

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

PRAIRIE RIVERS NETWORK,)	
NATURAL RESOURCES DEFENSE)	
COUNCIL, SIERRA CLUB,)	
ENVIRONMENTAL LAW & POLICY)	
CENTER, FRIENDS OF CHICAGO)	
RIVER and GULF RESTORATION)	
NETWORK)	
)	
Petitioners,)	PCB 14-106
)	(O'Brien)
v.)	PCB 14-107
)	(Calumet)
ILLINOIS ENVIRONMENTAL)	PCB 14-108
PROTECTION AGENCY and)	(Stickney)
METROPOLITAN WATER)	(Third-Party NPDES Permit Appeals
RECLAMATION DISTRICT OF)	- Water)
GREATER CHICAGO)	(Consolidated)
)	
)	
Respondents.)	

NOTICE OF ELECTRONIC FILING

To: Attached Service List

PLEASE TAKE NOTICE that on September 19, 2014 I electronically filed with the Clerk of the Pollution Control Board of the State of Illinois, **PETITIONERS' REPLY TO IEPA'S CROSS MOTION FOR SUMMARY JUDGMENT AND RESPONSE TO PETITIONERS' MOTION FOR SUMMARY JUDGMENT** in PCB 2014-106, 107, 108 a copy of which is attached hereto and herewith served upon you.

Respectfully Submitted,



Jessica Dexter (Region No.6298340)
Staff Attorney
Environmental Law & Policy Center
35 E. Wacker Drive, Suite 1600
Chicago, IL 60601
312-795-3747
jdexter@elpc.org

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PRAIRIE RIVERS NETWORK,)
NATURAL RESOURCES DEFENSE)
COUNCIL, SIERRA CLUB,)
ENVIRONMENTAL LAW & POLICY)
CENTER, FRIENDS OF THE CHICAGO)
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Petitioners,)

v.)

PCB 14-106, 107, 108
(Third Party NPDES Appeal)

ILLINOIS ENVIRONMENTAL)
PROTECTION AGENCY and)
METROPOLITAN WATER)
RECLAMATION DISTRICT OF)
GREATER CHICAGO)

Respondents.)

**PETITIONERS' RESPONSE TO IEPA'S AND MWRD'S CROSS MOTIONS
FOR SUMMARY JUDGMENT AND REPLY TO IEPA'S RESPONSE TO
PETITIONERS' MOTION FOR SUMMARY JUDGMENT**

In Petitioners' Memorandum of Law in Support of their Motion for Summary Judgment ("Petitioners' Mem."), Petitioners demonstrated that the Illinois Environmental Protection Agency ("IEPA") had failed to include limits and conditions required by Illinois law in the three National Pollutant Discharge Elimination System ("NPDES") permits ("the Permits") that IEPA granted for the Calumet, O'Brien and Stickney sewage treatment plants ("the Plants") operated by the Metropolitan Water Reclamation District of Greater Chicago ("MWRD"). The Petitioners' Memorandum identified applicable Illinois water quality standards (dissolved oxygen and narrative standards), established

that those standards are not being met in the waters receiving the Plants' phosphorus discharges, and demonstrated that, at the very minimum, there is a reasonable potential that phosphorus discharges from the plants are causing or contributing to violations of those water quality standards.

In response, the IEPA has filed its "Combined Memorandum in Response to Petitioners' Motion for Summary Judgment and in Support of its Cross-Motion for Summary Judgment" ("IEPA Combined Mem."). This document ignores or misstates much of the relevant law that requires that IEPA include permit limits to ensure that discharges will not cause or contribute to violations of numeric or narrative water quality standards. The MWRD's "Cross-Motion for Summary Judgment"¹ ("MWRD Mem.") suffers from the same flaws of the IEPA Combined Memorandum, and additionally misstates several relevant facts in the record.

Both IEPA and MWRD accuse Petitioners of covertly requesting that the Board adopt numeric standards for phosphorus as part of this proceeding. (IEPA Combined Mem. 7 n. 1; MWRD Mem. 10.) Petitioners seek nothing of the sort. While they believe numeric standards should be adopted in the future so that appeals like this one will not be necessary, Petitioners in this proceeding are asking the Board to require compliance with *existing* Board-enacted regulations that prohibit IEPA from issuing a permit that fails to ensure that Illinois water quality standards are protected.

In their initial memorandum, Petitioners' also showed that the Permits do not clearly prohibit sanitary sewer overflows, as they are required to do, and that the record fails to support the long compliance schedule given in the permits regarding phosphorus.

¹ Petitioners note that, under the June 23, 2014 Hearing Officer Order, dispositive motions were due to be filed on or before July 11, 2014.

Further, IEPA failed to comply with Board and IEPA regulations regarding public notice and comment. IEPA and MWRD have failed to refute Petitioners' arguments on these issues.

Petitioners' motion should therefore be granted, the cross-motions should be denied, and the Permits should be remanded to the IEPA for reconsideration applying the appropriate legal standards.

BURDEN OF PROOF

Petitioners recognize that they bear the burden of proving that IEPA's issuance of the Permits violates the Environmental Protection Act or regulations enacted pursuant to that Act. However, where, as here, IEPA's actions are unsupported by substantial evidence, Petitioners meet that burden by demonstrating the record lacks such evidence to support IEPA's decision. *See Des Plaines River Watershed Alliance v. IEPA* ("New Lenox"), PCB 04-88 at 11 (April 19, 2007), *aff'd sub nom. IEPA v. Illinois Pollution Control Bd.*, 896 N.E.2d 479 (Ill. App. Ct. 3d. 2007), (citing *IEPA v. PCB*, 115 Ill. 2d 65, 70; 503 N.E.2d 343, 345 (1986) ("The Board reviews the entirety of the record to determine (1) if the record supports the IEPA's decision, and (2) that the procedures used by the IEPA are consistent with the Act and Board regulations. The Board does not affirm the IEPA's decision on the permit unless the record supports the decision.")). The Board examines the record as a whole, but where evidence does not provide adequate basis for the permit conditions---or lack thereof--- the Board must remand the permits for correction by IEPA.

ARGUMENT

A. Under the law, IEPA must prevent violations of water quality standards resulting from discharges of phosphorus despite the lack of an applicable numeric standard for phosphorus.

In their responses to Petitioners' motion for summary judgment, both IEPA and MWRD stress that there is no applicable numeric standard for phosphorus. (IEPA Combined Mem. 7, MWRD Mem. 4.) While that is true, the law is nonetheless clear that IEPA must establish limits in the Permits to prevent discharges of phosphorus from causing impairments of both the numeric dissolved oxygen standards and the narrative standards impaired or threatened to be impaired by phosphorus pollution. (Petitioners' Mem. 15-16.)

IEPA and MWRD are claiming, in effect, that the lack of a numeric phosphorus water quality standard entitled IEPA permit writers to “[throw] up their hands” and fail to ensure that water quality is protected from phosphorus pollution, but that is precisely what IEPA is *not* entitled to do. *American Paper Institute v. U.S. Environmental Protection Agency*, 996 F.2d 346, 350 (D.C. Cir. 1992). Until the Board establishes statewide numeric water quality standards regarding phosphorus, IEPA must on a case-by-case basis write numeric effluent permit limits for phosphorus that protect water quality with respect to existing standards affected by that pollutant, *i.e.* dissolved oxygen and narrative offensive conditions standards. (U.S. EPA, NPDES Permit Writer's Manual, Chapter 6, p. 23, available at <http://water.epa.gov/polwaste/npdes/basics/NPDES-Permit-Writers-Manual.cfm>.)

- 1. The law requires that IEPA set enforceable permit limits that ensure that existing dissolved oxygen water quality standards and narrative water quality standards regarding plant and algal growth will not be violated.**

State and federal law require IEPA to include effluent limits in permits where necessary to prevent violations of water quality standards. 35 Ill. Admin. Code §§ 304.105; 309.141(d) (1), (2); 309.143(a); 40 CFR 122.44(d). Here, the Board has established water quality standards for dissolved oxygen, 35 Ill. Admin. Code §§ 302.206 and 302.405, as well as narrative water quality standards prohibiting plant and algal growth of other than natural origin. 35 Ill. Admin. Code §§ 302.203 and 302.403 (offensive conditions and unnatural sludge). IEPA has acknowledged that waters receiving pollution discharges from the Plants are violating the numeric dissolved oxygen and narrative offensive conditions water quality standards. (Petitioners' Mem. 11-13.) Yet IEPA included only an arbitrary 1.0 mg/L effluent limit for phosphorus in the Permits, devoid of any analysis whatsoever as to whether this quite high number will achieve compliance with standards or even come close. Since the record in this case does not contain substantial evidence supporting 1.0 mg/L as the limit necessary to prevent violations of the dissolved oxygen and offensive conditions water quality standards, the Permits must be remanded to establish a phosphorus limit that complies with the Board's regulations.

There is nothing in the Board rules that allow IEPA, as the NPDES permitting agency, to ignore pollutants that may cause violations of narrative water quality standards. The regulations specifically state that "*no effluent* shall, alone or in combination with other sources, cause a violation of *any* applicable water quality

standard.” 35 Ill. Admin. Code 304.105 (emphasis added). Similarly, the first sentence of 35 Ill. Admin. Code 309.143(a) provides:

Effluent limitations must control all pollutant or pollutant parameters (either conventional or unconventional, or toxic pollutants) which the Agency determines are, or may be, discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.

Id. (emphasis added). 35 Ill. Admin. Code 309.141(d)(1) also requires limits on pollution that are necessary to meet water quality standards without distinguishing between numeric and narrative limits.

Further, 35 Ill. Admin. Code 309.141(d)(2) requires limits “necessary to meet any other federal law or regulation.” Among such federal regulations is 40 CFR 122.44(d) that requires NPDES permits to contain limits sufficient to prevent discharges that have a reasonable potential to cause violations of water quality standards “including State narrative criteria for water quality.”

Federal regulations identify several options available to IEPA for translating a narrative water quality standard into a permit effluent limit. The D.C. Circuit court in *American Paper Institute v. U.S. EPA* explained that 40 CFR 122.44(d)(1)(vi) was enacted to prevent precisely the sort of mistake that IEPA made here:

On its face, section 301 [of the Clean Water Act] imposes this strict requirement as to all standards--i.e., permits must incorporate limitations necessary to meet standards that rely on narrative criteria to protect a designated use as well as standards that contain specific numeric criteria for particular chemicals. The distinctive nature of each kind of criteria, however, inevitably leads to significant distinctions in how the two types of criteria are applied to derive effluent limitations in individual permits. When the standard includes numeric criteria, the

process is fairly straightforward: the permit merely adopts a limitation on a point source's effluent discharge necessary to keep the concentration of a pollutant in a waterway at or below the numeric benchmark. Narrative criteria, however, present more difficult problems: How is a state or federal NPDES permit writer to divine what limitations on effluent discharges are necessary to assure that the waterway contains, for example, "no toxics in toxic amounts"? Faced with this conundrum, some permit writers threw up their hands and, contrary to the Act, simply ignored water quality standards including narrative criteria altogether when deciding upon permit limitations. . . .

To address these difficulties, the EPA promulgated the regulation under attack here, 40 C.F.R. § 122.44(d)(1)(vi). That rule requires NPDES permit writers to use one of three mechanisms to translate relevant narrative criteria into chemical-specific effluent limitations. Specifically, the regulation provides that a permit writer must establish effluent limits from narrative criteria by using (1) a calculated numeric water quality criterion derived from such tools as a proposed state numeric criterion or an "explicit state policy or regulation interpreting its narrative water quality criterion"; (2) the EPA recommended numeric water quality criteria, but only on a "case-by-case basis" and "supplemented where necessary by other relevant information"; and/or (3) assuming certain conditions are met, limitations on the discharge of an "indicator parameter," i.e., a different pollutant also found in the point source's effluent.

996 F.2d 346, 350.

Applying 40 CFR 122.44(d)(1)(vi) , U.S. EPA Region 1 has repeatedly set numeric phosphorus limits for sewage treatment plants to prevent violations of narrative water quality standards based on federal phosphorus criteria. These limits – which Petitioners note are an order of magnitude lower than the limit established in the Permits – have been upheld by the U.S. EPA Environmental Appeals Board and a federal appellate court. *E.g., Upper Blackstone Water Pollution Abatement District v. U.S. EPA*, 690 F.3d 9, 30-31 (1st Cir. 2012), cert. denied, 133 S.Ct. 2382 (2013) (upholding phosphorus and nitrogen limits including 0.1 mg/L phosphorus limit based on EPA criteria and national, regional and local studies); *In Re City of Attleboro, Ma. Wastewater Treatment Plant*, 14 E.A.D. 398, 399-400, (EAB 2005) (upholding limit of 0.1 mg/L

phosphorus to prevent violation of narrative and numeric standards based on EPA Gold Book criteria). A case that MWRD cited, (MWRD Mem. 7), in fact upheld a numeric nitrogen limit that U.S. EPA had placed in an NPDES permit to prevent violations of a narrative standard based on a scientific study. *In Re Town of Newmarket, New Hampshire*, 2013 WL 6439336 (EAB Dec. 2, 2013). The Environmental Appeals Board has even remanded a limit of 0.1 mg/L of phosphorus (ten times lower than the limit in the Permits) as potentially not strict enough, because the record in that case did not show that the limit ensured that the narrative standard would not be violated. *City of Marlborough, Ma.*, 12 E.A.D. 235, 250 (EAB 2008).

Precedent established by this Board further supports the requirement that IEPA must include limits in permits as necessary to prevent violations of dissolved oxygen and narrative standards. In *New Lenox*, the Board overturned an NPDES permit granted by IEPA for a sewage treatment plant because, among other reasons, IEPA had failed to assure that the discharge was so limited that it would not violate dissolved oxygen and narrative standards regarding plant and algal growth. *New Lenox*, PCB 04-88 at 44-45 and 50-51. *See also IEPA and Village of New Lenox v. Illinois Pollution Control Bd.*, 896 N.E. 2d 479, 490 (2008) (upholding IPCB decision remanding permit that failed to establish limits to prevent violation of narrative standards).

2. Respondents' arguments that numeric effluent limits are inappropriate or unnecessary are unsupportable.

Notwithstanding the clear requirements of the Clean Water Act and Illinois law requiring permit limits to be based on analysis of what is needed to protect water quality (as opposed to the arbitrary and unsupported limit in the Permits), Respondents put forth

multiple arguments why an analytically-grounded phosphorus limit is not necessary here. None of these arguments have merit.

Contrary to MWRD's argument, nothing in the Board's decision in *Natural Resources Def. Council v. Illinois Env't'l Protection Agency and Dynegy Midwest Energy* ("Dynegy") No. 13-17, 2014 WL 2591592 (IPCB June 5, 2014) is inconsistent with this law. In *Dynegy*, the Board specifically distinguished *New Lenox* (PCB 04-88), stating that "[i]n *New Lenox* representative effluent monitoring data from the treatment plant were available for quantifying the potential impact of the increased loading on the stream," while in *Dynegy*, "the record is conspicuously silent on the water quality conditions" in the portion of the Illinois River likely to be affected by the discharge in question. *Dynegy* at 42. Here, unlike *Dynegy*---but like *New Lenox*---there are plentiful data regarding what levels of the relevant pollutant the three plants at issue are discharging, (R. at 925-1043), and the specific waters that are known to receive phosphorus from the Plants have been listed as impaired by low dissolved oxygen, aquatic life impairments, excessive algal growth and other problems known to be caused in whole or in part by phosphorus. (R. at 283, 308, 1333, 2522, 3822, 3941-42, 4014-21, 4031-33, 4085-89, 4323-24, 4328, 4342-43, 4347, 4564, 4576-77, 4606, 4631-33, 4718, 4740, 4782.)

Moreover, as discussed below, the Board in *Dynegy* remanded the permit for IEPA to require the permittee to collect the data necessary to resolve whether a numeric effluent limit was needed. In other words, far from abandoning the Board's regulations requiring effluent limits where discharges might cause or contribute to violations of water quality standards, the Board required that sufficient data be gathered regarding the

Dynegy discharges in order to do the type of analysis that led the Board to require effluent limits in *New Lenox*.

In their briefs (IEPA Combined Mem. 8 n.2 and MWRD Mem. 12), IEPA and MWRD additionally take Petitioners to task for citing the U.S. EPA phosphorus criteria for this Eco-region (0.77 mg/L) and the Wisconsin phosphorus water quality standard (0.1 mg/L). To be clear, Petitioners do not argue that the U.S. EPA and Wisconsin criteria are water quality standards that directly apply in Illinois. The applicable water quality standards are the narrative standards and the dissolved oxygen standards. Because Illinois has no applicable numeric water quality standard for phosphorus, the U.S. EPA and Wisconsin criteria are precisely the sort of data that 40 CFR 122.44(d)(1)(vi)(A) (applicable in Illinois through 35 Ill. Admin. Code 309.141(d)(2)) requires IEPA to use in setting numeric effluent limits on phosphorus to protect against violations of the dissolved oxygen standards and the narrative standards against unnatural plant and algal growth.

In arguing that the U.S. EPA and Wisconsin criteria should not be considered here, MWRD implicitly suggests other possible guideposts that may be available for IEPA to consider in setting a proper numeric limit after remand.² (MWRD Mem. 12.)

² MWRD complains that most of Wisconsin is not in the same U.S. EPA ecoregion as Illinois and thus that the Wisconsin standard should not be used in Illinois. (MWRD Mem. 12.) This is a fact that should be considered on remand. Very recently, Minnesota adopted phosphorus standards of 0.15 mg/L for its south river region, which is in the same U.S. EPA ecoregion as northern Illinois. (See, Minnesota Water Quality Standards for Class 2 Waters, *available at* <https://www.revisor.mn.gov/rules/?id=7050.0222>.) This 0.15 mg/L level should be considered on remand although this figure is close to the uppermost figure that scientists studying Illinois waters have concluded may serve to limit anthropogenic plant and algal growth in Illinois. (See, Royer, Todd V., David, Mark B. Gentry, Lowell E., and Starks, Karen M., Assessment of Chlorophyll-a as a Criterion for Establishing Nutrient Standards in the Streams and Rivers of Illinois, J.

Indeed, given that many of the water body segments below the three plants are impounded, IEPA should also consider setting permit effluent limits based on the Illinois standard for lakes of 0.05 mg/L. *See* 35 Ill. Admin. Code 302.205.³

IEPA also claims Petitioners failed to identify what water quality standards may be violated by the discharges (IEPA Combined Mem. 9), but that is not the case, as discussed in the previous subsection. Petitioners specifically identified the dissolved oxygen, offensive conditions and unnatural sludge standards on pages 11 (note 6) and 15 of their Memorandum. Indeed, IEPA itself has identified waters receiving phosphorus from the Plants as being impaired for aquatic life due to low dissolved oxygen and phosphorus, and has identified a segment of the Little Calumet River, a segment of the North Shore Channel, and lakes connected to the Illinois River that receive pollution from the MWRD discharges as impaired by low oxygen and algal growth. (R.1135-36, 1303, 1333, 2522, 5371.)

IEPA's final argument is that it has precluded the violation of any water quality standards through its inclusion of Special Condition 5, which states, "the effluent, alone or in combination with other sources shall not cause the violation of any water quality

Environmental Quality, 37:437-447 (2008), *available at* http://biogeochemistry.nres.illinois.edu/Biogeochem_lab/publications.htm (data on a wide range of Illinois rivers and streams shows correlation between phosphorus and sestonic algae when levels of total phosphorus were below 0.2 mg/L but most Illinois sites had more phosphorus than 0.2 mg/L.) In any event, 0.15 mg/L is less than 1/6th of what IEPA allowed in the Permits being appealed.

³ That 35 Ill. Admin. Code 302.205 exempts certain dischargers from meeting 35 Ill. Admin. Code 304.105 does not exempt permits from meeting the requirements of 35 Ill. Admin. Code 309.141(d) and does not lessen the value of using the 0.05 mg/L standard as a potential measure to consider in setting numeric effluent limits under 35 Ill. Admin. Code 309.141(d) and 40 CFR 122.44(d). Moreover, MWRD does not begin to qualify for any exemption.

standard outlined in 35 Ill. Admin. Code 302." (IEPA Combined Mem. 9.) Petitioners agree that including this special condition in the permits at least affords citizens an opportunity to enforce violations of water quality standards through citizen suits. But relying on Special Condition 5 to ensure compliance with water quality standards does not meet the requirements of 40 CFR 122.44(d)(v), and represents an abdication by IEPA of its basic responsibilities under the Clean Water Act and the Board rules – not to mention rendering enforcement and compliance assurance substantially more complex and costly than they ought to be under the Clean Water Act framework.

Including a permit condition telling the permittee not to cause violations of water quality standards is inadequate to protect water quality standards for a number of reasons. First, as a practical matter, this approach turns what is required to be a forward-looking permit limit designed to prevent violations of water quality standards into a “catch-me-if-you-can” enforcement issue. Further, the condition does not provide guidance as to what monitoring should be required or otherwise lend itself to efficient enforcement. Finally, it leaves it up to the discharger to decide what is necessary to meet water quality standards. In this case, MWRD does not even acknowledge that its phosphorus discharges are already causing or contributing to violations of the dissolved oxygen and narrative water quality standards. MWRD is not going to take steps to bring its level of phosphorus discharge down to the level that is needed to protect water quality until IEPA orders it to do so following a remand from this Board.⁴

⁴ Or it is ordered to do so by a federal court.

3. MWRD phosphorus discharges cause or contribute to violations of dissolved oxygen and narrative standards.

IEPA has stated that phosphorus is a cause of impairments of numerous waters that receive phosphorus from the three plants in numerous documents that have been filed to comply with federal law, which were then affirmed by U.S. EPA, and reaffirmed specifically in connection with consideration of these permits. (R. at 1303, 2522, 5371.) IEPA's brief does not go back on these conclusions. MWRD attempts to quibble with them, but all of its arguments are unsupported by the record.

First, while not denying that numerous waters receiving phosphorus from the three plants have been listed by IEPA as impaired for aquatic life with a cause listed as phosphorus, MWRD claims that IEPA abandoned listing waters as impaired by phosphorus because its threshold value for phosphorus (0.61 mg/L) was not supported by science and because of the supposed absence of evidence linking phosphorus to impacts on aquatic life in Illinois. (MWRD Mem. 13.) This is simply wrong. In fact, IEPA *continued to list* numerous waters that receive phosphorus from the Calumet, O'Brien and Stickney plants as impaired by phosphorus in its 2012 303(d) listings. (R. at 1333; Petitioners' Mem. 11-12.) Those impairment listings are fully justified because the listed waters are known to experience violations of dissolved oxygen standards and to have impaired aquatic life. It is well established that phosphorus can cause excess plant and algal growth that in turn causes violations of dissolved oxygen standards and interference with aquatic life and recreational uses of waters. (R. at 283, 308, 2522, 4019-21, 4323-4, 4328, 4347, 4565.)

MWRD is correct that IEPA has abandoned use of its threshold value approach, but MWRD is right for the wrong reason. In fact, Petitioners agree with IEPA's decision

because the threshold value IEPA used (0.61 mg/L) is absurdly high compared with what the science says is needed to protect against impairments from phosphorus pollution. (R. at 5371.) This former threshold number is over 7 times the 0.77 mg/L U.S. EPA criterion for this ecoregion.

MWRD also claims that IEPA has not listed plant or algal growth as a cause of impairment in any stream segments downstream of the three plants. (MWRD Mem. 14.) This, again, is simply false. Illinois waters connected to the Illinois River downstream from the three plants are so listed in the 2012 list⁵, (R. at 1131, 1136, and 4719; Petitioners' Mem. 11), as are segments of the North Shore Channel (HCCA-02) and the Little Calumet River (HA-05) known to receive pollutants from the O'Brien and Calumet plants.⁶ (R. at 2576; Petitioners' Mem. 11-13.)

As proof of its contention that Illinois waters are somehow immune from the effects of phosphorus, MWRD first quotes itself by citing documents (R. at 1212-13, 1274) containing unsupported statements by MWRD officials. Leaving aside the inherent implausibility that Illinois waters are different from the waters of states where a clear relation has been found between phosphorus levels, plant and algal growth, and use impairments, MWRD's claim is contradicted by the record.

The only thing that MWRD cites that resembles science is a page from its own study of what happened when it brought phosphorus discharge levels down from its Egan plant to less than 1.0 mg/L. (R. at 304.) To the extent this snapshot study proves

⁵ These downstream lakes are listed in the 2012 303(d) list as impaired by "algal growth" using code # 479. IEPA 303(d) List for lakes at p. 8 and p.21, *available at* <http://www.epa.state.il.us/water/tmdl/303-appendix/2012/appendix-b3.pdf>.

⁶ These segments are also listed as impaired by cause #479 (=algal growth), IEPA 303(d) List for streams at p. 45 and p. 58, *available at* <http://www.epa.state.il.us/water/tmdl/303-appendix/2012/appendix-b2.pdf>.

anything, it actually supports Petitioners' position that bringing phosphorus levels down to the levels that MWRD has "agreed" to achieve is very unlikely to cure the problem. Bringing the level of phosphorus in a water body from 20 times too much down to 10 times too much does not have an observable benefit in that water body. Before and after the Egan reduction, phosphorus levels in the receiving water were well above the level likely to limit unnatural plant and algal growth. The MWRD employee authors of the study acknowledge, as they must, the science linking phosphorus to algae and dissolved oxygen effects. There is every reason to believe that, had the total phosphorus levels been brought down to the 0.07 or 0.1 mg/L levels and held there long enough to flush the system, water quality improvements would have been achieved.⁷

While the record thus does not support, and, in fact, contradicts MWRD's implausible scientific claims concerning the impact of its phosphorus discharges on algal growth, the whole issue should be opened for further comment on remand. An overview, however, can be provided from the permit record and published studies.

As was explained to the Board by Professor Michael J. Lemke of the University of Illinois at Springfield in testimony in an earlier proceeding that was placed in the

⁷ The MWRD authors of the Egan study recognized that if phosphorus is brought down far enough, theoretically algal growth and its effects on dissolved oxygen levels should lessen. (R. at 283.) However, apparently they were confused by the low levels of ortho-phosphate in Bussey Lake into believing that lower levels of phosphorus would not limit algal growth. In fact, they should have focused on total phosphorus, rather than ortho-phosphate for the reasons explained to the Board by Professor Michael Lemke. Basically, the ortho-phosphorus is "assimilated by algal and bacterial growth and thus temporarily removed from the water and incorporated into biomass." (R. at 4716.) Total phosphorus in Bussey Lake, which receives pollution from a number of sources upstream in the Salt Creek watershed averaged 0.25 mg/L. (R. at 284.) 0.25 mg/L is five times the Board's lake standard for phosphorus. It is, then, no wonder that there was high algal growth and associated dissolved oxygen effects in Bussey Lake although it was above the Egan plant.

permit record, (R. at 4714-28), aquatic plant and algal growth is generally controlled by the nutrient found “in least quantity in the environment (i.e. limiting nutrient).” (R. at 4715.) In other words, a nutrient is “limiting” if it is necessary for plant growth but there is not enough of it in the water for plants and algae to increase their abundance. The total phosphorus concentration of most uncontaminated surface waters is between 0.01 to 0.05 mg/L (*i.e.*, roughly two orders of magnitude less than the Permit limit), (R. at 4716), and, as recognized by MWRD officials in the Egan study, scientists have found that “threshold concentrations” at which phosphorus pollution leads to unnatural plant and algae growth may be as low as 0.05 mg/L. (R. at 304.)

As the MWRD authors of the Egan study stated, in Illinois “nutrients are generally available in high concentrations.” (R. at 304.) Because phosphorus levels are too high almost everywhere in Illinois, one does not see much of a correlation *on a statewide level* between phosphorus and plant and algae growth. Once pollution has raised in-stream phosphorus levels above limiting levels, more of a bad thing does not have much additional bad effect beyond what is already apparent in the waters having these very high levels of phosphorus. The differences in phosphorus concentration levels above the limiting level are not significant in such case, because the plants and algae have as much phosphorus as they need – and hence something else (e.g. light or nitrogen) eventually becomes limiting of additional plant and algal growth. (R. at 304, 4818, and 4724.) However, at those few Illinois sites where total phosphorus is below 0.2 mg/L, a strong correlation is found between phosphorus and algal growth, just as has been found in other states. *See* Royer et al. p.442 (internet cite in note 3).

Certainly, phosphorus is not now limiting plant and algal growth in the waters awash in phosphorus from MWRD plants. The goal is to bring the phosphorus concentration down to where it is limiting, thereby preventing overgrowth of algae and plants. Scientific studies and other material in the record indicate that if phosphorus levels were brought down to levels that have been required of numerous sewage treatment plants elsewhere, (e.g. 0.1 mg/L, at least ten times less than the Permit limit), there would be less unnatural plant and algal growth and fewer violations of the dissolved oxygen and narrative standards. (R. at 283, 4714-26.)

Accordingly, as a leading study on Illinois waters and phosphorus indicates, if phosphorus only limits plant and algal growth when less than 0.2 mg/L is present in the water (Royer et al), one would not expect that waters with higher levels than that -- 1.0 or 0.5 mg/L phosphorus -- would have less plant and algal growth or healthier aquatic life than waters with the even higher level of 2.0 mg/L phosphorus. This does not mean that reducing the concentration of phosphorus in MWRD's effluent down to 1.0 mg/L is worthless, but it will not have an apparent impact in the CAWS or the Illinois River because levels will still be far too high.

The limited reduction required in the Permits may help the Gulf of Mexico, and will reduce the amount of time needed for the system to recover after the necessary, much deeper, phosphorus reductions are made to get levels down to below 0.2 mg/L, (*see* testimony of Professor Michael Lemke, R. at 4724), but they will not alleviate the impairment of Illinois waters downstream of the Plants.

Thus, while bringing phosphorus levels down from perhaps 20 times too much to only 10 times too much is an improvement, it is far less progress than the law requires.

IEPA must therefore identify numeric effluent limits for phosphorus based on what is necessary to achieve the narrative and dissolved oxygen water quality standards and require MWRD to achieve those limits as soon as possible.

B. Having failed to set numeric limits for phosphorus and nitrogen pollution, IEPA should at least have required studies that would assist it to set numeric limits in the future

Under the law discussed *supra*, IEPA was required to set limits that ensure that discharges from the Plants do not cause water quality impairments or violations of the dissolved oxygen, offensive conditions or unnatural sludge standards. IEPA can base these limits on the available U.S. EPA criteria or other studies. As explained above, IEPA ignored these requirements, and threw up its hands, pretending that the fact that there are no numeric water quality standards for phosphorus or nitrogen means that it does not have to prevent violations of dissolved oxygen standards and other standards that may be caused by the phosphorus and nitrogen discharges.

IEPA compounded this error by not even including conditions in the Permits requiring studies to help IEPA set numeric effluent limits for phosphorus or other pollutants in the future. In its argument on this point, IEPA again cites the lack of numeric water quality standards for phosphorus or nitrogen, and claims that the lack of numeric water quality standards liberates it from even having to require studies. (IEPA Combined Mem. 10-11.)

It is true, as IEPA points out, that in *Dynegy* the Board was faced with a situation where there was a numeric standard for the pollutant at issue and the Board required that IEPA obtain the information as to whether that standard would be violated, while here there are violations of numeric dissolved oxygen standards and narrative standards and

Petitioners asked (as an alternative to immediate water quality-based effluent limits) that IEPA require studies to develop information needed to assure that those dissolved oxygen and narrative standards do not continue to be violated. But this is a distinction without a difference.

The moral that should be drawn from *Dynegy* is that, if IEPA claims lack of information as a reason not to do something that may be required to protect water quality standards, IEPA must make sure it requires actions designed to obtain the necessary information.. Here, Petitioners' believe, for reasons explained above, that IEPA already has ample information from MWRD data, the U.S. EPA criteria and various other sources that is needed to establish numeric effluent limits for phosphorus and that IEPA should be required to set such limits. If, however, IEPA after remand reasonably determines based on an expanded record that it lacks the necessary information needed to set the numeric effluent limits required by law, *Dynegy* dictates that IEPA obtain that information.

For this reason and more, MWRD is wrong to suggest that, rather than studying the problem and developing a limit now, IEPA could under *Dynegy* establish a 1.0 mg/L total phosphorus limit as a reasonable "interim" limit until IEPA develops a "long-range statewide standard." First, as explained above, this clearly contradicts state and federal law that requires IEPA to establish an effective numeric effluent limit now.

Moreover, even if there was some leeway to ignore state and federal law, which there is not, MWRD has already shown that such an interim limit on phosphorus is not practical. In this proceeding, MWRD moved for (and obtained) a stay from having to begin work designed to implement a 1.0 mg/L limit on phosphorus, after representing to the Board that MWRD could incur costs from working to meet the 1.0 mg/L limit and

then having to meet a lower limit later. MWRD cannot claim that it is unreasonable to require it to start work to meet a 1.0 mg/L limit while this appeal goes on but then claim that an interim limit of 1.0 mg/L until numeric phosphorus standards are established is a great idea.

Finally, no one claims that statewide numeric standards for phosphorus are anywhere on the horizon. In any event, the Board in *Dynegy* did not endorse putting resolution of the proper limit off until some indefinite time in the future. It required that the necessary studies be done now.

IEPA's last argument as to why it did not even require studies points to the fact that the permits can be reopened if further information is developed. (IEPA Combined Mem. 12.) This argument does not help its case. True, the NPDES permit involved in *Dynegy* contained a reopener clause, but that clause was only useful because the permit also required that information be obtained that might lead to reconsideration of the permit conditions. Here, IEPA has created a situation where the reopener is useless boilerplate that will never be invoked because IEPA has not required the studies and data that would be required for the reopener provision to be meaningful. Certainly, the Board in *Dynegy* did not suggest that the hypothetical possibility that a permit might be improved years in the future is a reason for not getting the permit right in the first place.

C. The permits' failure to unambiguously prohibit SSOs could limit the scope of enforcement against SSO discharges.

Petitioners demonstrated in their initial brief that Permit language requiring only that MWRD "work towards the goals of achieving no discharges from sanitary sewer overflows," rather than plainly prohibiting them, creates unnecessary ambiguity regarding the unambiguous requirement in applicable law that SSOs be prohibited

outright. *See* 35 Ill. Admin. Code § 309.148(a). In response, MWRD and IEPA both express confidence that notwithstanding the lack of an express SSO prohibition in the special conditions at issue, violations of the regulatory SSO prohibition could still be prosecuted by citizens directly.

These assurances are unpersuasive. IEPA and MWRD both affirm that the Act and its regulations are enforceable before the Board independent of the language of the permit. (IEPA Combined Mem. 12-13; MWRD Mem. 16-17.) While Petitioners fully concur with this view, applicable law could well be interpreted less clearly. Indeed, one of the Board decisions cited by IEPA, *Mahomet Valley Water Authority, et. al. v. Clinton Landfill, Inc.*, PCB 13-22 (September 19, 2013), specifically calls into question the scope of citizens' authority to address non-compliance with the Act's requirements through enforcement proceedings rather than the permitting process. Moreover, neither IEPA nor MWRD address the potential limitation on citizens' ability to enforce SSO violations via a Clean Water Act citizen suit in federal court. Again, while petitioners would have strong ground to argue that the permits' weak language concerning SSOs did not preclude a citizen suit, they are also mindful of the permit shield doctrine, which requires a situation-specific inquiry into the scope of a permit's prohibitions, which in turn governs the scope of citizen enforcement authority. *See, e.g., Piney Run Pres. Ass'n v. County Comm'rs*, 268 F.3d 255, 266 (4th Cir. 2001) ("It is clear . . . that if a permit holder discharges pollutants precisely in accordance with the terms of its permit, the permit will "shield" its holder from CWA liability. The permit shield defense, however, raises two additional questions that are slightly more difficult: (1) what comprises the scope or terms of an NPDES permit, and (2) whether the permit shield bars CWA

liability for discharges not expressly allowed by the permit when the holder has complied with the permit's express restrictions.”).

There is no reason why the Permits need be ambiguous about SSO prohibition, and create potential hurdles to swift enforcement, when applicable law is not remotely ambiguous. Petitioners are not advocating that the SSO language be removed and replaced entirely, merely that it be clarified to establish that SSO discharges are unambiguously prohibited, notwithstanding any efforts the permittee may be making to prevent them. The Permits should be remanded with instruction that such clarifying language be added.

D. The record lacks evidence that the Permits require compliance within the shortest reasonable period of time.

As demonstrated in the Petitioners' Motion for Summary Judgment, the administrative record in this permit appeal contains no evidence that the compliance schedules for any of the Permits require compliance with the phosphorus effluent limits at the earliest reasonable date, or within the shortest reasonable time frame as required by the Illinois Environmental Protection Act (the Act) and Board regulations implementing the Act.

Although MWRD argues that milestones listed in the compliance schedule of each Permit and corresponding progress reports establish the reasonableness of the length of those schedules, none of this evidence establishes that the schedules were developed to achieve compliance at the earliest reasonable date. While the inclusion of milestones and reporting are necessary requirements when granting compliance schedules, 40 CFR 122.47(a)(3) and (4), the mere existence of a milestone, or a requirement to report on progress in reaching that milestone, fails to establish that the delay afforded the permittee

in meeting permit conditions is the shortest reasonable delay under the circumstances. Neither the public nor the Board has any evidence to judge whether a 10-year delay at the O'Brien plant is the shortest reasonable time frame for meeting a phosphorus limit of 1.0 mg/L. Nor is there evidence to judge whether 6.5-year and 49-month delays at the Calumet and Stickney plants are the shortest reasonable delays. All we have in support of the reasonableness of the schedules is MWRD's claim that implementing the phosphorus limits is complex. (MWRD Mem. 15.)

According to IEPA's Combined Memo, the compliance delays are reasonable because phosphorus limits are not required by the Act or by Board regulations. (IEPA Combined Mem. 10.) As shown above, this legal conclusion is simply wrong.

MWRD attempts to analogize long term control plans (LTCP) for redressing combined sewer overflows with compliance schedules for effluent limits, in support of its argument that the phosphorus compliance schedules are reasonable. Yet a long term control plan is by definition long term. An LTCP is a phased approach for controlling combined sewer overflows that begins with a comprehensive multi-year study of the entire combined sewer system, followed by an implementation phase, which typically contains various multi-year schedules of compliance within it. LTCPs may address hundreds of combined sewer overflow outfalls. *See* US EPA Combined Sewer Overflows, Guidance for Long Term Control Plans, *available at* <http://www.epa.gov/npdes/pubs/owm0272.pdf>. MWRD's citations to consent decrees approving long term control plans in excess of fifteen years thus have no bearing on whether the phosphorus compliance schedules in these Permits require compliance in the shortest reasonable time period. Because the record lacks substantial evidence supporting

the delays, Petitioners have met their burden and are entitled to summary judgment remanding the permits to IEPA.

Additionally, as noted in Petitioners' Memorandum the phosphorus limits and corresponding compliance schedules were included, for the first time, in the final permits. (Petitioners' Mem. 4, 30.) IEPA afforded the public no opportunity to present further evidence responding to the limits or to the reasonableness of the compliance schedules. This failure to reopen the public comment period contravenes 35 Ill. Admin. Code 309.120 and leaves the record devoid of the necessary evidence.

E. The record is plain that IEPA did not respond to significant issues in its Responsiveness Summary.

The question of whether IEPA complied with the requirement to respond specifically to all significant comments, criticisms and suggestions, 35 Ill. Admin. Code 166.192(4), can only be answered by examining one operative document: IEPA's Responsiveness Summary. It can hardly be said that Petitioners comments are insignificant regarding the need to address nitrogen pollution or require further studies and monitoring to determine the appropriate effluent limits for both phosphorus and nitrogen. The Responsiveness Summary simply does not respond to either of these issues.

IEPA's Combined Memorandum acknowledges the Agency's obligation to respond to significant comments, and ostensibly attempts to show that the Responsiveness Summary does in fact respond to the issues Petitioners have identified as absent from the Summary. However, even this attempt to justify IEPA's faulty Responsiveness Summary does not mention nitrogen, and does not mention the requested studies.

MWRD's Memorandum does not argue with Petitioners' complaint about the inadequate Responsiveness Summary. Indeed, MWRD raised a similar issue in its Motion for Summary Judgment in its IPCB 14-103 and 14-104 permit appeals, the proceedings coordinated with the instant appeals. According to MWRD, in the Responsiveness Summary, IEPA also did not respond to significant comments by MWRD itself. While Petitioners and MWRD do not agree on much, on this we appear to be united: the Board needs to instruct IEPA to improve its Responsiveness Summaries to meet the requirements of state and federal regulations.

CONCLUSION

The Permits should be remanded to the IEPA with instructions to place clear limits in the Permits necessary to protect against pollution that may cause violations of water quality standards and to make those limits effective as soon as possible. The Permits should also be clarified to unambiguously prohibit sanitary sewer overflows.

CERTIFICATE OF SERVICE

I, Jessica Dexter, hereby certify that I have served the attached **PETITIONERS' REPLY TO IEPA'S CROSS MOTION FOR SUMMARY JUDGMENT AND RESPONSE TO PETITIONERS' MOTION FOR SUMMARY JUDGMENT** in PCB 2014-106, 107, 108 upon:

Mr. John T. Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

via electronic filing on September 19, 2014; and upon the attached service list by depositing said documents in the United States Mail, postage prepaid, in Chicago, Illinois on September 19, 2014.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'JD', with a long horizontal flourish extending to the right.

Jessica Dexter
Staff Attorney
Environmental Law and Policy Center
35 East Wacker Drive, Suite 1300
Chicago, IL 60601
312-795-3747

2014-106 Service List

Ronald M. Hill
Lisa Luhrs Draper
Ellen M. Avery
Jorge T. Mihalopoulos
Metropolitan Water District of Greater
Chicago
100 E. Erie Street
Chicago, IL 60611

Thomas H. Shepard
Robert W. Petti
Assistant Attorney General
69 W. Washington St, Ste 1800
Chicago, IL 60602

Bradley P. Halloran, Hearing Officer
Illinois Pollution Control Board
100 West Randolph St
Suite 11-500
Chicago, IL 60601

Division of Legal Counsel
IEPA
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794