at question.

The Board disagreed with the arguments that the proposed standards are not supported by the record and that the standards may not be necessary to protect the public. The Board also disagreed that there are no relief mechanisms available to dischargers.

Record

The record is replete with evidence supporting the Board’s determinations on each of the standards proposed. The Board acknowledged that the participants and the Board did not concentrate fully on this subdocket until after the Board’s decision in Subdocket C. However, prior to the subdockets being established, the Board heard substantial testimony and received comment on water quality standards. *See e.g.* Exh. 1 through 3, Exh. 187 and 230, Exh. 191 and 209. The Board summarized that testimony and those comments in its first notice opinion. The Board scheduled and held additional hearings and allowed for final comments on the record in this proceeding. All of this was contained in the record, and considered by the Board, prior to the Board’s adoption of the first notice.

For each of the standards proposed, the Board considered the technical feasibility and economic reasonableness of compliance. The Board balanced technical feasibility and economic reasonableness against the necessity of protecting the aquatic life uses established for each

stream segment of the CAWS and LDPR. The Board was not persuaded by the arguments in the first-notice comments that the standards should be amended based on technical feasibility and economic reasonableness.

Protective

In adopting the Act, the General Assembly found that “environmental damage seriously endangers the public health and welfare”. 415 ILCS 5/2(a)(i) (2014). The General Assembly further found that “it is the purpose” of the Act “to establish a unified, statewide program . . . to restore, protect and enhance the quality of the environment”. 415 ILCS 5/2(b) (2014). Thus, the purposes of the Act include restoration and enhancement of the environment.

The national goal of the CWA is to attain “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for the recreation in and on the water. . . .” 33 U.S.C. § 1251(a)(2). Waters that cannot meet the CWA goals may be designated only if specific criteria are met. In Illinois, waters that meet the CWA goals are considered General Use waters. *See* 35 Ill. Adm. Code 302.202.

The record in this proceeding is clear that the water quality in CAWS and LDPR has improved, in some cases substantially, since the adoption of the Secondary Contact and Indigenous Aquatic Life standards. For example, the Board designated the Chicago River as capable of recreational use and maintained the General Use water quality standards for that segment. With the UDIP, the Board found that UDIP waters almost meet the CWA goals, while recognizing that thermal standards may need to be adapted for certain dischargers. Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(C), slip op. at 43 (Feb. 21, 2013). The aquatic life use designations and recreational use designations reflect the advancement of the stream quality. However, many sections of CAWS and LDPR still need to be improved to achieve the goals of the CWA.

The Board proposed at first notice standards protective of the aquatic life uses adopted for CAWS and LDPR. The Board found that protecting those aquatic life uses is required by the Act. The Board addressed specific concerns later in the opinion, but generally the Board was convinced that proceeding to second notice with the standards as proposed is required to protect the aquatic life uses designated for the streams.

Relief Mechanisms

The Board is cognizant that variances have been used in the past as a relief mechanism but may not be feasible for CAWS and LDPR now due to recent USEPA actions. However, adjusted standards and site-specific rules are available and variances under the Act may again be available in the future. Further, relief from temperature standards may be available through a thermal demonstration under Section 316(a) of the CWA, 33 U.S.C. § 1326(a), and 35 Ill. Adm. Code 304.141(c), as well as the Board’s Subpart K procedural rules, 35 Ill. Adm. Code 106.Subpart K. The Board noted that Citgo/PDV in effect provided information to support a site-specific rule in this proceeding. Furthermore, the Board specifically indicated with chloride

water quality standards that other participants could consider site-specific relief. Therefore, even if the standards proposed were technically infeasible or economically unreasonable to a specific discharger, relief mechanisms are available.

Additional Subdockets

The Board noted that on March 18, 2010, the Board severed the rulemaking into four separate dockets. Subdocket D was to address the issues dealing with water quality standards and criteria that are necessary to meet the aquatic life use designations finalized in Subdocket C. Prior to and at first notice, the Board declined to open a subdocket for chloride. In the first-notice comments, the request for a chloride subdocket was renewed, and potential subdockets were recommended for other constituents.

Subdocket D is the subdocket designated to establish water quality standards. In the last set of hearings scheduled by the hearing officer in Subdocket D, the Board set aside three days for hearing. Yet the prefiled testimony resulted in only one of those days being necessary. Furthermore, no one requested a hearing during first notice. Rather the Board received requests for subdockets so more information can be developed. Another major concern the Board has with these requests was that many of the requested subdockets are for constituents that need to be addressed on a statewide basis and not just in CAWS and LDPR. Those constituents should therefore be addressed in new rulemaking, reflecting the statewide nature of the constituent.

The Board examined the arguments and the Board was not persuaded that additional subdockets would assist in resolving the issues raised by the participants. Therefore, the Board did not open any additional subdockets.

Temperature

The Board received several comments during first notice asking that the Board reconsider its first notice proposal regarding temperature standards. While USEPA and IEPA urged the Board to adopt IEPA's temperature standards for CAWS and LDPR, the Environmental Groups and Midwest Generation asked the Board to consider their proposals instead of the proposed General Use temperature standards. Also, USEPA, IEPA, and the Environmental Groups recommend changes to the proposed temperature standards if the Board were to proceed with the application of General Use standards to CAWS and LDPR. Additionally, Stepan, Ingredion, and ExxonMobil recommended changes concerning thermal standards for ALU B and UDIP waters.

The Board declined to adopt the alternative proposals put forth by IEPA, Midwest Generation, and the Environmental Groups. Instead, the Board decided to move forward with the temperature standards proposed at first notice with certain changes, including a three-year delayed effective date for CAWS ALU A, CAWS and Brandon Pool ALU B, and UDIP waters.

Proposed General Use Thermal Standards for CAWS and LDPR

Participants raised a number of concerns regarding the Board's decision to apply the General Use daily maximum thermal standards to CAWS and LDPR. USEPA, IEPA, and the Environmental Groups stated that the Board may adopt the General Use limits as long as the

Board also adopts the General Use narrative thermal standards under Part 302. Further, the District and Environmental Groups requested that the Board modify the General Use standards during winter months so that the District would not have to cool its effluent. Ingridion also voiced concern regarding the application of General Use standards during winter months to CAWS ALU B waters. Midwest Generation and Stepan opposed the adoption of General Use thermal standards to UDIP and ALU B waters. ExxonMobil raised compliance concerns for small dischargers resulting from large upstream thermal dischargers. The Board addressed the concerns raised by participants regarding the application of the General Use thermal standards to CAWS and LDPR

Application of General Use Standards. The Board disagreed with contentions regarding the application of General Use thermal standards to UDIP waters. The Board reiterated that the UDIP ALU designation is an upgrade of the previous Indigenous ALU designation. While UDIP may not fully attain the CWA aquatic use goal, when compared to ALU A or ALU B waters, UDIP has more diverse habitat conditions and is subject to a lesser degree of recurring impacts from navigation use and upstream flood control functions. *See Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(C), (Nov. 21, 2013) at 55.* Therefore, the Board found that the General Use thermal standards offer the most appropriate alternative for protecting of the UDIP ALU designation.

Regarding ALU A and ALU B waters, participants questioned the appropriateness of proposing the existing General Use water quality temperature standards for waters not meeting the CWA goals. The Board found at first notice “that it would be inappropriate to adopt thermal standards for CAWS and LDPR that are more stringent than the current General Use standards.” *Id.* at 204. At second notice the Board was faced with a record that does not support the adoption of any one of the alternate proposals for ALU A and ALU B waters. At first notice, the Board proposed General Use thermal standards, which have been effective since the Board adopted them early in 1970s and provided a federally-approved alternative to the various proposals in the record. As noted by the Environmental Groups, the General Use standards were not developed to protect pristine waters, but apply to all waters of the state that are not covered by specific use designations under Part 303, including those that are to some degree effluent dominated, impounded, or subject to barge traffic. PC 1428 at 3.

In light of the above, the Board found that the proposed thermal standards based on General Use are appropriate for both ALU A and ALU B waters. In this regard, the Board noted that other than conceptual issues concerning the application of General Use standards to water not meeting CWA goals, the only concern raised by the participants regarding the proposed thermal standards for ALU A and ALU B waters involve the winter limits. As discussed below, the Board believes that the delayed effective date provides sufficient time for affected entities to seek adjustment of the winter thermal limits. As such, the Board will move forward with the proposed thermal standards for CAWS and LDPR with some revisions pertaining to the narrative thermal provisions.

Inclusion of Narrative Thermal Standards. USEPA, IEPA, and the Environmental Groups stated that if the Board decides to move forward with the proposed thermal standards, the Board must include the General Use narrative standards at 35 Ill. Adm. Code 302.211 (b) thru

(d). PC 1414, 1415, and 1422. These standards place limitations on abnormal temperature changes, maintenance of normal daily and seasonal temperature fluctuations, and temperature rise above natural temperatures. Midwest Generation argues that the narrative standards were never intended to apply to lower use waters such as CAWS and LDPR. PC. 1427 at 8. Midwest Generation contends that the adoption of the narrative standards would make the rules completely “unworkable and unjustified”. *Id.* at 10.

The Board notes that the omission of the narrative thermal standards at first notice was unintentional. The Board found that it was appropriate to apply the General Use thermal standards to CAWS and LDPR waters, but due to an oversight did not include the narrative provisions. *See* Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(D), (Sept. 18, 2014) at 209-210. The narrative standards are critical to preventing abnormal changes in temperature that affect spawning and survival of aquatic life. Further, the narrative thermal standards also address cold shock concerns. Regarding concerns about determining the “natural temperatures” of the waterways, the Board noted that dischargers can rely on temperature data of streams in the region and tributaries to CAWS and LDPR, as well as the historical temperature data of CAWS and LDPR. Thus the Board found that the General Use narrative standards must apply to CAWS and LDPR to protect aquatic life from abnormal temperature changes. Accordingly, the Board added the narrative standards at Section 302.211(b), (c) and (d) to Section 302.408.

Temperature Standards for Winter Months. The Environmental Groups and the District voiced concerns regarding the proposed temperature standards during winter months from December through March. However, neither the Environmental Groups nor the District proposed alternative winter temperature standards for North Shore Channel and Little Calumet River. Additionally, Ingression voiced concern regarding the winter temperature standards for ALU B waters. Ingression asserted that the proposed winter standard of a 60° F daily maximum is a drastic departure from the current daily maximum temperature of 93° F with an anytime limit of 100 °F. PC 1421 at 5. Ingression recommended an ALU B daily maximum limit of 75° F for the months of December through March to allow for the occasional warm day or week would be consistent with the daily maximum proposed by IEPA. *Id.* at 7. Alternatively, Ingression suggested that the Board grant relief to dischargers from thermal standards for 72 hours following any time the ambient temperature rises to 55° F or higher during which time the summer daily maximum of 90° F would apply. While the Board appreciated the concerns raised by the participants regarding the proposed winter temperature, the Board declined to establish a winter temperature. As discussed below, the Board delayed the effective date of the proposed temperature standards for CAWS and LDPR by three years. This will allow sufficient time for affected dischargers or IEPA to propose appropriate winter thermal standards for the affected segments of CAWS and LDPR with sufficient technical justification.

Cold Shock. For the same reasons noted at first notice, the Board was not convinced that there is a need for a separate provision to address cold shock. *See* Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(D), (Sept. 18, 2014) at 213. Further, the Board’s decision to adopt the General Use narrative thermal standards for

CAWS and LDPR addresses any issues associated with abnormal temperature changes during winter months. In light of this, the Board declined to propose a cold shock provision.

Excursion Hours. At first notice, the Board included the General Use excursion hours under Section 302.408 and invited comments. IEPA supported the proposed excursion hours provision, while the Environmental Groups continue to oppose any excursion above the daily maximum thermal limits. In addition, Midwest Generation requested that the Board increase the excursion hours. The Board declined to make any revisions.

Delayed Effective Date and Compliance Issues. At first notice, the Board addressed the concerns raised by several participants, including Midwest Generation, ExxonMobil, and Stepan regarding immediate compliance with the thermal standards by proposing an eighteen-month delayed effective date of the thermal standards for CAWS and Brandon Pool ALU B and UDIP waters. *See Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(D)*, (Sept. 18, 2014) at 215-217. Midwest Generation asked that the Board extend the delayed effective date to at least three years if the Board decides not to open a Subdocket to address thermal issues. PC 1418 at 36. Midwest Generation argued that the three-year period will allow for resolution of compliance issues being addressed by IEPA and USEPA, as well any revisions of the General Use thermal standards by IEPA. *Id.* at 33-34.

At second notice, the Board agreed with Midwest Generation that an additional three-year delay of the effective date would be helpful to address compliance issues facing thermal dischargers to the affected waters, including ALU A waters. Specifically, a three-year delayed effective date will allow resolution of variance issues at the federal level and provide clarity to affected dischargers. At the same time, the additional delay of effective date will also allow thermal dischargers like Midwest Generation, ExxonMobil, Ingredion, and the District sufficient time to determine their compliance options, including operational changes, treatment options, CWA Section 316(a) thermal demonstrations, or site-specific thermal standards. Additionally, the Board found that a delayed effective date for ALU A waters is also necessary to allow sufficient time for the District to seek appropriate winter thermal limits for the North Shore Channel and the Little Calumet River. Finally, a delayed effective date will also help IEPA in addressing implementation issues raised by ExxonMobil, including cascading implementation to address large upstream dischargers first.

Therefore, the Board proposed a three-year delayed effective date for thermal standards for CAWS ALU A, CAWS and Brandon Pool ALU B, and UDIP waters. The Board noted that the existing Indigenous Aquatic Life Use thermal standard will continue to apply to CAWS and LDPR waters during the delayed effective date period. The Board added a provision reflecting the three-year delayed effective date at Section 302.408(b).

Subdocket for Temperature

The Board found that the evidence supports the proposed temperature water quality standards based upon the Board's General Use thermal standards to protect the aquatic life uses of CAWS and LDPR. The Board is proposing a three-year delayed effective date for the temperature standards to allow IEPA and other affected entities to address compliance issues, as

well as to formulate any site-specific thermal standards. Any new proposal filed with the Board after the effective date of the regulations that addresses thermal standards for CAWS and LDPR will be considered by the Board in a new docket. As such, the Board declined to open a subdocket to address thermal standards.

Economic Reasonableness and Technical Feasibility

Participants raised a number of concerns about the ability of industry to meet the proposed temperature standards at the end of pipe. The Board understands those concerns; however, the Board found that the record establishes that the existing General Use water quality standards are necessary to protect the designated aquatic life uses for CAWS and LDPR. Further, as the Board proposed to allow for a delayed effective date, this will provide opportunity for participants to seek alternative relief from the standards. The Board encouraged participants to consider site-specific relief for individual facilities.

Proposed Language

The Board proposed the following changes to at Section 302.408:

- a) For the South Fork of the South Branch of the Chicago River (Bubbly Creek), temperature Temperature (STORET number (° F) 00011 and (° C) 00010) shall not exceed 34° C (93° F) more than 5% of the time, or 37.8° C (100° F) at any time.
- b) The temperature standards in subsections (c) through (i), will become applicable beginning 3 years after the effective date of this Section. For a period of 3 years from the effective date of this Section, the waters designated at 35 Ill. Adm. Code 303 as Chicago Area Waterway System Aquatic Life Use A, Chicago Area Waterway System and Brandon Pool Aquatic Life Use B, and Upper Dresden Island Pool Aquatic Life Use will not exceed temperature (STORET number (° F) 00011 and (° C) 00010) of 34° C (93° F) more than 5% of the time, or 37.8° C (100° F) at any time.
- c) There shall be no abnormal temperature changes that may adversely affect aquatic life unless caused by natural conditions.
- d) The normal daily and seasonal temperature fluctuations which existed before the addition of heat due to other than natural causes shall be maintained.
- e) The maximum temperature rise above natural temperatures shall not exceed 2.8° C (5° F).
- f) Water temperature shall not exceed the maximum limits in the applicable table in subsections ~~(b), (c) and (d)~~(g), (h), and (i), during more than one percent of the hours in the 12-month period ending with any month. Moreover, at no time shall

the water temperature exceed the maximum limits in the applicable table that follows by more than 1.7 °C (3.0° F).

- ~~eg)~~ Water temperature in the Chicago Area Waterway System Aquatic Life Use A waters listed in 35 Ill. Adm. Code 303.230-235 shall not exceed the limits in the following table in accordance with subsection (af):

<u>Months</u>	<u>Daily Maximum (°F)</u>
<u>January</u>	<u>60</u>
<u>February</u>	<u>60</u>
<u>March</u>	<u>60</u>
<u>April</u>	<u>90</u>
<u>May</u>	<u>90</u>
<u>June</u>	<u>90</u>
<u>July</u>	<u>90</u>
<u>August</u>	<u>90</u>
<u>September</u>	<u>90</u>
<u>October</u>	<u>90</u>
<u>November</u>	<u>90</u>
<u>December</u>	<u>60</u>

- ~~he)~~ Water temperature in the Chicago Area Waterway System and Brandon Pool Aquatic Life Use B waters listed in 35 Ill. Adm. Code 303.325-340, shall not exceed the limits in the following table in accordance with subsection (af):

<u>Months</u>	<u>Daily Maximum (°F)</u>
<u>January</u>	<u>60</u>
<u>February</u>	<u>60</u>
<u>March</u>	<u>60</u>
<u>April</u>	<u>90</u>
<u>May</u>	<u>90</u>
<u>June</u>	<u>90</u>
<u>July</u>	<u>90</u>
<u>August</u>	<u>90</u>
<u>September</u>	<u>90</u>
<u>October</u>	<u>90</u>
<u>November</u>	<u>90</u>
<u>December</u>	<u>60</u>

- i) Water temperature for the Upper Dresden Island Pool Aquatic Life Use waters, as defined in 35 Ill. Adm. Code 303.237230, shall not exceed the limits in the following table in accordance with subsection (a):

<u>Months</u>	<u>Daily Maximum (°F)</u>
<u>January</u>	<u>60</u>
<u>February</u>	<u>60</u>
<u>March</u>	<u>60</u>
<u>April</u>	<u>90</u>
<u>May</u>	<u>90</u>
<u>June</u>	<u>90</u>
<u>July</u>	<u>90</u>
<u>August</u>	<u>90</u>
<u>September</u>	<u>90</u>
<u>October</u>	<u>90</u>
<u>November</u>	<u>90</u>
<u>December</u>	<u>60</u>

Chloride

As stated in a 2012 report by the Illinois State Water Survey⁴, chloride is found in all natural waters; however, elevated concentrations due to anthropogenic sources are a cause for concern in aquatic ecosystems. Exh. 493 Att. 3 at iii.

Beginning in the 1960s, rivers draining the Chicago region, as in other urban areas, have experienced increased chloride concentrations, primarily due to runoff from deicing road salt following winter storm events. Exh. 493 Att. 3 at iii, 8, 17. Road salt is the leading contributor to chloride levels in the waterways of the State with an estimated annual average of 518,000 tons applied each year mostly in the Chicago region. Potassium chloride fertilizer follows at 410,000 tons/year; however, because it is spread over large areas for agriculture, its impact on water quality in the Chicago region is less than concentrated applications of road salt. The District's effluent is the next greatest contributor at 192,000 tons/year due to sewage and water conditioning salts. Exh. 493 at 7, Att. 3 at 8-13.

Being located in the highly urbanized watersheds of Chicago and suburban Cook and Will Counties, CAWS and LDPR experience the direct impacts of chloride from non-point sources of deicing road salt in winter stormwater runoff. PC 1402 at 6-7. Although elevated chloride levels are primarily attributed to non-point sources, NPDES permitted point sources that also discharge to the CAWS and LDPR are impacted. During times of winter stormwater runoff, industrial point sources are faced with the possibility of losing their mixing zones and not being

⁴ Kelly, Walton R.; Samuel V. Panno, Keith Hackley, The Sources, Distribution, and Trends of Chloride in the Water of Illinois, Illinois State water Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign, March 2012. Exh. 493 Att. 3.

able to discharge into the waterways without costly treatment or facility shutdowns. Exh. 285 at 8-10, Exh. 493 at 8.

IEPA noted that the water quality issues associated with road salt are not unique to CAWS and LDPR. Currently, IEPA is addressing chloride issues in NPDES stormwater permits to municipalities requiring the implementation of BMPs and other programs to minimize storm-related water quality impacts from salts and other pollutants. SR at 76-77.

Since 1979, the waters in CAWS and LDPR have been designated as Secondary Contact and Indigenous Aquatic Life Waters and have been subject to a water quality standard of 1,500 mg/L for TDS to provide for the protection of aquatic life. *See Amendments to the Water Pollution Regulations of the Illinois Pollution Control Board, R77-12 Docket A (May 24, 1979)*, referring to Chapter 3: Water Pollution Regulations, Rule 205 Secondary Contact and Indigenous Aquatic Life Standards, subpart (e). *See also Water Pollution Regulation Amendments, R73-1 (February 14, 1974)*. The TDS standard addresses both chloride and sulfate. Initially, IEPA proposed that the TDS standard be eliminated once chloride and sulfate standards were adopted because “the quantities of [TDS] individual constituents are more relevant to toxicity than their simple sum”. SR at 78. Also, IEPA initially proposed a 500 mg/L year-round chloride standard, which is the General Use chloride standard. SR at 76. However, the issues associated with adopting a winter chloride water quality standard have proven to be complex. The Board also notes that the record has presented limited options for addressing the chloride issue.

At second notice, the Board recognized that future amendments to the water quality standards and NPDES permit regulations may be needed to address chloride to reflect more current science and methodologies as well as local conditions. At this time, the Board notes that IEPA still awaits USEPA’s planned revisions to the chloride national criteria as well as completion of the efforts by the work group on a proposal for chloride and a water body wide variance.

Second Notice Revisions

Participants raised a number of concerns regarding the Board’s decision at first notice to propose the General Use chloride water quality standard for CAWS and LDPR, outside CSSC, during the winter. In post-first notice comments, IEPA suggested retaining the current TDS standard until the work group develops a proposal regarding chloride and a water body wide variance for the Board’s consideration. PC 1415 at 10-11. IEPA explained, it “had previously proposed that TDS [standard] be eliminated once a chloride standard was adopted.” PC 1415 at 11. However, since IEPA is asking no action be taken with respect to a chloride water quality standard in this docket, IEPA states that the TDS standard should stay in effect while the work group draws up its proposal. PC 1415 at 11.

IEPA, Citgo/PDV, ExxonMobil, and Stepan noted significant impacts and widespread noncompliance if the Board were to move forward with adopting a 500 mg/L chloride water quality standard in the winter. PC 1415 at 7, Exh. 493 at 7, PC 1420 at 2, PC 1425 at 2, PC 1426 at 1, 3. IEPA and Citgo/PDV presented evidence showing that most segments of CAWS and

LDPR would be expected to exceed a 500 mg/L chloride water quality standard two to 13 percent of the time in the winter. PC 1402 at 6, PC 1415 Att. 1. During these times, Citgo/PDV stressed that industrial point sources would be faced with the possibility of losing their mixing zones and not being able to discharge into the waterways without costly treatment or facility shutdowns. Exh. 285 at 8-10, Exh. 493 at 8.

The Board recognized that future amendments to the water quality standards and NPDES permit regulations may be needed for addressing chloride to reflect more current science and methodologies as well as local conditions. At the adoption of second notice, the Board noted that IEPA still awaits USEPA's planned revisions to the chloride national criteria as well as completion of the efforts by the work group on a proposal for chloride and a water body wide variance. The Board determined that the three-year delayed effective date would allow time for determining the best course of action.

Therefore, the Board proceeded with a year-round 500 mg/L chloride water quality standard applicable to all of CAWS and LDPR, except the CSSC, with a three-year delayed effective date. During this three-year period, the Board retained the 1,500 mg/L TDS standard during the winter months of December 1 through April 30 and apply the 500 mg/L chloride standard during summer months of May 1 through November 30. At the end of the three year period, the 500 mg/L chloride water quality standard will be in effect year-round for all segments of CAWS and LDPR, except the CSSC.

Several participants stated that if the Board proceeded to adopt the 500 mg/L chloride water quality standards for CAWS and LDPR, the Board must provide appropriate relief mechanisms. The three year interim period with the delayed effective date is intended to allow time for the work group to develop a proposal to address chloride and a water body wide variance as well as for others who may be seeking alternatives. Even as the chloride work group progresses, the Board noted that a site-specific rulemaking or adjusted standard may be available for dischargers upon adequate proof that a different standard would protect the aquatic life uses. Citgo/PDV provided such information during this proceeding, and the Board noted that this option is available to others if site-specific circumstances are not able to be addressed through the work group's efforts.

The Board is unconvinced that a subdocket is appropriate when no specific proposal yet exists; especially given the Board's decision to delay the effective date of the year-round chloride standard. The three-year delay in adopting a 500 mg/L year-round chloride standard and the interim TDS standard should address the concerns about the need for a subdocket at this point. This should also provide time for a specific proposal to be filed in a new rulemaking.

Site-Specific Water Quality Standards for CSSC

At first notice, based on the proposal by Citgo/PDV, the Board proposed a site-specific chloride water quality standard for the CSSC with a chronic standard of 620 mg/L and an acute standard of 990 mg/L chloride.

The Board continued to find that Citgo/PDV properly employed USEPA's 2013 recalculation procedures to derive scientifically defensible site-specific acute and chronic water quality standards for chloride in the CSSC as USEPA stated could be done. PC 1404 Enc. 1 at 1. The Board found that Citgo/PDV adequately responded to each of IEPA's and USEPA's concerns in the record to provide supplemental evidence and clarification of the site-specific derivation.

USEPA expressed concern that the record does not contain information to demonstrate that the CSSC site-specific standards will protect aquatic life uses downstream in the LDPR in accordance with 40 C.F.R. §131.10(b). PC 1414 at 6. The Board noted that the USEPA Recalculation Procedure states, "Use of the Recalculation Procedure does not sidestep the need to protect downstream uses." USEPA Recalculation Procedure at 4. The Board noted that the current 1988 national acute criteria for chloride is 860 mg/L, so the predicted peak of 750 mg/L would be below this value. Therefore, the CSSC site-specific water quality standards for chloride would be considered protective of aquatic life uses downstream in the LDPR in accordance with 40 C.F.R. §131.10(b) based on the national chloride criteria.

Proposed New Subsection 309.141(i) regarding Best Management Practices

At first notice, the Board proposed revisions to the NPDES provisions at 309.141(i) to facilitate the use of BMPs for chloride in NPDES permits based on the federal rule language at 40 C.F.R. §122(k). Comments received after first notice from IEPA, Citgo, ExxonMobil, Stepan, and the Environmental Groups voiced overwhelming support for the BMP provision, but suggested that it not be limited to chloride as would be consistent with the federal rule language simply referring to "pollutants". PC 1415 at 11-12, 1417, 1423, 1420, 1422, 1426. With the information in the record, the Board is not prepared to open the provision to all pollutants without further information, especially with regard to bioaccumulative chemicals of concern. However, at first notice, the Board noted that IEPA has the authority under the Act to include conditions to implement BMPs in NPDES permits to control or abate discharges of pollutants consistent with 40 C.F.R. §122.44(k). See Section 39(b) of the Act (415 ILCS 5/39(b) (2014)). In order to facilitate the use of BMPs in Illinois NPDES permits for chloride, the Board proceeded at second notice to amend 35 Ill. Adm. Code 309.141 to include the federal applicable provisions of the rule at 40 C.F.R. §122.44(k) under 35 Ill. Adm. Code 309.143(c), limited to chloride. This addition, the Board notes, is not intended to limit the scope of the federal rule in Illinois. The federal rule at 40 C.F.R. §122.44(k) is broader in referring to "pollutants" in general and still applies to the State NPDES program. Therefore, the Board finds that there is no need for any revisions.

Chloride Summary

Based on the new information provided after first notice was published, the Board proceeded with a year-round 500 mg/L chloride water quality standard applicable to all of CAWS and LDPR, except the CSSC, with a three-year delayed effective date. During this three year period, the Board proposes to retain the 1,500 mg/L TDS standard during the winter months of December 1 through April 30 and apply the 500 mg/L chloride standard during the summer months of May 1 through November 30. At the end of the three-year period, the 500 mg/L

chloride water quality standard will be in effect year-round for all segments of CAWS and LDPR, except the CSSC. Also at the end of the three year period, the chloride standard for summer months and the TDS standard for winter months will be repealed.

The Board also proceeded to second notice with a site-specific winter chloride water quality standard for the CSSC to apply instead of the TDS or chloride water quality standards during the winter months. The numeric standard of 620 mg/L as a chronic chloride water quality standard and 990 mg/L as an acute water quality standard is proposed for the CSSC from December 1 until April 30. Additionally, the Board proceeded to second notice with the inclusion of BMPs in the NPDES rules for complying with the chloride water quality standard.

Based on the aquatic life uses as designated in R08-9(C) pursuant to the 40 C.F.R. §131.10(g) factors, the Board proposed the following water quality standards:

- 2) From the effective date of this rule until three years after the effective date, the following concentrations for Chloride and Total Dissolved Solids shall not be exceeded except in waters for which mixing is allowed pursuant to Section 302.102 of this Part.

<u>Chloride during the period of May 1 through November 30</u>	<u>mg/L</u>	<u>500</u>
<u>Total Dissolved Solids during the period of December 1 through April 30</u>	<u>mg/L</u>	<u>1,500</u>

- 3) From three years after the effective date of these rules, the chloride and Total Dissolved Solids standards in subsection (g)(2) of this section is repealed and the following concentration for Chloride shall not be exceeded except in waters for which mixing is allowed pursuant to Section 302.102 of this Part:

<u>Chloride</u>	<u>mg/L</u>	<u>500</u>
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where:

mg/L = milligram per liter.

Section 303.449 Chicago Sanitary and Ship Canal

The numeric water quality standards for chloride and Total Dissolved Solids set forth at 35 Ill. Adm. Code 302.407(g) ~~does~~ do not apply to the Chicago Sanitary and Ship Canal during the period of December 1 through April 30. Chloride levels in these waters must meet the numeric water quality standards for the protection of aquatic organisms of 620 mg/L as a chronic water quality standard

and 990 mg/L as an acute water quality standard for chloride during the period of December 1 through April 30.

Economic Reasonableness and Technical Feasibility

Based on the record, the Board is convinced that the record continues to support the Board's decision to proceed with chloride water quality standards, but with a delayed effective date and the addition of a three-year interim TDS standard in CAWS and LDPR outside the CSSC in the winter.

Several parties have stated that if the Board proceeds to adopt chloride water quality standards for CAWS and LDPR, the Board must provide appropriate relief mechanisms. To that end, the Board noted that the three-year interim period with the delayed effective date is intended to allow time for the work group to develop a proposal to address chloride and a water body wide variance as well as for others who may be seeking alternatives. Even as the chloride work group progresses, the Board notes that a site-specific rulemaking or adjusted standards may be available for dischargers upon adequate proof that a different standard or regulation would protect the aquatic life uses. Citgo/PDV provided such information during this proceeding, and the Board notes that this option is available to others if site-specific circumstances are not able to be addressed through the work group's efforts.

Remaining Water Quality Standards

The Board will begin by addressing total ammonia nitrogen and then cadmium. The Board then moves to copper to be followed by cyanide. The Board next addresses issues regarding fluoride and manganese, selenium, and benzene. Mercury and DO will complete this section.

Total Ammonia Nitrogen

At first notice, the Board proposed IEPA's total ammonia standard, which affords early life stage protection for all CAWS and LDPR waters except CAWS and Brandon Pool ALU B waters. Acknowledging that this standard does not comport with USEPA's 2013 national criteria, the Board requested input from participants on the applicability of the 2013 national criteria.

USEPA contended that the proposed ammonia standards are not derived using USEPA's most recent 304(a) criteria toxicity datasets, and that the Board needs to revise the standards to ensure the protection of early life stages of fish during the period of March through October. IEPA commented that USEPA's 2013 national criteria are more stringent than the current ammonia standards and most facilities could not meet these standards. IEPA reiterated its position that USEPA's 2013 national criteria need to be addressed on a statewide basis. The District and Stepan opposed use of USEPA's 2013 national criteria document for CAWS and LDPR waters and supported IEPA's commitment to address new ammonia standards on a statewide basis. The Environmental Groups recognized that the proposed ammonia standard does not meet USEPA's 2013 national criteria but urged the Board to either open a new

subdocket to address ammonia standards or adopt the General Use standards with the knowledge these standards will be reconsidered soon.

The Board agreed with IEPA that USEPA's 2013 national criteria for ammonia should be addressed on a statewide basis. No information was received to suggest that early life stages exist in ALU B waters thus requiring application of the General Use ammonia standard. Further, as discussed above, the Board is reluctant to open subdockets for standards that should be considered on statewide basis. Therefore, the Board proceeded to second notice with the ammonia standards as proposed at first notice and declined to open a subdocket.

Cadmium

At first notice, the Board proposed the cadmium General Use water quality standard for the ALU A, ALU B, and UDIP waters, which IEPA had stated was protective of aquatic life uses. USEPA provided the only comment to the first notice proposal. USEPA believes the Board's rationale is scientifically sound and consistent with federal requirements. No additional comments were received, and the Board proceeded to second notice with the General Use water quality standard for cadmium for these waters.

Copper

IEPA's proposed acute and chronic copper standards were based on the recalculation procedures established in the 1995 national criteria document rather than the 2007 USEPA update because IEPA believed the new methodology was complex and a departure from how copper standards have been developed. The Board found the record supported IEPA's recommended copper standard and proposed it at first notice. The Board asked participants to more fully explain why the 2007 national criterion is not workable.

USEPA recommended that the Board either employ the biotic ligand model (BLM) to calculate and adopt a copper standard for each segment of CAWS and LDPR or "revise the hardness-based copper criteria equations using the recalculation procedure applied to an updated toxicity database". IEPA, however, asserts that BLM-based standards can be more stringent than the current hardness-based copper standards, and in certain cases, hardness-based standards may be overly stringent for particular water bodies and that there are implementation issues that need to be addressed before IEPA proposes adoption of the copper standards state-wide. The District opposed using USEPA's 2007 criteria, which includes use of the BLM, and further suggests that if the 2007 criteria are considered for adoption, that a new subdocket be opened to address these issues. Stepan also opposed the adoption of the 2007 criteria. The Environmental Groups supported USEPA's recommendations.

The Board has concerns with adopting USEPA's 2007 copper criteria because the underlying BLM has not been used to adopt water quality standards state-wide in Illinois. Also, according to IEPA and the District, the data required for the BLM are not now being collected. No information was provided as to how the BLM can be used without dissolved organic carbon data or why the BLM should be employed first for CAWS and LDPR waters when it has not

been used to develop water quality standards statewide. Therefore, the Board proceeded to second notice with the copper standard as proposed at first notice.

Cyanide

The Board, at first notice, proposed a cyanide standard based on existing General Use standards, with an amended chronic standard to reflect the removal of the rainbow trout from the species list. The Board proposed a 22 µg/L acute cyanide standard and the amended 10 µg/L chronic standard. The chronic General Use cyanide standard is 5.2 µg/L. The Environmental Groups continue to support the General Use standard for cyanide, including the chronic standard; whereas, Stepan and the District oppose the lower chronic criterion and support the Board's proposal. No additional information was received to suggest the rainbow trout exists in CAWS or LDPR waters or that the 10 µg/L proposed chronic standard would not be protective of existing aquatic life uses. The Board therefore proceeded to second notice with the cyanide standards proposed at first notice.

Fluoride and Manganese

While no national criteria have been developed for fluoride and manganese, the Board proposed General Use water quality standards for both at first notice based on IEPA's proposal. No comments were received in support or opposition to the General Use standards for fluoride and manganese so the Board proceeded to second notice with the standards proposed.

Selenium

At first notice, the Board proposed no changes from the standard for selenium in the existing Secondary Contact and Indigenous Aquatic Life standard as recommended by IEPA. IEPA did not use USEPA's criteria for selenium due to the uncertainty regarding the science used in developing the most recent draft rules. The Board invited comments from participants as to why USEPA's proposed national criterion for selenium should not be adopted by the Board.

USEPA continued to recommend the adoption of the chronic water column total recoverable selenium standards of 5 µg/L, which is consistent with its 304(a) criteria document dated 1987. IEPA reiterated its position that the most recent national criteria document is more stringent than the proposed selenium standard, and that it is concerned about the science behind the national selenium criteria document. The Environmental Groups supported adoption of the USEPA-recommended 5 µg/L standard, although also support opening a new subdocket to address the selenium standard. Both Citgo/PDV and the District opposed adoption of the more stringent 5 µg/L standard. Citgo/PDV supported the Environmental Groups' suggestion that IEPA begin collecting selenium data, and the District suggested waiting for further federal guidance before adopting new standards.

The Board shared IEPA's concerns with the science used in developing USEPA's draft selenium criteria, while noting the draft criteria is more stringent than the General Use water quality standard. The Board also supported the District's suggestion that waiting for further guidance is advisable before proceeding with adoption of a new selenium standard. Therefore,

the Board proceeded to second notice with the selenium standards as proposed at first notice and declines to open a subdocket.

Benzene

At first notice, the Board proposed the human health standard for benzene, as recommended by IEPA. This standard is based on the existing General Use standards, and according to IEPA, is more up-to-date than the national criterion. The Board invited comment from participants as to whether the proposed standard was appropriate. The Environmental Groups argued that the benzene standard should be reduced from the proposed 310 µg/L to 23 µg/L because the proposed standards 13 times greater than the criterion supported by science and is recommended in USEPA's 2014 ambient water quality criterion for benzene. They also note that the benzene standard recommended in USEPA's 2002 report is 51 µg/L. With two national documents recommending benzene criterion more stringent than proposed by IEPA, the Environmental Groups argued the Board must amend its proposed standard.

Stepan did not support the recommendation of the Environmental Groups and noted that the Board proposed a human health standard for benzene because CAWS and LDPR waters are not designated as public water supplies. The proposed 310 µg/L standard is the same as that which applies to General Use waters. Stepan argued there is no justification to adopt standards for CAWS and LDPR that are more stringent than General Use waters, and that if a more stringent standard is to be considered, it should be done on a state-wide basis.

The Board agreed with Stepan that because CAWS and LDPR waters are not designated as public water supplies, the General Use benzene standard is appropriate. If a more stringent standard for benzene is warranted, it should be considered on a state-wide basis, as Stepan suggests. Therefore, the Board proceeded to second notice with the benzene standard as proposed at first notice.

Mercury

IEPA proposed a human health standard for mercury that is similar to the General Use human health standard, with two amendments: allowing for a 12-month rolling average versus an annual average and removing reference to harmonic mean flow. The Board found that IEPA's proposal was supported by the record and proposed the 12 ng/L standard at first notice. IEPA and the Environmental Groups support the Board's proposed mercury standard. ExxonMobil supported the proposed amendments allowing for a 12-month rolling average versus an annual average and removing reference to harmonic mean flow.

The Board cannot support modifying water quality standards for a bioaccumulative chemical of concern. However, the Board understands the concerns raised by ExxonMobil regarding the source of mercury in CAWS and LDPR waters and the lack of availability of mercury treatment processes. Regulatory relief mechanisms exist that would be considered by the Board, including adjusted standards, a site-specific rule, or a water body variance as IEPA is exploring for chloride. The Board believes the record supports the mercury standard proposed at first notice, which includes allowing for a 12-month rolling average versus an annual average

and removing reference to harmonic mean flow. Therefore, the Board proceeded to second notice with the mercury standard as proposed at first notice.

Dissolved Oxygen

IEPA recommended and the Board proposed at first notice DO standards based on USEPA's 1986 national criteria document. A different standard is proposed for each of the three different aquatic life use designations. General Use DO standards are proposed for the UDIP ALU, and for ALU A waters, a standard is proposed that reflects the lower biological potential of these waters compared to the UDIP ALU. DO standards are incrementally less for CAWS and Brandon Pool ALU B waters, including having no standards for early life stages of fish because these waters do not have the potential to support early life stages for fish. A new requirement that 24 consecutive hours of DO data be used to assess attainment of mean and minimum values is also included at first notice.

USEPA stated that the Board proposed DO standards for the CSSC and Brandon Pool using a different rationale from that explained by IEPA, although USEPA appears to support the proposed DO standards. Stepan opposed the DO numeric standards. The District raised questions as to the justification for the new requirement that 24 consecutive hours of DO data be used to assess attainment. The District states that this would necessitate continuous hourly DO monitoring and urged the Board to reconsider whether this should be included in the regulations. The Environmental Groups argued that continuous DO monitoring is very important because DO naturally fluctuates in a 24-hour cycle as plants and algae consume and emit oxygen into the water. As a result, DO levels can look normal during daytime business hours but plummet to deadly lows at night. They contend that to protect aquatic life, the DO standard needs to account for the true minimum and mean DO in a water body, which can only be assessed with continuous DO monitoring.

The Board agreed with the Environmental Groups' rationale of the need for 24 consecutive hours of DO data to assess attainment of mean and minimum values as proposed in Section 302.405(e), which the District explained would necessitate continuous hourly DO monitoring. The Board understands that DO levels fluctuate on a 24-hour cycle, which needs to be reflected in the data collected to demonstrate compliance with DO standards. No parties submitted alternative methods to assess attainment with the DO standards or a detailed explanation as to why the proposed methods are not appropriate. As a result, the Board proceeded to second notice with the DO standards as proposed at first notice.

Bubbly Creek

At first notice, the Board proposed to retain the existing Secondary Contact, Indigenous Aquatic Life Use standards for Bubbly Creek. However, the Board raised a concern that these standards would subject Bubbly Creek to an "anytime" DO standard of 4.0 mg/L, which appears to be more protective than the "anytime" DO standard of 3.5 mg/L that will be applicable to CAWS ALU A, ALU B, and UDIP waters. The Board requested comments from participants on this issue.

IEPA noted that the “anytime” DO standard of 3.5 mg/L in the IEPA’S 2007 proposal is only one component of the standards that makes the DO standard protective. IEPA recommended that the Board adopt the water quality standards it proposed in 2007 to address this question. IEPA also suggested that if the Board does not agree with this approach, the existing water quality standard should remain in place until these issues are addressed in Subdocket E.

The District opposed both of IEPA’S recommendations, noting that adopting IEPA’S 2007 proposed standards for Bubbly Creek would make Subdocket E irrelevant. The District also noted that maintaining the 4.0 mg/L “anytime” standard for Bubbly Creek would be inappropriate because it would make Bubbly Creek subject to a higher standard when it is acknowledged that Bubbly Creek has complex DO issues. The District recommended a 3.5 mg/L standard being applied to Bubbly Creek.

The Board thanked the District and IEPA for providing insight on this issue. IEPA raised a good point that the 3.5 mg/L “anytime” standard associated with the standards proposed for CAWS ALU A, ALU B, and UDIP waters is but one component that makes the DO standard protective. For example, for UDIP, ALU A, and ALU B waters during August to February, the “anytime” standard is 3.5 mg/L, but the daily mean averaged over 30 days is 4.0 mg/L, and for UDIP and ALU A waters during the months of March to July, the “anytime” standard is 5.0 mg/L. The existing Secondary Contact and Indigenous Aquatic Life DO standard, which is applicable to Bubbly Creek, is 4.0 mg/L “anytime”, with no seasonal differences. Therefore, the 3.5 mg/L DO standard applicable to UDIP, ALU A, and ALU B waters is not less protective than the 4.0 mg/L standard applicable to Bubbly Creek when the entire set of DO standards are examined.

The District also raised a legitimate point in that assigning a more protective DO standard to Bubbly Creek would effectively make Subdocket E irrelevant. This also applies to the District’S recommendation to change the 4.0 mg/L “anytime” standard that now applies to Bubbly Creek with the Secondary Contact and Indigenous Aquatic Life designation to 3.5 mg/L. As a result of the clarification of the 3.5 and 4.0 mg/L “anytime” standards and the intent to address water quality standards for Bubbly Creek in Subdocket E, the Board proposed to proceed to second notice with the existing Secondary Contact and Indigenous Aquatic Life standards for Bubbly Creek, including the 4.0 mg/L DO standard.

USEPA Disapprovals of Actions in Prior Subdockets

Both USEPA and the Environmental Groups remind that USEPA “disapproved” a number of revisions that the Board adopted in the prior subdockets of this proceeding. Specifically USEPA disapproved of the removal of the General Use designation for the Upper North Shore Channel from the Wilmette Pumping Station to the North Side Water Reclamation Plant and Calumet River from Lake Michigan to the O’Brien Locks and Dam.⁵ PC 1338 at 4.

⁵ The Board adopted a final rule that designated these two CAWS segments as ALU A waters. Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and

USEPA also disapproved of the removal of the Secondary Contact recreational use designation from the CSSC and the LDPR from the CSSC to the Brandon Road Lock and Dam.⁶ *Id* at 5.

This Subdocket addresses water quality standards necessary to protect the designated aquatic life uses. The Board previously ruled on the designation of uses in Subdocket C. The Board appreciates USEPA's position; however, until the Board receives a new proposal, the Board cannot act on USEPA's disapprovals. The Board encouraged IEPA to propose rules that address USEPA's disapprovals, and the Board will proceed with any such proposal as expeditiously as possible.

Miscellaneous Changes Suggested

Sampling Requirements

As noted above, the proposed water quality standards for CAWS and LDPR parallel the General Use standards, which also include similar minimum sampling requirements for attainment demonstration. Since the General Use standards were updated in 1990, there appears to be no confusion regarding the applicability of those standards to protect the designated uses or the sampling provisions for attainment demonstration. The sampling or assessment requirements are intended only for the purposes of demonstrating compliance and not to place any limitation on the applicability of the standards. For example, any discharge to a receiving General Use stream would be evaluated on the basis of the applicable water quality standard to determine if a permit limit is necessary. In light of this the Board will move forward with sampling requirements proposed at first notice in Sections 302.405, 302.407 and 302.412. However, the Board directed the IEPA to propose changes to Part 302 in a future rulemaking to move all sampling requirements associated with the water quality standards under a new subpart or section to avoid any perceived confusion regarding the applicability the water quality standards.

The proposed averaging time at Section 302.407(b) parallels the Board's General Use standards provision at Section 302.208(b), which sets forth that the chronic standards "shall not be exceeded by the arithmetic average of at least four consecutive sample collected over any period of at least four days, ..." 35 Ill. Adm. Code 302.208(b). The Board specified the 4-day averaging period for chronic standards at Section 302.208 when it first adopted the acute and chronic water quality standards in 1990. *See Proposed Amendments to Title 35, Subtitle C (Toxics Control)*, R88-21(A) (Jan 25, 1990). In that rulemaking, the IEPA explained that it relied on USEPA guidance in developing the chronic standards, which are the highest four-day average concentrations that will not produce unacceptable effects over a long-term exposure. R88-21(A), IEPA Pre-filed Testimony dated November 2, 1988 at 5. The Board adopted the

Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(C), slip op. at 190 (Feb. 21, 2013); see also R08-9(C) (Feb. 6, 2013)

⁶ The Board adopted a final rule that designated the lower CSSC and the LDPR from the CSSC to the Brandon Road Lock and Dam as a Non-recreational use. Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments, R08-9(A) slip op. at 42, 49 (June 16, 2011); *see also* R08-9(A) (Aug. 18, 2011).

averaging period for chronic standards as recommended by the IEPA with minor changes to improve clarity including the phrase “at least four days”. R88-21(A) slip op at 27 (Dec. 6, 1989).

Although the IEPA proposed an averaging period of “at least four days” in Section 302.208(b) in R88-21(A), that provision was clearly intended to be consistent with the federal guidance. As noted by USEPA, including the phrase “at least four days” may not be consistent with the scientific rationale behind the proposed standards, i.e. the highest four-day average concentrations that will not produce unacceptable effects over a long-term exposure. As such, the Board revised Section 302.407(b) by removing the phrase “at least” and requiring that exposure be averaged over any four-day period. The Board noted that similar change will be made to the General Use standards in a future rulemaking when Section 302.208 is open.

Section 302.410

Section 302.410 was retitled as “Other Toxic Substances” as suggested by USEPA and IEPA. *See* pc 1414 at 4; PC 1415 at 16-18. The Board also adopted the clarifying language suggested by USEPA and IEPA. *See Id.* The Board declined to further clarify the language as suggested by Stepan (PC 1426 at 21) as the Board believes the requested change does not clarify the rule language.

Combination of Toxic Pollutants

The Environmental Groups expressed concern regarding the synergistic effect of combining toxic pollutants that have numeric standards. The Environmental Groups suggested not including IEPA and USEPA’s proposed language for Section 302.410, “Individual chemical substances or parameters for which numeric standards are specified in this Subpart are not subject to this Section.” PC 1428 at 13 *referring* to PC 1414 at 4. The Board noted that Subpart F already addresses determination of criteria for combinations of substances as well as for individual substances.

Obsolete Total Metal Standards

The District asks that “obsolete total metals standards should be stricken”. However, those total metal standards are still required for Bubbly Creek and will be retained.

Changes to Language regarding the Chicago River

In Section 302.401(b), the Board clarified the standards for the Chicago River as recommended by the USEPA and IEPA. The Board also addressed the concern that the standards in Subpart D were protective of more than just aquatic life by deleting the phrase “indigenous aquatic life” in Section 302.401 and making the changes suggested by USEPA in Sections 303.204 and 302.402.

Additional Changes to the Rule Language

In Section 302.101, the Board added a reference to Section 303.449, as IEPA requested. In Section 302.407(e) corrected the spelling of Fluoride. In Section 302.408, the references to the corresponding subsections have been corrected. In Section 302.412, cross references to subsections were corrected.

USEPA asked for changes to Sections 303.204, 302.401 and 302.402, noting that the sections describe the standards as relating to aquatic life. However, USEPA notes the applicable standards in Subpart D address aquatic life, wildlife and human health standards. USEPA suggests clarifying language in each of those sections and the Board accepts those suggestions. Specifically in Section 302.401(a), the Board deleted “indigenous aquatic life” and in 302.402 added “wildlife, human health”. In Section 303.204, at second notice, the Board deletes “for the protection of aquatic life as well as the” and replaced that phrase with “including the”.

DISCUSSION OF FINAL ADOPTION

JCAR and the Board agreed to make several nonsubstantive changes to the rule language. These nonsubstantive changes are in the nature of correcting typographical errors, adding commas, and changing “which” to “that”. In Section 302.407(g)(2), the Board and JCAR agreed to change the phrase “From the effective date of this rule, until three years after the effective date” to “From July 1, 2015, until July 1, 2018”. Also in Section 302.407(g)(3), the Board and JCAR agreed to replace “From the effective date of these rules” with “Beginning July 1, 2018”.

In Section 302.408(b), JCAR and the Board agreed to replace “3 years after the effective date of this Section” with “July 1, 2018” and “For a period of 3 years from the effective date of this Section” with “Starting June 1, 2015”. Finally as requested by Stepan during the comment period on temperature, JCAR and the Board added “at representative locations in the main river” in Section 302.408(f).

The substantial record in this proceeding, developed over multiple days of hearings and testimony along with voluminous public comments, supports the Board’s decision to establish these water quality standards. While the Board is aware that specific dischargers may need to seek site-specific relief for their discharges, this rule sets forth water quality standards that will protect the aquatic life uses established for CAWS and LDPR.

The Board is greatly appreciative of IEPA, USEPA, the regulated community, environmental groups, and members of the public for their efforts, comments, and testimony that have helped to develop this record.

The Board finds that the record supports proceeding to adoption with the water quality as proposed at second notice, and amended with agreement by JCAR. Furthermore, having considered “the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of the existing air quality or receiving body of water, as the case may be, and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution” (415 ILCS 5/27(a)

(2014)), the Board finds that the adopted rule is technically feasible and economically reasonable.

CONCLUSION

The Board today adopts water quality standards for CAWS and the LDPR that are necessary to protect the aquatic life uses for those waterways as designated in Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(C), (Feb. 6, 2014). The Board is proceeding with the standards as proposed at second notice and as amended by agreement with JCAR. Specifically, the Board is adopting standards including a site specific chloride water quality standard for the CSSC. As to the remaining segments of the CAWS and LDPR, while the Board adopts a year-round chloride standard of 500 mg/L, the standard will have a three-year delayed effective date. In the interim, the Board leaves in place the TDS standard during the winter months of December 1 through April 30 and applies the 500 mg/L chloride standard during the summer months of May 1 through November 30 for CAWS and LDPR, except for the CSSC. The interim TDS standard will sunset three years after the effective date of the rules.

In addition, the Board adopts the temperature standards as proposed at second-notice, except the Board, in agreement with JCAR, added a phrase suggested by Stepan. The new revised temperature standard will be applicable on July 1, 2018.

ORDER

The Board directs the Clerk to provide the following rule to the Secretary of State for publication in the *Illinois Register* as an adopted rule:

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: CHICAGO AREA WATERWAY SYSTEM AND LOWER DES PLAINES
RIVER WATER QUALITY SECONDARY CONTACT AND INDIGENOUS AQUATIC LIFE
STANDARDS

Section	
302.401	Scope and Applicability
302.402	Purpose
302.403	Unnatural Sludge
302.404	pH
302.405	Dissolved Oxygen
302.406	Fecal Coliform (Repealed)
302.407	Chemical Constituents
302.408	Temperature
302.409	<u>Cyanide for the South Fork of the South Branch of the Chicago River (Bubbly Creek)</u>
302.410	Substances Other Toxic to Aquatic Life <u>Substances</u>
302.412	<u>Total Ammonia Nitrogen</u>

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
302.580	Procedures for Deriving Water Quality Criteria and Values in the Lake Michigan Basin to Protect Human Health – General
302.585	Procedures for Determining the Lake Michigan Basin Human Health Threshold Criterion (LMHHTC) and the Lake Michigan Basin Human Health Threshold Value (LMHHTV)
302.590	Procedures for Determining the Lake Michigan Basin Human Health Nonthreshold Criterion (LMHHNC) or the Lake Michigan Basin Human Health Nonthreshold Value (LMHHNV)
302.595	Listing of Bioaccumulative Chemicals of Concern, Derived Criteria and Values

SUBPART F: PROCEDURES FOR DETERMINING WATER QUALITY CRITERIA

Section	
302.601	Scope and Applicability
302.603	Definitions
302.604	Mathematical Abbreviations
302.606	Data Requirements
302.612	Determining the Acute Aquatic Toxicity Criterion for an Individual Substance – General Procedures
302.615	Determining the Acute Aquatic Toxicity Criterion - Toxicity Independent of Water Chemistry
302.618	Determining the Acute Aquatic Toxicity Criterion - Toxicity Dependent on Water Chemistry
302.621	Determining the Acute Aquatic Toxicity Criterion - Procedure for Combinations of Substances
302.627	Determining the Chronic Aquatic Toxicity Criterion for an Individual Substance - General Procedures
302.630	Determining the Chronic Aquatic Toxicity Criterion - Procedure for Combinations of Substances
302.633	The Wild and Domestic Animal Protection Criterion
302.642	The Human Threshold Criterion
302.645	Determining the Acceptable Daily Intake
302.648	Determining the Human Threshold Criterion
302.651	The Human Nonthreshold Criterion

302.654	Determining the Risk Associated Intake
302.657	Determining the Human Nonthreshold Criterion
302.658	Stream Flow for Application of Human Nonthreshold Criterion
302.660	Bioconcentration Factor
302.663	Determination of Bioconcentration Factor
302.666	Utilizing the Bioconcentration Factor
302.669	Listing of Derived Criteria
302.APPENDIX A	References to Previous Rules
302.APPENDIX B	Sources of Codified Sections
302.APPENDIX C	Maximum total ammonia nitrogen concentrations allowable for certain combinations of pH and temperature
302.TABLE A	pH-Dependent Values of the AS (Acute Standard)
302.TABLE B	Temperature and pH-Dependent Values of the CS (Chronic Standard) for Fish Early Life Stages Absent
302.TABLE C	Temperature and pH-Dependent Values of the CS (Chronic Standard) for Fish Early Life Stages Present
302.APPENDIX D	Section 302.206(d): Stream Segments for Enhanced Dissolved Oxygen Protection

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

SOURCE: Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 44, p. 151, effective November 2, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 3 Ill. Reg. 25, p. 190, effective June 21, 1979; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg. 11161, effective September 7, 1982; amended at 6 Ill. Reg. 13750, effective October 26, 1982; amended at 8 Ill. Reg. 1629, effective January 18, 1984; peremptory amendments at 10 Ill. Reg. 461, effective December 23, 1985; amended at R87-27 at 12 Ill. Reg. 9911, effective May 27, 1988; amended at R85-29 at 12 Ill. Reg. 12082, effective July 11, 1988; amended in R88-1 at 13 Ill. Reg. 5998, effective April 18, 1989; amended in R88-21(A) at 14 Ill. Reg. 2899, effective February 13, 1990; amended in R88-21(B) at 14 Ill. Reg. 11974, effective July 9, 1990; amended in R94-1(A) at 20 Ill. Reg. 7682, effective May 24, 1996; amended in R94-1(B) at 21 Ill. Reg. 370, effective December 23, 1996; expedited correction at 21 Ill. Reg. 6273, effective December 23, 1996; amended in R97-25 at 22 Ill. Reg. 1356, effective December 24, 1997; amended in R99-8 at 23 Ill. Reg. 11249, effective August 26, 1999; amended in R01-13 at 26 Ill. Reg. 3505, effective February 22, 2002; amended in R02-19 at 26 Ill. Reg. 16931, effective November 8, 2002; amended in R02-11 at 27 Ill. Reg. 166, effective December 20, 2002; amended in R04-21 at 30 Ill. Reg. 4919, effective March 1, 2006; amended in R04-25 at 32 Ill. Reg. 2254, effective January 28, 2008; amended in R07-9 at 32 Ill. Reg. 14978, effective September 8, 2008; amended in R11-18 at 36 Ill. Reg. 18871, effective December 12, 2012; amended in R11-18(B) at 37 Ill. Reg. 7493, effective May 16, 2013; amended at in R08-09(D)_____ at 38 Ill. Reg. _____, effective _____.

SUBPART A: GENERAL WATER QUALITY PROVISIONS

Section 302.101 Scope and Applicability

- a) This Part contains schedules of water quality standards which are applicable throughout the State as designated in 35 Ill. Adm. Code 303. Site specific water quality standards are found with the water use designations in 35 Ill. Adm. Code 303.
- b) Subpart B contains general use water quality standards which must be met in waters of the State for which there is no specific designation (35 Ill. Adm. Code 303.201).
- c) Subpart C contains the public and food processing water supply standards. These are cumulative with Subpart B and must be met by all designated waters at the point at which water is drawn for treatment and distribution as a potable supply or for food processing (35 Ill. Adm. Code 303.202).
- d) Subpart D contains the Chicago Area Waterway System and the Lower Des Plaines River water quality secondary contact and indigenous aquatic life standards. These standards must be met only by certain waters designated in 35 Ill. Adm. Code 303.204, 303.220, 303.225, 303.227, 303.230, 303.235, ~~303.240~~ and ~~303.240~~ 303.449~~303.441~~. Subpart D also contains water quality standards applicable to indigenous aquatic life waters found only in the South Fork of the South Branch of the Chicago River (Bubbly Creek).
- e) Subpart E contains the Lake Michigan Basin water quality standards. These must be met in the waters of the Lake Michigan Basin as designated in 35 Ill. Adm. Code 303.443.
- f) Subpart F contains the procedures for determining each of the criteria designated in Sections 302.210 and 302.410.
- g) Unless the contrary is clearly indicated, all references to "Parts" or "Sections" are to Ill. Adm. Code, Title 35: Environmental Protection. For example, "Part 309" is 35 Ill. Adm. Code 309, and "Section 309.101" is 35 Ill. Adm. Code 309.101.

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 302.102 Allowed Mixing, Mixing Zones and ZIDs

- a) Whenever a water quality standard is more restrictive than its corresponding effluent standard, or where there is no corresponding effluent standard specified at 35 Ill. Adm. Code 304, an opportunity shall be allowed for compliance with 35 Ill. Adm. Code 304.105 by mixture of an effluent with its receiving waters, provided the discharger has made every effort to comply with the requirements of 35 Ill. Adm. Code 304.102.

- b) The portion, volume and area of any receiving waters within which mixing is allowed pursuant to subsection (a) shall be limited by the following:
- 1) Mixing must be confined in an area or volume of the receiving water no larger than the area or volume which would result after incorporation of outfall design measures to attain optimal mixing efficiency of effluent and receiving waters. ~~Such~~ These measures may include, but are not limited to, use of diffusers and engineered location and configuration of discharge points.
 - 2) Mixing is not allowed in waters which include a tributary stream entrance if ~~such~~the mixing occludes the tributary mouth or otherwise restricts the movement of aquatic life into or out of the tributary.
 - 3) Mixing is not allowed in water adjacent to bathing beaches, bank fishing areas, boat ramps or dockages or any other public access area.
 - 4) Mixing is not allowed in waters containing mussel beds, endangered species habitat, fish spawning areas, areas of important aquatic life habitat, or any other natural features vital to the well being of aquatic life in such a manner that the maintenance of aquatic life in the body of water as a whole would be adversely affected.
 - 5) Mixing is not allowed in waters ~~which~~ that contain intake structures of public or food processing water supplies, points of withdrawal of water for irrigation, or watering areas accessed by wild or domestic animals.
 - 6) Mixing must allow for a zone of passage for aquatic life in which water quality standards are met. However, a zone of passage is not required in receiving streams that have zero flow for at least seven consecutive days recurring on average in nine years out of ~~ten~~10.
 - 7) The area and volume in which mixing occurs, alone or in combination with other areas and volumes of mixing, must not intersect any area of any body of water in such a manner that the maintenance of aquatic life in the body of water as a whole would be adversely affected.
 - 8) The area and volume in which mixing occurs, alone or in combination with other areas and volumes of mixing must not contain more than 25% of the cross-sectional area or volume of flow of a stream except for those streams ~~where~~ for which the dilution ratio is less than 3:1. In streams where the dilution ratio is less than 3:1, the volume in which mixing occurs, alone or in combination with other volumes of mixing, must not contain more than 50% of the volume flow unless an applicant for an NPDES permit demonstrates, pursuant subsection (d) ~~of this section~~, that

an adequate zone of passage is provided for pursuant to ~~Section 302.102~~subsection (b)(6).

- 9) No mixing is allowed ~~where~~ when the water quality standard for the constituent in question is already violated in the receiving water.
 - 10) No body of water may be used totally for mixing of single outfall or combination of outfalls, except as provided in ~~Section 302.102~~subsection (b)(6).
 - 11) Single sources of effluents ~~which~~ that have more than one outfall shall be limited to a total area and volume of mixing no larger than that allowable if a single outfall were used.
 - 12) The area and volume in which mixing occurs must be as small as is practicable under the limitations prescribed in this subsection (b), and in no circumstances may the mixing encompass a surface area larger than 26 acres.
- c) All water quality standards of this Part must be met at every point outside of the area and volume of the receiving water within which mixing is allowed. The acute toxicity standards of this Part Sections 302.208 and 302.210 must be met within the area and volume within which mixing is allowed, except as provided in subsection (e).
 - d) Pursuant to the procedures of Section 39 of the Act and 35 Ill. Adm. Code 309, a person may apply to the Agency to include as a condition in an NPDES permit formal definition of the area and volume of the waters of the State within which mixing is allowed for the NPDES discharge in question. ~~Such formally~~ The defined area and volume of allowed mixing shall constitute a "mixing zone" for the purposes of 35 Ill. Adm. Code: Subtitle C. Upon proof by the applicant that a proposed mixing zone conforms with the requirements of Section 39 of the Act, this Section and any additional limitations as may be imposed by the Clean Water Act (CWA) (33 USC 1251 et seq.), the Act or Board regulations, the Agency shall, pursuant to Section 39(b) of the Act, include within the NPDES permit a condition defining the mixing zone.
 - e) Pursuant to the procedures of Section 39 of the Act and 35 Ill. Adm. Code 309, a person may apply to the Agency to include as a condition in an NPDES permit a ZID as a component portion of a mixing zone. ~~Such~~ The ZID shall, at a minimum, be limited to waters within which effluent dispersion is immediate and rapid. For the purposes of this subsection, "immediate" dispersion means an effluent's merging with receiving waters without delay in time after its discharge and within close proximity of the end of the discharge pipe, so as to minimize the length of exposure time of aquatic life to undiluted effluent, and "rapid" dispersion means an effluent's merging with receiving waters so as to minimize

the length of exposure time of aquatic life to undiluted effluent. Upon proof by the applicant that a proposed ZID conforms with the requirements of Section 39 of the Act and this Section, the Agency shall, pursuant to Section 39(b) of the Act, include within the NPDES permit a condition defining the ZID.

- f) Pursuant to Section 39 of the Act and 35 Ill. Adm. Code 309.103, an applicant for an NPDES permit shall submit data to allow the Agency to determine that the nature of any mixing zone or mixing zone in combination with a ZID conforms with the requirements of Section 39 of the Act and of this Section. A permittee may appeal Agency determinations concerning a mixing zone or ZID pursuant to the procedures of Section 40 of the Act and 35 Ill. Adm. Code 309.181.
- g) ~~Where~~ When a mixing zone is defined in an NPDES permit, the waters within that mixing zone, for the duration of that NPDES permit, shall constitute the sole waters within which mixing is allowed for the permitted discharge. It shall not be a defense in any action brought pursuant to 35 Ill. Adm. Code 304.105 that the area and volume of waters within which mixing may be allowed pursuant to subsection (b) is less restrictive than the area or volume or waters encompassed in the mixing zone.
- h) ~~Where~~ When a mixing zone is explicitly denied in a NPDES permit, no waters may be used for mixing by the discharge to which the NPDES permit applies, all other provisions of this Section notwithstanding.
- i) Where an NPDES permit is silent on the matter of a mixing zone, or ~~where~~ when no NPDES permit is in effect, the burden of proof shall be on the discharger to demonstrate compliance with this Section in any action brought pursuant to 35 Ill. Adm. Code 304.105.

(Source: Amended at 38 Ill. Reg. _____ effective _____)

SUBPART D: CHICAGO AREA WATERWAY SYSTEM AND LOWER DES PLAINES RIVER WATER QUALITY STANDARDS SECONDARY CONTACT AND INDIGENOUS AQUATIC LIFE STANDARDS

Section 302.401 Scope and Applicability

- a) Subpart D contains the ~~secondary contact and indigenous aquatic life~~ standards that ~~These~~ must be met only by the South Fork of the South Branch of the Chicago River (Bubbly Creek) certain waters specifically designated in Part 303. The Subpart B general use and Subpart C public and food processing water supply standards of this Part do not apply to Bubbly Creek designated for secondary contact and indigenous aquatic life (Section 303.204.
- b) Subpart D also contains the Chicago Area Waterway System and Lower Des Plaines River water quality standards. Except for the Chicago River, these

standards must be met only by waters specifically designated in 35 Ill. Adm. Code 303. The Subpart B general use and Subpart C public and food processing water supply standards of this Part do not apply to waters described in 35 Ill. Adm. Code 303.204 as the Chicago Area Waterway System or Lower Des Plaines River and listed in 35 Ill. Adm. Code 303.220 through 303.240, except that waters designated as Primary Contact Recreation Waters in 35 Ill. Adm. Code 303.220 must meet the numeric water quality standard for bacteria applicable to protected waters in Section 302.209 of this Part. The Chicago River must **meet the general use standards**, including the numeric water quality standard for fecal coliform bacteria applicable to protected waters in Section 302.209 of this Part.

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 302.402 Purpose

The Chicago Area Waterway System and Lower Des Plaines River standards shall protect primary contact, incidental contact or non-contact recreational uses (except when designated as non-recreational waters); commercial activity, including navigation and industrial water supply uses; and the highest quality aquatic life and wildlife that is attainable, limited only by the physical condition of these waters and hydrologic modifications to these waters. The numeric and narrative standards contained in this Part will assure the protection of the aquatic life, wildlife, human health, and recreational uses of the Chicago Area Waterway System and Lower Des Plaines River as those uses are defined in 35 Ill. Adm. Code 301 and designated in 35 Ill. Adm. Code 303. ~~Secondary contact and indigenous~~ Indigenous aquatic life standards are intended for those waters not suited for general use activities but which will be appropriate for all secondary contact uses and which for the South Fork of the South Branch of the Chicago River (Bubbly Creek), which will be is capable of supporting an indigenous aquatic life limited only by the physical configuration of the body of water, characteristics and origin of the water and the presence of contaminants in amounts that do not exceed the water quality standards listed in this Subpart D-. However, the Chicago River is required to meet the general use standard, including the water quality standard for fecal coliform bacteria applicable to protected waters in Section 302.209 of this Part.

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 302.404 pH

pH (~~STORET number 00400~~) shall be within the range of ~~6.5~~ 6.0 to 9.0 except for natural causes, except for the South Fork of the South Branch of the Chicago River (Bubbly Creek) for which pH shall be within the range of 6.0 to 9.0 except for natural causes.

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 302.405 Dissolved Oxygen

Dissolved oxygen (~~STORET number 00300~~) concentrations shall not be less than the applicable values in subsections (a), (b), (c), and (d) ~~4.0 mg/l at any time except that the Calumet-Sag Channel shall not be less than 3.0 mg/l at any time.~~

- a) For the South Fork of the South Branch of the Chicago River (Bubbly Creek) dissolved oxygen concentrations shall not be less than 4.0 mg/L at any time.
- b) For the Upper Dresden Island Pool Aquatic Life Use waters listed in 35 Ill. Adm. Code 303.230:
 - 1) during the period of March through July:
 - A) 6.0 mg/L as a daily mean averaged over 7 days; and
 - B) 5.0 mg/L at any time; and
 - 2) during the period of August through February:
 - A) 5.5 mg/L as a daily mean averaged over 30 days;
 - B) 4.0 mg/L as a daily minimum averaged over 7 days; and
 - C) 3.5 mg/L at any time.
- c) For the Chicago Area Waterway System Aquatic Life Use A waters listed in 35 Ill. Adm. Code 303.235:
 - 1) during the period of March through July, 5.0 mg/L at any time; and
 - 2) during the period of August through February:
 - A) 4.0 mg/L as a daily minimum averaged over 7 days; and
 - B) 3.5 mg/L at any time.
- d) For the Chicago Area Waterway System and Brandon Pool Aquatic Life Use B waters listed in 35 Ill. Adm. Code 303.240:
 - 1) 4.0 mg/L as a daily minimum averaged over 7 days; and
 - 2) 3.5 mg/L at any time.
- e) Assessing attainment of dissolved oxygen mean and minimum values.
 - 1) Daily mean is the arithmetic mean of dissolved oxygen concentrations in 24 consecutive hours.

- 2) Daily minimum is the minimum dissolved oxygen concentration in 24 consecutive hours.
- 3) The measurements of dissolved oxygen used to determine attainment or lack of attainment with any of the dissolved oxygen standards in this Section must assure daily minima and daily means that represent the true daily minima and daily means.
- 4) The dissolved oxygen concentrations used to determine a daily mean or daily minimum should not exceed the air-equilibrated concentration.
- 5) “Daily minimum averaged over 7 days” means the arithmetic mean of daily minimum dissolved oxygen concentrations in 7 consecutive 24-hour periods.
- 6) “Daily mean averaged over 7 days” means the arithmetic mean of daily mean dissolved oxygen concentrations in 7 consecutive 24-hour periods.
- 7) “Daily mean averaged over 30 days” means the arithmetic mean of daily mean dissolved oxygen concentrations in 30 consecutive 24-hour periods.

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 302.407 Chemical Constituents

- a) The acute standard (AS) for the chemical constituents listed in subsection (e) shall not be exceeded at any time except as 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 as 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 that have water quality based standards dependent upon hardness, the chronic water quality standard will be calculated according to subsection (e) using the hardness of the water body at the time the sample was collected. To calculate attainment status of chronic standards, the concentration of the chemical constituent in each sample is divided by the calculated water quality standard for the sample to determine a quotient. The water quality standard is attained if the mean of the sample quotients is less than or equal to one for the duration of the averaging period.
- c) The human health standard (HHS) for the chemical constituents listed in subsection (f) shall not be exceeded, on a 12-month rolling average based on at

least eight samples, collected in a manner representative of the sampling period, except as provided in subsection (d).

- d) In waters where mixing is allowed pursuant to Section 302.102 of this Part, the following apply:
- 1) The AS shall not be exceeded in any waters except for those waters for which a zone of initial dilution (ZID) applies pursuant to Section 302.102 of this Part.
 - 2) The CS shall not be exceeded outside of waters in which mixing is allowed pursuant to Section 302.102 of this Part.
 - 3) The HHS shall not be exceeded outside of waters in which mixing is allowed pursuant to Section 302.102 of this Part.
- e) Numeric Water Quality Standards for the Protection of Aquatic Organisms

<u>Constituent</u>	<u>AS ($\mu\text{g/L}$)</u>	<u>CS ($\mu\text{g/L}$)</u>
<u>Arsenic (trivalent, dissolved)</u>	<u>$340 \times 1.0^* = 340$</u>	<u>$150 \times 1.0^* = 150$</u>
<u>Benzene</u>	<u>4200</u>	<u>860</u>
<u>Cadmium (dissolved)</u>	<u>$e^{A+B \ln(H)} \times \{1.138672 - [(\ln(H))(0.041838)]\}^*$, where $A = -2.918$ and $B = 1.128$</u>	<u>$e^{A+B \ln(H)} \times \{1.101672 - [(\ln(H))(0.041838)]\}^*$, where $A = -3.490$ and $B = 0.7852$</u>
<u>Chromium (hexavalent, total)</u>	<u>16</u>	<u>11</u>
<u>Chromium (trivalent, dissolved)</u>	<u>$e^{A+B \ln(H)} \times 0.316^*$, where $A = 3.7256$ and $B = 0.8190$</u>	<u>$e^{A+B \ln(H)} \times 0.860^*$, where $A = 0.6848$ and $B = 0.8190$</u>
<u>Copper (dissolved)</u>	<u>$e^{A+B \ln(H)} \times 0.960^*$, where $A = -1.645$ and $B = 0.9422$</u>	<u>$e^{A+B \ln(H)} \times 0.960^*$, where $A = -1.646$ and $B = 0.8545$</u>
<u>Cyanide**</u>	<u>22</u>	<u>10</u>
<u>Ethylbenzene</u>	<u>150</u>	<u>14</u>
<u>Flouride Fluoride (total)</u>	<u>$e^{A+B \ln(H)}$ where $A = 6.7319$ and $B = 0.5394$</u>	<u>$e^{A+B \ln(H)}$, but shall not exceed <u>4.0 mg/L</u> where $A = 6.0445$ and $B =$ <u>0.5394</u></u>
<u>Lead (dissolved)</u>	<u>$e^{A+B \ln(H)} \times \{1.46203 - [(\ln(H))(0.145712)]\}^*$, where $A = -1.301$ and $B = 1.273$</u>	<u>$e^{A+B \ln(H)} \times \{1.46203 - [(\ln(H))(0.145712)]\}^*$, where $A = -2.863$ and $B = 1.273$</u>

<u>Manganese (dissolved)</u>	$e^{A+B \ln(H)} \times 0.9812^*$ where $A = 4.9187$ and $B = 0.7467$	$e^{A+B \ln(H)} \times 0.9812^*$ where $A = 4.0635$ and $B = 0.7467$
<u>Mercury (dissolved)</u>	$1.4 \times 0.85^* = 1.2$	$0.77 \times 0.85^* = 0.65$
<u>Nickel (dissolved)</u>	$e^{A+B \ln(H)} \times 0.998^*$, where $A=0.5173$ and $B=0.8460$	$e^{A+B \ln(H)} \times 0.997^*$, where $A=-2.286$ and $B=0.8460$
<u>Toluene</u>	<u>2000</u>	<u>600</u>
<u>TRC</u>	<u>19</u>	<u>11</u>
<u>Xylene(s)</u>	<u>920</u>	<u>360</u>
<u>Zinc (dissolved)</u>	$e^{A+B \ln(H)} \times 0.978^*$, where $A=0.9035$ and $B=0.8473$	$e^{A+B \ln(H)} \times 0.986^*$, where $A=-0.4456$ and $B=0.8473$

where:

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

$H = \text{Hardness concentration of receiving water in mg/L as CaCO}_3,$

$e^x = \text{base of natural logarithms raised to the x- power,}$

$\ln(H) = \text{natural logarithm of Hardness in milligrams per liter,}$

$* = \text{conversion factor multiplier for dissolved metals, and}$

** = standard to be evaluated using either of the following USEPA approved methods, incorporated by reference at 35 Ill. Adm. Code 301.106: Method OIA-1677, DW: Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry, January 2004, Document Number EPA-821-R-04-001 or Cyanide Amenable to Chlorination, Standard Methods 4500-CN-G (40 CFR 136.3).

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

<u>Constituent</u>	<u>HHS in micrograms per liter ($\mu\text{g/L}$)</u>
<u>Benzene</u>	<u>310</u>
<u>Mercury (total)</u>	<u>0.012</u>
<u>Phenols</u>	<u>860,000</u>

where:

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

g) Numeric Water Quality Standards for Other Chemical Constituents

- 1) Concentrations of the following chemical constituents shall not be exceeded except in waters for which mixing is allowed pursuant to Section 302.102 of this Part.

<u>Constituent</u>	<u>Unit</u>	<u>Standard</u>
<u>Chloride</u>	<u>mg/L</u>	<u>500</u>
<u>Iron (dissolved)</u>	<u>mg/L</u>	<u>1.0</u>
<u>Selenium (total)</u>	<u>mg/L</u>	<u>1.0</u>
<u>Silver (dissolved)</u>	<u>µg/L</u>	<u>$e^{A+B\ln(H)}$ X 0.85*, where A=-6.52 and B=1.72</u>
<u>Sulfate (where H is ≥ 100 but ≤ 500 and C is ≥ 25 but ≤ 500)</u>	<u>mg/L</u>	<u>$[1276.7+5.508(H)-1.457(C)]$ X 0.65</u>
<u>Sulfate (where H is ≥ 100 but ≤ 500 and C is ≥ 5 but < 25)</u>	<u>mg/L</u>	<u>$[-57.478 + 5.79(H) + 54.163(C)]$ X 0.65</u>
<u>Sulfate (where H > 500 and C ≥ 5)</u>	<u>mg/L</u>	<u>2,000</u>

where:

mg/L = milligram per liter,

µg/L = microgram per liter,

H = Hardness concentration of receiving water in mg/L as CaCO₃,

C = Chloride concentration of receiving water in mg/L,

e^x = base of natural logarithms raised to the x-power,

ln(H) = natural logarithm of Hardness in milligrams per liter, and

* = conversion factor multiplier for dissolved metals

- 2) From the effective date of this rule July 1, 2015, until three years after the effective date July 1, 2018, the following concentrations for Chloride and Total Dissolved Solids shall not be exceeded except in waters for which mixing is allowed pursuant to Section 302.102 of this Part.

<u>Constituent</u>	<u>Unit</u>	<u>Standard</u>
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<u>Chloride during the period of May 1 through November 30</u>	<u>mg/L</u>	<u>500</u>
<u>Total Dissolved Solids during the period of December 1 through April 30</u>	<u>mg/L</u>	<u>1,500</u>

- 3) From three years after the effective date of these rules Beginning July 1, 2018, the chloride Chloride and Total Dissolved Solids standards in subsection (g)(2) of this section Section are repealed and the following concentration for Chloride shall not be exceeded except in waters for which mixing is allowed pursuant to Section 302.102 of this Part:

<u>Constituent</u>	<u>Unit</u>	<u>Standard</u>
<u>Chloride</u>	<u>mg/L</u>	<u>500</u>

where:

mg/L = milligram per liter;

- h) Concentrations of other chemical constituents in the South Fork of the South Branch of the Chicago River (Bubbly Creek) shall not exceed the following standards:

<u>CONSTITUENTS</u>	<u>STORET NUMBER</u>	<u>CONCENTRATION (mg/L)</u>
Ammonia Un-ionized (as N*)	00612	0.1
Arsenic (total)	01002	1.0
Barium (total)	01007	5.0
Cadmium (total)	01027	0.15
Chromium (total hexavalent)	01032	0.3
Chromium (total trivalent)	01033	1.0
Copper (total)	01042	1.0
Cyanide (total)	00720	0.10
Fluoride (total)	00951	15.0
Iron (total)	01045	2.0
Iron (dissolved)	01046	0.5
Lead (total)	01051	0.1

Manganese (total)	01055	1.0
Mercury (total)	71900	0.0005
Nickel (total)	01067	1.0
Oil, fats and grease	00550, 00556 or 00560	15.0**
Phenols	32730	0.3
Selenium (total)	01147	1.0
Silver	01077	1.1
Zinc (total)	01092	1.0
Total Dissolved Solids	70300	1500

*For purposes of this ~~section~~ Section the concentration of un-ionized ammonia shall be computed according to the following equation:

$$U = \frac{N}{[0.94412(1 + 10^X) + 0.0559]} \quad \text{where:}$$

where:

$$X = 0.09018 + \frac{2729.92}{(T + 273.16)} - \text{pH}$$

U = Concentration of un-ionized ammonia as N in mg/L

N = Concentration of ammonia nitrogen as N in mg/L

T = Temperature in degrees Celsius

**Oil shall be analytically separated into polar and non-polar components if the total concentration exceeds 15 mg/L. In no case shall either of the components exceed 15 mg/L (i.e., 15 mg/L polar materials and 15 mg/L non-polar materials).

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 302.408 Temperature

- a) For the South Fork of the South Branch of the Chicago River (Bubbly Creek), temperature Temperature-(STORET number (° F) 00011 and (° C) 00010) shall not exceed 34° C (93° F) more than 5% of the time, or 37.8° C (100° F) at any time.
- b) The temperature standards in subsections (c) through (i), will become applicable beginning 3 years after the effective date of this Section July 1, 2018. For a period of 3 years from the effective date of this Section Starting July 1, 2015, the waters designated at 35 Ill. Adm. Code 303 as Chicago Area Waterway System

Aquatic Life Use A, Chicago Area Waterway System and Brandon Pool Aquatic Life Use B, and Upper Dresden Island Pool Aquatic Life Use will not exceed temperature (STORET number (°F) 00011 and (°C) 00010) of 34° C (93° F) more than 5% of the time, or 37.8° C (100° F) at any time.

- c) There shall be no abnormal temperature changes that may adversely affect aquatic life unless caused by natural conditions.
- d) The normal daily and seasonal temperature fluctuations ~~which~~ existed before the addition of heat due to other than natural causes shall be maintained.
- e) The maximum temperature rise above natural temperatures shall not exceed 2.8° C (5° F).
- ~~ef)~~ Water temperature ~~at representative locations in the main river~~ shall not exceed the maximum limits in the applicable table in subsections ~~(b), (c) and (d)~~(g), (h), and (i), during more than one percent of the hours in the 12-month period ending with any month. Moreover, at no time shall the water temperature exceed the maximum limits in the applicable table that follows by more than 1.7 °C (3.0° F).
- eg) Water temperature in the Chicago Area Waterway System Aquatic Life Use A waters listed in 35 Ill. Adm. Code 303.230-235 shall not exceed the limits in the following table in accordance with subsection ~~(ef)~~:

<u>Months</u>	<u>Daily Maximum (°F)</u>
<u>January</u>	<u>60</u>
<u>February</u>	<u>60</u>
<u>March</u>	<u>60</u>
<u>April</u>	<u>90</u>
<u>May</u>	<u>90</u>
<u>June</u>	<u>90</u>
<u>July</u>	<u>90</u>
<u>August</u>	<u>90</u>
<u>September</u>	<u>90</u>
<u>October</u>	<u>90</u>
<u>November</u>	<u>90</u>
<u>December</u>	<u>60</u>

- ~~he)~~ Water temperature in the Chicago Area Waterway System and Brandon Pool Aquatic Life Use B waters listed in 35 Ill. Adm. Code 303.225-240, shall not exceed the limits in the following table in accordance with subsection ~~(ef)~~:

<u>Months</u>	<u>Daily Maximum</u>

	(°F)
<u>January</u>	<u>60</u>
<u>February</u>	<u>60</u>
<u>March</u>	<u>60</u>
<u>April</u>	<u>90</u>
<u>May</u>	<u>90</u>
<u>June</u>	<u>90</u>
<u>July</u>	<u>90</u>
<u>August</u>	<u>90</u>
<u>September</u>	<u>90</u>
<u>October</u>	<u>90</u>
<u>November</u>	<u>90</u>
<u>December</u>	<u>60</u>

- i) Water temperature for the Upper Dresden Island Pool Aquatic Life Use waters, as defined in 35 Ill. Adm. Code 303.237230, shall not exceed the limits in the following table in accordance with subsection (f):

<u>Months</u>	<u>Daily Maximum (°F)</u>
<u>January</u>	<u>60</u>
<u>February</u>	<u>60</u>
<u>March</u>	<u>60</u>
<u>April</u>	<u>90</u>
<u>May</u>	<u>90</u>
<u>June</u>	<u>90</u>
<u>July</u>	<u>90</u>
<u>August</u>	<u>90</u>
<u>September</u>	<u>90</u>
<u>October</u>	<u>90</u>
<u>November</u>	<u>90</u>
<u>December</u>	<u>60</u>

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 302.409 Cyanide for the South Fork of the South Branch of the Chicago River (Bubbly Creek)

Cyanide (total) shall not exceed 0.10 mg/4L in the South Fork of the South Branch of the Chicago River (Bubbly Creek).

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 302.410 ~~Substances~~ Other Toxic to Aquatic Life ~~Substances~~

Any substance or combination of substances toxic to aquatic life not listed in Section 302.407 shall not be present in amounts toxic or harmful to human health, aquatic life or wildlife; except for South Fork of the South Branch of the Chicago River (Bubbly Creek) where the substance shall not exceed one-half of the 96-hour median tolerance limit (96-hour TL_m) for native fish or essential fish food organisms in the South Fork of the South Branch of the Chicago River (Bubbly Creek). All other Chicago Area Waterway System and Lower Des Plaines River waters as designated in Part 35 Ill. Adm. Code 303 shall be free from any substances or combination of substances in concentrations toxic or harmful to human health, or to animal, plant or aquatic life. Individual chemical substances or parameters for which numeric standards are specified in this Subpart are not subject to this Section.

- a) Any substance or combination of substances shall be deemed to be toxic or harmful to aquatic life if present in concentrations that exceed the following:
 - 1) An Acute Aquatic Toxicity Criterion (AATC) validly derived and correctly applied pursuant to procedures set forth in Sections 302.612 through 302.618 of this Part or in Section 302.621 of this Part; or
 - 2) A Chronic Aquatic Toxicity Criterion (CATC) validly derived and correctly applied pursuant to procedures set forth in Section 302.627 or 302.630 of this Part.
- b) Any substance or combination of substances shall be deemed to be toxic or harmful to wild or domestic animal life if present in concentrations that exceed any Wild and Domestic Animal Protection Criterion (WDAPC) validly derived and correctly applied pursuant to Section 302.633 of this Part.
- c) Any substance or combination of substances shall be deemed to be toxic or harmful to human health if present in concentrations that exceed criteria, validly derived and correctly applied, based on either of the following:
 - 1) Disease or functional impairment due to a physiological mechanism for which there is a threshold dose below which no damage occurs calculated pursuant to Sections 302.642 through 302.648 (Human Threshold Criterion) of this Part; or
 - 2) Disease or functional impairment due to a physiological mechanism for which any dose may cause some risk of damage calculated pursuant to Sections 302.651 through 302.658 (Human Nonthreshold Criterion) of this Part.
- d) The most stringent criterion of subsections (a), (b) and (c) shall apply at all points outside of any waters within which, mixing is allowed pursuant to Section 302.102 of this Part. In addition, the AATC derived pursuant to subsection (a)(1)

shall apply in all waters except that it shall not apply within a ZID that is prescribed in accordance with Section 302.102 of this Part.

- e) The procedures of Subpart F set forth minimum data requirements, appropriate test protocols, and data assessment methods for establishing criteria pursuant to subsections (a), (b) and (c). No other procedures may be used to establish such criteria unless approved by the Board in a rulemaking or adjusted standard proceeding pursuant to Title VII of the Act. The validity and applicability of the Subpart F procedures may not be challenged in any proceeding brought pursuant to Title VIII or X of the Act, although the validity and correctness of application of the numeric criteria derived pursuant to Subpart F may be challenged in the proceedings pursuant to subsection (f).
- f) Agency derived criteria may be challenged as follows:
- 1) A permittee may challenge the validity and correctness of application of a criterion derived by the Agency pursuant to this Section only at the time the criterion is first applied in an NPDES permit pursuant to 35 Ill. Adm. Code 309.152 or in an action pursuant to Title VIII of the Act for violation of the toxicity water quality standard. Failure of a person to challenge the validity of a criterion at the time of its first application shall constitute a waiver of the challenge in any subsequent proceeding involving application of the criterion to that person.
 - 2) Consistent with subsection (f)(1), if a criterion is included as, or is used to derive, a condition of an NPDES discharge permit, a permittee may challenge the criterion in a permit appeal pursuant to Section 40 of the Act and 35 Ill. Adm. Code 309.181. In any such ~~that~~ action, the Agency shall include in the record all information upon which it has relied in developing and applying the criterion, whether that information was developed by the Agency or submitted by the Petitioner. The burden of proof shall be on the petitioner to demonstrate that the criterion-based condition is not necessary to accomplish the purposes of subsection ~~(a)~~(f)(1) (see Section 40(a)(1) of the Act), but there is no presumption in favor of the general validity and correctness of the application of the criterion as reflected in the challenged condition.
 - 3) Consistent with subsection (f)(1), in an action in which alleged violation of the toxicity water quality standard is based on alleged excursion of a criterion, the person bringing the action shall have the burdens of going forward with proof and of persuasion regarding the general validity and correctness of application of the criterion.
- g) Subsections (a) through (e) do not apply to USEPA registered pesticides approved for aquatic application and applied pursuant to the following conditions:

- 1) Application shall be made in strict accordance with label directions;
- 2) Applicator shall be properly certified under the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act (7 USC 135 et seq. (1972)); and
- 3) Applications of aquatic pesticides must be in accordance with the laws, regulations and guidelines of all state and federal agencies authorized by law to regulate, use or supervise pesticide applications.

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 302.412 Total Ammonia Nitrogen

- a) This Section does not apply to the South Fork of the South Branch of the Chicago River (Bubbly Creek).
- b) For the Chicago Area Waterway System and the Lower Des Plaines River described in 35 Ill. Adm. Code 303.204 and listed in 35 Ill. Adm. Code 303.220 through 303.240, total ammonia nitrogen must in no case exceed 15 mg/L.
- c) The total ammonia nitrogen acute, chronic, and sub-chronic standards are determined in accordance with the equations in subsections (c)(1) and (c)(2). Attainment of each standard must be determined in accordance with subsections (d) and (e) in mg/L.

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

$$AS = \frac{0.411}{1 + 10^{7.204-pH}} + \frac{58.4}{1 + 10^{pH-7.204}}$$

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

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

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

$$CS = \left\{ \frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}} \right\} (2.85)$$

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

$$CS = \left\{ \frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}} \right\} (1.45 * 10^{0.028*(25-T)})$$

Where T = Water Temperature, degrees Celsius

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

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

$$CS = \frac{\left\{ \frac{0.0577}{1 + 10^{7.688 - \text{pH}}} + \frac{2.487}{1 + 10^{\text{pH} - 7.688}} \right\} (1.45 * 10^{0.504})}{1}$$

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

$$CS = \frac{\left\{ \frac{0.0577}{1 + 10^{7.688 - \text{pH}}} + \frac{2.487}{1 + 10^{\text{pH} - 7.688}} \right\} (1.45 * 10^{0.028(25 - T)})}{1}$$

Where:

T = Water Temperature, degrees Celsius

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

d) Attainment of the Total Ammonia Nitrogen Water Quality Standards.

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

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

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

- e) The water quality standard for each water body must be calculated based on the temperature and pH of the water body measured at the time of each ammonia sample. The concentration of total ammonia in each sample must be divided by the calculated water quality standard for the sample to determine a quotient. The water quality standard is attained if the mean of the sample quotients is less than or equal to one for the duration of the averaging period.
- f) The Early Life Stage Present period occurs from March through October. All other periods are subject to the Early Life Stage Absent period, except that waters listed in 35 Ill. Adm. Code 303.240 are not subject to Early Life Stage Present ammonia limits at any time.

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

(Source: Added at 38 Ill. Reg. _____ effective _____)

SUBPART F: PROCEDURES FOR DETERMINING WATER QUALITY CRITERIA

Section 302.601 Scope and Applicability

This Subpart contains the procedures for determining the water quality criteria set forth in Sections ~~Section~~ 302.210(a), (b) and (c) and 302.410(a), (b) and (c).

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 302.648 Determining the Human Threshold Criterion

The HTC is calculated according to the equation:

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

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 (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 38 Ill. Reg. _____ effective_____)

Section 302.657 Determining the Human Nonthreshold Criterion

The HNC is calculated according to the equation:

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

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 302.102(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 = Aquatic Life Bioconcentration Factor with units of liter per kilogram (L/kg) as derived in Section 302.663.

(Source: Amended at 38 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

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303.227	Non-Contact Recreation Waters and Non-Recreational Waters
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303.235	Chicago Area Waterway System Aquatic Life Use A Waters and Chicago Area Waterway System and Brandon Pool Aquatic Life Use B Waters
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SUBPART C: SPECIFIC USE DESIGNATIONS AND SITE
 SPECIFIC WATER QUALITY STANDARDS

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303.312	Waters Receiving Fluorspar Mine Drainage (Repealed)
303.321	Wabash River Temperature
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303.326	Unnamed Tributary of Salt Creek, Salt Creek, and Little Wabash River
303.331	Mississippi River North Temperature
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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
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<u>303.449</u>	<u>Chicago Sanitary and Ship Canal</u>

SUBPART D: THERMAL DISCHARGES

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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, 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. 18898, effective December 12, 2012; amended in R08-9(C) at 38 Ill. Reg. 5517, effective February 13, 2014; amended in R08-09(D) at 38 Ill. Reg. _____, effective _____>

SUBPART B: NONSPECIFIC WATER USE DESIGNATIONS

Section 303.204 Chicago Area Waterway System and Lower Des Plaines River ~~Outstanding Resource Waters~~

The Chicago Area Waterway System and Lower Des Plaines River Waters are designated to protect for primary contact recreation, incidental contact or non-contact recreational uses (except where designated as non-recreational waters), commercial activity (including navigation and industrial water supply uses), and the highest quality aquatic life and wildlife attainable, limited only by the physical condition of these waters and hydrologic modifications to these waters. ~~Except for the Chicago River, these~~ These waters are required to meet ~~the secondary contact and indigenous aquatic life~~ the standards contained in 35 Ill. Adm. Code 302, Subpart D, but are not required to meet the general use standards or the public and food processing water supply standards of 35 Ill. Adm. Code 302, Subpart B and C, except that the waters designated as Primary Contact Recreation Waters in Section 303.220 must meet the numeric water quality standard for fecal coliform bacteria applicable to protected waters in 35 Ill. Adm. Code 302.209. Designated recreational uses and aquatic life use for each segment of the Chicago Area Waterway System and Lower Des Plaines River are identified in this Subpart. The Chicago River must meet the general use standards for the protection of aquatic life as well as the including the numeric water quality standard for fecal coliform bacteria applicable to protected waters in 35 Ill. Adm. Code 302.209.

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 303.235 Chicago Area Waterway System Aquatic Life Use A Waters and Chicago ~~Area Waterway System and Brandon Pool Aquatic Life Use B Waters~~

- a) ~~Chicago Area Waterways System Aquatic Life Use A Waters~~
- a+) Waters designated as Chicago Area Waterway System Aquatic Life Use A Waters are capable of maintaining, and shall have quality sufficient to protect, aquatic-life populations predominated by individuals of tolerant and intermediately tolerant types that are adaptive to the unique physical conditions, flow patterns, and operational controls necessary to maintain navigational use, flood control, and drainage functions of the waterway system. Such aquatic life may include, but is not limited to, fish species, such as channel catfish, largemouth bass, bluegill, black crappie, spotfin shiner, orangespotted sunfish, common carp, and goldfish.

- b2) Waters designated as Chicago Area Waterway System Aquatic Life Use A Waters are not capable of attaining an aquatic life use consistent with the section 101(a)(2) of the Clean Water Act goal (33 USC 1251(a)(2)).
- c3) The following waters are designated as Chicago Area Waterway System Aquatic Life Use A Waters and must meet the water quality standards of 35 Ill. Adm. Code 302. Subpart D:
- 1A) Upper North Shore Channel from Wilmette Pumping Station to North Side Water Reclamation Plant;
 - 2B) Lower North Shore Channel from North Side Water Reclamation Plant to confluence with North Branch of the Chicago River;
 - 3C) North Branch of the Chicago River from its confluence with North Shore Channel to its confluence with South Branch of the Chicago River and Chicago River;
 - 4D) South Branch of the Chicago River;
 - 5E) Calumet-Sag Channel;
 - 6F) Calumet River from Lake Michigan to its confluence with Grand Calumet River and Little Calumet River;
 - 7G) Little Calumet River from its confluence with Calumet River and Grand Calumet River to its confluence with Calumet-Sag Channel;
 - 8H) Grand Calumet River;
 - 9I) Lake Calumet; and
 - 10J) Lake Calumet Connecting Channel.
- b) ~~Chicago Area Waterway System and Brandon Pool Aquatic Life Use B Waters~~
- 1) ~~Waters designated as Chicago Area Waterway System and Brandon Pool Aquatic Life Use B Waters are capable of maintaining, and shall have quality sufficient to protect, aquatic life populations predominated by individuals of tolerant types that are adaptive to unique physical conditions and modifications of long duration, including artificially constructed channels consisting of vertical sheet pile, concrete and rip-rap walls designed to support commercial navigation, flood control, and drainage functions in deep draft, steep walled shipping channels. Such aquatic life may include, but is not limited to, fish species such as~~

~~common carp, golden shiner, bluntnose minnow, yellow bullhead and green sunfish.~~

- 2) ~~Waters designated as Chicago Area Waterway System and Brandon Pool Aquatic Life Use B Waters are not capable of attaining an aquatic life use consistent with the section 101(a)(2) of the Clean Water Act goal (33 USC 1251(a)(2)).~~
- 3) ~~The following waters are designated as Chicago Area Waterway System and Brandon Pool Aquatic Life Use B Waters and must meet the water quality standards of 35 Ill. Adm. Code 302. Subpart D:~~
 - A) ~~Chicago Sanitary and Ship Canal; and~~
 - B) ~~Lower Des Plaines River from its confluence with Chicago Sanitary and Ship Canal to the Brandon Road Lock and Dam (Brandon Pool).~~

(Source: Amended at 38 Ill. Reg. _____ effective _____)

Section 303.240 Chicago Area Waterway System and Brandon Pool Aquatic Life Use B Waters

- a) Waters designated as Chicago Area Waterway System and Brandon Pool Aquatic Life Use B Waters are capable of maintaining, and shall have quality sufficient to protect, aquatic life populations predominated by individuals of tolerant types that are adaptive to unique physical conditions and modifications of long duration, including artificially constructed channels consisting of vertical sheet-pile, concrete and rip-rap walls designed to support commercial navigation, flood control, and drainage functions in deep-draft, steep-walled shipping channels. Such aquatic life may include, but is not limited to, fish species, such as common carp, golden shiner, bluntnose minnow, yellow bullhead and green sunfish.
- b) Waters designated as Chicago Area Waterway System and Brandon Pool Aquatic Life Use B Waters are not capable of attaining an aquatic life use consistent with the section 101(a)(2) of the Clean Water Act goal (33 USC 1251(a)(2)).
- c) The following waters are designated as Chicago Area Waterway System and Brandon Pool Aquatic Life Use B Waters and must meet the water quality standards of 35 Ill. Adm. Code 302. Subpart D:
 - 1) Chicago Sanitary and Ship Canal; and
 - 2) Lower Des Plaines River from its confluence with Chicago Sanitary and Ship Canal to the Brandon Road Lock and Dam (Brandon Pool).

(Source: Added at 38 Ill. Reg. _____ effective _____)

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

Section 303.449 Chicago Sanitary and Ship Canal

The numeric water quality standards for chloride and Total Dissolved Solids set forth at 35 Ill. Adm. Code 302.407(g) do ~~not~~ apply to the Chicago Sanitary and Ship Canal during the period of December 1 through April 30. Chloride levels in these waters must meet the numeric water quality standards for the protection of aquatic organisms of 620 mg/L as a chronic water quality standard and 990 mg/L as an acute water quality standard for chloride during the period of December 1 through April 30.

(Source: Added at 38 Ill. Reg. _____ effective _____)

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

PART 309
PERMITS

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309.221	Applications - Contents
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309.APPENDIX A References to Previous Rules

AUTHORITY: Implementing Sections 13 and 13.3 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/13, 13.3 and 27].

SOURCE: Adopted in R71-14, at 4 PCB 3, March 7, 1972; amended in R73-11, 12, at 14 PCB 661, December 5, 1974, at 16 PCB 511, April 24, 1975, and at 28 PCB 509, December 20, 1977; amended in R73-11, 12, at 29 PCB 477, at 2 Ill. Reg. 16, p. 20, effective April 20, 1978; amended in R79-13, at 39 PCB 263, at 4 Ill. Reg. 34, p. 159, effective August 7, 1980; amended in R77-12B, at 41 PCB 369, at 5 Ill. Reg. 6384, effective May 28, 1981; amended in R76-21, at 44 PCB 203, at 6 Ill. Reg. 563, effective December 24, 1981; codified at 6 Ill. Reg. 7818; amended in R82-5, 10, at 54 PCB 411, at 8 Ill. Reg. 1612, effective January 18, 1984; amended in R86-44 at 12 Ill. Reg. 2495, effective January 13, 1988; amended in R88-1 at 13 Ill. Reg. 5993, effective April 18, 1989; amended in R88-21(A) at 14 Ill. Reg. 2892, effective February 13, 1990; amended in R91-5 at 16 Ill. Reg. 7339, effective April 27, 1992; amended in R95-22 at 20 Ill. Reg. 5526, effective April 1, 1996; amended in R99-8 at 23 Ill. Reg. 11287, effective August 26, 1999; amended in R02-11 at 27 Ill. Reg. 202, effective December 20, 2002; amended in R03-19 at 28 Ill. Reg. 7310, effective May 7, 2004; amended in R07-9 at 32 Ill. Reg. 14995, effective September 8, 2008; amended at in R08-09(D)_____ at 38 Ill. Reg. _____, effective _____.

SUBPART A NPDES PERMITS

Section 309.141 Terms and Conditions of NPDES Permits

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

- a) Effluent limitations under ~~Sections~~ sections 301 and 302 of the CWA;
- b) Standards of performance for new sources under ~~Section~~ section 306 of the CWA;
- c) Effluent standards, effluent prohibitions, and pretreatment standards under ~~Section~~ section 307 of the CWA;
- d) Any more stringent limitation, including those:

- 1) necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any Illinois statute or regulation (under authority preserved by ~~Sections~~ section 510 of the CWA),
 - 2) necessary to meet any other federal law or regulation, or
 - 3) required to implement any applicable water quality standards, such limitations to include any legally applicable requirements necessary to implement total maximum daily loads established pursuant to ~~Section~~ section 303(d) of the CWA and incorporated in the continuing planning process approved under ~~Section~~ section 303(e) of the CWA and any regulations or guidelines issued pursuant ~~thereto~~ to that statute;
- e) Any more stringent legally applicable requirements necessary to comply with a plan approved pursuant to ~~Section~~ section 208(b) of the CWA;
 - f) Prior to promulgation by the Administrator of the U.S. Environmental Protection Agency of applicable effluent standards and limitations pursuant to ~~Sections~~ sections 301, 302, 306 and 307 of the CWA, such conditions as the Agency determines are necessary to carry out the provisions of the CWA;
 - g) If the NPDES Permit is for the discharge of pollutants into navigable waters from a vessel or other floating craft (except that no NPDES Permit shall be issued for the discharge of pollutants from a vessel or other floating craft into Lake Michigan), any applicable regulations promulgated by the Secretary of the Department in which the Coast Guard is operating, establishing specifications for safe transportation, handling, carriage, storage and stowage of pollutants; and
 - h) If the NPDES Permit is for the discharge of pollutants from other than wet weather point sources into the Lake Michigan Basin as defined at 35 Ill. Adm. Code 303.443:
 - 1) Total Maximum Daily Loads (TMDLs) and Waste Load Allocation (WLA) will be established through either the LaMP or a RAP for an Area of Concern. If a LaMP or RAP has not been completed and adopted, effluent limits shall be established consistent with the other provisions of this Section, including, but not limited to, Additivity, Intake Pollutants, Loading Limits, Level of Detection/Level of Quantification and Compliance Schedules. When calculation of TMDLs or a WLA is incomplete and it is expected that limits established through other provisions will be superseded upon completion of the TMDL or WLA process, those limits shall be identified as interim and the permit shall include a reopener clause triggered by completion of a TMDL or WLA determination. Any new limits brought about through exercise of the reopener clause shall be eligible for delayed compliance dates and

compliance schedules consistent with Section 39(b) of the Act [415 ILCS 5/39(b)], ~~35 Ill. Adm. Code Section 309.148 of this Part~~, and 35 Ill. Adm. Code 352.Subpart H.

- 2) 35 Ill. Adm. Code 302.590 establishes an acceptable additive risk level of one in 100,000 (10^5) for establishing Tier I criteria and Tier II values for combinations of substances exhibiting a carcinogenic or other nonthreshold toxic mechanism. For those discharges containing multiple nonthreshold substances application of this additive standard shall be consistent with this subsection (h).
- A) For discharges in the Lake Michigan Basin containing one or more 2,3,7,8-substituted chlorinated dibenzo-p-dioxins or 2,3,7,8-substituted dibenzofurans, the tetrachloro dibenzo-p-dioxin 2,3,7,8-TCDD toxicity equivalence concentration (TEC_{TCDD}) shall be determined as outlined in subsection (h)(2)(B).
- B) The values listed in the following Table shall be used to determine the 2,3,7,8-TCDD toxicity equivalence concentrations using the following equation:

$$(TEC)_{TCDD} = \sum (C)_x (TEF)_x (BEF)_x$$

WHERE:

$(TEC)_{TCDD}$ = 2,3,7,8-TCDD toxicity equivalence concentration in effluent

$(C)_x$ = Concentration of total chemical x in effluent

$(TEF)_x$ = TCDD toxicity equivalency factor for x

$(BEF)_x$ = TCDD bioaccumulation equivalency factor for x

TABLE

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

1,2,3,4,6,7,8-HpCDF	0.01	0.0
1,2,3,4,7,8,9-HpCDF	0.01	0.4
OCDF	0.001	0.0

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

3) Reasonable potential to exceed.

A) The first step in determining if a reasonable potential to exceed the water quality standard exists for any particular pollutant parameter is the estimation of the maximum expected effluent concentration for that substance. That estimation will be completed for both acute and chronic exposure periods and is termed the PEQ. The PEQ shall be derived from representative facility-specific data to reflect a 95 percent confidence level for the 95th percentile value. These data will be presumed to adhere to a lognormal distribution pattern unless the actual effluent data demonstrates a different distribution pattern. If facility-specific data in excess of 10 data

values is available, a coefficient of variation that is the ratio of the standard deviation to the arithmetic average shall be calculated by the Agency. The PEQ is derived as the upper bound of a 95 percent confidence bracket around the 95th percentile value through a multiplier from the following table applied to the maximum value in the data set that has its quality assured consistent with 35 Ill. Adm. Code 352.410 as appropriate for acute and chronic data sets.

$$\text{PEQ} = (\text{maximum data point})(\text{statistical multiplier})$$

Coefficient of Variation

No. Samples	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
1	1.4	1.9	2.6	3.6	4.7	6.2	8.0	10.1	12.6	15.5	18.7	22.3	26.4
2	1.3	1.6	2.0	2.5	3.1	3.8	4.6	5.4	6.4	7.4	8.5	9.7	10.9
3	1.2	1.5	1.8	2.1	2.5	3.0	3.5	4.0	4.6	5.2	5.8	6.5	7.2
4	1.2	1.4	1.7	1.9	2.2	2.6	2.9	3.3	3.7	4.2	4.6	5.0	5.5
5	1.2	1.4	1.6	1.8	2.1	2.3	2.6	2.9	3.2	3.6	3.9	4.2	4.5
6	1.1	1.3	1.5	1.7	1.9	2.1	2.4	2.6	2.9	3.1	3.4	3.7	3.9
7	1.1	1.3	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.1	3.3	3.5
8	1.1	1.3	1.4	1.6	1.7	1.9	2.1	2.3	2.4	2.6	2.8	3.0	3.2
9	1.1	1.2	1.4	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.8	2.9

10	1.1	1.2	1.3	1.5	1.6	1.7	1.9	2.0	2.2	2.3	2.4	2.6	2.7
11	1.1	1.2	1.3	1.4	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.4	2.5
12	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.9	2.0	2.1	2.2	2.3	2.4
13	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3
14	1.1	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2
15	1.1	1.2	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.1
16	1.1	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.8	1.9	1.9	2.0
17	1.1	1.1	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.7	1.8	1.9	1.9
18	1.1	1.1	1.2	1.3	1.3	1.4	1.5	1.6	1.6	1.7	1.7	1.8	1.9
19	1.1	1.1	1.2	1.3	1.3	1.4	1.5	1.5	1.6	1.6	1.7	1.8	1.8
20	1.1	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7
30	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	1.4
40	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2
50	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1
60 or greater	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

- i) If the PEQ is less than or equal to the water quality standard, there is no reasonable potential and no limit will be established in the permit.
 - ii) If the PEQ is more than the water quality standard, the Agency will proceed to consideration of dilution and mixing pursuant to subsection (h)(4).
- B) If facility-specific data of 10 or less data values is available, an alternative PEQ shall be derived using the table in subsection (h)(3)(A) assuming a coefficient of variation of 0.6, applied to the maximum value in the data set that has its quality assured consistent with 35 Ill. Adm. Code 352.410.
- i) If the PEQ is less than or equal to the water quality standard, there is no reasonable potential and no limit will be established in the permit.
 - ii) If the PEQ exceeds the water quality standard, an alternative PEQ will be calculated using the maximum value in the data set and a multiplier of 1.4. If the alternative PEQ also exceeds the water quality standard, the Agency will proceed to consider dilution and mixing pursuant to subsection (h)(4).
 - iii) If the PEQ exceeds the water quality standard but the alternative PEQ is less than or equal to the standard, the Agency will either proceed to consider dilution and mixing pursuant to subsection (h)(4), or will incorporate a

monitoring requirement and reopener clause to reassess the potential to exceed within a specified time schedule, not to exceed one year. In determining which of these options to use in any individual application, the Agency shall consider the operational and economic impacts on the permittee and the effect, if any, deferral of a final decision would have on an ultimate compliance schedule if a permit limit were subsequently determined to be necessary.

- C) The Agency shall compare monthly average effluent data values, when available, with chronic aquatic life, human health and wildlife standards to evaluate the need for monthly average water quality based effluent limitations (WQBELs). The Agency shall use daily effluent data values to determine whether a potential exists to exceed acute aquatic life water quality standards.
 - D) The Agency may apply other scientifically defensible statistical methods for calculating PEQ for use in the reasonable potential analysis as provided for in Procedure 5.b.2 of ~~Appendix~~ appendix F to 40 CFR 132, incorporated by reference at 35 Ill. Adm. Code 301.106.
 - E) Regardless of the statistical procedure used, if the PEQ for the parameter is less than or equal to the water quality standard for that parameter, the Agency shall deem the discharge not to have a reasonable potential to exceed, and a WQBEL shall not be required unless otherwise required under 35 Ill. Adm. Code 352.430.
- 4) If the PEQ for a parameter is greater than the particular water quality standard, criteria or value for that parameter, the Agency will assess the level of treatment being provided by the discharger. If the discharger is providing (or will be providing) a level of treatment consistent with the best degree of treatment required by 35 Ill. Adm. Code 304.102(a), the PEQ derived under subsection (h)(3) shall be compared to a preliminary effluent limitation (PEL) determined by applying an appropriate mixing zone or a default mixing zone to the discharge. Mixing opportunity and dilution credit will be considered as follows:
- A) Discharges to tributaries of the Lake Michigan Basin shall be considered to have no available dilution for either acute or chronic exposures, and the PEL will be set equivalent to the water quality standard unless dilution is documented through a mixing zone study.
 - B) Bioaccumulative chemicals of concern (BCCs):

- i) No mixing shall be allowed for new discharges of BCCs commencing on or after December 24, 1997. The PEL will be set equivalent to the water quality standard.
 - ii) Mixing shall be allowed for discharges of BCCs ~~which~~ that existed as of December 24, 1997 in accordance with the requirements of 35 Ill. Adm. Code 302.530.
 - C) Direct discharges to the Open Waters of Lake Michigan shall have a default mixing allowance of 2:1 for acute standards, criteria or values and 10:1 for chronic standards, criteria or values if the discharge configuration indicates that the effluent readily and rapidly mixes with the receiving waters. If ready and rapid mixing is in doubt the Agency shall deny any default dilution or mixing allowance and require a mixing or dispersion study to determine the proper dilution allowance. If the discharger applies for more than the default dilution or mixing allowance, it must submit a mixing or dispersion study to justify its request. Whenever a mixing or dispersion study is available, it shall be used to determine dilution or mixing allowance in lieu of the default allowance.
- 5) Preliminary effluent limitations calculations.
 - A) The preliminary effluent limitation (PEL) is calculated in a simple mass balance approach reflecting the dilution allowance established in subsection (h)(4):

$$\text{WQS} = [(Q_e)(\text{PEL}) + (Q_d)(C_d)] / [Q_e + Q_d] \text{ or}$$

$$\text{PEL} = [\text{WQS}(Q_e + Q_d) - (Q_d)(C_d)] / Q_e$$

WHERE:

WQS = applicable water quality standard, criteria or value
 Q_e = effluent flowrate
 Q_d = allowable dilution flowrate
 C_d = background pollutant concentration in dilution water
 - B) The representative background concentration of pollutants to develop TMDLs and WLAs calculated in the absence of a TMDL shall be established as follows:
 - i) "Background" represents all pollutant loadings, specifically loadings that flow from upstream waters into the specified watershed, water body, or water body segment for which a TMDL or WLA in the absence of a TMDL is being

developed and enter the specified watershed, water body, or water body segment through atmospheric deposition, chemical reaction, or sediment release or resuspension.

- ii) When determining what available data are acceptable for use in calculating background, the Agency shall use its best professional judgment, including consideration of the sampling location and the reliability of the data through comparison, in part, to detection and quantification levels. When data in more than 1 of the data sets or categories described in subsection (h)(5)(B)(iii) exists, best professional judgment shall be used to select the data that most accurately reflects or estimates background

concentrations. Pollutant degradation and transport information may be considered when using pollutant loading data to estimate a water column concentration.

- iii) The representative background concentration for a pollutant in the specified watershed, water body, or water body segment shall be established on a case-by-case basis as the geometric mean of: acceptable water column data; water column concentrations estimated through use of acceptable caged or resident fish tissue data; or water column concentrations estimated through the use of acceptable or projected pollutant loading data. When determining the geometric mean of the data for a pollutant that includes values both above and below the detection level, commonly accepted statistical techniques shall be used to evaluate the data. If all of the acceptable data in a data set are below the detection level for a pollutant, then all the data for the pollutant in that data set shall be assumed to be zero.

6) Water quality based effluent limitations.

- A) If the PEQ is less than or equal to the PEL, it will be concluded that there is no reasonable potential to exceed. Under such circumstances a permit limit for that contaminant will not be set unless otherwise justified under one or more provisions of 35 Ill. Adm. Code 352.430.
- B) If the PEQ is equal to or greater than the PEL, and the PEQ was calculated using a data set of more than 10 values, a WQBEL will be included in the permit. If the PEQ was calculated using a data set of less than or equal to 10 values, and the alternative PEQ calculated under subsection (h)(3) (B) also exceeds the PEL, a WQBEL will be included in the permit.

- C) If the PEQ was calculated using a data set of less than or equal to 10 values, and the PEQ is greater than the PEL but the alternative PEQ is less than the PEL, the Agency will either establish a WQBEL in the permit or incorporate a monitoring requirement and reopener clause to reassess potential to exceed within a specified time schedule, not to exceed one year. In determining which of these options to use in any individual application, the Agency shall consider the operational and economic impacts on the permittee and the effect, if any, deferral of a final decision would have on an ultimate compliance schedule if a permit limit were subsequently determined to be necessary.
- D) The WQBEL will be set at the PEL, unless the PEL is appropriately modified to reflect credit for intake pollutants when the discharged water originates in the same water body to which it is being discharged. Consideration of intake credit will be limited to the provisions of 35 Ill. Adm. Code 352.425.
- E) The reasonable potential analysis shall be completed separately for acute and chronic aquatic life effects. When WQBELs are based on acute impacts, the limit will be expressed as a daily maximum. When the WQBEL is based on chronic effects, the limit will be expressed as a monthly average. Human health and wildlife based WQBELs will be expressed as monthly averages. If circumstances warrant, the Agency shall consider alternatives to daily and monthly limits.
- i) Best management practices (BMPs) to control or abate the discharge of chloride when:
- 1) Authorized under section 402(p) of the CWA for the control of storm water discharges;
 - 2) Numeric effluent limitations are infeasible; or
 - 3) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

(Source: Amended at 38 Ill. Reg. _____ effective _____)

IT IS SO ORDERED.

I, John T. Therriault, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on March 19, 2015, by a vote of 5-0.

A handwritten signature in black ink, reading "John T. Therriault". The signature is written in a cursive style with a long horizontal stroke at the end.

John T. Therriault, Clerk
Illinois Pollution Control Board