

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

**NOTICE OF FILING**

To:

John Therriault, Assistant Clerk  
Illinois Pollution Control Board  
100 West Randolph, Suite 11-500  
Chicago, IL 60601-7447

Stefanie N. Diers, Assistant Counsel  
Illinois Environmental Protection  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276

Marie Tipsord, Hearing Officer  
Illinois Pollution Control Board  
100 West Randolph, Suite 11-500  
Chicago, IL 60601-7447

Persons on the attached service list

Please take notice that on the 3<sup>rd</sup> Day of February, 2010, I filed with the Office of the Clerk of the Illinois Pollution Control Board the attached **Motion of Environmental Groups to Sever, Open Subdocket, and Proceed to Decision Concerning Recreational Use Issues**, a copy of which is hereby served upon you.



By: \_\_\_\_\_  
Ann Alexander, Natural Resources Defense Council

Dated: February 3, 2010

Ann Alexander  
Senior Attorney  
Natural Resources Defense Council  
2N. Riverside Plaza, Suite 2250  
Chicago, Illinois 60606  
312-651-7905  
312-663-9920 (fax)  
[AAlexander@nrdc.org](mailto:AAlexander@nrdc.org)

**CERTIFICATE OF SERVICE**

I, Ann Alexander, the undersigned attorney, hereby certify that I have served the attached **Motion of Environmental Groups to Sever, Open Subdocket, and Proceed to Decision Concerning Recreational Use Issues** on all parties of record (Service List attached), by depositing said documents in the United States Mail, postage prepaid, from 227 W. Monroe, Chicago, IL 60606, before the hour of 5:00 p.m., on this 3<sup>rd</sup> Day of February, 2010.

A handwritten signature in blue ink that reads "Ann Alexander". The signature is written in a cursive style.

---

Ann Alexander, Natural Resources Defense Council

**Service List**

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

Bernard Sawyer and Thomas Grant  
Metropolitan Water Reclamation District  
6001 West Pershing Road  
Cicero, IL 60650-4112

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

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

Kevin G. Desharnais, Thomas W. Diamond  
and Thomas V. Skinner  
Mayer, Brown LLP  
71 South Wacker Drive  
Chicago, IL 60606-4637

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

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

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

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

Katherine D. Hodge and Monica T. Rios  
Hodge Dwyer Zeman  
3150 Roland Avenue  
P.O. Box 5776  
Springfield, IL 62705-5776

Charles W. Wesselhoft and James T. Harrington  
Ross & Hardies  
150 North Michigan Avenue  
Suite 2500  
Chicago, IL 60601-7567

Margaret P. Howard  
Hedinger Law Office  
2601 South Fifth Street  
Springfield, IL 62703

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

Keith I. Harley and Elizabeth Schenkier  
Chicago Legal Clinic, Inc.  
205 West Monroe, 4<sup>th</sup> Floor  
Chicago, IL 60606

Electronic Filing - Received, Clerk's Office, February 3, 2010

William Richardson, Chief Legal Counsel  
Illinois Department of Natural Resources  
One Natural Resources Way  
Springfield, IL 62702

Fred L. Hubbard  
Attorney at Law  
16 West Madison  
P.O. Box 12  
Danville, IL 61834

Lisa Frede  
Chemical Industry Council of Illinois  
2250 E. Devon Avenue  
Suite 239  
Des Plaines, IL 60018-4509

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

Sharon Neal  
Commonwealth Edison Company  
125 South Clark Street  
Chicago, IL 60603

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

Georgie Vlahos  
Naval Training Center  
2601A Paul Jones Street  
Great Lakes, IL 60088-2845

Cathy Hudzik  
City of Chicago, Mayor's Office of Intergovernmental Affairs  
121 North LaSalle Street  
City Hall – Room 406  
Chicago, IL 60602

Dennis L. Duffield  
Director of Public Works & Utilities  
City of Joliet, Department of Public Works & Utilities  
921 E. Washington Street  
Joliet, IL 60431

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

Ann Alexander, Senior Attorney  
Natural Resources Defense Council  
2 N Riverside Plaza, Suite 2250  
Chicago, IL 60606

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

Beth Steinhorn  
2021 Timberbrook  
Springfield, IL 62702

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

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

Electronic Filing - Received, Clerk's Office, February 3, 2010

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

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

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

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

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

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

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

Jeffrey C. Fort and Ariel Tescher  
Sonnenschein Nath & Rosenthal LLP  
7800 Sears Tower  
233 S. Wacker drive  
Chicago, IL 60606-6404

Marie Tipsord, Hearing Officer  
John Therriault, Assistant Clerk  
Illinois Pollution Control Board  
100 West Randolph, Suite 11-500  
Chicago, IL 60601-7447

Stacy Myers-Glen  
Openlands  
25 East Washington, Suite 1650  
Chicago, IL 60602

Susan Hedman and Andrew Armstrong, Environmental Counsel  
Environmental Bureau  
Office of the Illinois Attorney General  
69 West Washington, Suite 1800  
Chicago, IL 60602

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

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

Ronald M. Hill and Margaret T. Conway  
Metropolitan Water Reclamation District of Greater Chicago  
100 East Erie Street, Room 301  
Chicago, IL 60611

Frederic P. Andes, Carolyn S. Hesse and David T. Ballard  
Barnes & Thornburg LLP  
One North Wacker Drive, Suite 4400  
Chicago, IL 60606

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

**MOTION OF ENVIRONMENTAL  
GROUPS TO SEVER, OPEN SUBDOCKET, AND PROCEED TO  
DECISION CONCERNING RECREATIONAL USE ISSUES**

Pursuant to 35 Ill. Admin. Code 101.408, the Natural Resources Defense Council, Openlands, Sierra Club – Illinois Chapter, Southeast Environmental Task Force, Environmental Law and Policy Center, Friends of the Chicago River, and Alliance for the Great Lakes (collectively, “Environmental Groups”) move the Pollution Control Board (“Board”) for an order creating severing and opening a subdocket to address issues in the proceeding concerning the proposed Chicago Area Waterway System (“CAWS”) recreational use designations, which are now ripe for decision. Specifically, the Environmental Groups request creation of a subdocket concerning the following elements of the CAWS rule proposal submitted by the Illinois Environmental Protection Agency (“IEPA”):

1. The proposed designations of “limited contact recreation,” “non-contact recreation,” and “non-recreation” uses of CAWS waterways set forth in IEPA Proposed Rule Nos. 303.220, 303.225, and 303.227; and
2. The proposed technology-based fecal coliform discharge limit supporting those use designations set forth in IEPA Proposed Rule No. 304.224.

A separate subdocket is clearly appropriate given that recreational use involves a set of issues almost entirely separate and distinct from the aquatic life use issues also included in R08-09. All testimony concerning recreational use has now concluded; the hearings moving forward will involve extensive and time-consuming additional testimony concerning the unrelated aquatic life issues; and this proceeding has already set a record as the longest-running Board rulemaking hearing.

The Environmental Groups state as follows in support of their motion:

**I. Procedural Background**

IEPA's rule proposal

On October 26, 2007, IEPA filed with the Board its Proposed Amendments to 35 Ill. Adm. Code Parts 301, 302,303 and 304, accompanied by a Statement of Reasons. The proposal was effectively divided into two subject areas: proposed recreational use designations and proposed aquatic life use designations. With respect to recreational use, various portions of the CAWS were upgraded from secondary contact use to "limited contact recreation," "non-contact recreation," or "non-recreational." With respect to aquatic life use, new designations were defined for Aquatic Use A and B and for Upper Dresden Pool.

The proposal included substantial changes to water quality standards and criteria supporting the aquatic life use designations. However, IEPA decided to postpone setting standards and criteria to support the recreational use designations in view of ongoing research being conducted by both the Metropolitan Water Reclamation District ("MWRD") and the United States Environmental Protection Agency ("USEPA"). Specifically, as discussed in the Statement of Reasons at 42-45, USEPA has been working since 2004 on developing new criteria for "indicator bacteria," i.e., bacteria such as E.Coli and fecal coliform that are not pathogenic

but are used by regulatory agencies as an indicator of the presence of harmful organisms.<sup>1</sup>

Additionally, MWRD was at that time conducting a risk assessment (i.e., a “paper” study without human test subjects), and had also commissioned an epidemiological study concerning the human health impact of pathogens in the CAWS to be performed by the University of Illinois at Chicago (“UIC”). The risk assessment has been completed<sup>2</sup>, but the epidemiological study is still underway. There is no formal commitment to a completion date for the epidemiological study, although MWRDGC estimated in 2008 that the study would be completed in early 2010<sup>3</sup>, after which it will undergo a peer review process prior to publication.

Notwithstanding its decision to defer setting water quality standards pending the ongoing studies and USEPA standard-setting, IEPA made a determination to impose its widely-used technology-based discharge standard for indicator bacteria in order to protect the proposed uses and provide more immediate protection of public health, in recognition of the increasing recreational value of the CAWS. See Statement of Reasons at 93. Specifically, IEPA proposed a requirement that discharges to the CAWS between March and November not exceed 400 colony forming units per 100 milliliters (“cfu/100 ml”) of fecal coliform (an indicator bacteria), which is the standard currently in effect for discharges into general use waters throughout the state. The purpose of this technology-based standard was to ensure that the disinfection equipment is installed and working properly. See Statement of Reasons at 45, 92-93.

<sup>1</sup> A document introduced at hearing indicates that new or revised criteria will be issued by October, 2012. See Settlement Agreement Between Natural Resources Defense Council and USEPA, and the National Association of Clean Water Agencies, marked at hearing as Exhibit 58, at 6.

<sup>2</sup> Report prepared for MWRDGC by Geosyntec entitled “Dry and Wet Weather Risk Assessment of Human Health Impacts of Disinfection vs. No Disinfection of the Chicago Area Waterways System” April 2008 (“Risk Assessment”), marked at hearing as Exhibit 71.

<sup>3</sup> See MWRDGC Motion to Stay IPCB R08-09 at 10 (June 12, 2008).

Hearings concerning the proposal

Hearings on the rule proposal commenced in January 2008 with IEPA's presentation, which concluded in May 2008. At that time, the Hearing Officer issued an order defining two phases for the remainder of the hearing: the first phase would address the use designations, and the second phase would address the supporting water quality standards and criteria. Prefiled testimony and questions concerning first-phase witnesses addressing use designation were due August, 2008. Additional prefiling deadlines and hearing dates are to be set for the second-phase issues upon conclusion of the use designation portion of the hearing. See Hearing Officer Order dated May 19, 2008.

Pursuant to that order, interested parties submitted prefiled testimony for approximately 50 first-phase witnesses in August, 2008. These witnesses' testimony concluded on January 14, 2010. At this point, a total of 37 days of hearing have been held concerning this rulemaking, beating the previous record of 31 days.

Based on the Hearing Officer's May 19, 2008 order, the next step in the proceeding will be to commence the second phase, concerning water quality standards and criteria supporting the designated uses, by establishing due dates for prefiled witness testimony on the subject. A conference to discuss second-phase scheduling will take place on February 5, 2010.

**II. Basis for the Motion**

At this juncture, maintaining both recreational use issues and unrelated aquatic life issues in the same docket will unnecessarily delay decision on the essential question of whether MWRD should be required to disinfect its sewage effluent into the CAWS, an issue on which all prefiled testimony has now been heard. Therefore, the Environmental Groups move to sever the recreational use issues from the aquatic life issues and create separate subdockets for these

issues, pursuant to the Board's rules. Those rules provide at 35 Ill. Admin. Code 101.408 that "Upon motion of any party or on the Board's own motion, in the interest of convenient, expeditious, and complete determination of claims, and where no material prejudice will be caused, the Board may sever claims involving any number of parties." This procedure has been used by the Board on multiple occasions to facilitate rulemaking in dockets involving disparate subject matter. See, e.g. In the Matter of: Nonhazardous Special Waste Hauling and the Uniform Program: Amendments to 35 Ill. Adm. Code 809, R99-18 (Rulemaking-Land), 1998 Ill. Env. Lexis 617, 7 (Dec. 17, 1998) (Granting IEPA motion to sever used oil management and oil transport rules from substantively different hazardous waste transport rules); In the Matter of: Triennial Water Quality Review: Amendments to 35 Ill. Adm. Code 302.202, 302.208, 302.212, 302.213, 302.407, 304.122 and 304.301 (Lead, Mercury and Ammonia Nitrogen), R-94-1 (Rulemaking-Water), 1996 Ill. Env. Lexis 3, 1-2 (Jan. 4, 1996) (Severing water quality standards rulemaking in order to proceed with mercury and lead standards without delay caused by opposition to ammonia standards); and In the Matter of: Toxic Air Contaminants List, R90-1, 1991 Ill. Env. Lexis 987, 6 (Nov. 21, 1991) (Granting motion to sever in order to "allow quick adoption of toxic air contaminants list while preserving issue of reporting by existing sources.").

Once a subdocket has been created, the Board should proceed to decision on the recreational use issues. All testimony concerning recreational use has been completed, and the Board now has all evidence before it necessary to render decision expeditiously concerning those issues. As discussed infra, neither the ongoing epidemiological study commissioned by MWRD nor the ongoing research and standard-setting by USEPA will provide any additional information on which the Board should base its decision.<sup>4</sup> By the same token, there would be no prejudice

<sup>4</sup> These ongoing studies may well be taken into account in establishing water quality standards supporting recreational use in the future, but that is not the issue before the Board.

to any party, because there is no possible outcome of this ongoing research would support rejection of IEPA's proposed recreational use designations.

**A. The Recreational Use Issues and the Aquatic Life Issues are Almost Entirely Unrelated in Substance**

There is no material connection between the issues pertinent to the proposed recreational use designations and the proposed aquatic life use designations. The witnesses who have testified concerning the recreational use designation have all addressed either questions regarding pathogens (their presence, associated health risk, and technology for addressing them), or questions regarding the type and frequency of recreational uses (kayaking, canoeing, fishing, etc.). Specifically, recreational use witnesses have provided testimony concerning the type and source of sewage pathogens in the CAWS, measuring human and animal health risk from these pathogens, disinfection technology and its efficacy, the cost of disinfection, the impact of CSOs on instream pathogen levels, the quality and value of MWRD's health risk studies (the epidemiological study and the risk assessment), current and projected level of use of the CAWS recreational resources, and construction projects and government and private initiatives that encourage use of the CAWS.

By contrast, the aquatic life use designations are all based on considerations of ecosystem health and tolerance for polluting constituents other than pathogens – e.g., metals, dissolved oxygen, and heat. Accordingly, witnesses who have testified to date concerning these designations have addressed the types of species present in the CAWS and Lower Des Plaines, the types that would be present if water quality were improved, the toxicity of various metals to aquatic life, the responses of fish to temperature changes, the presence or absence of early life stage organisms, and the overall quality of the habitat and potential for its improvement.

Although there may be occasional minimal intersection between the recreational use issues and

the aquatic life issues, they are in every meaningful sense separate.

Moreover, as noted in the Background section and discussed further below, the two issues additionally differ in that there are no instream water quality standards and criteria proposed to support the proposed recreational uses. All of the proposed standards and criteria pertain to aquatic life use, not recreational use. The only measure proposed in connection with the recreational use standards is the technology-based effluent discharge standard that is used statewide "to assure that disinfection technologies are functioning properly."<sup>5</sup> Thus, the upcoming second-phase proceedings concerning standards and criteria will be entirely unrelated to the proposed recreational use designations.

For these reasons, interests of convenience and judicial economy weigh in favor of creation of a separate subdocket for the recreational use issues.

**B. The Board Should Proceed to Decision on the Proposed Recreational Use Designations Once a Subdocket Has Been Created**

Once a subdocket for the recreational use issues is created, the Board should proceed to decision on those issues immediately. After two full years of hearings over a record-setting number of days, the Board now finally has before it all witness testimony and other evidence concerning this issue presented by all interested parties: IEPA, MWRD, the Environmental Groups, and various industrial users of the CAWS who have chosen to weigh in. Although the Hearing Officer's May 19, 2008 order requires additional hearing dates and testimony in the second phase of the proceeding concerning water quality standards and criteria supporting the proposed use designations, no such standards and criteria were proposed to support the recreational use designations (only the technology-based discharge standard of 400 cfu/100 ml). Accordingly, the second phase proceedings will concern solely aquatic life use issues, and will

<sup>5</sup> IEPA Statement of Reasons at 92.

not address recreational use issues at all.

There is thus no reason to delay decision concerning the proposed recreational use designations and the associated technology-based discharge standard. IEPA's proposed recreational safety measures should not be held hostage to potentially lengthy hearings on unrelated issues. While there is no way to know at this juncture how long the second-phase hearings will last, we can say with a degree of confidence that they will not be over quickly. The hearing officer will need to schedule deadlines for prefiled testimony and questions at some date reasonably in the future. She will then schedule hearing dates for however many witnesses there are – and if past experience in this case is any guide, those dates will occur only sporadically due to the complexities of scheduling. As a rough estimate, it is probably fair to say that we would be fortunate to conclude second-phase proceedings in this matter within a year. The Board should use that lengthy interval of time to consider and render a decision on the recreational use issues that are now ripe, rather than simply allowing them to gather dust.

It is not strictly necessary, in deciding whether to proceed to decision, for the Board to evaluate on the merits the public health urgency of implementing disinfection. Regardless of whether effluent disinfection will in fact support the proposed designated uses by reducing exposure to harmful pathogens – a substantive question the Board will ultimately decide in evaluating IEPA's proposal – the procedural issue on this severance motion is whether that question can be resolved by the Board sooner rather than later. That said, this Board should also take into consideration the relative risks and benefits of an earlier versus a delayed decision on recreational use issues in view of the parties' positions on the issue of public health. It is the position of IEPA and the Environmental Groups that disinfection will reduce the risk of illness to kayakers, canoeists, and other recreators whom IEPA's proposal aims to protect. It is the

position of MWRD that disinfection will not substantially reduce that risk.<sup>6</sup> If the Board ultimately determines that IEPA and the Environmental Groups are correct, then there would be significant public health benefit in reaching that determination sooner rather than later. But if the Board determines that MWRD is correct, there is no harm done by an earlier decision to that effect, and no particular benefit to a delayed decision. This balance of risks clearly weighs against further delay – particularly where that delay is entirely unnecessary.

**C. The Ongoing Research Studies Cannot Justify Delaying Decision on the Recreational Use Issues**

As discussed above and in IEPA's Statement of Reasons, MWRD is currently conducting an epidemiological study of CAWS recreation. Although we are aware of no formal commitment to a completion date, estimates made in 2008 suggest that the study may be completed in 2010<sup>7</sup>, followed by a period of peer review prior to publication. To the extent MWRD may suggest that these ongoing studies justify yet more delay in the Board's decision regarding recreational use standards, it is clearly wrong.

IEPA has indicated that the results of this study may be relevant to a future rulemaking setting CAWS water quality standards for indicator bacteria, in conjunction with the large-scale re-evaluation of indicator bacteria being conducted by USEPA that is expected to conclude in 2012.<sup>8</sup> The results of these studies, and any other relevant ongoing research, may assist IEPA in a future determination of whether designated recreational uses are being protected.

However, IEPA has appropriately determined that these studies are not necessary to support its basic, and rather obvious, conclusion that disinfection is appropriate to reduce public exposure to sewage-related pathogens – a conclusion already reached by regulators pretty much

<sup>6</sup> See Risk Assessment.

<sup>7</sup> See *infra* n. 3.

<sup>8</sup> Statement of Reasons at 42-45.

everywhere in the nation except here. The questions of what specific instream level of waterborne pathogens represents support of the designated recreational uses, and which indicator bacteria tests most accurately measure that level, can appropriately be informed by epidemiological research of the sort being conducted by USEPA and UIC. However, the basic question of whether sewage-related waterborne pathogens represent a risk to human health, and whether reducing the level of waterborne pathogens through disinfection reduces that risk, does not require more epidemiological research to answer. Simply put, we do not need more studies to conclude that sewage germs in the water are bad for people. The first-order question whether to disinfect sewage effluent – as is now done in virtually every major metropolitan area in the United States and virtually every Illinois municipality of any size except Chicago – is a no-brainer.

As stated at hearing by Dr. Peter Orris, the Chief of Service for Occupational and Environmental Medicine at UIC Hospital, a senior colleague of the lead researcher for the MWRD-commissioned epidemiological study (Dr. Samuel Dorevitch), and witness for the Environmental Groups, we have known “from the time of antiquity” of the risks associated with recreating in sewage-contaminated water; and that “[i]f you recreationally use polluted water, you get it in your system and it correlates with disease.” It is not necessary, he testified, to “reprove that for these particular rivers just around Chicago,” or to conduct an epidemiological study to “raise that level of proof in the face of such a public health well established consensus.”<sup>9</sup>

He concluded in his testimony,

[B]ased on my extensive experience with the science of epidemiology, and my understanding of both its capabilities and limits, I believe that delaying disinfection at the MWRD facilities pending the outcome of the single study being conducted by my colleagues at the UIC School of Public Health on behalf of MWRD would be seriously misguided. It has long been established that

<sup>9</sup> Transcript of hearing dated April 15, 2009 (“April 15 Transcript”) at 113-114.

waterborne pathogens associated with sewage are hazardous to public health. Perhaps no other area of medicine has been as well established for as long. No single epidemiological study – no matter how well designed and executed, and no matter what the ultimate result – is a sufficient basis to refuse to address waterborne pathogens in the CAWS.<sup>10</sup>

In any event, it has been established at hearing that a negative result in an epidemiological study – i.e., a failure to detect a statistically significant risk – cannot appropriately inform a determination that the risk does not exist and disinfection is not necessary. As explained at hearing by Dr. Marc Gorelick, a professor in the Departments of Pediatrics and Population Health at the Medical College of Wisconsin, Chief of the Section of Emergency Medicine in the Department of Pediatrics, and author of peer-reviewed epidemiological research concerning the public health impacts of waterborne sewage pathogens<sup>11</sup>, epidemiological studies are an exercise in “looking for a needle in a haystack.”<sup>12</sup> Specifically, he explained,

The types of waterborne pathogens associated with sewage frequently cause diarrhea and stomach upset, and occasionally fever. These types of symptoms are, of course, extremely common. Millions of cases of diarrhea, fever, and vomiting occur every year in this country that having nothing to do with waterborne pathogens. All of these symptoms have dozens of potential causes. Thus, it is an extreme challenge to try to separate out water recreation as a cause of any of them – it is looking a needle in a haystack.<sup>13</sup>

While finding the “needle” of risk associated with CAWS recreation would certainly be additional basis for joining the rest of the nation in requiring disinfection, failure to find such a risk would not be. As Dr. Orris, who has conducted extensive epidemiological research himself, put it, “Epidemiological studies are by nature blunt instruments, based in our everyday world

<sup>10</sup> Prefiled testimony of Dr. Peter Orris submitted August 4, 2008 (“OrrisTestimony”) at 1.

<sup>11</sup> Prefiled testimony of Dr. Marc Gorelick submitted August 4, 2008 (“Gorelick Testimony”) Exhibit 1 (CV).

<sup>12</sup> Gorelick Testimony at 10.

<sup>13</sup> Id.

with multiple influences.”<sup>14</sup>

Moreover, while the Environmental Groups have no issue with the validity of the research methods being employed by Dr. Dorevitch and his team at UIC, the study itself is not designed to detect at all the risks relevant to a determination whether to disinfect. The study is designed to assess the risk of *overall* use of the CAWS – that is, the wide array of recreational activities currently taking place there.<sup>15</sup> Some of these activities, such as large-craft boating, involve very little if any actual contact with water, while others – such as kayaking and canoeing – involve unavoidable routine contact with the water and a risk of swallowing a significant amount in the event of capsizing.<sup>16</sup> Along these same lines, it also assesses a sampling of the whole array of current recreational users of the CAWS, including some individuals with weaker or compromised immune systems – children, pregnant women, older people, people on chemotherapy – and some with normal immune systems.

As such, by admission of Dr. Dorevitch, the UIC study is not designed to assess the risk to any of the more at-risk subsets of current CAWS users – e.g., kayakers or children. The study team used a “power calculation” to arrive at the population sample size necessary to derive statistically significant results, which was determined to be 9,330.<sup>17</sup> This is the number of study participants determined necessary to assess the risk to the population of CAWS recreational users as a whole. However, Dr. Dorevitch stated at hearing that, in order to assess the risk to any subset of these recreational users – such as kayakers or children – one would need 9,330 members of that subset participating in the study.<sup>18</sup> Thus, even if a negative result of the UIC

<sup>14</sup> Orris Testimony at 5.

<sup>15</sup> Several parties have provided testimony and evidence in R08-09 that recreational uses, such as canoeing and kayaking on the CAWS have been steadily increasing over the last decade. (See e.g. Illinois Department of Natural Resources Public Comment 182 , p. 4.)

<sup>16</sup> See Risk Assessment at 94-95.

<sup>17</sup> Transcript of hearings held September 24, 2008 (a.m.) (“September 24 a.m. Transcript”) at 50.

<sup>18</sup> Id. at 52.

study were interpreted to support a finding of low risk to CAWS recreators as a whole (which it should not be) it could *not* support a finding of low risk to kayakers, children, or any other particularly at-risk subgroup, whose welfare should appropriately be considered by the Board in rendering its determination.

Various other inherent limitations in the study also severely limit the value of any potential negative risk finding in assessing the appropriateness of IEPA's proposed disinfection requirement. The study evaluates self-reported symptoms potentially associated with waterborne pathogens, but cannot by its own design assess the secondary illnesses that may result from asymptomatic infection. That is, many of the illnesses potentially associated with sewage contamination do not necessarily cause symptoms in every infected person, but those asymptomatic infected persons may pass along the infection to others – family members, roommates, day care center classmates -- who then do exhibit symptoms. Those secondary infections are not being evaluated by the UIC study.<sup>19</sup> As Dr. Gorelick stated,

The CHEERS epidemiological study is based upon self-reported symptoms of illness. That is, recreational users are asked to fill out a questionnaire describing any symptoms of illness. This works well with types of pathogens that cause symptoms in most or all of people who are infected by them. It does not work as well, however, for pathogens that infect a large number of people asymptotically, and make only a small fraction of infected people actually sick. Many of the more harmful and prevalent types of waterborne pathogens associated with sewage-contaminated wastewater are in the latter category, *i.e.*, they can infect large numbers of people but actually result in illness in only a small number of them.<sup>20</sup>

Finally, as an overall matter, a fundamental tenet of science is that study results must be reproduced. While there may be some value in a well-conducted first time study, and the UIC

<sup>19</sup> Study participants are asked to state whether anyone they live with is sick, but no further inquiry is made into the cause or nature of such illnesses; and no questions are asked concerning illness among people that the study participants have contact with (*e.g.*, coworkers, students, friends) but do not live with. Transcript of hearing testimony dated September 23, 2008 (p.m.) (“September 23 p.m. Transcript”) at 86.

<sup>20</sup> Gorelick Testimony at 9.

study may be one useful data point in setting an indicator bacteria water quality standard at some future point, it would be inappropriate to in any way rely on negative epidemiological study results (should they materialize) as a basis for refusing to take the basic, nearly universal step of sewage effluent disinfection to protect public health. As stated by Dr. Gorelick, who has researched and co-authored more than 50 peer-reviewed epidemiological studies,

Given the inherent uncertainty of epidemiological research, it is essential that results of any kind be reproduced in at least one more study. This is part and parcel of the more fundamental principle applicable to all scientific research that results must be replicated in order to be valid – indeed, a substantial part of scientific inquiry consists of attempts to reproduce the published results of others in order to determine their validity. While a single positive epidemiological study may provide sufficient evidence to justify preliminary action, it is absolutely critical to reproduce negative research results before drawing actionable conclusions, given the potential pitfalls of such findings. . . .<sup>21</sup>

Dr. Orris similarly observed that epidemiological studies “require repetition and the study of large populations,” and that “Illness in recreational users of the CAWS may well be missed even in this excellent first epidemiologic look at this issue.”<sup>22</sup>

In any event, regardless of any substantive questions regarding the usefulness of the future epidemiological study data, it would not serve the interest of convenient and expeditious decisionmaking to postpone a determination on the recreational use portions of the proposed rule when there is not even a firm date for finalizing the study. The Board has complete information now sufficient to make a decision, and should not wait upon future information to materialize at an indefinite date in the future.

### **Conclusion**

For the foregoing reasons, the Board should create a subdocket for the recreational use portions of IEPA’s rule proposal, and proceed to decision on that subdocket.

<sup>21</sup> Gorelick Testimony at 6-7.

<sup>22</sup> Orris Testimony at 5.

Dated: February 3, 2010

Respectfully submitted,

NATURAL RESOURCES DEFENSE COUNCIL

SOUTHEAST ENVIRONMENTAL TASK  
FORCE

SIERRA CLUB-ILLINOIS CHAPTER

OPENLANDS

ENVIRONMENTAL LAW & POLICY CENTER

FRIENDS OF THE CHICAGO RIVER

ALLIANCE FOR THE GREAT LAKES



By: \_\_\_\_\_

Ann Alexander, Senior Attorney  
Natural Resources Defense Council  
2 North Riverside Plaza, Suite 2250  
Chicago, IL 60606  
312-651-7905  
312-651-7919 (fax)  
[AAlexander@nrdc.org](mailto:AAlexander@nrdc.org)

Authorized to represent the parties listed above for  
purposes of this motion