

ILLINOIS POLLUTION CONTROL BOARD

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MAY 15 2002

STATE OF ILLINOIS
Pollution Control Board

IN THE MATTER OF:)
)
PROPOSED AMENDMENTS TO)
AMMONIA NITROGEN STANDARDS)
35 ILL. ADM. CODE 302.212, 302.213)
AND 304.122)

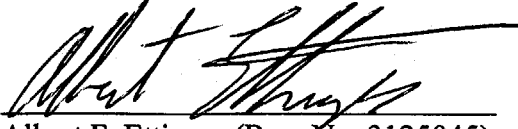
R02-19
(Rulemaking - Water)

P.e.#3

NOTICE OF FILING

PLEASE TAKE NOTICE that on May 15, 2002, the undersigned filed an original and nine (9) copies of the foregoing Comments of the Environmental Law and Policy Center Prairie Rivers Network and Sierra club on Proposed Ammonia Standard Changes with Dorothy Gunn, Clerk of the Pollution Control Board, 100 West Randolph Street, Suite 11-500, Chicago, IL 60601. One (1) copy of said comments is hereby served upon each of you.

Respectfully Submitted,

BY: 
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Environmental Law and Policy Center
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May 15, 2002

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**COMMENTS OF THE ENVIRONMENTAL LAW AND POLICY
CENTER PRAIRIE RIVERS NETWORK AND SIERRA CLUB
ON PROPOSED AMMONIA STANDARD CHANGES**

The Environmental Law and Policy Center of the Midwest, the Illinois Chapter of the Sierra Club and Prairie Rivers Network (collectively "Environmental Groups") hereby comment on the proposed changes to the ammonia water quality standard offered by the Illinois Association of Wastewater Agencies ("IAWA").

Briefly, the Environmental Groups, take no position regarding the proposed changes to sections 302.100 and 302.212. There are aspects of these proposed changes that pose dangers to Illinois aquatic life that will require careful consideration by IEPA in designing the implementation rules and permit writing. The dangers can be addressed in large part through careful application of Illinois' new antidegradation regulations and adoption by IEPA of ammonia standard implementation regulations that require developing site-specific criteria for waters where fingernail clams, endangered mussels, or important bluegill populations may be present.

The Environmental Groups support the proposal insofar as it would repeal the portion of the ammonia standards concerning Effluent Modified Waters ("EMW's") through amendments proposed to sections 302.213 and 304.122.

The Environmental Groups do not agree with all of the self-congratulatory rhetoric and one-sided history lectures that have accompanied the IAWA proposal. However, because the rhetoric and lectures are of little relevance, the rhetoric will be treated summarily in Section III below and history will be addressed only in the attached historical appendix.

I. If Proper Implementation Rules Are Adopted And Other Water Quality Protections Are Fully Implemented, the Proposed Changes to Section 302.212 Probably Will Not Damage Illinois Aquatic Life.

Representatives of ELPC and the Sierra Club met with representatives of IAWA informally in 2000 and 2001 regarding the IAWA's plans for revisions to ammonia standards. At that time, ELPC and Sierra Club indicated that they would not oppose changes to the ammonia standards if the proposed changes faithfully tracked the 1999 U.S. EPA ammonia national criteria document ("1999 NCD"). Unlike some U.S. EPA national criteria documents, the 1999 ammonia document is supported by many studies that considered a wide range of species. It appears that the IAWA proposal does faithfully track the 1999 NCD.

Further, although the potential costs may be exaggerated, it appears that a handful of Illinois dischargers will incur significant costs if they are forced to meet effluent limits designed to prevent violations of the current Illinois ammonia standards but may avoid such costs if standards tracking the 1999 NCD are adopted.

There are a number of approaches possible under the Clean Water Act and the Illinois Environmental Protection Act to address this situation. Changing Illinois ammonia standards is one approach and is the approach that has been embraced by IAWA. This approach is not without dangers to Illinois aquatic life, including endangered species. But such risks are probably manageable as to ammonia if Illinois antidegradation standards are rigorously enforced by IEPA.

However, it should be noted that the 1999 NCD states that the criteria it proposes may not be protective of the fingernail clam¹ and that the criteria allowed little or no margin of safety for the "recreationally important bluegill". (1999 NCD at 80). The 1999 NCD suggests development of site-specific criteria where sensitive endangered species may be affected by an ammonia discharge. (Ibid).

Moreover, there have been new ammonia studies. (See Letter from Mary Beth Tyson to Toby Frevert, October 21 2001, with attached list of studies, Hearing Exhibit 2). These recent studies indicate that the 1999 NCD may not be protective of important mussel species living in Illinois waters. While not all of these new mussel studies have been fully peer-reviewed or finalized, many of them have. None of the studies can safely be ignored.

¹ The fingernail clam is extremely important to the Illinois environment as the decline of the fingernail clams had "drastic repercussions on the populations of ducks and fish". Ex. A. Sparks, R and Ross P. Identification of Toxic Substances in the Upper Illinois River (1992)

If Illinois adopts the proposed standard based on the 1999 NCD, there can be no presumption that Illinois standards are protective of mussels. The antidegradation standards clearly require protection of existing uses. Accordingly, any permit seeking a new or expanded discharge of ammonia must be accompanied by proof that the discharge will not affect mussel beds or any other existing use, be it of biological, recreational or other significance. In most cases, this could probably be done by showing that no such sensitive uses are present in any area that will be affected by the discharge.

Still further, it must be recognized that a new Illinois ammonia standard that renders the standard less stringent cannot be used to affect any permit until IEPA adopts the necessary implementation rules and the standard, with the implementation rules, are approved by U.S. EPA. Under 40 CFR §131.6(f), standards submissions to U.S. EPA must be accompanied by "information on general policies applicable" . . . "which may affect [the standard's] application and implementation." No change in standards is effective or may be used in writing effective permits until it is approved by U.S. EPA. 33 U.S.C. §1313(c)(3); 40 C.F.R. §131.21; Alaska Clean Water Network v. Clarke, 1997 U.S. Dist. Lexis 11144 (W.D. Wash. 1997). Hopefully, the science regarding mussel toxicity will be more clear by the time that U.S. EPA has to decide whether or not to approve a change to the Illinois ammonia standard. ²

II. The Board Should Delete the Portion of the Current Ammonia Standards Regarding Effluent Modified Waters.

The Environmental Groups agree without reservation that the provisions regarding EMWs should be deleted from Illinois ammonia standards. Our reasons for supporting this change, however, are somewhat different than IAWA's and follow directly from the requirements of the Clean Water Act and the regulations developed by U.S. EPA and the Board to implement the Clean Water Act.

The EMW provisions allow certain waters to be designated as "effluent modified" and waive chronic ammonia limits as to such waters. However, the Clean Water Act does not allow a state to downgrade a use designation to allow greater pollution loadings just because the state believes it is inconvenient or expensive to protect the designated use. Basically it must be shown, after allowing public participation, that the water is inherently limited ecologically or that

² Nonetheless, if U.S. EPA approves a change to the Illinois ammonia standard without the effect of ammonia on mussels, fingernail clams and other species being fully known, there is a risk of damage to Illinois aquatic life even if Illinois EPA properly implements the new antidegradation rules. The antidegradation rules would not apply to an increased discharge of ammonia that was already permitted even if the discharger had not previously discharged ammonia at the levels allowed by the permit. The extent of this danger is not known.

controls needed to protect the designated use "would result in substantial and widespread economic and social impact." 40 CFR §131.10 (g)(6). In all cases, the existing use must be protected.

As the Board is aware, regulations established under the Clean Water Act require that states designate uses for all waters of the state, 40 CFR § 131 10(a), and criteria to protect those uses. Regulations prohibit the issuance of permits that will allow a discharge that causes or contributes to a violation of the criteria designed to protect uses. 40 CFR §122.44. In Illinois, almost all waters are designated as "general use" (see 35 Ill. Adm Code 303.441 listing exceptions) Permits cannot be issued that will allow violations of the criteria adopted by the Board to protect aquatic life except in the limited circumstances in which a mixing zone is allowed.

The Clean Water Act does allow for the use of a water to be redesignated to allow greater pollution loadings or concentrations, but the circumstances in which this can be done are extremely limited. A water that has been designated as "general use" can be redesignated as "secondary contact" (or given some other level of use designation that did not require application of general use criteria) only in the limited circumstances provided by 40 CFR 131.10(g). That regulation provides that removing a use requires a "Use Attainability Analysis" and states:

- (g) States may remove a designated use which is *not* an existing use, as defined in § 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:
 - (1) Naturally occurring pollutant concentrations prevent the attainment of the use; or
 - (2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or
 - (3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
 - (4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment

- of the use; or
- (5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
 - (6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

The effluent modified waters provisions, now contained in 35 Ill. Adm Code 302.213 and 304.122, do not fit comfortably with the Clean Water Act. Indeed, unless the EMW provisions are interpreted very restrictively, they cannot be reconciled with the Clean Water Act at all. Essentially, if the EMW provisions were interpreted in a manner that did not require strict compliance with the "Use Attainability Analysis" requirements of 40 CFR 131.10(g) and the principles of the Clean Water Act set forth in 33 U.S.C. §1251, the EMW provisions would be illegal and could never have been approved by U.S. EPA.

It was never clear how the Board intended the EMW provisions to be implemented and perhaps the Board simply expected the matter to be decided by the IEPA in accordance with state and federal law. In any event, IEPA has been persuaded to issue regulations, 35 Ill. Adm. Code part 355, that interpret the EMW provisions narrowly, basically requiring that the showings be made that would be necessary to perform a use attainability analysis under 40 CFR 131.10(g). So limited, the EMW provisions are not pernicious. They are not terribly useful to anyone either.³ Moreover, no reason appears why Illinois should in effect have special Use Attainability Analysis regulations applicable only to chronic ammonia standards.

III The Science And Wastewater Treatment For Ammonia Have Improved And Must Continue To Improve.

Certain rhetorical flourishes and statements made by IAWA representatives in the course of these proceedings require a brief response to avoid leaving the impression that everyone is in agreement with this hyperbole.

First, the "I told you so's" suggesting that Illinois ammonia standards have always been fine and the past controversies were all caused by erratic U.S. EPA science and policies are not justified. It is simply not true that the 1999 NCD indicates that the pre-1996 Illinois ammonia

³ IAWA takes no satisfaction from the EMW provisions as they have been limited to accord with the Clean Water Act.

standards were protective or that ammonia discharge concentrations of 1.5 mg/L in the summer and 4.0 mg/L in the winter are always acceptable. In fact, to the credit of IAWA's scientific consultants, IAWA's proposal largely tracks the 1999 NCD and, clearly recognizes that Illinois cannot go back to anything like the pre-1996 standards. The IAWA proposal also implicitly recognizes that, depending on pH, temperature and dilution, many permits must contain effluent limits tighter than the 1.5(summer)/4.0(winter) mg/L level to be protective. Further, following the 1999 NCD, the IAWA proposal makes careful judgements regarding early life stages.⁴

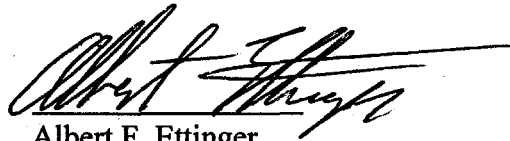
Second, it is clear that sewerage treatment plants do not generally experience prohibitively high costs if they seek to treat ammonia beyond the level necessary to meet 1.5(summer)/4.0(winter) effluent concentrations. The very exhibits offered by IAWA show sewerage treatment plants not coming close to discharging ammonia at the 1.5/4.0 concentrations for years. See Pre-filed Testimony of Tim Bachman attachments 4 & 5. Certainly, there should not be any presumption in future proceedings that ammonia effluent limits as high as 1.5(summer)/4.0(winter) mg/L are protective or economically necessary.

⁴These judgements may, however, need to be the subject of further research and be reconsidered in the context of developing implementation rules given the remarks of Dr. Burr, quoted in the January 18, 2002 letter of Thomas Muth to David Pfeiffer. See Exhibit 1.

CONCLUSION

We wish we could conclude now with the statement that all of Illinois' problems with ammonia are now behind it and the Board can conclusively end all consideration of ammonia standards by adopting the IAWA proposal. Unfortunately, the IAWA proposal is ultimately based on tentative science that may very well have to be revised in the future.

In any event, improved science and technological improvements will be needed if Illinois is to accommodate a growing population and economy without further damaging Illinois' rivers, lakes, wetlands and streams.



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May 15, 2002

HISTORICAL APPENDIX

To briefly summarize a long history that took place over a five year period, IEPA in 1994 filed its ammonia proposal that contained the EMW provisions. The Environmental Groups do not know what IEPA told IAWA as to how the EMW provisions would be interpreted and implemented, but the Environmental Groups were told that the EMW provisions would only apply to drainage ditches that were of no use for outdoor recreation and of no ecological value. This was confirmed by IEPA briefs filed in R94-1(B) that stated that the EMWs would solely consist of "small effluent dominated and ecologically limited resources." Agency's Final Comments, filed April 6, 1995 p.3.

The Environmental Groups were disturbed to learn during the R94-1(b) proceedings that certain dischargers claimed that they had been told that miles of the Fox River and other valuable waters would be designated as EMWs. Accordingly, the Environmental Groups asked the Board "to eliminate or at least clarify the provisions regarding effluent modified waters to assure that a water body may only be identified as an EMW if is small, effluent dominated and ecologically limited." Post-Hearing Comments of Public Hearing Participants, March 29, 1996 p.1.

Assuming that IEPA would comply with the requirements of the CWA, the environmental groups expected that after the Board issued its final decision on the standards, IEPA would develop implementation rules that would go through the agency rulemaking process before any permits were issued that used the new EMW provisions. Conversation with IEPA officials in late 1996 confirmed these expectations. We were, accordingly, appalled to learn during Spring 1997 that IEPA had decided to interpret the EMW provisions to allow EMW designations to take place in every Illinois water, no matter how sensitive or valuable, and that IEPA -without establishing implementation rules or securing U.S. EPA approval of the standards and implementation rules under 33 U.S.C. 1313(c) and 40 CFR 131.21 - had issued numerous permits containing EMWs designations in highly valued and sensitive Illinois waters.

In the summer and fall of 1997, it was brought to U.S. EPA's attention that IEPA's issuance of illegal permits had to stop. In Fall 1997, the issuance of permits with the illegally loose and improperly established EMW provisions was stopped. Many permits, had been issued, including permits for discharges to the Cache River, the Little Vermilion River, Manhattan Creek and tributaries to the Mackinaw and Kishwaukee Rivers. Based on IEPA biological data, it is believed that this permit issuance resulted in substantial damage to Illinois aquatic life.

As a result of this controversy, few or no permits were issued involving ammonia discharges for over a year and a substantial permit backlog developed. However, during 1998 and 1999, the safeguards on use of the EMW provisions, now contained in 35 Ill. Adm. Code part 355 were developed. These safeguards reconciled the EMW provisions with governing federal and state law, the standards and implementation rules were approved by U.S. EPA, and IEPA was able to issue permits again.

In retrospect, it is clear that the process would have been much smoother if IEPA had submitted draft implementation rules with its ammonia proposal as it did later with its Great Lakes and antidegradation standards proposals. Fortunately, IAWA has supplied the Board in its proposal with a clear indication of how it is expected that the standards will be implemented. This should greatly facilitate the IEPA rulemaking that is necessary before the standard and implementation rules can be presented to U.S. EPA for approval.

The Environmental Groups are willing to supply documents supporting each of the statements made in this footnote concerning historical events. However, in view of their marginal relevance to this appendix, it does not seem worth the paper to include such exhibits here.

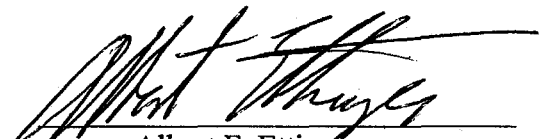
EXHIBIT

10277-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. ILENR/RE-WR-92/07	2.	3. Recipient's Accession No.
4. Title and Subtitle Identification of Toxic Substances in the Upper Illinois River		5. Report Date October 1992	
7. Author(s) Richard E. Sparks and Philippe E. Ross		6. 8. Performing Organization Report No.	
9. Performing Organization Name and Address River Research Laboratory Forbes Biological Station Illinois Natural History Survey P.O. Box 599 Havana, IL 62644		10. Project/Task/Work Unit No. 89/215 11. Contract(G) or Grant(G) No. (C) (G) WR3691	
12. Sponsoring Organization Name and Address Illinois Department of Energy and Natural Resources Office of Research and Planning 325 West Adams Street Springfield, IL 62704-1892		13. Type of Report & Period Covered 14.	
15. Supplementary Notes			
16. Abstract (Limit: 200 words) Between 1955 and 1958, several abundant species of aquatic insects, snails and fingernail clams practically disappeared from the upper Illinois River. These declines had equally drastic repercussions on the populations of ducks and fish that fed upon these invertebrates. The situation changed very little into the 1980s, despite improvements in water quality. This research found that porewater from relevant river sediments contains a toxic factor that inhibits the filtering ability of fingernail clams and also negatively effects the water flea, while stimulating alga and bacteria growth. All evidence points to ammonia as the toxic agent. Also, at two sites, the porewater contained toxic oil products, including polycyclic aromatic hydrocarbons, such as naphthalene. A three phase Toxicity Identification and Evaluation methodology was utilized in reaching these conclusions.			
17. Document Analysis a. Descriptors Water Pollution, Toxicity, Water Pollution Effects (Animals), Sediments, Sedimentation, Suspended Sediments b. Identifiers/Open-Ended Terms Sedimentation - Illinois River Toxicity - Illinois River Water Pollution - Illinois River c. COSATI Field/Group Biological and Medical Sciences; Environmental Biology			
18. Availability Statement No restriction on distribution. Available at IL Depository Libraries or from National Technical Information Service, Springfield, VA		19. Security Class (This Report) Unclassified	21. No. of Pages 72
		20. Security Class (This Page) Unclassified	22. Price

CERTIFICATE OF SERVICE

I, Albert F. Ettinger, certify that, on May 15, 2002 I mailed, with proper postage on recycled paper, the foregoing Comments of the Environmental Law and Policy Center Prairie Rivers Network and Sierra Club on Proposed Ammonia Standard Changes the addresses on the attached service list.



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May 15, 2002

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