

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

NOTICE OF FILING

To: ALL COUNSEL OF RECORD
(Service List Attached)

PLEASE TAKE NOTICE that on the 17th day of June, 2011, I electronically filed with the Office of the Clerk of the Illinois Pollution Control Board, the **Written Responses to Prairie Rivers Network and Sierra Club's Pre-Filed Questions for MWRDGC's Witness Adrienne D. Nemura.**

Dated: June 17, 2011.

**METROPOLITAN WATER RECLAMATION
DISTRICT OF GREATER CHICAGO**

By: /s/ Fredric P. Andes
One of Its Attorneys

Fredric P. Andes
David T. Ballard
BARNES & THORNBURG LLP
One North Wacker Drive, Suite 4400
Chicago, Illinois 60606
(312) 357-1313

PROOF OF SERVICE

The undersigned attorney certifies, under penalties of perjury pursuant to 735 ILCS 5/1-109, that I caused a copy of the foregoing, **Notice of Filing** and the **Written Responses to Prairie Rivers Network and Sierra Club's Pre-Filed Questions for MWRDGC's Witness Adrienne D. Nemura** to be served via First Class Mail, postage prepaid, from One North Wacker Drive, Chicago, Illinois, on the 17th day of June, 2011, upon the attorneys of record on the attached Service List.

/s/ David T. Ballard

David T. Ballard

SERVICE LIST
R08-9 (Rulemaking - Water)

Richard J. Kissel
Roy M. Harsch
Drinker, Biddle, Gardner, Carton
191 North Wacker Drive
Suite 3700
Chicago, IL 60606-1698

Claire A. Manning
Brown, Hay & Stephens LLP
700 First Mercantile Bank Building
205 South Fifth Street
P.O. Box 2459
Springfield, IL 62705-2459

Deborah J. Williams, Assistant Counsel
Stefanie N. Diers, Assistant Counsel
IEPA
Division of Legal Counsel
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Katherine D. Hodge
Monica T. Rios
Matthew C. Read
Hodge Dwyer & Driver
3150 Roland Avenue
P.O. Box 5776
Springfield, IL 62705-5776

Thomas W. Dimond
Ice Miller LLP
200 West Madison Street
Suite 3500
Chicago, IL 60606-3417

Jerry Paulsen
Cindy Skrukrud
McHenry County Defenders
132 Cass Street
Woodstock, IL 60098

Robert VanGyseghem
City of Geneva
1800 South Street
Geneva, IL 60134-2203

Lisa Frede
Chemical Industry Council of Illinois
1400 East Touhy Avenue
Suite 100
Des Plaines, IL 60019-3338

Matthew J. Dunn, Chief
Office of the Attorney General
Environmental Bureau North
Suite 1800
69 West Washington Street
Chicago, IL 60602

James L. Daugherty, District Manager
Thorn Creek Basin Sanitary District
700 West End Avenue
Chicago Heights, IL 60411

Andrew Armstrong
Environmental Counsel
Environmental Division
69 West Washington Street
Suite 1800
Chicago, IL 60602

Tracy Elzemeyer, General Counsel
American Water Company Central Region
727 Craig Road
St. Louis, MO 63141

Electronic Filing - Received, Clerk's Office, June 17, 2011

Bernard Sawyer
Thomas Granato
Metropolitan Water Reclamation District
6001 West Pershing Road
Cicero, IL 60804-4112

Keith I. Harley
Elizabeth Schenkier
Chicago Legal Clinic, Inc.
205 West Monroe Street
4th Floor
Chicago, IL 60606

W.C. Blanton
Husch Blackwell Sanders LLP
4801 Main Street
Suite 1000
Kansas City, MO 64112

Traci Barkley
Prairie Rivers Networks
1902 Fox Drive
Suite 6
Champaign, IL 61820

James Huff, Vice President
Huff & Huff, Inc.
915 Harger Road
Suite 330
Oak Brook, IL 60523

Joe Deal
City of Chicago - Mayor's Office of
Intergovernmental Affairs
121 North LaSalle Street
City Hall - Room 509
Chicago, IL 60602

Irwin Polls
Ecological Monitoring and Assessment
3206 Maple Leaf Drive
Glenview, IL 60025

Frederick D. Keady, P.E., President
Vermilion Coal Company
1979 Johns Drive
Glenview, IL 60025

James E. Eggen
Director of Public Works & Utilities
City of Joliet, Department of Public
Works & Utilities
921 East Washington Street
Joliet, IL 60431

Ann Alexander, Sr. Attorney
Natural Resources Defense Council
2 North Riverside Plaza
Floor 23
Chicago, IL 60606

Beth Steinhorn
2021 Timberbrook
Springfield, IL 62702

Dr. Thomas J. Murphy
DePaul University
2325 North Clifton Street
Chicago, IL 60614

Vicky McKinley
Evanston Environment Board
223 Grey Avenue
Evanston, IL 60202

Kenneth W. Liss
Andrews Environmental Engineering
3300 Ginger Creek Drive
Springfield, IL 62711

Electronic Filing - Received, Clerk's Office, June 17, 2011

Marc Miller, Senior Policy Advisor
Jamie S. Caston, Policy Advisor
Office of Lt. Governor Pat Quinn
Room 414 State House
Springfield, IL 62706

Bob Carter
Bloomington Normal Water
Reclamation District
P.O. Box 3307
Bloomington, IL 61702-3307

Albert Ettinger, Senior Staff Attorney
Jessica Dexter
Environmental Law & Policy Center
35 East Wacker Drive
Suite 1300
Chicago, IL 60601

Kay Anderson
American Bottoms RWTF
One American Bottoms Road
Sauget, IL 62201

Tom Muth
Fox Metro Water Reclamation District
682 State Route 31
Oswego, IL 60543

Kristy A. N. Bulleit
Brent Fewell
Hunton & Williams LLC
1900 K Street, NW
Washington, DC 20006

Jack Darin
Sierra Club
Illinois Chapter
70 East Lake Street
Suite 1500
Chicago, IL 60601-7447

Lyman C. Welch
Manager, Water Quality Programs
Alliance for the Great Lakes
17 North State Street
Suite 1390
Chicago, IL 60602

Marie Tipsord, Hearing Officer
John Therriault, Assistant Clerk
Illinois Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, IL 60601

Mark Schultz
Regional Environmental Coordinator
Navy Facilities and Engineering Command
201 Decatur Avenue
Building 1A
Great Lakes, IL 60088-2801

Stacy Meyers-Glen
Openlands
25 East Washington
Suite 1650
Chicago, Illinois 60602

Susan M. Franzetti
Nijman Franzetti LLP
10 South LaSalle Street
Suite 3600
Chicago, IL 60603

Jeffrey C. Fort
Ariel J. Teshner
Sonnenschein Nath & Rosenthal LLP
233 South Wacker Drive
Suite 7800
Chicago, IL 60606-6404

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

**WRITTEN RESPONSES TO PRAIRIE RIVERS NETWORK AND SIERRA CLUB'S
PRE-FILED QUESTIONS FOR MWRDGC'S WITNESS ADRIENNE D. NEMURA**

Pursuant to the Board's Order of June 1, 2011, the following responses are provided to Prairie Rivers Network and Sierra Club's Pre-Filed Questions for Adrienne D. Nemura.

I. QUESTIONS REGARDING THE PROPOSED WET WEATHER LIMITED USE DESIGNATION (SUBDOCKET C)

1. In what other places have there been wet weather use designations regarding aquatic life uses?

RESPONSE: I do not know of any other places.

2. To your knowledge, has U.S. EPA ever approved a wet weather use designation for aquatic life uses? If so, please describe.

RESPONSE: I do not know of any instances.

3. On page 2 of your testimony, you state that it is not possible to eliminate or fully treat these wet weather sources in the foreseeable future. Is it possible eliminate or treat them partially?

RESPONSE: Once the Tunnel and Reservoir Plan (TARP) is completed, there will still be some CSO discharges. As to treatment for dissolved oxygen, it may be theoretically possible to provide some sort of additional treatment at some locations but there would be constraints on land availability. Conventional treatment is not appropriate for diluted wet weather discharges

and I am not sure that there are feasible treatment alternatives for the high-rate CSO discharges. The same is probably true for other wet weather discharges.

4. Are their benefits to elimination or treating CSOs in addition to reducing the effect of CSOs on dissolved oxygen levels?

RESPONSE: Possibly. But treatment of CSOs to reduce the biochemical oxygen demand would not necessarily reduce bacteria.

5. How do you believe that the construction of the Deep Tunnel system (TARP) should bear on this issue?

RESPONSE: TARP will help but you are still going to have wet weather sources, so you will still need the WWLU.

6. What is your understanding of when the TARP will be completed?

RESPONSE: I believe that based on the most recent information (Exhibit 565 for the Board filed on January 3, 2011), TARP is currently scheduled to be completed in 2029.

7. Will this proposal be equally necessary after such time as TARP is completed?

RESPONSE: CSOs will still occur even after TARP is fully completed, and there will still be other wet weather sources. So yes, the WWLU will still be necessary, although it may need to be exercised less.

8. Do you believe that MWRD will complete the TARP if all regulatory requirements that it do so are eliminated?

RESPONSE: I'm not aware of any proposals to eliminate the regulatory requirements to complete TARP.

9. On page 3 of your testimony, you refer to a "finding" by the District that the DO criteria now applicable to the CAWS cannot be met through advanced wastewater treatment at the MWRD's three major plants or by the capture and treatment of CSOs. Further, you cite a

document, MWRD Report 09-50. Where is this finding contained in the cited document? Is the finding contained in some other document?

RESPONSE: Page 1 of MWRD Report 09-50, which I have attached, has that statement.

Similar statements have been made in previous annual water quality reports. I don't know if this statement appears in other documents.

10. Have you seen data that is adequate to see daily changes in DO levels at the locations? Are there any areas within the cause which show diurnal patterns of DO levels due to the effects of photosynthesis? If so, please describe them? If there are no sites showing such effects of photosynthesis, do you know why not?

RESPONSE: I am not sure whether "daily" in this question refers to day-to-day changes or changes within a day. If it is day-to-day, then yes, data show daily changes. These plots are in the District's annual CDOM reports. If the question refers to changes within a day, I have not studied the system from a perspective of evaluating photosynthesis. Changes associated with photosynthesis would not be related to biochemical oxygen demand from wet weather sources.

11. Do you disagree with Mr. Zenz's testimony regarding the possibility of meeting DO standards through use of aeration equipment?

RESPONSE: Dr. Zenz relied on model simulations to develop his cost estimates about the technologies needed to comply with proposed dissolved oxygen standards. I would say that the model simulations were based on two periods that were selected to be representative, and because of the nature of wet weather events, there will be years with different conditions. I would not make definitive conclusions that if the technologies that were simulated were implemented, that you could achieve full compliance with water quality standards in all hydrologic periods.

12. Why is it "appropriate to establish a [wet weather designation] based on the existing system" (p. 4) if the TARP is going to lessen or eliminate any of the CSOs.

RESPONSE: This is because CSOs are not the only source of negative impact from wet weather; other sources, such as urban stormwater runoff, highway runoff, and overland runoff to the tributaries are not going away even after TARP is completed. The standards under discussion are for current and future conditions. It doesn't make sense to set a standard based on something that you know won't be attained in the near future and probably won't be attained even after TARP is fully implemented because there will still be some CSO discharges and other wet weather sources.

13. Is the study in the record in which it is purportedly shown that even with elimination of CSOs wet weather conditions would continue to adversely impact dissolved oxygen conditions?

RESPONSE: The study was referenced in my earlier testimony in Attachment 4. This was a model simulation where all of the gravity CSOs were eliminated.

- a. How severe would the DO problem be if all CSOs were eliminated? Would all portions of the CAWS continue to have DO problems if CSOs were eliminated?

RESPONSE: In my testimony, it is clear that for some events (specifically the July 25, 2001 and August 2-3, 2001 events) eliminating the gravity CSOs would not solve the dissolved oxygen problems during wet weather.

- b. Could the limited problems that continue to exist after CSOs were eliminated be addressed with treatment of the CSOs or aeration?

RESPONSE: I do not know of any feasible way to treat or eliminate the biochemical oxygen demand in the remaining CSO discharges after TARP is implemented. It's possible that aeration could help but we don't know what would be needed.

II. QUESTIONS REGARDING THE PROPOSED STANDARDS AND CRITERIA WHICH ARE NECESSARY TO MEET THE MWRD'S PROPOSED AQUATIC LIFE USE DESIGNATIONS:

1. Has any state approved criteria that allow DO levels to fall below 1.5 mg/L?

RESPONSE: The Chesapeake Bay criteria include a 1.0 mg/L minimum criterion for certain waters. These criteria were developed by the Chesapeake Bay Program and have been or are in the process of being adopted by the State of Maryland, the District of Columbia, and the Commonwealth of Virginia. I don't know of any specific instances where states have evaluated the periodic need for lower dissolved oxygen specifically for wet weather events. The CAWS is the first system I know where this has been evaluated.

2. Has U.S. EPA ever approved a state standard that allowed DO levels to fall below 1.5 mg/L?

RESPONSE: Again, US EPA adopted the Chesapeake Bay criteria.

3. Do fish kills sometimes go unreported?

RESPONSE: Possibly.

4. Are there forms of aquatic life that cannot swim away from low oxygen conditions that could be harmed by days of DO levels below 2 mg/L?

RESPONSE: Do you mean benthic macroinvertebrates, like clams or mussels? I think that in the CAWS, they are more affected by the sediment and toxicity throughout the system. I have not studied whether the worms that exist in the CAWS would be harmed by periods of low dissolved oxygen. But again, the WWLU will not make the existing conditions worse.

5. Have you reviewed any studies that consider the effect of low DO conditions on native mussels or other species that might live in the CAWS?

RESPONSE: No. I would defer to Ms. Wasik on this issue. I believe that Unionidae mussels have not been found in the CAWS because of habitat limitations.

6. On page 5 of your testimony you state that the “WWLU would not be applied during a wet weather event when dissolved oxygen levels were greater than or equal to the dissolved oxygen criterion.” What does this mean and what, if any, practical consequences does it have on how protective or unprotective the proposed criterion is?

RESPONSE: This was something to help the public understand that even though a WWLU could be applied because of a wet weather event, the District would not need to exercise it. I do not believe it has any practical consequences (for this system) as to how protective or unprotective the proposed criteria are.

7. On page 13 of your proposal it is stated that under the District’s proposal, one location will receive additional treatment. Why?

RESPONSE: My statement was that “this location” (which is Main Street on the North Shore Channel) would receive additional treatment. This is because Marquette University’s model simulations showed that flow augmentation would be needed at this location to achieve the District’s proposed criteria.

ATTACHMENT

MWRDGC (2009). REPORT NO. 09-50: CONTINUOUS DISSOLVED OXYGEN MONITORING IN THE DEEP-DRAFT CHICAGO WATERWAY SYSTEM DURING 2008. Monitoring and Research Department, August 2009.