

ILLINOIS POLLUTION CONTROL BOARD
September 15, 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. Second Notice.

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

Today the Board adopts this proposed rule for second notice pursuant to the Illinois Administrative Procedure Act. 5 ILCS 100/1-1 (2004). The following opinion will explain the proposal background, summarize the second-notice proposal, and discuss the economic reasonableness and technical feasibility of the rule.

BACKGROUND

On May 14, 2004, the Board received a rulemaking proposal from the Illinois Environmental Protection Agency (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. The Board received 17 public comments prior to proceeding to first notice.

On April 7, 2005, the Board found that the proposal was technically feasible and economically reasonable. The Board proceeded to first notice, and noted that additional comments on the proposal would be accepted.

The proposed amendments were published in the *Illinois Register* on May 6, 2005. See Ill. Reg. Vol. 29 Issue 19, p. 6200. The Illinois Association of Wastewater Agencies (IAWA) filed a public comment on June 20, 2005. On July 1, 2005, the Environmental Law & Policy

Center, Prairie Rivers Network and Sierra Club (collectively ELPC) filed a response to the comments of IAWA. The Agency filed a comment on July 26, 2005.

PUBLIC COMMENTS AND RESPONSE

Three public comments and a response were filed in this rulemaking after the Board proceeded to first notice. Both the Agency (PC 22) and ELPC (docketed as a response, hereinafter ELPC Resp.) were supportive of the proposal the Board sent to first notice. The IAWA (PC 21) filed a comment against the proposal on June 20, 2005. On August 31, 2005, the IAWA filed additional comments, accompanied by a motion for leave to file *instanter*.

In the motion for leave to file, the IAWA asserts that through a combination of factors including vacation schedule and workload, it has not been able to file the comments in a timely fashion. Mot. at 1. The IAWA contends that the purpose of the additional comments is not to prejudice the other parties, but to provide the Board with the IAWA's unique insight into what it believes is a mistake by the Board in its previous order. *Id.*

Hearing Officer John Knittle directed the parties to indicate on or before September 9, 2005, whether any response to the motion and comments would be forthcoming. ELPC indicated that they would not be filing any response to the motion or comment. To date, no other responses have been received by the Board. The motion for leave to file is granted, and the Board accepts the IAWA's additional comments, and docketed the comments as Public Comment 23 (PC 23). The pleadings are summarized below.

IAWA

The IAWA continues to oppose the proposal as insufficiently supported. PC 21 at 1. IAWA asserts that the record does not contain evidence that phosphorus is causing widespread pollution problems in the state of Illinois, or that promulgation of the proposed standard will have a measurable impact on eutrophication. *Id.* The IAWA contends that eutrophic conditions may or may not be an environmental problem depending on the presence or absence of conditions other than phosphorus, such as low reaeration rates. *Id.* The IAWA notes that the Illinois Eater Quality Report prepared by the Agency does list many streams segments as impaired due to phosphorus, but that the listing is not based on onsite determination of cause and effect, but on statistical guidelines. *Id.* The IAWA contends that this should not be considered evidence that these elevated levels of phosphorus are causing environmental problems. PC 21 at 1-2.

The IAWA states that the Agency, along with the Illinois Nutrient Work Group, is in the midst of a multi-year undertaking to develop science-based water quality standards, and that IAWA does not believe the record in this matter documents an urgent need to shortcut the science-based approach. PC 21 at 2. The IAWA contends the proposed rule will have very limited impact on the total amount of phosphorus entering the aquatic environment because agricultural sources are also major dischargers of phosphorus. *Id.*

The IAWA asserts that if a phosphorus effluent standard is adopted, the Board should exempt the standard from the Averaging Rule at 35 Ill. Adm. Code 304.104 (a)(2) and (3). PC 21 at 2. The IAWA asserts that the rule would require the Agency to place a daily maximum limit of 2.0 mg/L in NPDES permits, and that a daily maximum limit is both unnecessary and undesirable. *Id.* The IAWA contends that a daily maximum limit is not needed since phosphorus is not a toxic parameter. The IAWA argues that daily maximum effluent limits are typically related to acute toxicity levels of pollutants, and are designed to prevent short-term discharges of high levels of pollutants that would lead to acute toxicity levels. *Id.*

The IAWA asserts that a daily maximum limit is undesirable as it will discourage the use of biological phosphorus removal technology (BPR), and that the Board should encourage the use of BPR over chemical phosphorus removal (CPR) because CPR is more resource intensive. PC 21 at 2-3. CPR requires the manufacture of a chemical and transportation of the chemical to the treatment facilities. PC 21 at 3. The IAWA notes that the state of Wisconsin has allowed an exemption even to the monthly average limit for plants using BPR. *Id.* The IAWA suggests the following addition to the rule:

- g) (4) Monthly average permit limits established under this subsection (g) are not subject to the averaging rules under subsections (a)(2) and (a)(3) of Section 304.104. PC 21 at 3.

The IAWA believes that the economic impact of the proposed rule has been seriously underestimated. PC 21 at 3. The IAWA asserts that the Village of Beecher is expanding its plant to 1.2 MGD and that the cost of chemical phosphorus removal including a chemical feed building, equipment, electrical, and controls amounts to \$288,000. *Id.* The IAWA contends the cost for the phosphorus portion of the sludge handling is \$178,600, equating to a total capital cost for phosphorus removal of \$466,600 for a 1.2 MGD plant. *Id.* The IAWA asserts that the City of McHenry's South plant is expanding to 1.5 MGD, and that the cost of the chemical feed equipment and building, including electrical and controls, was \$350,000. *Id.*

The IAWA argues that these costs are dramatically different from those referenced by the Board and that the Board's decision in the first-notice opinion and order was erroneously based upon an estimate of the capital cost for phosphorus removal of \$35,000 per MGD capacity. PC 21 at 4-5. The IAWA asserts that the actual costs of complying with the proposed rule will be 4 or 10 times higher than the costs cited in the Board's first-notice opinion and order. *Id.* The IAWA asserts that costs will be ten times higher than \$35,000 for plants in the 1 to 5 MGD range and four times \$35,000 for plants above 30 MGD. *Id.* The IAWA assert that for plants with a capacity of 1 to 2 MGD using CPR, it appears that the 20-year present worth including sludge processing and disposal will be \$600,000 to \$1,000,000. *Id.*

In its additional comments, the IAWA asserts that to the extent the Board relied on costs estimates submitted in the record by the City of Elgin in a facility plan amendment request, the Board is relying on incorrect information. PC 23 at 1. The IAWA submits a letter from Mr. Greg Hergenroeder, the director of the Fox Water Reclamation District in support of this assertion. The IAWA asserts that, as set forth in the letter, the costs contained in the IAWA's

first public comment are more accurate, and that the cost for chemical phosphorus control would be approximately \$3,000,000. PC 23 at 1-2.

The IAWA contends that the information it provided regarding the actual costs for twenty facilities that constructed phosphorus removal in Wisconsin are probably much more accurate than cost estimates contained in the Agency comments. PC 23 at 2. The IAWA asserts that the best evidence is provided by the IAWA and that it is mere speculation that chemical feed facilities can be fit into existing buildings at a reasonable cost. *Id.*

The IAWA asserts that the costs using whatever numbers the Board uses are unreasonable when compared to environmental need or benefit. PC 23 at 2.

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

The ELPC asserts that it is true, but irrelevant, that agriculture is a major source of phosphorus, and that the Board has found that phosphorus from point sources is likely more damaging to the environment because it is more biologically available to algae. ELPC Resp. at 1-2, citing Site-Specific Phosphorus Limitation for the City of Shelbyville, R83-12 (Dec. 20, 1984). The ELPC does not object to amending the rules to make it more clear that daily maximum limits are not intended. ELPC Resp. at 2. The ELPC proposes the following language to effectuate that intention:

- k) The averaging rules under subsections (a)(2) and (a)(3) of Section 304.104 do not apply to permit limits established pursuant to Section 304.123(g) or (h). ELPC Resp. at 2.

The ELPC asserts that without a daily maximum it should be possible for most Illinois dischargers to use BPR methods that generate less sludge than CPR methods. ELPC Resp. at 2.

The ELPC contends that if the proposal costs dischargers anything, the costs will be very modest. ELPC Resp. at 2. The ELPC assert that the IAWA comments regarding potential economic costs to Illinois dischargers basically confirm that the costs are modest. *Id.* The ELPC argues that the economic costs of the proposal were probably overstated and certainly were not significantly understated as suggested by the IAWA. ELPC Resp. at 3. The ELPC notes that a limit of 1 mg/L is already required for new or increased discharges by a provision of Illinois' antidegradation regulations. *Id.* The ELPC asserts that under this provision, new or increased pollution may only be allowed to the extent it is necessary and it certainly is not necessary to allow more than 1 mg/L phosphorus to be discharged given that a 1 mg/L phosphorus limit was found economically reasonable by the Board using technology in existence two decades ago. ELPC Resp. at 3, citing Village of Wauconda v. IEPA, PCB 81-017 (May 1, 1981); Amendments to the Water Pollution Regulations, R76-1 (Feb. 15, 1979).

The ELPC asserts that the figures provided by the IAWA are for the present value of the total costs of 20 years of construction and operation of the phosphorus removal equipment. ELPC Resp. at 3. The ELPC contends that no party to this proceeding has denied that phosphorus removal is likely to required well within the 20 year period, and thus even if

phosphorus removal were not already required by the antidegradation rules, the effect of the proposal at issue would be to advance the installation of phosphorus removal equipment at a few plants by a few years and to encourage some municipalities to explore land treatment or other non-discharge methods. ELPC Resp. at 3-4. The ELPC calculates that ignoring antidegradation, the virtual certainty that phosphorus treatment will be required in much less than 20 years, and assuming \$1,000,000 for a 1 MGD will result in a cost of \$5.00 per person per year. ELPC Resp. at 4. The ELPC asserts that the Wisconsin study cited by the IAWA makes clear that costs per person vary greatly and fall rapidly with increased scale. *Id.*

The ELPC asserts that even ignoring the antidegradation requirements, total costs would not be large, and that it is unclear how many new or increased discharges there will be before numeric phosphorus standards are adopted, and what, if any, increased costs will be incurred by new or expanding discharges as a result of having a 1 mg/L phosphorus limit. ELPC Resp. at 4. Further, argues the ELPC, the savings from not having to retrofit plants after numeric standards are adopted and the savings for drinking water plants and other waste users from reduced phosphorus pollution must be set against any increased costs. *Id.* The ELPC asserts that the evidence shows that the net economic effects of reducing phosphorus loadings are strongly positive. ELPC Resp. at 5.

The ELPC concludes that the adoption of the proposal will save money for the state of Illinois by establishing a bright line rule for new or increased discharges during the period in which phosphorus standards are developed. ELPC Resp. at 5. The ELPC posits that the net effect of the adoption of the proposal will be to reduce the number of permit disputes and potential hearings and appeals resulting from such disputes. *Id.*

Agency

The Agency fully supports the Board's decision to proceed to first notice and agrees that the Board's proposed language provides clarity to the proposal without sacrificing the intent or changing the scope of the original proposal. PC 22 at 2. The Agency asserts that, contrary to the assertion of the IAWA, the record contains abundant discussion on issues related to need to control phosphorus loading in Illinois streams, and the availability of technically feasible and economically reasonable phosphorus controls. *Id.*

The Agency, in general, supports the IAWA's concept that a daily maximum limit is not necessary, and believes that the exemption of the proposed phosphorus standard from the Board's averaging rule does not interfere with the original intended purpose of the proposal. PC 22 at 2-3. The Agency asserts that the primary objective of its proposal is to reduce net loading of phosphorus from certain major sources into waters of the state, and as long as there are no changes to the proposed monthly average limit of 1 mg/L, the primary objective will be met. PC 22 at 3. The Agency proposes the following language to meet the IAWA's intended objective:

- k) The averaging rules under subsections (a)(2) and (a)(3) of Section 304.104 do not apply to permit limits established pursuant to Section 304.104(g) or (h). PC 22 at 3.

The Agency argues that its proposed language ensures that the averaging rule exemption is available to permits issued under Section 304.104(g) as well as 304.104(b). PC 22 at 3.

The Agency contends that the costs provided by the IAWA may be applicable to the Village of Beecher and the City of McHenry, but appear to be above the expected average costs in general. PC 22 at 3-4. The Agency asserts that when specific high costs are extrapolated on a statewide basis, they would give an unrealistic high estimate of the costs because (1) the costs are based on a strictly CPR or BPR method and the general trend in the industry is to remove most of the phosphorus with BPR methods and any remaining phosphorus with CPR at a minimum cost; (2) The 20% increase in sludge production is excessive, and generally 5 to 10 percent is considered a good number, especially with BPR and CPR are used in combination; (3) the cost of \$288,000 for a chemical feed building may be reasonable for the Village of Beecher, but in most cases the chemical feed may fit into an existing building or a proposed building may be expanded for a more reasonable cost; and (4) many plants built or modified in the last few years considered the possibility of phosphorus removal in the planning phase of the treatment plant and removal at such plants can be accomplished with minimal additional facilities at a modest cost. PC 22 at 4.

DISCUSSION

The Board has held two days of hearings and received substantial testimony and comments on this proposal. The comments and the recent additional language changes suggested by IAWA, the ELPC, and the Agency and the participants have been evaluated, and the second-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 in the first-notice comments.

Justification for the Proposed Phosphorus Standard

IAWA has reiterated its opposition to this rulemaking as not based on sound science, noting that the Illinois Nutrient Work Group is in the midst of a multi-year undertaking to develop science-based water quality standards. As discussed in the first notice opinion and order, 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, the Board finds nothing in the comments of the IAWA to alter its decision that there is sufficient information in the record to justify reduction of phosphorus loading on the State waters.

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 continues to agree 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.

The IAWA argues that the proposed rule will have very limited impact on the total amount of phosphorus entering the aquatic environment because agricultural sources are also major dischargers of phosphorus. As before, 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.

Economic Reasonableness

The IAWA believes that the economic impact of the proposed rule has been seriously underestimated, and presents information in its comments to support this contention. The Agency notes that although the costs provided by the IAWA may be applicable to the Village of Beecher and the City of McHenry, they appear to be above the expected average costs in general; while the ELPC argues that the economic costs contained in the proposal were probably overstated and certainly were not significantly understated as suggested by the IAWA.

The Board finds nothing in the information provided by IAWA to alter its decision that the implementation of the proposed phosphorus effluent standard is economically reasonable. In the first-notice opinion, the Board stated that 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. If anything, the information supplied by the IAWA taken in context with the comments of the Agency and the ELPC bolsters that statement.

As stated in the first-notice opinion and order, BPR and CPR are generally used for phosphorus removal. CPR treatment involves the use of aluminum salts, iron salts or lime to precipitate phosphorus from wastewater. The BPR processes involve the application of a combination of anaerobic, anoxic, and aerobic zones in suspended growth biological systems to remove and reduce both phosphorus and nitrogen. Chemical addition is also used to augment the biological treatment processes.

The Board continues to believe that, based on the cost information in the record coupled with the fact that the proposed rule applies to only larger facilities, affected 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.

Daily Maximum Limits

Each commenting party agrees that if a phosphorus effluent standard is adopted, the Board should exempt the standard from the averaging rule at 35 Ill. Adm. Code 304.104 (a)(2) and (3). The Board agrees. The exemption of the proposed phosphorus standard from the Board's averaging rule will not interfere with the stated objective of the proposal to reduce net loading of phosphorus from certain major sources into waters of the state. Exempting the phosphorus effluent standard from the averaging rule will in no way change the proposed monthly average limit of 1 mg/L.

Further, as argued by both the IAWA and the ELPC, exempting the phosphorus effluent standard from the averaging rule should encourage the use of BPR methods that may have more beneficial results, including the generation of less sludge.

The Board will use the following language in its second-notice proposal:

k) The averaging rules under subsections (a)(2) and (a)(3) of Section 304.104 do not apply to permit limits established pursuant to Section 304.123(g) or (h).

This language ensures that the exemption from the averaging rule applies to permit limits established pursuant to both subsections 304.123(g) or (h), instead of limiting the exemption to only subsection 304.123(g).

SUMMARY OF SECOND-NOTICE PROPOSAL

The proposal sets forth 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.

Today's proposal differs in only one substantive manner than the proposal as set forth in its entirety in the Board's first notice opinion and order – the addition of proposed language to ensure that the averaging rule exemption is available to permits issued under Section 304.104(g) as well as 304.104(b). This change was supported by IAWA, the ELPC and the Agency in post first-notice filings, and is set forth above.

In response to testimony and questions at hearing, the Agency offered several changes to the original proposal in its post-hearing comments prior to first notice. In the first notice opinion and order, the Board found that the changes to the proposal did not change the scope of the originally proposed language. The proposal that was published in the *Illinois Register* accepted the Agency's changes along with some clarifying changes drafted by Board.

Changes of note that were made in the Board's first-notice opinion and order include: (1) the addition of 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; (2) 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; (3) 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; (4) a 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; and (5) a new clause in the renumbered subsection (j) that the new water quality standards are not effective until approved by the United States Environmental Protection Agency (USEPA). Interim Phosphorus Effluent Standard, Proposed 35 Ill. Adm. Code 304.123(g-k), R04-26 (Apr. 7, 2005), slip op. at 20.

In addition, the Board defined what constitutes as a “new” or “expanded” discharge from treatment works at subsections (g)(3), defined a “new” discharge as a discharge from treatment works constructed after the effective date of the proposed regulations, 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, and deleted subsection (i) of the Agency’s proposal. Interim Phosphorus Effluent Standard, Proposed 35 Ill. Adm. Code 304.123(g-k), R04-26 (Apr. 7, 2005), slip op. at 20.

The Board has made additional non-substantive changes to the rule, but 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

Based on the record developed to date in this matter, the Board finds that adoption of the Agency’s proposal is warranted. The Board proposes this rulemaking for second-notice review by Joint Committee on Administrative Rules (JCAR).

ORDER

The Board directs the Clerk to cause the filing of the following rule with the Joint Committee on Administrative Rules for its second-notice review.

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

PART 304
EFFLUENT STANDARDS

SUBPART A: GENERAL EFFLUENT STANDARDS

Section	
304.101	Preamble
304.102	Dilution
304.103	Background Concentrations
304.104	Averaging
304.105	Violation of Water Quality Standards

304.106	Offensive Discharges
304.120	Deoxygenating Wastes
304.121	Bacteria
304.122	Total Ammonia Nitrogen (as N: STORET number 00610)
304.123	Phosphorus (STORET number 00665)
304.124	Additional Contaminants
304.125	pH
304.126	Mercury
304.140	Delays in Upgrading (Repealed)
304.141	NPDES Effluent Standards
304.142	New Source Performance Standards (Repealed)

SUBPART B: SITE SPECIFIC RULES AND EXCEPTIONS NOT OF GENERAL APPLICABILITY

Section	
304.201	Wastewater Treatment Plant Discharges of the Metropolitan Water Reclamation District of Greater Chicago
304.202	Chlor-alkali Mercury Discharges in St. Clair County
304.203	Copper Discharges by Olin Corporation
304.204	Schoenberger Creek: Groundwater Discharges
304.205	John Deere Foundry Discharges
304.206	Alton Water Company Treatment Plant Discharges
304.207	Galesburg Sanitary District Deoxygenating Wastes Discharges
304.208	City of Lockport Treatment Plant Discharges
304.209	Wood River Station Total Suspended Solids Discharges
304.210	Alton Wastewater Treatment Plant Discharges
304.211	Discharges From Borden Chemicals and Plastics Operating Limited Partnership Into an Unnamed Tributary of Long Point Slough
304.212	Sanitary District of Decatur Discharges
304.213	PDV Midwest Refining, L.L.C. Refinery Ammonia Discharge
304.214	Mobil Oil Refinery Ammonia Discharge
304.215	City of Tuscola Wastewater Treatment Facility Discharges
304.216	Newton Station Suspended Solids Discharges
304.218	City of Pana Phosphorus Discharge
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 subsection (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:

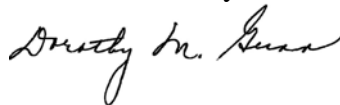
- 1) Treatment works with a Design Average Flow of 1.0 million gallons per day or more receiving primarily municipal or domestic wastewater; or

- 2) Any treatment works, other than those treating 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) Discharges qualifying under subsections (g)(1) and (g)(2) of this Section may not be subject to the requirements of subsection (g) of this Section 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 (g) or (h) of this Section.
- 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.
- k) The averaging rules under subsections (a)(2) and (a)(3) of Section 304.104 do not apply to permit limits established pursuant to subsection (g) or (h) of this Section.

(Source: 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 September 1, 2005, by a vote of 5-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board