

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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MAR 26 2010

IN THE MATTER OF:)
)
WATER QUALITY STANDARDS AND)
EFFLUENT LIMITATIONS FOR THE)
CHICAGO AREA WATERWAY SYSTEM)
AND THE LOWER DES PLAINES RIVER:)
PROPOSED AMENDMENTS TO 35 Ill.)
Adm. Code Parts 301, 302, 303 and 304)

STATE OF ILLINOIS
Pollution Control Board

R08-09 (Sub-docket D)
(Rulemaking – Water)

NOTICE OF FILING

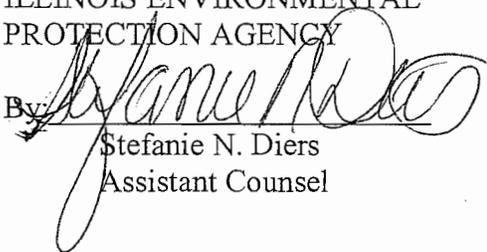
PC#286

To: John Therriault, Clerk
Marie Tipsord, Hearing Officer
James R. Thompson Center
Illinois Pollution Control Board
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

SEE ATTACHED SERVICE LIST

PLEASE TAKE NOTICE that I have filed today with the Illinois Pollution Control Board ILLINOIS EPA'S FILING OF COMMENTS RECEIVED FROM US EPA ON PROPOSED WATER QUALITY STANDARDS FOR THE CHICAGO AREA WATERWAY AND LOWER DES PLAINES RIVER, a copy of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: 
Stefanie N. Diers
Assistant Counsel

Dated: March 24, 2010
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276
(217) 782-5544

THIS FILING IS SUBMITTED ON RECYCLED PAPER

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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MAR 25 2010

STATE OF ILLINOIS
Pollution Control Board

IN THE MATTER OF:)
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 WATER QUALITY STANDARDS AND)
 EFFLUENT LIMITATIONS FOR THE) R08-09 (Sub-docket D)
 CHICAGO AREA WATERWAY SYSTEM) (Rulemaking – Water)
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 PROPOSED AMENDMENTS TO 35 Ill.)
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**ILLINOIS EPA'S FILING OF COMMENTS RECEIVED FROM US EPA ON
 PROPOSED WATER QUALITY STANDARDS FOR THE CHICAGO AREA
 WATERWAY AND LOWER DES PLAINES RIVER**

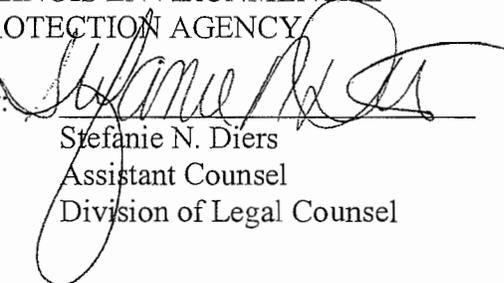
The Illinois Environmental Protection Agency ("Illinois EPA") hereby submits the following information to the Board:

1. Illinois EPA has recently received written comments from US EPA concerning Illinois EPA's proposed water quality standards for the Chicago Area Waterway and Lower Des Plaines River. (See Attached letter from US EPA dated January 29, 2010).
2. Illinois EPA has previously filed comments received from US EPA.

Therefore, US EPA's comments are being filed in an attempt to keep an up to date record in this matter.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
 PROTECTION AGENCY

By: 

Stefanie N. Diers
 Assistant Counsel
 Division of Legal Counsel

Date: March 24, 2010
 1021 N. E. Grand Avenue East
 P.O. Box 19276
 Springfield, Illinois 62794-9276
 217-782-5544



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JAN 29 2010

REPLY TO THE ATTENTION OF:

WQ-16J

Marcia Willhite, Chief
Bureau of Water
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, Illinois 62794-9276

Dear Ms. Willhite:

Thank you for the opportunity to provide written comments on the October 2007 proposed water quality standards (WQS) for the Chicago Area Waterway (CAW) and Lower Des Plaines River (LDPR). Our review also covered the supporting material in the Statement of Reasons. Our comments are enclosed and represent input from both Region 5 and EPA headquarters. We did not include comments on recreational uses and recreational criteria issues. We will provide comments on those issues separately. We would like Illinois to consider our comments prior to the Illinois Pollution Control Board's taking final action on the proposed WQS.

Our comments are focused on the following specific areas: 1) the designated uses proposed for the CAW and LDPR; 2) temperature criteria derived to protect aquatic life; 3) chemical criteria for the protection of aquatic life; and 4) criteria for the protection of human health. EPA's comments on human health standards are new comments and resulted from our recent review of the proposed rule and Statement of Reasons. We ask that you carefully review this section, since it is composed of new questions regarding the proposed rule.

We look forward to working with you to address any questions you have and hope that these comments will help to identify areas where the proposed standards may benefit from additional analysis and possible revision. We believe that continued progress on the CAW and LDPR rulemaking is extremely important and hope to work with you to ensure that this rulemaking is completed by Illinois in a timely manner.

If you have any questions, please contact me at (312) 886-6758, or Candice Bauer of my staff at (312) 353-2106. If you would like us to set up a call so that we can walk through our comments, please let me know.

Sincerely,

A handwritten signature in black ink that reads "Linda Holst". The signature is written in a cursive style with a large initial "L" and a distinct "H".

Linda Holst
Chief, Water Quality Branch

Enclosure

cc: Rob Sulski, IEPA

**U.S. EPA Comments on October 2007 Version of Proposed Water Quality Standards
Revisions for the Chicago Area Waterway and Lower Des Plaines River**

Designated Uses

- 1. Lower Des Plaines River/Dresden Island Pool Use:** Page 52 of Illinois EPA's **Statement of Reasons (SoR)** states that the "Upper Dresden Island pool is capable of maintaining a biological condition that minimally meets the CWA's aquatic life goal." Illinois should confirm whether Illinois intends for the proposed use for that water body to be consistent with the uses specified in section 101(a)(2) of the Clean Water Act (CWA) and, if not, to explain and justify an alternative position.
- 2. Protection of Human Health:** In the Chicago Area Waterway (CAW) and Lower Des Plaines River (LDPR), fishing was one of the most common activities observed during the recreation use survey (either most common or second most common activity following power boating in 9 of 10 waterbodies surveyed in CAW) and fishing was documented as an "actual use" in the LDPR use attainability analysis (UAA). Furthermore, the SoR states that "human health exposure to environmental conditions of the waterway is primarily, if not exclusively, attributable to exposure through consumption of fish from the system" (pg. 72). While fishing may be "banned" in certain water bodies, like parts of the Chicago Sanitary and Ship Canal (CSSC), fishing was witnessed in all waters, excluding the South Fork of the Chicago River. EPA has numerous published human health criteria recommendations that have been derived to protect human health from the exposure of contaminated fish (organism-only exposure criteria). **EPA recommends that Illinois review available information on fishing use in the CAW and LDPR and consider revising the proposed designated uses and criteria to include protection of human health via fish consumption. (See also: Criteria for the Protection of Human Health.)**

Temperature Criteria for the Protection of Aquatic Life

- 1. We have a number of questions due to the lack of detail in the description of the temperature criteria presented in the SoR. First, what information was used to support the choice of the 8 RAS, 8 RAS plus white sucker, and 27 RAS as the basis of summer maximum and period average criteria (for Aquatic Life Use B, Aquatic Life Use A, and Upper Dresden Island Pool Aquatic Life Use, respectively)? Specifically, EPA recommends that Illinois include additional analyses regarding whether these criteria are protective of existing and designated uses. Second, the SoR does not state which of the six thermal input parameters serves as the basis of the summer temperature criteria. It appears that the summer period criteria were derived based upon survival endpoints. EPA recommends that Illinois update the SoR to state that the survival endpoints were used for criteria derivation (if this is correct) and explain why the period average criteria derived from survival endpoints when available information was presented to show that these temperatures may lead to avoidance or reduced**

growth? Third, how was the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) data summarized and used for the November – February timeframe (i.e., which data was included and what statistic was used for criteria derivation). Furthermore, why was the MWRDGC used for the October 1-15th and November – February timeframe?

2. **Illinois EPA is proposing a year round acute criterion of 88.7°F or 90.3°F depending on the designated use. However, because this does not take into account seasonal temperature differences, we have questions as to whether it will be protective of aquatic life during the winter months. Illinois should provide justification to demonstrate that year-round application of these acute criteria, without considering seasonal effects in the winter months, is protective of resident aquatic life and/or fish passage through the system. If Illinois is unable to do so, Illinois should consider revising the proposed standards to include seasonally-based acute criteria based upon an appropriate analysis of ambient background temperature conditions present in these waters. Illinois should use a similar rationale for derivation of both the period average and daily maximum criteria. Specifically, Illinois should consider revising the daily maximum criteria to be consistent with the recommendations presented in Attachment GG and HH of Illinois EPA’s initial submission to the Board. It appears that the proposed period average criteria are, in some time periods, based upon the data summarized in the column labeled “RAS 1 Option E”(Table 5, Attachment GG **As such, EPA recommends that Illinois consider deriving seasonally-based daily maximum criteria based upon the information provided in Option E or other adequately-justified and scientifically-defensible methods.****
3. **Illinois EPA utilized the monitoring location on the CSSC at Route 83 to set the background temperature for the periods of March 1- June 15, September 16-30 and October 16-31. Illinois EPA asserts that this location was representative of background conditions not influenced by Lake Michigan or thermal sources (page 83 SoR). However, the MBI report states on pages 16-17 that this location appears to be affected by thermal discharges and instead relied upon the monitoring location on the Cal Sag at Route 83. We have questions regarding the appropriateness of using the CSSC location as a basis for temperature criteria during the time periods listed above. EPA recommends that Illinois consider revising the proposed criteria using the Route 83 Cal-Sag station ambient temperatures for the aforementioned time periods.**
4. **Illinois EPA used the MWRDGC effluent temperature data to define ambient temperatures, which is the basis of the proposed criteria for October 1-15th, and the months of November through February since MWRDGC effluent makes up most of the flow of the system. However, we have questions regarding whether this sets artificially-high winter temperatures for the segments upstream of the MWRDGC discharge locations including the North Shore Channel upstream of the Northside WRP, Chicago River, Calumet River, Grand Calumet River, and Little Calumet River upstream of the Calumet WRP . As a result, the proposed criteria may not result in ambient temperatures sufficient to support fish reproduction. EPA recommends that Illinois consider revising the criteria applicable to aforementioned segments for the non-summer**

months based upon data from monitoring locations upstream of the wastewater treatment plants. This would result in different temperature criteria for segments based upon whether or not the ambient temperatures are influenced by wastewater treatment plant discharge during the non-summer months.

5. Section 302.408 Parts b through d of the proposed rules contains tables of applicable temperature criteria throughout the year. The proposed rules state that instream temperatures "...shall not exceed the period average limits in the following table during any period on an average basis." It is unclear what is meant by "an average basis." EPA recommends that Illinois consider revising the proposed rule to more clearly state how compliance will be determined.
6. Section 302.408 allows for exceedences to the thermal standards. Illinois EPA proposes to allow an increase of 3.6°F above the proposed standards to occur for 2% of the hours in the year. We have questions regarding the adequacy of this provision, and note that it is greater than Illinois criteria for General Use waters (increases of 3°F for 1% of hours). Therefore, it is not clear that this provision in the rule will be protective of aquatic life. EPA recommends that Illinois provide a rationale for proposal of these allowed excursions, including information with regards to how these provisions protect aquatic life. Specifically, Illinois should analyze information on the survival of species included in the applicable RAS for each designated use at the temperatures allowed by this provision, or could consider deleting this provision.

Chemical Criteria for the Protection of Aquatic Life

1. **Unnatural sludge:** The SoR states that no changes are being proposed in the narrative criteria in section 302.403. However, this section is not shown in the proposed rule. Illinois should either ensure that section 302.403 is included in the adopted water quality standards, or provide a justification for deleting it.
2. **Ammonia Criteria:** We have questions as to whether the ammonia criteria that Illinois EPA is proposing for Aquatic Life Use B waters would protect larval fish during periods when early life stages are present (defined as the months of March through October). Specifically, there are no proposed ammonia criteria for the protection of early life stages. Available data suggest that larval fish are present in the waters during these times and we question whether a sufficient justification has been given to support the decision to omit criteria necessary to protect this life-stage. In addition, Illinois EPA omitted the statement from its General Use standards that provided for the application of early life stage criteria outside of March through October timeframe if these life stages were documented to be present. While the SoR states that this heightened level of conservatism is not needed in waters in the CAW and LDPR, no monitoring data is provided to support that statement. Therefore, EPA recommends that Illinois consider revising the proposed ammonia criteria for Aquatic Life Use B waters to ensure protection of larval fish that are present in these waters during March through October; and that Illinois consider including a narrative statement that would

extend the early life stages criteria to other parts of the year when these stages are present.

- 3. Dissolved Oxygen Criteria:** We have questions as to whether the proposed dissolved oxygen criteria for Aquatic Life Use B waters would protect larval fish during periods when early life stages are present (defined as the months of March through July). Specifically, there are no proposed daily minimum dissolved oxygen criteria for the protection of early life stages. As a result, less stringent criteria are applicable to Aquatic Life Use B waters during summer months. Available data suggest that larval fish are present in the waters during these times and we question whether a sufficient justification has been given to support the decision to omit criteria necessary to protect this life-stage. Furthermore, we have questions as to whether the proposed dissolved oxygen criteria for Aquatic Life Use A and B waters that protect against “chronic, sublethal effects – such as inhibited growth.” Due to the omission of the 7-day and 30-day mean of daily means criteria, the SoR explains that these criteria allow “considerable loss of production.” As such, the proposed criteria may not provide for the long-term maintenance of the aquatic community. We question whether the SoR provides sufficient justification for how these criteria would be protective of the designated uses. **Therefore, EPA recommends that Illinois consider revising the proposed dissolved oxygen criteria to ensure protection of larval fish that are present in these waters during the summer months. Additionally, EPA recommends a review of the chronic dissolved oxygen criteria. Illinois should consider either including the 7-day and 30-day mean criteria or providing additional justification as to the protectiveness of the proposed criteria.**
- 4. Cadmium Criteria:** Illinois EPA concluded in the SoR that the current EPA national 304(a) recommendation cannot be met due to suspension of contaminated sediments from barge traffic and proposed a cadmium criteria that is less stringent than the current recommendation. EPA is not aware of any information to suggest that dredging or capping the contaminated sediments would not be effective to remedy the human-caused condition or would be too costly and, therefore, questions whether adequate justification has been given to support the application of the 40 CFR 131.10(g) factor to this criteria. **EPA recommends that Illinois consider revising the proposed criteria to be as protective as the 2001 EPA national 304(a) cadmium criteria recommendation.** If the 2001 cadmium criteria cannot be met instream or dischargers cannot meet the criteria, site-specific criteria or variances could be proposed at a later date. Alternatively, Illinois could present information to support the decision that cadmium sediment contamination is a human-caused condition that *cannot be remedied*. However, Illinois EPA must submit this information to EPA for review to ensure that such a justification is appropriate and consistent with applicable laws and regulations.
- 5. Chloride Criterion:** Illinois EPA is proposing a chloride standard of 500mg/l for the CAW and LDPR. Illinois EPA’s rationale is that 500 is between EPA’s current national 304(a) recommendations for acute and chronic criteria of 230mg/L and 860 mg/L, respectively. EPA questions the adequacy of this rationale. **As such, EPA recommends that Illinois consider revising the proposed chloride criteria to be as protective as the existing 304(a) criteria or utilize the newest information available in the EPA**

draft chloride criteria, which was forwarded to Illinois EPA on May 22, 2009 in an email from E. Hammer to R. Sulski and others, to derive appropriate criteria.

6. **Lead Criteria:** Illinois EPA's proposed dissolved lead criteria are not as stringent as EPA's current 304(a) recommendations and we question whether sufficient justification is given in the SoR for the proposed criteria. A better justification was provided in Illinois EPA testimony to the Illinois Pollution Control Board (Robert Mosher, dated October 28, 1994), but we would like to review Exhibits N and O referenced in that testimony. These documents do not appear to be in our files. Specifically, these exhibits have the data reviewed and used by Illinois EPA in the lead criteria derivation. Review of this data, and any additional data that may have become available since 1994, will be needed in order to evaluate the appropriateness of the proposed criteria. As such, EPA requests that Illinois EPA provide the information summarized above in order to adequately justify the criteria or revise the proposed criteria to be consistent with EPA's latest recommendation.
7. **Silver Criterion:** Although Illinois EPA is proposing a criterion for silver that is less stringent than EPA's 304(a) criteria recommendations, Illinois EPA inaccurately states that it is adopting a water quality standard that is exactly the same as the October 1980 Ambient Water Quality Criteria for Silver. Illinois EPA's proposed dissolved metal criteria for silver has a different y-intercept (presented as EPA's bA and Illinois EPA's A terms). The result of this difference is that Illinois EPA's proposed criteria are less stringent than EPA's recommendation. As such, EPA recommends that Illinois EPA review the criteria and its justification for accuracy and propose changes to either the criteria or its justification to ensure that the proposed criteria are appropriate.
8. **Fluoride and Manganese Criteria:** Illinois EPA has proposed to delete the water quality criteria for fluoride and manganese as "out of date" standards. However, Illinois EPA is currently engaging in the derivation and adoption of aquatic life criteria for fluoride and manganese (as well as boron) to protect aquatic life for General Use waters. There are no national EPA recommended numeric criteria for fluoride and manganese for the protection of aquatic life. However, if the adoption of fluoride and manganese aquatic life criteria is necessary to protect designated uses in other waters in Illinois, it would appear that such criteria should also be applicable to the CAW and LDPR. EPA recommends that when aquatic life criteria for fluoride, manganese, and boron are adopted for the state, Illinois also apply these criteria to the CAW and LDPR. If these new aquatic life criteria are not adopted prior to the completion of the CAW rulemaking, EPA recommends that Illinois EPA consider keep the existing fluoride and manganese criteria until a time when the new criteria can be adopted in their place.
9. **Selenium criterion:** Illinois EPA proposed a total selenium water quality criterion of 1mg/L (or 1000 ug/L). This criterion is less stringent than EPA's recommended chronic criterion of 5 ug/L. While EPA acknowledges that the Agency is in the process of determining whether or not to update the selenium criterion to a fish-tissue based criterion, EPA recommends that Illinois EPA consider revising the proposed

criteria to be consistent with either the current chronic criteria recommendation of 5ug/L or the draft fish-tissue based selenium criteria.

- 10. Omission of Criteria for which EPA has Published Recommendations:** The CAW and LDPR, like all other water bodies in Illinois, must have criteria to protect the adopted designated uses. EPA, from time to time, publishes new criteria and revised criteria are developed in order to ensure protection of designated uses. EPA recommends that Illinois EPA review new EPA 304(a) criteria recommendations and consider revising, as necessary, the proposed water quality standard for the CAW and LDPR. Specifically, EPA recommends that Illinois EPA conduct a review of whether or not it is necessary to adopt numeric criteria for recently published 304(a) recommended criteria including Copper, Diazinon, Methyl Tertiary-Butyl Ether (MTBE), Nonylphenol, and Tributyltin. Illinois EPA should provide a detailed description of this review and its conclusions in the SoR and revise its current standards proposal to include these parameters if such action is determined to be necessary. In the future, EPA recommends that Illinois EPA conduct regular reviews of new information with regards to criteria that may be necessary to protect the designated uses of the CAW and LDPR and update these criteria as needed.

Criteria for the Protection of Human Health

- 1. Fishing is a Documented Activity:** As discussed above, the CAW and LDPR are used for fishing, and presumably, this fish is then eaten. EPA recommends that Illinois EPA determine if additional human health criteria are warranted to adequately protect human health from the consumption of contaminated fish caught in the CAW and LDPR based upon review of all EPA recommended criteria for the protection of human health (for the consumption of organism only). Furthermore, if the proposed water quality standards are revised to include protection of human health, EPA recommends that Illinois EPA consider revising (rather than deleting) the water quality criteria for phenol and barium to be as protective as EPA's current human health water quality criteria recommendations for these parameters (860 mg/L and 1 mg/L, respectively).
- 2. Mercury Human Health Standard:** Illinois EPA is proposing to adopt a mercury human health criterion equivalent to EPA's 1984 ambient water quality criterion for mercury (0.012ug/L); however, EPA's current 2001 mercury human health criteria recommendation is to adopt fish tissue-based methyl-mercury criteria (0.3 mg/kg). EPA recommends that Illinois consider adopting the fish-tissue based methyl-mercury criterion and/or translating the methyl-mercury tissue criterion into a water column criteria that is applicable to the CAW and LDPR to replace the proposed mercury human health criterion, as we question whether this criterion adequately considers bioaccumulation.
- 3. Benzene Human Health Standard:** Illinois EPA is proposing to adopt a benzene human health criteria (310 ug/L) that is not as stringent as EPA's recommended 304(a) criteria for the protection of human health (organism-only exposure criterion of 51ug/L at

a risk factor of 1×10^{-6} , which is the same risk factor as used in Illinois' approved human health procedure in Subpart F). Justification has not been given to support the derivation of the proposed criteria, and, as such, Illinois EPA has not shown whether or not the criterion is appropriate. **EPA recommends that Illinois EPA consider revising the proposed benzene criterion to be as protective as EPA's 304(a) criterion or provide justification as to the appropriateness of the proposed criterion by reviewing the derivation of the criterion for consistency with EPA's current human health methodology (published in 2000).**

Service List for R08-9

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STATE OF ILLINOIS
COUNTY OF SANGAMON

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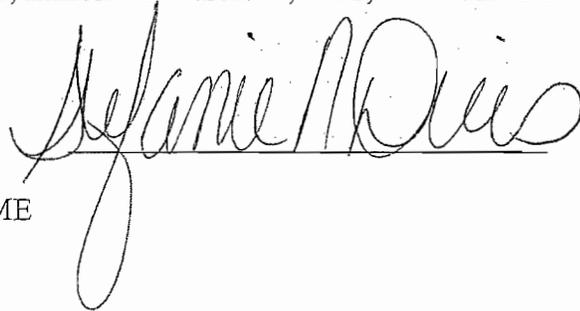
PROOF OF SERVICE

I, the undersigned, on oath state that I have served the attached ILLINOIS EPA'S
FILING OF COMMENTS RECEIVED BY US EPA ON PROPOSED WATER QUALITY
STANDARDS FOR THE CHICAGO AREA WATERWAY AND LOWER DES PLAINES
RIVER upon the person to whom it is directed by placing it an envelope addressed to:

John Therriault, Clerk
Marie Tipsord, Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

SEE ATTACHED SERVICE LIST

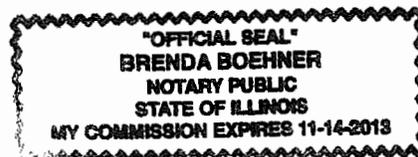
and mailing it First Class Mail from Springfield, Illinois on March 24, 2010, with sufficient
postage affixed.



SUBSCRIBED AND SWORN TO BEFORE ME

This 24th day of March, 2010

Brenda Boehner
Notary Public



THIS FILING IS SUBMITTED ON RECYCLED PAPER