

ILLINOIS POLLUTION CONTROL BOARD
April 7, 2005

IN THE MATTER OF:)
)
PROPOSED 35 ILL. ADM. CODE) R04-26
304.123(g), 304.123(h), 304.123(i), 304.123(j),) (Rulemaking - Water)
and 304.123(k))

Proposed Rule. First Notice.

OPINION AND ORDER OF THE BOARD (by T.E. Johnson):

Today the Board will proceed to first notice under the Illinois Administrative Procedure Act (5 ILCS 100/1-1 *et seq* (2002)) with a rulemaking proposed by the Illinois Environmental Protection Agency (Agency). On May 14, 2004, the Agency filed a petition that seeks to set an interim phosphorus effluent standard by adding five new subsections (g-k) to existing 35 Ill. Adm. Code 304.123. The Board has held two hearings and received substantial comments on the Agency's proposal.

BACKGROUND

On May 14, 2004, the Board received a rulemaking proposal from the Agency. The Agency seeks to set an interim phosphorus effluent standard by adding five new subsections (g-k) to existing 35 Ill. Adm. Code 304.123. A motion for acceptance accompanied the proposal.

In its statement of reasons, the Agency asserts that it is in the process of developing the State numeric nutrient standards pursuant to its triennial water quality standards review. Pet. at 7. The Agency expects to file a nutrient standards petition with the Board in early 2007. Pet. at 8. In the interim, the Agency is proposing this effluent standard for phosphorus to limit higher concentrations of phosphorus that may result in detrimental levels of plant and algae growth. *Id.* The Agency requests that the interim effluent standard apply until the Board adopts a numeric water quality standard for phosphorus.

Two hearings were held before Board Hearing Officer John Knittle. The first hearing was held on August 30, 2004, (Tr.1) in Chicago. The second hearing was held on October 25, 2004, in Springfield (Tr.2). During those hearings the Board heard testimony from a number of witnesses. In addition the Board has received 17 public comments in this proceeding.

SUMMARY OF PROPOSAL

The Agency proposes a phosphorus effluent limit of 1.0 milligram per liter (mg/L) as a monthly average that would apply to new or expanded discharges from treatment works with a design average flow (DAF) over 1.0 million gallons per day receiving municipal or domestic wastewater, or a total phosphorus effluent load of 25 lbs/day or more for treatment works other than those treating municipal or domestic wastewater. However, if the source can demonstrate

that phosphorus is not limiting nutrient in the receiving water or that alternative phosphorus effluent limits are warranted by the aquatic environment in the receiving water, the 1.0 mg/L limit would not apply.

In response to testimony and questions at hearing, the Agency offered several changes to the original proposal in its post-hearing comments. The changes to the proposal do not change the scope of the originally proposed language and are discussed more fully below.

TESTIMONY

At the hearings, the Board received testimony from nine witnesses. The testimony adduced at the hearings will be summarized here.

John R. Sheaffer

Sheaffer is the Chairman of Sheaffer International, L.L.C. (SIL). Sh. Test. at 1. He also serves as the Chairman of the Environmental Commission of DuPage County. *Id.* He has a B.S. in Science from Millersburg State University in Pennsylvania and a M.S. and Ph.D. from the University of Chicago. *Id.*

He testified that when the Illinois General Assembly created the Lake Michigan and Adjoining Lands Study Commission to create a Bill of Rights for Lake Michigan that later provided the framework for the Clean Water Act, he served as the Executive Director. Sh. Test. at 1. He testified that the Board should adopt and enforce limitations on the discharge of phosphorus and nitrogen as well as other nutrients contained in sewage effluent discharged into the surface waterways of Illinois. *Id.*

Agency Testimony

Toby Frevert, Robert Mosher, and Paul Terrio testified for the Agency.

Paul Terrio

Paul Terrio is a hydrologist at the U.S. Geological Survey (USGS) in Urbana. He has worked for the USGS for over 20 years. Tr.1 at 16. Over the last 12 years, Terrio has served as the water quality specialist for the Illinois district of the USGS. *Id.* He holds a degree in hydrology from the University of Arizona. *Id.*

Terrio testified that concurrent non-limiting levels of nitrogen and phosphorus can result in excessive and problematic plant and algal growth – a condition known as eutrophication, and that in most fresh water environments phosphorus is considered the limiting nutrient. Tr.1 at 18. He testified that a limiting nutrient is one present in the shortest supply and that will be exhausted first, limiting potential growth. Tr.1 at 17-18. Terrio stated that because the available supply of phosphorus in water bodies is typically less than that of nitrogen, further reductions in the sources of phosphorus might prevent the occurrence of problematic conditions in water bodies receiving wastewater treatment effluents. Tr.1 at 19.

Terrio testified that many midwestern states have some form of a 1.0 mg/L total phosphorus effluent standard in place and that others have pending revisions to incorporate such a standard. Tr.1 at 21. Terrio referenced two principle methods for phosphorus removal – biological and chemical precipitation. Tr.1 at 22. He testified that biological removal may be a superior method in terms of lower final effluent concentrations and minimal operational costs, but that this method would probably entail higher capital costs and would not be compatible with all existing plant configurations. *Id.*

Terrio stated that the chemical precipitation method will usually be chosen for expanded treatment plants. Tr.1 at 23. He stated that the capital improvements at recently designed plants in the 1 to 5 million gallon per day design average flow range would cost \$50,000 to \$60,000 if an existing building is available for a chemical storage tank and \$200,000 to \$300,000 if a new building must be added. *Id.* He estimated a chemical cost of approximately \$50,000 per year for an existing 5.9 million gallon per day plant. Tr.1 at 24.

Terrio testified that the United States Environmental Protection Agency (USEPA) divides the nation into different Eco Regions each with a different phosphorus criterion for surface waters. Tr.1 at 39. Illinois waterways fall under Eco Regions 6,7, and 9. *Id.* Terrio stated that Eco Region 6 is the northern two-thirds of the state and the USEPA water quality criterion is 0.076 mg/L for total phosphorus; Eco Region 9 is the southern part of the state with a 0.037 mg/L criterion; and Eco Region 7 is a small part of northwest Illinois with a 0.033 mg/L criterion. Tr.1 at 40.

Terrio testified that the State of Illinois has organized a nutrient work group comprised of government agencies, advocacy groups, academia that is looking at the big picture of nutrient standards in the state, and that Illinois is also participating in the USEPA Region 5 technical advisory group for nutrient standard development. Tr.1 at 42-43.

Robert Mosher

Robert Mosher has worked for the Agency for almost 19 years. He has been assigned to the Water Quality Standards Unit for 18 years, and has participated in the development and adoption of numerous water quality and effluent standards. Tr.1 at 25. He has a Master of Science degree in zoology from Eastern Illinois University. Tr.1 at 26.

Mosher testified that costs for the addition of phosphorous removal equipment will be most reasonable when they can be designed into the original construction, and that only new or expanding facilities with a design average flow of one million gallons per day are subject to the proposed effluent limit. Tr.1 at 26-27. He testified that other new or expanded facilities would be subject to the discharge limit if they would discharge phosphorus at the same pound loading as a one million gallon per day plant. Tr.1 at 27.

Mosher testified that phosphorus is generally believed to be the nutrient in shorter supply in freshwater ecosystems (the limiting nutrient factor) and therefore its concentration may often limit plant growth. Tr.1 at 28. He testified that if it is demonstrated that 1.0 mg/L total

phosphorus will be inadequate to control noxious plant growth in the receiving water, and that further phosphorus control below a monthly average of 1.0 mg/L is feasible at a facility, the Agency may impose a lower phosphorus limit to protect that water body. *Id.*

Mosher stated that a USEPA scientific procedure from the 1970s can be used to demonstrate that phosphorus is or isn't the limiting agent. Tr.1 at 32. Mosher testified that if the Agency saw the results of such a test, the proposed rule would allow them to make that decision as an NPDES permit decision. *Id.*

Mosher testified that the Agency's nutrient standard adoption plan, meeting the USEPA deadline in 2008, was one of the first in the nation to be approved by the USEPA. Tr.1 at 41. He testified that the Agency believes that there are as many as twelve new or expanding facilities that are putting in phosphorus control at the present time. Tr.1 at 77-78.

Mosher testified that currently the Agency couldn't state what the limiting phosphorus value is for Eco Regions 6,7 and 9. Tr.1 at 45. He testified that the Agency does not have a list of streams that might be sensitive to increased phosphorus, and needing additional protection. Tr.1 at 65. Mosher characterized the limiting of phosphorus at the great lakes tributary dischargers as a success story in phosphorus control. Tr.1 at 82.

Toby Frevert

Frevert testified that it would be up to a permit applicant or an outside group to bring information showing that phosphorus is not the limiting agent in any specific circumstances. Tr.1 at 33. He testified that the Agency is proposing a technology-based effluent standard because it currently does not have the information to establish a very specific water quality based nutrient limit. Tr.1 at 48. He testified that the real crux of the problem is the effluent standards addressing a violation of the narrative water quality standard. Tr.1 at 49. He added that the science is not there either at the state or national level. *Id.* Accordingly, he stated, one can't derive the water quality based standard, but there is readily available and reasonably affordable technology to limit the existence of nutrient discharge. *Id.*

Frevert testified that the Agency is proposing the interim standard in an attempt to establish an incremental step at facilities where there is going to be a significant loading increase or at large facilities where technology is readily available. Tr.1 at 50. He testified that it is a prudent policy decision on the Agency's part to require new and expanding facilities to incorporate additional treatment, but that the Agency is not ready to require such an expenditure of money at existing facilities. *Id.* In places where critical decisions regarding treatment facilities are not being made, the Agency's proposal is to maintain the *status quo*. Tr.1 at 52.

Frevert testified that in determining whether a more stringent interim effluent standard is required under the proposed rules, the Agency would use existing anti-degradation standards to look at the receiving water body and if it appears that the receiving water is extremely sensitive to phosphorus, and the facility were new or significantly redesigned, the Agency might impose a limit as low as .5 milligrams per year. Tr.1 at 53. Frevert said that new and expanding plants

already have to make that showing as part of their anti-degradation demonstration under the existing rules. *Id.*

Frevert testified that the Agency has not developed any internal rules on how it would determine that a discharge is causing a violation of the narrative water quality standards. Tr.1 at 64. He testified that this proposal is separate from the nutrient standards development proposal, and that the purpose of this proposal is to allow the NPDES program to continue to function. Tr.1 at 87.

Frevert testified that the existing regulation that requires the Agency to have documentation and determine what controls and limitation are necessary before authorizing the discharge. Tr.2 at 108. He testified that nobody knows exactly what specific role phosphorus plays in the overall environment, but that we know phosphorus is problematic in streams in Illinois. *Id.* He acknowledges that there is no distinction in the Agency's proposal between discharges to impaired water and those to high quality waters. *Id.*

He testified that lacking the specific sciences and the data to demonstrate a particular level of phosphorus in a discharge that is acceptable today, he doesn't know how to authorize an National Pollutant Discharge Elimination System (NPDES) permit on these changes on all facilities, expanding and existing. Tr.2 at 109. He testified that in the state of Illinois there are only 2,000 permitted sources, with over 500 of those facilities having domestic sewage limits. *Id.* He stated that the Agency estimates that approximately 20 sources per year will be impacted by the proposal. *Id.* He testified that the proposal specifically says that during this interim period unless facilities are expanding or relocating to a new stream, or have some new discharge to that effect, they do not have to invest money or resources. Tr.2 at 109.

In response to Lanyon's testimony suggesting the use of source control in lieu of treatment, Frevert testified that to an extent a facility could achieve the standard through source control that is perfectly acceptable. Tr.2 at 110.

LEMKE

Lemke is a professor of biology at the University of Illinois at Springfield. Lem. Test. at 1. His position includes education of graduate and undergraduate students as well as continuing research. *Id.* He states that he has experience in researching nutrient impacts in aquatic ecosystems including rivers and streams. Lem. Test. at 2. Lemke testified that eutrophication is the most wide-spread water quality problem in the United States and accounts for over one half of impaired river reaches in the country. Tr.2 at 18. He feels it is important that Illinois strictly limit increased discharges of phosphorous going into Illinois rivers and streams. *Id.* He testified that it is well known today that excess phosphorus harms riverine systems, and that phosphorus enriched systems often support algal and bacterial growth at levels that are considered offensive and harmful to the environment. Tr.2 at 19.

Lemke testified that reduction of point source discharge can help manage growth of nuisance aquatic plants and affect algae biomass, although the extent of benefit depends on the composition of biological communities, sediment characteristics and whether nutrients in the

sediments and river water exceed levels required for growth. Lem. Test. at 12. He testified that all sources, point and non-point, have to be considered in regards to the recovery of the Illinois river and its alleged contribution to the hypoxia in the Gulf of Mexico. Tr.2 at 24.

BETH WENTZEL

Wentzel is the Watershed Scientist for Prairie Rivers Network. Went. Test. Exh. 5 at 1. Prairie Rivers Network is a statewide river conservation organization and National Wildlife Federation's Illinois affiliate. *Id.* She holds a Master of Science degree in Civil and Environmental Engineering from the University of Illinois, where she completed course work in wastewater treatment system design. *Id.* In her position, she reviews NPDES permits and has become very familiar with many engineering designs used to satisfy the terms of those permits. *Id.* Wentzel has never designed or operated a wastewater treatment plant since graduating from school. Tr.2 at 31. She testified in support of the proposal. Went. Test. Exh. 5 at 1.

Wentzel testified that the literature on nutrient removal technology suggests that a phosphorus standard of one milligram per liter is reliability met, well-established and reasonable technology. Tr.2 at 29. She testified that several states have applied a similar limit broadly and have applied considerably more stringent limits for many permits. *Id.* She believes that the effluent limit of 1.0 milligrams per liter as a monthly average for total phosphorus that the Agency has proposed is technically and economically reasonable. *Id.*

Wentzel testified that communities and facilities that have agreed to some phosphorus removal process in their permits have received benefits, including better-treated effluent that some communities acknowledge is a value to the community. Tr.2 at 35.

Wentzel is involved in the ongoing efforts by the Agency to develop a long-term nutrient rule. Tr.2 at 43. Regarding the issue of upgraded treatment plants being able to meet lower phosphorus effluent limits as a result of future adoption of phosphorus water quality standard, she testified that it depends on the specific situation, but that based on the literature, it doesn't look like people will have to "rip out" anything in the future that they put in place now. Tr.2 at 45. She stated that the evidence from the first hearing indicates that many facilities will use chemical precipitation which is a pretty minimal capital investment, and most of the processes for achieving much lower levels of phosphorus include the same equipment at least for back-up purposes. *Id.*

ALBERT ETTINGER

Ettinger is the Senior Staff Attorney at the ELPC of the Midwest, as well as Water Issues Coordinator and General Counsel for the Illinois Chapter of the Sierra Club. Ett. Test. at 1. He has worked in Illinois on matters relating to water pollution and implementation of the federal Clean Water Act as counsel to the Sierra Club since 1982. *Id.*

Ettinger testified that the Clean Water Act and Illinois law require that NPDES permits control pollutants that may cause or contribute to violations of water quality standards and prohibit allowing new pollution that has not been shown to be necessary. Ett. Test. (Exh. 7) at 2. He testified that control on phosphorus pollution are needed to prevent conditions in Illinois

waters that violate Illinois water standards, and comply with antidegradation requirements. Ett. Test. at 7. He testified that the proposed limit is supported by the provisions of the Clean Water Act and the Act. Ett. Test. at 12. He believes that all new or increased discharges should be subject to the 1.0 mg/L phosphorus limit. Tr.2 at 56.

RICHARD LANYON

Richard Lanyon is employed by the Metropolitan Water Reclamation District of Greater Chicago (District) as its Director of Research and Development. Tr.2 at 58. The District is a unit of local government created by the legislature for the purpose of collecting and disposing of sewerage, reducing pollution of the waterways and preventing flooding. Tr.2 at 58-59. The District's service area is most of Cook County. Tr.2 at 59. He has been the District's Director of research and development since 1999. *Id.* He was the assistant director of the research and development department from 1975 to 1999. *Id.*

He testified that the Illinois plan for adoption of nutrient water quality standards states that more study is needed before numeric standards can be recommended, and that, therefore, no pressing need for the Agency to rush into promulgating interim phosphorus effluent standards exists, and actually the proposal contradicts the Agency submittal to the USEPA. Tr.2 at 61. Lanyon testified that the Agency's proposal ultimately places the responsibility for control solely on certain point source dischargers of phosphorus, discriminating against these dischargers by ignoring the significant phosphorus contributions of non-point dischargers. *Id.*

Lanyon testified that the Agency fails to cite any specific algal growth problems in Illinois lakes or rivers that affect uses and that can be attributed to excess phosphorus. Tr.2 at 62. He asserts that the Agency fails to cite any evidence that deficiencies in dissolved oxygen concentrations in Illinois lakes or rivers are the result of excessive phosphorus concentrations. Tr.2 at 63. Further, he testified that the Agency not only admits to a lack of adequate science upon which to base the proposed interim standard, but also is unwilling to even wait for the results of the scientific studies they are sponsoring. *Id.* He testified that there is no scientific basis for the proposed phosphorus standard of 1.0 mg/L and that the proposal is arbitrary and capricious. *Id.* Lanyon testified that the Agency is asking the Board to adopt this standard in an effort to rectify their permit backlog. Tr.2 at 64.

Lanyon testified that a number of sources of phosphorus, in addition to human waste, are discharged into the influent sewage to Publicly Owned Treatment Works (POTW)s, including residential and commercial automatic dishwasher detergents (ADWD) that still contain appreciable amounts of phosphorus. Tr.2 at 65. Lanyon cites to a Minnesota study of phosphorus contributions to POTW's that found that 10.7% of the phosphorus loading from POTW's was attributed to residential and commercial ADWD. Tr.2 at 66. He testified that a ban on phosphorus in ADWDs in Illinois could be a more effective approach to achieving immediate phosphorus reductions in POTW effluents than enacting the limited scope of POTW effluent limits proposed by the Agency. Tr.2 at 68.

Lanyon estimated that if ADWDs were banned, approximately 1,200 tons per year of phosphorus load would be eliminated from Illinois waters, and that adding commercial ADWDs

to the ban would increase the eliminated load by approximately 50%. Tr.2 at 85. He stated that even modest reductions in overuse of agricultural fertilizers would have a far larger effect on reducing the phosphorus levels in Illinois streams than adoption of the current Agency proposal. Tr.2 at 69.

Lanyon testified that there have been significant discussions with the Agency, USEPA Office of Water, and USEPA Region V Division of Water regarding the use of constructed and restored wetlands in Illinois to reduce the concentrations of nitrogen and phosphorus in the Illinois River Basin. Tr.2 at 74. He opined that the use of wetland technology to control the contribution of nitrogen and phosphorus was not mentioned by the Agency but should be included as a viable control technology. Tr.2 at 75. He further opined that effective control of nutrients in watersheds will require some form of water quality trading to create incentives for trading between point and non-point sources of these nutrients and that, in light of this, the Agency adopted a Water Quality Trading Policy on January 13, 2003. Tr.2 at 76. Lanyon testified that the use of wetland technology for nutrient management on a watershed scale would provide a cost-effective technology to control nutrients from both point and non-point sources in a watershed and would not place the entire burden for nutrient control solely on the POTWs. Tr.2 at 76-77. Lanyon testified that it is extremely important for the POTWs that the burden for control of phosphorus and nitrogen be equitable and that a means to reduce the contribution of nutrients from non-point sources must be found. Tr.2 at 77.

Lanyon testified that the District has three plants that discharge to General Use Waters. Tr.2 at 78. He testified that neither the District nor the Agency has been able to correlate the varying stream total phosphorus concentrations with differences in attainable uses or the general biological health of these waterways. Tr.2 at 79.

Lanyon testified that the District proposed to the Agency on April 27, 2004, that it would conduct a demonstration project at its Egan Water Reclamation Plant in Schaumburg to determine if phosphorus removal would show any impact or improvement in Salt Creek downstream of the plan outfall. Tr.2 at 80-81. Lanyon stated that the USEPA has shown support for the proposed demonstration project and that the monitoring results and conclusions will be prepared in a scientific report available to the public. Tr.2 at 81. Lanyon testified that should the report demonstrate that phosphorus causes impairment, it will support the need for a water quality based effluent limit. *Id.*

The District recommends that the Board deny the entire proposed intermit limit. Tr.2 at 81-82. However, in the event that the Board does not deny the proposal, the District recommends that the Board adopt additional requirements proposed by the District. Tr.2 at 82. The District's recommendations require the Agency to petition the Board for site-specific phosphorus standards for streams impacted by new or increased phosphorus loadings, apply a phosphorus effluent standard only for discharges into streams identified as phosphorus impaired; and allow dischargers to utilize alternative methods to comply with the applicable phosphorus limitation. Exh. 9 at 20.

JAMES DAUGHERTY

Daugherty is employed by the Thorn Creek Basin Sanitary District as its general manager. Tr.2 at 96. The sanitary district operates a wastewater treatment facility in southern Cook and northern Will counties with a design flow of 16 million gallons per day. *Id.* The facility currently serves a population of 100,000. *Id.* He has been employed by the sanitary district since 1973, and holds a B.S. and M.S. degree in civil engineering from the University of Illinois. *Id.* He provided testimony on behalf of the Illinois Association of Wastewater Agencies (IAWA). *Id.*

The IAWA supports the Agency's work plan to develop nutrient water quality standards for Illinois that would call for the application of sound science to develop nutrient limits by 2008. Tr.2 at 98. Daugherty testified that the IAWA is opposed to the proposed interim effluent phosphorus limits, and that the Agency has not provided an adequate environmental, technical or economic justification for a new statewide effluent limitation. Tr.2 at 99. Daugherty testified that for streams where phosphorus can be shown to be impairing a recognized stream use, there are already regulations that would allow the Agency to give those dischargers effluent limitations that will address such impairments. Tr.2 at 99.

Daugherty testified that for receiving streams where it cannot be determined that there will be a benefit from reductions in phosphorus levels, the proposed interim limit would result in the installation and operation of treatment technology with no known benefit. Tr.2 at 100. He testified that the most significant omission from the Agency's cost figures is the cost of handling and disposal of additional sludge. *Id.*

PUBLIC COMMENTS

Nineteen public comments were filed in this rulemaking. Fifteen of the comments expressed support of the Agency's proposal. Specifically, Professor Walter K. Dodds (PC 1); Bruce W. Anderson, D.D.S. (PC 2); Bruce J. Lippincott, President, Illinois Chapter American Fisheries Society (PC 3); Kathy Andria, President, American Bottom Conservancy (PC 4); Jonathan Goldman, Executive Director, Illinois Environmental Council, Illinois Environmental Council Education Fund (PC 6); Betsy Vandercook, President, Chicago Recycling Coalition (PC 7); Joyce O'Keefe, Associate Director, Openlands Project (PC 8); Ronald Thomas, AICP, Executive Director, Northeastern Illinois Planning Commission (PC 9); Sean S. Wiedel, Watershed Planner, of Lake County Stormwater Management Commission (PC 10); Lenore Beyer-Clow, Executive Director, McHenry County Defenders (PC 11); Pat Quinn, Lieutenant Governor, State of Illinois (PC 12); James W. Coursey, Chairman, Government Affairs Subcommittee, Illinois Council of Trout Unlimited (PC 13); Sanjay K. Sofat, Assistant Counsel, Division of Legal Counsel, Illinois Environmental Protection Agency (PC 14); the Environmental Law & Policy Center, Prairie Rivers Network and Sierra Club (PC 15); as well as Beth Wentzel (PC 16) filed comments in support of the Agency's proposal. In addition, Ronald Thomas, AICP, of the Northeastern Illinois Planning Commission (PC 19) filed a letter that expresses support for the proposal, but notes that the support is not an official position of the Northeastern Illinois Planning Commission.

Three comments were filed against the proposal. The Metropolitan Water Reclamation District of Greater Chicago (PC 5), the Home Builders Association of Illinois and Attainable

Housing Alliance (PC 17), and the Illinois Association of Wastewater Agencies (PC 18) each ask that the Board reject the Agency's proposal. The comments are summarized below.

Walter K. Dodds

Walter K. Dodds (Dodds) is a professor of Biology at Kansas State University. PC 1 at 2. He asserts that he has experience in researching nutrient criteria in rivers and streams and eutrophication, and has numerous publications in the peer-reviewed scientific literature. PC 1 at 1. He contends that the proposed regulation is a reasonable first policy step. *Id.* He asserts that phosphorus is a major problem in many Midwest lakes, rivers and streams, and can fertilize excessive growth of algae, including cyanobacteria. *Id.* He contends that algal blooms can cause supersaturating levels of dissolved oxygen that can kill fish, mussels, and other aquatic life and prevent breeding and juvenile development in these species. *Id.* He asserts that the proposed effluent limit is within the technological capabilities that are currently available and has been attained in many areas draining into the Great Lakes. PC 1 at 2.

Bruce W. Anderson

Bruce Anderson, D.D.S., (Anderson) supports the proposed limitation of phosphorus in discharge water. PC 2 at 1. He contends that the limit is only a start, but will benefit water quality. *Id.*

The Illinois Chapter of the American Fisheries Society

The American Fisheries Society was founded in 1870 and is the world's largest and oldest organization of professional fisheries biologists and aquatic resource scientists. PC 3 at 1. The Illinois Chapter of the American Fisheries Society (Illinois Chapter) represents more than 250 fisheries and aquatic scientists in the State of Illinois. *Id.* The Illinois Chapter supports the proposal, and commends the Agency for their submittal of the new standard. *Id.* The Illinois Chapter asserts the regulation of phosphorus effluent in the state's lotic systems is long overdue. PC 3 at 2. The Illinois Chapter contends that the new standard will help achieve the "fishable, swimmable" goals of the Clean Water Act. *Id.*

American Bottom Conservancy

The American Bottom Conservancy (ABC) is a not-for-profit organization working to protect the resources, citizens and communities of the American Bottom floodplain in Southwestern Illinois. PC 4 at 1. ABC is a member of the Illinois Department of Natural Resources Ecosystem Partnership, the Conservation Congress and the Clean Water Network. *Id.* The ABC strongly supports the proposal, contending it is good for water quality as well as being consistent with and required by the current laws and regulations. *Id.* The ABC asserts the proposal is readily achievable and urges the Board to adopt the proposal. *Id.*

District

The District asserts that, not only are there more economical and efficient ways to reduce phosphorus in the waterways, but that the Agency admitted no science exists supporting the proposed phosphorus limit. PC 5 at 1. The District contends that, as District witness Lanyon testified, a ban on products containing phosphorus or phosphorus compounds would be a more effective approach to achieving immediate reductions in publicly owned treatment work effluents than enacting the limit in the proposed rule. PC 5 at 1-2, citing Tr.2 at 68.

The District reiterates its suggestion that the Board allow for the use of water quality trading and wetlands to remove nutrients, including phosphorus, as suggested by Lanyon, and argues that water quality trading for nutrients will be necessary when nutrient standards are adopted. PC 5 at 3.

The District asserts that the Agency's testimony indicates that the proposal is designed to eliminate its permit backlog, not to improve Illinois streams. PC 5 at 4. The District argues that if the proposal unjustly impacts only one permit discharger, it is unjust, and that minimizing the impact of an imperfect proposal is not justification for adoption. *Id.*

Illinois Environmental Council

The Illinois Environmental Council (IEC) is a statewide organization representing fifty environmental and conservation organizations in Illinois. PC 6 at 1. The IEC strongly supports an interim monthly average phosphorus effluent limit of 1.0 mg/L for new or increased discharges. *Id.* The IEC contends the proposal is good for water quality and consistent with and required under current laws and regulations. *Id.* The IEC urges the Board to adopt the proposal. *Id.*

Chicago Recycling Coalition

The Chicago Recycling Coalition (CRC) is an organization of several hundred members based in Chicago and its suburbs with a main focus on solid waste. PC 7 at 1. The CRC asserts that it agrees with the Agency that it is not sufficient for discharges of phosphorus to only be regulated when they flow into lakes and tributaries. *Id.* The CRC contends that such a situation would be like regulating landfills in the counties bordering Lake Michigan while allowing the rest of the state to use unlined garbage dumps. *Id.* The CRC supports the proposal and asserts it can be readily achieved as it has been for phosphorus entering tributaries to the Great Lakes since the 1970s. *Id.*

Openlands Project

Openlands Project (Openlands) is a 41-year old conservation organization that promotes the protection and restoration of open spaces, natural areas and waterways throughout northeastern Illinois. PC 8 at 1. Openlands urges the Board to support the proposal. *Id.* Openlands contends that elevated phosphorus levels can lead to human health risks and damage to the aquatic ecosystem. *Id.* Openlands asserts that nutrient enrichment is generally associated with the formation of trihalomethanes that are carcinogenic. *Id.* Openlands contends the

problem is widespread in Illinois, and that the proposal is legally required, economically achievable and environmentally beneficial. PC 8 at 2.

Ronald Thomas, Executive Director of the Northeastern Illinois Planning Commission

Ronald Thomas (Thomas) is the Executive Director for the Northeastern Illinois Planning Commission. (NIPC). PC 9 at 1. He asserts that the proposal will reduce algae and bacteria growth that kills fish and other wildlife and can turn waters into green slime undesirable for swimming or other uses. *Id.* He fully supports the Agency's proposal. *Id.* Thomas asserts that the proposal is good for water quality and consistent with and required under current laws and regulations. *Id.*

North Branch Chicago River Watershed Project

The North Branch Chicago River Watershed Project (NBCWP) is a voluntary, collaborative partnership involving over 200 members from non-profit organizations, municipalities, county, state and federal agencies, corporate and private landowners, drainage districts and local residents. PC 10 at 1. The NBCWP works to integrate multi-objective watershed management in land use planning and development activities. *Id.* The NBCWP asserts that reduction of phosphorous loading will reduce algae and bacteria growth that kills fish and other wildlife, and that control is needed to prevent violations of water quality standards that can result from excess phosphorous loading. *Id.* The NBCWP urges the Board to adopt the Agency's proposal. PC 10 at 2.

McHenry County Defenders

The McHenry County Defenders (Defenders) is a 34-year-old county based not-for-profit corporation dedicated to the preservation and improvement of the environment. PC 11 at 1. The Defenders support the proposal as necessary to maintain the quality of the many high quality streams and rivers found in McHenry County. *Id.* The Defenders assert that the interim limit will provide immediate benefit in McHenry County by limiting increases in new phosphorus discharges to numerous streams. *Id.* The Defenders urges the Board to adopt the interim phosphorus effluent standard proposed by the Agency. PC 11 at 2.

Lieutenant Governor Pat Quinn

Illinois Lieutenant Governor Pat Quinn (Quinn) supports the proposal. PC 12 at 1. Quinn asserts that the Agency has identified excessive nutrient pollution as one of the top causes of water quality impairment in the state. *Id.* He contends that overabundance of the nutrient phosphorus has led to excess algae growth, eutrophication and dissolved oxygen deficiencies, and makes for green, foul-smelling water that, even when filtered, has become a source of numerous drinking water complaints. *Id.* Quinn contends that phosphorus contamination has contributed to poor habitat for fish and other wildlife throughout the state, decreasing fishing and boating, lowering lakeshore property values and diminishing our water's potential as an economic and recreational resource. *Id.* He recommends adoption of the Agency's proposal. PC 12 at 2.

Illinois Council of Trout Unlimited

The Illinois Council of Trout Unlimited (TU) represents approximately 3,000 members residing in Illinois, and 130,000 national members. PC 13 at 1. TU's mission is to conserve, protect and restore North America's cold water fisheries and their watersheds. *Id.* TU asserts the proposal will reduce algae and bacteria growth that kills fish and other wildlife and can turn waters into green slime undesirable for swimming and other uses. *Id.* TU contends the proposal is modest, but good for water quality and is consistent with, and required under, current law and regulations. *Id.* TU urges the Board to adopt the Agency's proposal. *Id.*

Agency

The Agency asserts that the primary objective of its proposal is to reduce the loading of phosphorus from major point sources. PC 14 at 3. The Agency contends that its proposal will facilitate more comprehensive nutrient management program in the future, and that in the interim the Agency is attempting to reduce phosphorus loading from both point and non-point sources. *Id.* The Agency notes that in the past it has spent money authorized from Section 319 of the Clean Water Act on projects that have the potential to reduce the loading of phosphorus from non-point sources. PC 14 at 3-4.

The Agency reiterates that it is proposing an effluent standard and not a water quality standard in this rulemaking, and that the Agency's proposal seeks protection of all General Use waters, not just impaired ones. PC 14 at 4. The Agency asserts that, in general, effluent standards are established based on the type of pollutant and type of discharger, and that each discharger is subject to effluent limitations based on technology feasibility and the costs of the technology. PC 14 at 7.

The Agency argues that it is a well established fact that primary nutrients nitrogen and phosphorus are generally plentiful in surface waters and that elevated concentrations of these elements can lead to problematic algal growth and eutrophic conditions including depressed or widely fluctuating dissolved oxygen levels in water bodies. PC 14 at 8. Accordingly, the Agency contends, the control of phosphorus in surface water bodies is often considered to be of prime importance in reducing the accelerated eutrophication of fresh waters. *Id.*

The Agency contends that in Minnesota, it was determined that phosphorus contributions from wastewater treatment plants is typically in a form that is more bioavailable than non-point source phosphorus. PC 14 at 8-9. The Agency asserts that implementation of the proposed standard would reduce effluent concentrations of phosphorus to less than one-third of the current average effluent concentration at wastewater treatment facilities and would result in a significant reduction in phosphorus loading to receiving streams and water bodies in Illinois. PC 14 at 9.

The Agency asserts that phosphorus removal in the wastewater treatment process can be accomplished through either biological or chemical processes, and that initial construction and capitol costs are generally larger for biological treatment, but continuing operational costs (principally chemical procurement) is usually higher for chemical phosphorus removal. PC 14 at 11. The Agency notes that a variety of treatment technologies are available to achieve effluent

levels of 1.0 mg/L total phosphorus, and that many treatment facilities have been achieving phosphorus removal to this level for many years. PC 14 at 12.

The Agency contends that the economic impact of the proposed regulation would pertain to only a small fraction of the 814 facilities in Illinois and only to large facilities that could likely incorporate capital and operational improvements more easily. PC 14 at 13. The Agency notes that Beth Wentzel estimated at hearing that for a 5 MGD treatment facility approximately \$175,000 in capital improvements and approximately \$90,000 in annual operational costs would be required to implement phosphorus removal. PC 14 at 14. The Agency asserts that it was estimated that treatment plants with capacities between 1 MGD and 5 MGD design average flow would incur capital improvement costs between \$50,000 to \$60,000 if existing facilities could incorporate the necessary equipment and an additional \$200,000 to \$300,000 if new construction is required. PC 14 at 14. The annual chemical cost is estimated to be approximately \$45,000 for a 5 MGD facility. *Id.* The Agency contends that the costs associated with additional sludge production and its disposal will vary due to the method of disposition and the options available to each specific facility, and that it is not practical to provide any estimates here. *Id.*

Environmental Law and Policy Center, Prairie Rivers Network and Sierra Club

The Environmental Law and Policy Center, Prairie Rivers Network and Sierra Club (collectively ELPC) asserts that basically only two objections have been made to the proposal. PC 15 at 1. The first objection, contends ELPC, is that there are many other things we should be doing to control phosphorus. *Id.* The ELPC contends that this is true, but completely irrelevant. *Id.* The second objection, the ELPC contends, is that no limit should be placed on any dischargers until a scientifically sound demonstration has been made. PC 15 at 2. The ELPC disagrees and contends that the proposal is very scientifically sound and that any objections are based on a fundamental misunderstanding the purpose and goal of Part 304, Subpart A: General Effluent Standards and the basic theory of the 1972 Clean Water Act. *Id.*

The ELPC asserts that the proposed rule should be adopted because it will significantly reduce the extent to which Illinois waters are degraded while numeric phosphorus standards are developed. PC 15 at 2. The ELPC contends that many dischargers already have to meet effluent limits far lower than those proposed for new or increased dischargers by the proposed rule. PC 15 at 3. However, the ELPC asserts, the fact that more needs to be done to control phosphorus pollution now and in the future is not a basis for not doing something now. *Id.*

The ELPC suggests that point sources may be the biggest part of the phosphorus problem for many waters, and more harmful to the environment than other loadings. PC 15 at 3.

The proposed effluent limit, states the ELPC, is sound as a matter of science, law and policy. PC 15 at 4. The ELPC contends that water quality standards must be based on sound scientific rationale and must protect the most sensitive use of the water body, but that effluent standards are different from water quality standards and are based on practical considerations of environmental prudence, permit writing and wastewater treatment. *Id.* The ELPC asserts that effluent rules require ordinary good practice to lessen the chance of a known evil occurring and

that the proposed effluent rules are scientific insofar as science is not opposed to common sense. PC 15 at 5.

The ELPC asserts that Illinois currently has effluent limits for discharges of phosphorus to lakes and to all waters in the Lake Michigan Basin, and would have limits for that phosphorus discharges to rivers and streams but for the bygone belief that such discharges did not harm the environment. PC 15 at 5. The ELPC contends we now know that discharges to rivers and streams injure the receiving waters as well as waters miles downstream. *Id.*

The ELPC contends that it is against the principles of the Clean Water Act that the state should only limit pollution to the extent that it can be scientifically proven that allowing more pollution will cause environmental damage, rather under the Clean Water Act, all discharges are suspect and to be eliminated many years ago. PC 15 at 5-6. The ELPC argues that under Illinois law there is no right to pollute, and that the notion that there can only be limits on pollution to the extent it has been scientifically demonstrated that more pollution to the receiving water will cause impairments is at odds with the law and sound public policy. PC 15 at 6.

The ELPC concludes that the Board should adopt its proposed language or other clear language consistent with the law. PC 15 at 6.

Beth Wentzel

Wentzel asserts that new tanks may not be necessary to incorporate phosphorus removal into treatment plants during expansions. PC 16 at 2. Wentzel contends that technologies installed in accordance with the proposed rule would not likely need to be removed to meet lower limits in accordance with more stringent nutrient standards. *Id.* Wentzel asserts that pursuant to information she received from the Agency, 14 municipal wastewater treatment plants that she identified all have permit limits of 1.0 mg/L as a monthly average and 2.0 mg/L as a daily maximum. PC 16 at 3.

Home Builders Association of Illinois and Attainable Housing Alliance

The Home Builders Association of Illinois is comprised of thousand of member firms throughout the state and is affiliated with the National Association of Home Builders. PC 17 at 1. The Attainable Housing Alliance was formed to provide a unified voice for the building industry in the eight-county metro area around Chicago. *Id.* Both the Home Builders Association of Illinois and the Attainable Housing Alliance (collectively HBAI) oppose the rule and believe it to be insufficiently supported by scientific evidence. PC 17 at 2.

IAWA

The IAWA opposes the proposal as insufficiently supported, not based on sound science, and deficient in meeting the requirements required by statute and Board rules that allow the Board to adopt standards. PC 18 at 2. The IAWA asserts that the Agency has not provided an adequate environmental, technical or economic justification for a new statewide effluent limitation. *Id.*

The IAWA asserts that the proposed standards are not based on sound science but are improperly based on an election year pledge by Governor Rod Blagojevich and the Agency's desire to reduce the regulatory burden associated with the NPDES permit program. PC 18 at 2. The IAWA believes that any expected benefit from the proposal is illusory, and that the Agency will still have to address water quality and anti-degradation even with an interim standard. PC 18 at 3. The IAWA asserts that Agency witness Frevert stated at hearing that nobody has sound science and knows exactly what to do with nutrients. *Id.* The IAWA further asserts that for receiving streams where it cannot be determined that there will be a benefit from reductions in phosphorus levels, the proposed interim limit would result in the installation and operation of treatment technology with no known benefit and an unknown cost. *Id.*

The IAWA asserts that there is a real deficiency in the information that has been submitted on the cost of this proposed regulation to wastewater treatment agencies and, consequently, taxpayers. PC 18 at 4.

The IAWA notes that the state is moving forward on developing nutrient standards that would be based on sound science by forming the Illinois Nutrient Work Group. PC 18 at 5. The IAWA asserts that the Board should move toward creating an incentive to allow treatment facilities to explore wetland trading to address nutrients and evaluate other alternatives. *Id.* The IAWA concludes that since nutrient limits are in progress, and the Agency currently has the legal means to deal with streams that have known nutrient problems, the adoption of an interim technology-based phosphorus limit is not wise public policy. PC 18 at 6.

Ronald Thomas, Executive Director of the Northeastern Illinois Planning Commission

Thomas is the Executive Director for the Northeastern Illinois Planning Commission. (NIPC) who filed PC 9. PC 19 at 1. He filed this comment to clarify that this initial comment that expressed support for the proposal is a letter expressing the NIPC staff opinion and is not adopted position of the commission. *Id.*

DISCUSSION

The Board has held two days of hearings and received substantial testimony and comments on this proposal. The comments and the additional language changes suggested by both the Agency and the participants have been evaluated, and the first-notice proposal adopted by the Board today reflects the Board's consideration of all the comments and testimony the Board has received. The Board will discuss below the issues raised by the participants at the hearings and in the post hearing comments along with the first-notice changes.

Justification for the Proposed Phosphorus Standard

The District, IAWA and other participants opposed to this rulemaking proposal share a primary concern that the Agency's proposal is not based on sound science. Essentially, those opposed argue that no interim phosphorus limit should be set until sufficient research has been performed to show the need for a limit and what that limit should be. The Illinois Nutrient Work

Group has been formed to develop nutrient standards. The Agency expects that a nutrient standards petition will be filed with the Board in early 2007. While the Board recognizes that water quality data is still being gathered for the State's rivers and streams to develop comprehensive nutrient standards, based on the record, the Board finds that there is sufficient information in the record to justify reduction of phosphorus loading on the State waters.

As noted by the Agency, when it comes to nutrient to impacts, phosphorus is generally considered to be the primary limiting nutrient in most freshwater environments. Thus, when nitrogen is present in sufficient amounts, an elevated level of phosphorus can result in eutrophic conditions, which can limit the use of a waterbody for swimming, boating, and water supply. Further, excessive algal growth can change the composition of the aquatic biota. However, a major concern with eutrophication is the effect on dissolved oxygen levels. Eutrophication can alter or lower dissolved oxygen concentration. Although studies are currently being conducted to evaluate the relationships between nutrient concentration, algae growth, biological parameters and dissolved oxygen, the Board agrees with the Agency that reducing phosphorus loading from new or expanded treatment works is one of the steps towards comprehensive nutrients control and minimizing the impact of nutrients on water quality.

While the findings of the nutrient control work group will help the Agency in developing scientifically justifiable nutrient water quality standards, the Board believes that an effluent standard would reduce the phosphorus loading on the State waters. The Board agrees with ELPC and the Agency that an effluent standard is mainly intended to reduce significant loading of a pollutant giving consideration to availability of appropriate treatment technology, and associated costs. As discussed below, the Board finds that viable phosphorus control technologies are available at a reasonable cost.

The Board recognizes that wastewater treatment plants are not the only significant source of phosphorus. However, at this time, the Board believes it is prudent to control phosphorus discharge from larger treatment plants given the impact of such discharges on receiving streams. While non-point source contribution (agricultural drainage and runoff) is also a significant source of phosphorus loadings, the Board believes that control of phosphorus from non-point sources is not appropriate in this rulemaking. In light of this, the Board finds that the record in this proceeding contains adequate justification for the proposed phosphorus effluent standard. Further, the Board concurs with the Agency that its proposal is an effluent standard seeking protection of all General Use Waters, not only those impaired, and not a water quality standard. A showing that the receiving stream is impaired before a phosphorus limit is imposed should not, therefore, be required. The Agency's proposal is tailored to meet its stated primary objective; that of reducing the loading of phosphorus from major sources while the Nutrient Work Group develops nutrient standards.

Technical Feasibility and Economic Reasonableness

The information presented by the Agency indicates that technology is available for removing phosphorus from wastewater. Biological or chemical treatment processes are generally used for phosphorus removal. Chemical treatment involves the use of aluminum salts, iron salts or lime to precipitate phosphorus from wastewater. The biological processes involve

the application of a combination of anaerobic, anoxic, and aerobic zones in suspended growth biological systems to remove reduce both phosphorus and nitrogen. Chemical addition is also used to augment the biological treatment processes.

The record also suggests that most existing treatment plants could be retrofitted or augmented with biological or a combination of biological and chemical processes to achieve effluent phosphorus concentrations in the range of 0.5 mg/L on reliable and consistent basis. Thus, the Board finds that technology is currently available to meet the proposed total phosphorus effluent standard of 1 mg/L. Further, the Board finds that it is technically feasible to retrofit most existing plants with the biological/chemical treatment systems for phosphorus removal.

Regarding the economic impacts, the Board notes that the compliance costs for existing treatment plants subject to the proposed phosphorus standard include both capital and operational costs. While the capital costs pertain to any additional tankage, aeration equipment, chemical addition equipment and storage, and sludge handling facilities, the operational costs deal with additional chemicals, energy, labor, and sludge management.

Although the cost of phosphorus removal varies on a site-specific basis depending upon the plant capacity, type of phosphorus removal process and existing treatment processes, the Board notes that the cost information presented by the participants provides a broad estimate of the economic impact of the proposed regulations.

Based on the costs provided by Wentzel for Fox River Water Reclamation District's West Wastewater Treatment Plant to implement phosphorus removal, the Agency estimates the capital improvement costs to be \$35,000 per mgd capacity and the operational costs to be \$ 50.00 per mgd treated. While most of the cost data supplied by the Agency and other participants dealt with upgrading existing municipal treatment plants, the Board believes that the economic information provides an estimate of the cost impact for all facilities covered by the proposed rules. In this regard, the Board will consider any additional cost information provided by the Agency and other participants during the first notice comment period. Based on the cost information in the record, the Board agrees with the Agency that since the proposed rule applies to only larger facilities, such facilities can incorporate the additional cost of phosphorus control in their overall expansion plans with minimal impact. Thus, the Board finds that the implementation of the proposed phosphorus effluent standard to be economically reasonable.

Alternative Methods

The opponents argue that additional methods of reducing phosphorus are available. However, the fact that there are additional ways to control phosphorus does not render the Agency's proposal unsound. In this regard, the Board believes that State's overall nutrient management strategy to meet the State's nutrient water quality standards upon adoption by end of 2008 may include: source control such as reducing phosphorus in ADWD; reduction of agricultural nonpoint source contribution by enhancing best management practices and implementing new control strategies; point source control, including conventional treatment

processes and alternative control methods such as the application of dedicated wetlands; and water quality trading.

While some of the nutrient control options will be addressed in future rulemakings, the Board believes that certain control methods may require legislative action. In this regard, a bill dealing with limitations on phosphorus content in ADWD is pending before the current legislature. 94th Ill. Gen. Assem. House Bill 1502, 2005 Sess. Further, implementation of some of the control options is dependent on the outcome of the studies being conducted by the Agency and other participants.

This rulemaking represents one of the steps towards comprehensive nutrient management similar to another ongoing rulemaking dealing with dissolved oxygen standard. Although the state is still studying the relationships between nutrients concentrations, algae growth, biological parameters and dissolved oxygen, the Board accepted IAWA's DO proposal for hearing rather than wait to address all parameters at the same time. Similarly, the Board believes that the Agency' proposal includes sufficient justification to move forward with the phosphorus effluent standard.

The Board notes it is has previously found that it is appropriate to regulate one type of source in a rulemaking proceeding even if other types exist. In Amendments to Requirements for Landscape Waste Compost Facilities, 35 Ill. Adm. Code 830.203(c), 831.107, and 831.109(b)(3), R97-29 (June 17, 1998), the Board was not persuaded by the argument that it is arbitrary for the Board to regulate the proximity of compost facilities to schools and hospitals while not imposing a similar restriction on other sources of air pollution that may operate near schools and hospitals. The Board noted that "it has been recognized that evils in the same field may be of different dimensions and reform may take place one step at a time. The legislature may address itself to one stage of a problem and not take action at the same time as to other phases." Amendments to Requirements for Landscape Waste Compost Facilities, 35 Ill. Adm. Code 830.203(c), 831.107, and 831.109(b)(3), R97-29, slip op. at 35-36, citing Illinois Coal Operators Association v. PCB, 59 Ill. 2d 305, 312-313, 319 N.E.2d 782, 786 (1974) (upholding the Board's decision to exempt equipment used in construction, but not similar equipment used in mining, from certain noise regulations); *see also* Chicago National League Ball Club v. Thompson, 108 Ill. 2d 357, 367, 483 N.E.2d 1245, 1250 (1985) ("The legislature need not choose between legislating against all evils of the same kind or not legislating at all."). The same principles apply to the Board when it adopts rules in its quasi-legislative capacity.

Proposed Amendments to Section 304.123

After careful consideration of the record, the Board will propose for first-notice the language proposed by the Agency, with some clarifying changes. Specifically, in today's order, the Board defines what constitutes as a "new" or "expanded" discharge from treatment works at subsections (g)(3). The Board notes that while the Agency explained that the proposal is intended to apply the phosphorus effluent standard to discharges from new or expanded treatment works with a specific design average flow or phosphorus loading, the rule language does not clearly reflect the proposed intent. This is because the Agency's proposal does not define "new" or "expanded" discharges from treatment works.

In today's order, the Board defines a "new" discharge as a discharge from treatment works constructed after the effective date of the proposed regulations, and an "expanded" discharge as a discharge from an existing treatment works that would be greater than the flow rates permitted prior to the effective date of the proposed amendments. The Board believes that the proposed language additions clarify the proposed intent without changing the scope of the Agency's proposal, but invites comments from the Agency and other participants on the question of rule applicability.

Since the Board has clearly specified the scope of the proposed amendments, the Board deletes subsection (i) of the Agency's proposal. This provision was proposed by the Agency to clarify which treatment works are not subject to the proposed regulations. The changes suggested by the Agency in its post-hearing comment do not change the scope of the originally proposed language. The Board accepts the changes as follows. The Board adds language in subsections (g)(1) and (g)(2) to clarify that treatment works receiving primarily municipal or domestic wastewater are not covered by subsections (b) through (f) of the proposal. Additionally, the Board accepts the changes by the Agency regarding subsection (h). Specifically, the Board proposes language in subsection (h) that provides that dischargers otherwise subject to the requirement in (g) may choose to demonstrate that the treatment works in question is not causing the phosphorus issues in the receiving waters, and therefore should not be subject to a monthly average permit limit for total phosphorus of 1.0 mg/L. A sentence allowing the Agency to consider site-specific information in deciding whether alternative phosphorus effluent limits are appropriate is also included in the proposal.

The proposal also includes the suggested change in the renumbered subsection (i) that provides that dischargers that comply with the requirements of (g) or (h) are not subject to additional phosphorus limitations that may be otherwise required by 35 Ill. Adm. Code 304.105 and 302.203. Finally, the Board proposes a new clause in the renumbered subsection (j) that the new water quality standards are not effective until approved by the USEPA.

The Board has made additional changes to the rule, including those necessary to comport with the requirements of the APA. The Board will not summarize or delineate the entirety of the rule or the changes made by the Board. The Board's order reflects the Board's changes.

CONCLUSION

The Board finds that the proposal is technically feasible and economically reasonable. The Board will proceed to first notice with the proposal and will accept additional comments on the proposal.

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

PART 304

EFFLUENT STANDARDS

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304.219	North Shore Sanitary District Phosphorus Discharges
304.220	East St. Louis Treatment Facility, Illinois-American Water Company

- 304.221 Ringwood Drive Manufacturing Facility in McHenry County
 304.222 Intermittent Discharge of TRC

SUBPART C: TEMPORARY EFFLUENT STANDARDS

Section

- 304.301 Exception for Ammonia Nitrogen Water Quality Violations (Repealed)
 304.302 City of Joliet East Side Wastewater Treatment Plant
 304.303 Amerock Corporation, Rockford Facility

Appendix A References to Previous Rules

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

SOURCE: Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 30, p. 343, effective July 27, 1978; amended at 2 Ill. Reg. 44, p. 151, effective November 2, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 3 Ill. Reg. 25, p. 190, effective June 21, 1979; amended at 4 Ill. Reg. 20, p. 53 effective May 7, 1980; amended at 6 Ill. Reg. 563, effective December 24, 1981; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg. 11161, effective September 7, 1982; amended at 6 Ill. Reg. 13750, effective October 26, 1982; amended at 7 Ill. Reg. 3020, effective March 4, 1983; amended at 7 Ill. Reg. 8111, effective June 23, 1983; amended at 7 Ill. Reg. 14515, effective October 14, 1983; amended at 7 Ill. Reg. 14910, effective November 14, 1983; amended at 8 Ill. Reg. 1600, effective January 18, 1984; amended at 8 Ill. Reg. 3687, effective March 14, 1984; amended at 8 Ill. Reg. 8237, effective June 8, 1984; amended at 9 Ill. Reg. 1379, effective January 21, 1985; amended at 9 Ill. Reg. 4510, effective March 22, 1985; peremptory amendment at 10 Ill. Reg. 456, effective December 23, 1985; amended at 11 Ill. Reg. 3117, effective January 28, 1987; amended in R84-13 at 11 Ill. Reg. 7291 effective April 3, 1987; amended in R86-17(A) at 11 Ill. Reg. 14748, effective August 24, 1987; amended in R84-16 at 12 Ill. Reg. 2445, effective January 15, 1988; amended in R83-23 at 12 Ill. Reg. 8658, effective May 10, 1988; amended in R87-27 at 12 Ill. Reg. 9905, effective May 27, 1988; amended in R82-7 at 12 Ill. Reg. 10712, effective June 9, 1988; amended in R85-29 at 12 Ill. Reg. 12064, effective July 12, 1988; amended in R87-22 at 12 Ill. Reg. 13966, effective August 23, 1988; amended in R86-3 at 12 Ill. Reg. 20126, effective November 16, 1988; amended in R84-20 at 13 Ill. Reg. 851, effective January 9, 1989; amended in R85-11 at 13 Ill. Reg. 2060, effective February 6, 1989; amended in R88-1 at 13 Ill. Reg. 5976, effective April 18, 1989; amended in R86-17(B) at 13 Ill. Reg. 7754, effective May 4, 1989; amended in R88-22 at 13 Ill. Reg. 8880, effective May 26, 1989; amended in R87-6 at 14 Ill. Reg. 6777, effective April 24, 1990; amended in R87-36 at 14 Ill. Reg. 9437, effective May 31, 1990; amended in R88-21(B) at 14 Ill. Reg. 12538, effective July 18, 1990; amended in R84-44 at 14 Ill. Reg. 20719, effective December 11, 1990; amended in R86-14 at 15 Ill. Reg. 241, effective December 18, 1990; amended in R93-8 at 18 Ill. Reg. 267, effective December 23, 1993; amended in R87-33 at 18 Ill. Reg. 11574, effective July 7, 1994; amended in R95-14 at 20 Ill. Reg. 3528, effective February 8, 1996; amended in R94-1(B) at 21 Ill. Reg. 364, effective December 23, 1996; expedited correction in R94-1(B) at 21 Ill. Reg. 6269, effective December 23, 1996; amended in R97-25 at 22 Ill. Reg. 1351, effective December 24, 1997; amended in

R97-28 at 23 Ill. Reg. 3512, effective February 3, 1998; amended in R98-14 at 23 Ill. Reg. 687, effective December 31, 1998; amended in R02-19 at 26 Ill. Reg. 16948, effective November 8, 2002; amended in R02-11 at 27 Ill. Reg. 194, effective December 20, 2002; amended in R04-26 at 29 Ill. Reg. _____, effective _____.

SUBPART A: GENERAL EFFLUENT STANDARDS

Section 304.123 Phosphorus (STORET number 00665)

- a) No effluent discharge within the Lake Michigan Basin shall contain more than 1.0 mg/L of phosphorus as P.
- b) No effluent from any source which discharges to a lake or reservoir with a surface area of 8.1 hectares (20 acres) or more, or to any tributary of such a lake or reservoir whose untreated waste load is 2500 or more population equivalents, and which does not utilize a third-stage lagoon treatment system as specified in subsections 304.120(a) and (c), shall exceed 1.0 mg/L of phosphorus as P; however, this subsection shall not apply where the lake or reservoir, including any side channel reservoir or other portion thereof, on an annual basis exhibits a mean hydraulic retention time of 0.05 years (18 days) or less.
- c) Pursuant to Section 28.1 of the Environmental Protection Act (Act) [415 ILCS 5/28.1], the owner or operator of any source subject to subsection (b) of this Section may apply for an adjusted standard. In addition to the proofs specified in Section 28.1(c) of the Act 415 ILCS 5/28.1(c), such application shall, at a minimum, contain adequate proof that the effluent resulting from grant of the adjusted standard will not contribute to cultural eutrophication, unnatural plant or algal growth or dissolved oxygen deficiencies in the receiving lake or reservoir. For purposes of this subsection (c), such effluent shall be deemed to contribute to such conditions if phosphorus is the limiting nutrient for biological growth in the lake or reservoir, taking into account the lake or reservoir limnology, morphological, physical and chemical characteristics, and sediment transport. However, if the effluent discharge enters a tributary at least 40.25 kilometers (25 miles) upstream of the point at which the tributary enters the lake or reservoir at normal pool level, such effluent shall not be deemed to contribute to such conditions if the receiving lake or reservoir is eutrophic and phosphorus from internal regeneration is not a limiting nutrient.
- d) For the purposes of this Section the term "lake or reservoir" shall not include low level pools constructed in free flowing streams or any body of water which is an integral part of an operation which includes the application of sludge on land.
- e) Compliance with the limitations of subsection (b) of this Section will be achieved by the following dates:

- 1) Sources with the present capability to comply will do so on the effective date of this Section;
 - 2) All other sources will comply as required by NPDES permit.
- f) For purposes of this Section, the following terms will have the meanings specified:
- 1) "Dissolved oxygen deficiencies" means the occurrence of a violation of the dissolved oxygen standard applicable to a lake or reservoir.

(BOARD NOTE: Dissolved Oxygen standards for general use waters are set forth at 35 Ill. Adm. Code 302.206; Dissolved Oxygen standards for secondary contact or indigenous aquatic life waters are set forth at 35 Ill. Adm. Code 302.405.)
 - 2) "Euphotic zone" means that region of a lake or reservoir extending from the water surface to a depth at which 99% of the surface light has disappeared or such lesser depth below which photosynthesis does not occur.
 - 3) "Eutrophic" means a condition of a lake or reservoir in which there is an abundant supply of nutrients, including phosphorus, accounting for a high concentration of biomass.
 - 4) "Eutrophication" means the process of increasing or accumulating plant nutrients in the water of a lake or reservoir. Cultural eutrophication is eutrophication attributable to human activities.
 - 5) "Internal regeneration" means the process of conversion of phosphorus or other nutrients in sediments of a lake or reservoir from the particulate to the dissolved form and the subsequent return of such dissolved forms to the euphotic zone.
 - 6) "Limiting nutrient" means a substance which is limiting to biological growth in a lake or reservoir due to its short supply or unavailability with respect to other substances necessary for the growth of organisms.
 - 7) "Unnatural plant or algal growth" means the occurrence of a violation of the unnatural sludge standard applicable to a lake or reservoir with respect to such growth.

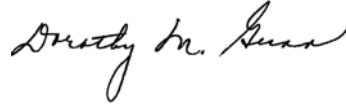
(BOARD NOTE: Unnatural sludge standards for general use waters are set forth at 35 Ill. Adm. Code 302.203; unnatural sludge standards for secondary and indigenous aquatic life waters are set forth at 35 Ill. Adm. Code 302.403.)

- g) Except as provided in Section 304.123(h) of this Section, any new or expanded discharges into General Use waters from the following treatment works not covered by subsections (b) through (f) of this Section, are subject to monthly average permit limits for total phosphorus of 1 mg/L:
- 1) Treatment works with a Design Average Flow of 1.0 million gallons per day or more receiving primarily municipal or domestic wastewater; or
 - 2) Any treatment works, other than those treatment primarily municipal or domestic wastewater, with a total phosphorus effluent load of 25 pounds per day or more.
- 3) For purposes of this subsection:
- i) A new discharge means a discharge from a treatment works constructed after the effective date of this Section.
 - ii) An expanded discharge means a discharge from any existing treatment works that would be greater than the flowrates permitted prior to the effective date of this Section.
- h) (g)(1) and (g)(2) of this Section may not be subject to the requirements of Section 304.123(g) provided the discharger demonstrate that phosphorus from treatment works is not the limiting nutrient in the receiving water. The Agency may impose alternative phosphorus effluent limits where the supporting information shows that alternative limits are warranted by the aquatic environment in the receiving stream.
- i) No additional phosphorus limitations are required pursuant to Sections 304.105 and 302.203 for the discharges that comply with the requirements of Sections 304.123(g) or (h).
- j) The provisions of subsections (g), (h), and (i) of this Section apply until such time as the Board adopts a numeric water quality standard for phosphorus and the adopted standard is approved by the U.S. EPA.

(Source: Amended in R87-6 at 14 Ill. Reg. 6777, effective April 24, 1990; amended in _____ at _____ Ill. Reg. _____, effective _____, 2005.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on April 7, 2005, by a vote of 4-0.

A handwritten signature in cursive script that reads "Dorothy M. Gunn".

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board