ILLINOIS POLLUTION CONTROL BOARD
March 21, 2013
* * * Corrected Date * * *

PHILLIPS 66 COMPANY,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 12-101
	)	(Permit Appeal - NPDES)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
	)	
Respondent.	)	

DAVID L. REISER OF MUCH, SHELIST, P.C. APPEARED ON BEHALF OF PETITIONER; and

RACHEL MEDINA OF THE OFFICE OF THE ATTONERY GENERAL APPEARED ON BEHALF OF RESPONDENT.

OPINION AND ORDER OF THE BOARD[1] (by D. Glosser):

On January 17, 2012, ConocoPhillips Company (Phillips[2]) timely filed a petition asking the Board to review a December 22, 2011 permit determination of the Illinois Environmental Protection Agency (IEPA). *See* 415 ILCS 5/40(a)(1) (2010); 35 Ill. Adm. Code 101.300(b), 105.206. IEPA issued a permit, subject to conditions, under the National Pollutant Discharge Elimination System (NPDES) for Phillips's operation of a petroleum refinery owned by WRB Refining LP, known as the Wood River Refinery in Roxana, Madison County.

The Board begins by explaining the procedural history of this case followed by a summary of facts. The Board then sets forth the legal background. Before discussing the substance of the parties' arguments the Board addresses the stipulation filed by the parties. The Board summarizes the arguments of the parties and then discusses the Board's decision.

After examining the record in this permit appeal and reviewing the parties' arguments, the Board affirms IEPA's imposition of a condition requiring that Phillips meet the human health water quality standard for mercury in its effluent. The Board finds that Phillips waived arguments regarding the inclusion of a condition regarding mercury in the 2011 permit when Phillips accepted the same condition as a part of a permit modification in 2009. Further, based

[1] Chad Kruse, who worked for the Illinois Environmental Protection Agency prior to joining the Board as an attorney assistant on March 19, 2013, took no part in the Board's drafting or deliberation of any order or issue in this matter.
[2] On October 19, 2012, an agreed motion was filed changing the name of petitioner from ConocoPhillips Company to Phillips 66 Company.

on the information provided in this record, the Board finds, even if the arguments had not been waived, Phillips cannot be granted a mixing zone for mercury because Phillips failed to establish that the human health mercury water quality standard is being met in the receiving stream, for which Phillips is seeking a mixing zone.

The Board declines to accept the stipulations regarding amendment of permit conditions, consistent with prior Board decisions stipulations regarding permit conditions are not appropriate in the context of a permit appeal. Those conditions involved in the stipulation remain in effect as those conditions were included in the permit issued in 2011.

The Board finds that Phillips failed to show that IEPA's imposition of a mass limit for mercury was not necessary to accomplish the purposes of the Act; however consistent with IEPA's concern regarding the calculation of the limit, the Board will remand the permit to address the calculation of the mass limit for mercury.

PROCEDURAL BACKGROUND

On January 17, 2012, Phillips filed its petition for review (Pet.) and request for stay of certain permit conditions. On February 2, 2012, the Board accepted the petition but reserved ruling on the motion for stay. After the parties briefed the issue of whether or not the Board should grant the stay, on April 5, 2012, the Board granted the stay.

On March 19, 2012, IEPA filed the record in this proceeding and on April 11, 2012 a supplement was filed.[3]

On October 3, 2012, a hearing was held before Board hearing officer Carol Webb (Tr.). At hearing, an agreed motion and stipulation were handed to the hearing officer (*see* Tr. at 8). On October 10, 2012, the agreed motion and stipulation were filed with the Board. On October 19, 2012, an amended agreed motion and stipulation were filed with the Board. The Board will address the stipulations later in the opinion, but the agreed motion to amend the caption, changing ConocoPhillips Company to Phillips 66 Company is granted.

On November 5, 2012, Phillips filed a motion to correct the transcript. IEPA has not responded to the motion so any objection to granting the motion is deemed waived. *See* 35 Ill. Adm. Code 101.500(d). The Board grants the motion to correct the transcript.

On November 18, 2012, post hearing comments were filed by the Illinois Environmental Regulatory Group (IERG).

[3] The Board notes that IEPA's record is not numbered in any way. (While the Board's permit appeal rules at 35 Ill. Adm. Code 105.116 and 105.212 do not specify how the record is to be prepared, IEPA may wish to take guidance from the requirements for siting appeal records at 35 Ill. Adm. Code 107.304(b) and 107.306.) The certificate of record identifies each document and assigns a number to that document. However, numbers have not been placed on the documents. The Board will cite to the documents (R.Doc. # at), based on the identifications in the certificate of the record.

Phillips filed its opening brief on November 15, 2012 (Br.) and its reply on January 14, 2013 (Reply). IEPA filed its response brief on December 31, 2012 (Resp.).

FACTS

Phillips operates the refinery that is owned by WRB Refining LP. Pet. at 1. The refinery is located at 900 South Central Avenue, Roxana, Madison County. *Id*. In May of 2006, Phillips applied for a revision to an NPDES permit that was issued by IEPA in 2004. Tr. at 29. Phillips sought to revise the permit to address changes to the wastewater treatment process necessitated by the Coker Refinery Expansion project (CORE). *Id*. The changes to the wastewater treatment plant were expected to cost $100 million, with operation and maintenance costs of $6.7 million per year. R.Doc. 100; Tr. at 23.

CORE included a 65,000 barrel per day coker unit and multiple other units added to allow efficient processing of heavier crude oil. R.Doc. 58, 100; Tr. at 10-11. CORE is designed to increase the crude oil throughput from 323,000 to 385,000 barrels per day. Tr. at 69. The cost of the expansion is expected to be $3.8 billion and generate an estimated $48 million per year for the area. Tr. at 10-11. Also, as a part of the expansion, wet scrubbers and catalytic cracking units were installed in response to a consent decree the refinery entered into with the United States Environmental Protection Agency (USEPA). Pet. at 1; Tr. at 29-30; R.Doc. 100.

The refinery discharges treated wastewater to the Mississippi River. Tr. at 16. The wastewater treatment process at the refinery includes a series of unit operations beginning with two bar screens operated in parallel, followed by two 93,359-gallon pH neutralization tanks. Tr. at 16-21. Wastewater then flows through eight oil/water separators followed by two dissolved nitrogen flotation units to reduce oil concentration before biological treatment. *Id*. Wastewater then flows to a diversion/equalization tank and next to the activated sludge process. The effluent flows through "polishing lagoons" before discharging to the Mississippi River. *Id*. Prior to the expansion the wastewater treatment facility had a design average flow of 7.93 million gallons per day (mgd) and with the expansion the design average flow will be raised to 10.97 mgd. Tr. at 69.

Mike Bechtol, environmental director for the refinery, testified to "clarify the unique permitting process" that has gone on to this point. Tr. at 29. On April 14, 2004, prior to the expansion, the IEPA issued an NPDES permit to the refinery with an expiration date of March 31, 2009. *Id.;* Pet. at 3. On May 12, 2006, Phillips sought a modification of that permit, which the IEPA granted and issued on February 5, 2009 (2009 Permit). Tr. at 29; R.Doc. 58, 59. Mr. Bechtol testified that on November 3, 2006, IEPA issued a draft permit that did not include mercury limits. Tr. at 30. After a public hearing and comment period, in the spring of 2008, IEPA raised the issue of adding to the permit a mercury water quality standard of 12 nanograms per liter (ng/L) for the first time. Tr. at 30.

Phillips provided data to IEPA concerning the levels of mercury in Phillips' effluent. R.Doc. 83. That data demonstrated that the effluent concentration averaged 12.49386 ng/L for the period beginning August 17, 2007 to November 28, 2007. *Id*. Bob Mosher, IEPA's manager

in the Water Quality Standards Unit, drafted a memorandum (included in this record at R.Doc. 93) that concluded that Phillips' effluent has a reasonable potential to exceed the human health standard for mercury. *Id*. Mr. Mosher recommended the inclusion of a permit limit of 12 ng/L with no mixing zone being allowed and an annual average load limit of 7.8×10^{-4} lbs/day. *Id*.; R.Doc.115 at 2. In order to achieve this load limit, Phillips would have to achieve a mercury effluent concentration of no more than 8.5 ng/L. Tr. at 73; R.Doc. 103.

Between May and November of 2008, before the issuance of the 2009 permit, IEPA and Phillips met three times to discuss the issue of a mercury effluent limit. Tr. at 30. Phillips expressed concerns about the mercury limits as well as the proposed compliance plan. Tr. 30-31; R.Doc. 102, 103. Phillips further addressed the mercury issue in the antidegradation analysis prepared by Jim Huff, Phillips' environmental consultant (*Antidegradation Analysis for the Proposed NPDES Modification of the ConocoPhillips Wood River Refinery NPDES #ILD0000205* (Antidegradation Analysis). Tr. at 71; R.Doc. 100; Pet. Exh. 6; Resp. Exh. G.

Mr. Huff was retained in 2006 to prepare an antidegradation analysis for the plant expansion and the associated wastewater treatment plant expansion. Tr. at 69. Mr. Huff also conducted a mixing zone study. *Id*. In performing this study, Mr. Huff stated that a mussel bed was discovered near the shore line beneath Outfall 001. In order to protect the mussel bed, it was recommended that Outfall 001 be extended out into the Mississippi River. *Id*. The design called for extending the outfall 120 feet from the shoreline and angled at 30º. Tr. at 70. As a result of the outfall modification, 86 to one dilution would be achieved with a 21-foot lateral spread from the center line. *Id*.

As a part of the antidegradation assessment and at IEPA's request, Mr. Huff indicated that samples of the effluent were collected using a low-level detection level for mercury. Tr. at 71. A total of 14 samples were collected and a mean of 12.5 ng/L was found. *Id*. USEPA's statistical protocol was applied and the 95% confidence level of the mean was computed as 17.6 ng/L. *Id*.

Mr. Huff found that there were no known economically reasonable and technically feasible methods to treat mercury, and that the discharge of mercury would not violate the Board's antidegradation rules. Tr. at 71. Mr. Huff testified that based on the incremental flow that will be added with the expansion of the wastewater treatment facility, 0.11 pounds per day of mercury will be added to the Mississippi River. Tr. at 71. Mr. Huff further testified that based on the upstream Mississippi River concentration, no measurable change in concentration of mercury is predicted at the edge of the mixing zone. *Id*.

Phillips agreed to Special Condition 28 in the 2009 permit, which established a five-year compliance plan and allowed Phillips to apply for an adjusted standard if an appropriate treatment for mercury could not be found. Tr. at 30; R.Doc. 115. Specifically, Special Condition 28 provided, in part:

> Permittee [Phillips] shall achieve compliance with the effluent limitations for Mercury in three phases. In Phase I Permittee shall sample and analyze potential sources of wastewater mercury at the refinery, and/or Incoming crudes. Permittee

> may also perform modeling to identify mercury disposition and partitioning in process and wastewater streams. In Phase II Permittee shall identify additional technology if necessary to comply with the annual average mercury concentration and load limits listed on pages two, three and four of this permit. In Phase III Permittee shall design and implement the selected technology. Operation level must be obtained by the completion date of Phase III. If no technology is identified which would allow Permittee to comply with the limit, the Permittee may apply to the Illinois Pollution Control Board for an adjusted standard or a site specific rule change. R.Doc. 115 at 15.

Because the 2009 Permit was a modification of a 2004 permit that was set to expire in 2010, Phillips filed an application for renewal of the 2009 permit on September 30, 2008. R.Doc. 3. IEPA issued a draft permit on December 21, 2010. R.Doc. 29, 30.

The testing required by the 2009 Permit was undertaken by Phillips and results based on this testing were reached in 2011. *See generally* Tr. at 32, 38. Mr. Jeffrey Allen, a consultant for Phillips with Brown and Caldwell, testified that he is not aware of any oil refineries implementing treatment technologies at full scale to specifically reduce mercury. Tr. at 38-39. Mr. Allen opined that the wastewater treatment plant at the refinery provides end of the pipe treatment that is equivalent to the "best available treatment" economically achievable as defined by USEPA. Tr. at 39.

During Phase I, after analyzing and sampling sources at Outfall 001, Phillips established that the mercury values were consistently greater than 12 ng/L. Tr. at 39. On average the values were 20% higher than the permit limits. Tr. at 40. Mr. Allen testified that the sampling data also indicated that 98% removal of mercury was achieved from across the entire wastewater treatment plant. *Id*. From the Phase I study information, Mr. Allen stated that it was concluded that mercury controls would need to be implemented to meet the permit limits. *Id*. Wastewater filtration through either granular media filtration or rotating disc filtration in the 11 micron range was identified as potential treatment techniques. *Id*.

During Phase II, granular media filtration pilot study indicated that the technology could achieve the design target, and a design concept was developed for a full-scale granular medial filtration system. Tr. at 40. The estimated capital cost in October 2011 was $18.5 million. *Id*. Mr. Allen testified that successful compliance following implementation of the system is subject to certain risks and uncertainties, such as a potential to increase soluble mercury and/or mercury content of the effluent in the total suspended solids (TSS) as compared to the values observed during the pilot testing. Tr. at 40, 41. Another risk or uncertainty is the undefined impacts and/or cost of managing the mercury-containing dirty backwash water that will be generated from the wastewater filter system. *Id*. Finally, the uniqueness of the granular media filtration technology to the refinery. *Id*.

Mr. Mosher testified that the first time he had dealt with the issue of a mixing zone for mercury was in the 2009 Permit process, when it was first included in the refinery's permit. Tr. at 85. Mr. Mosher stated that based on the data in the record, he concluded that while the acute and chronic water quality standards for mercury were not going to be exceeded at the end of the

pipe, the human health standard would be exceeded. Tr. at 88. Mr. Mosher recommended against a mixing zone, because IEPA's policy at the time was that there could not be a mixing zone for mercury. Tr. at 88-89. Mr. Mosher indicated that IEPA's policy has changed, but before a mixing zone could be allowed a "best degree of treatment analysis" would be required. Tr. at 89-90, 111.

Mr. Mosher explained that IEPA's policy changed regarding mixing zones for mercury as a result of comments received during a Board rulemaking proceeding by some stakeholders concerned about the ban for mixing zones for bioaccumulative chemicals of concerns, including mercury. Tr. at 111. The comments indicated that the ban could slow down the rulemaking, so IEPA removed the ban. Tr. at 111-12. Stakeholders who attended the meeting on the rulemaking would have been aware of the policy change. Tr. at 115. Mr. Mosher testified that the policy was not subject to notice and comment. Tr. at 113-14.

Mr. Mosher testified that granular media filtration provided "good results in removing mercury from the effluent." Tr. at 91. Based on the pilot study, Mr. Mosher noted that there were results that indicated a significant reduction in mercury in the effluent. *Id*. Mr. Mosher acknowledged that Phillips had provided information on the costs of granular media filtration; however IEPA needed more information to determine if the technology was economically reasonable. *See* Tr. at 93-94, 109. Mr. Mosher opined that almost all of the waters of the State have fish advisories for mercury, and mercury is an important problem that needs to be addressed. One way to address mercury is to reduce mercury in the waters. Tr. at 109.

Mr. Mosher expressed concerns with the mixing zone analysis in the Antidegradation Analysis (R.Doc. 100, Pet. Exh. 6, Resp. Exh. G). Tr. at 102-05. Specifically, Mr. Mosher noted that there was no analysis done addressing the human health standard. Tr. at 103. Mr. Mosher indicated that to perform the analysis, upstream concentrations for mercury must be known to determine if mixing is available. Tr. at 103-05. Based on the data in the Antidegradation Analysis, Mr. Mosher testified that Phillips would not be entitled to a mixing zone for mercury, since the upstream average mercury concentration was already above the 12 ng/L human health water quality standard. Tr. at 104. He stated that "there's no where to go with mixing" when there's no assimilative capacity. *Id.* Mr. Mosher also noted that that the mercury data used in the Antidegradation Analysis was outdated and "insufficient to for purposes of trying to evaluate whether the human health water quality standard for mercury is being met or not met." Tr. at 105. He maintained that for a mixing zone determination, mercury monitoring data from the Mississippi River upstream of Phillips outfall using USEPA Method 1631, Measurement of Mercury in Water (67 Fed. Reg. 209 (Oct. 29, 2002), is needed. Further, Mr. Mosher stated that it is necessary to collect an adequate number of samples over time to come up with an average with statistical meaning. *Id.*

Mr. Jaime Rabins, an IEPA employee who reviewed both the 2009 Permit and the 2011 Permit, testified at hearing. Mr. Rabins calculated the permit limit for mercury. Tr. at 138. Mr. Rabins also performed the analysis to determine if the best degree of treatment was being used by Phillips. Tr. at 144-48. Mr. Rabins noted that Section 304.102 (35 Ill. Adm. Code 304.102) requires use of the best degree of treatment consistent with technological feasibility and economic reasonableness and sound engineering judgment. Tr. at 144-45. Mr. Rabins pointed

out that Phillips studied mercury in its discharge and performed a pilot test that resulted in mercury discharges below the permit limit. Tr. at 145. Therefore, Mr. Rabins testified, Phillips acknowledged that there was a technologically feasible treatment method to meet the mercury water quality standards. *Id*.

Mr. Rabins next noted that the cost for the granular media filtration treatment was $9.4 million to $14.1 million with an annual operation and maintenance of $380,000; while Phillips had a market capitalization of $89.43 billion on September 6, 2011. Tr. at 145. Phillips' net income during the first half of 2011 was $6.43 billion. *Id.* at 145-46. Mr. Rabins opined that Phillips should have explored less-expensive treatment options, and that Phillips should perform an interim economic guidance for water quality standards affordability on any less-expensive options. Tr. at 146.

Mr. Rabins stated that Phillips was not providing the best degree of treatment, because there is a technologically feasible alternative, but Phillips had not provided an affordability analysis demonstrating that compliance with the mercury limits was economically unreasonable. Tr. at 147.

Mr. Huff takes issue with IEPA's decision that granular media filtration is the best degree of treatment for mercury removal. Tr. at 74. Mr. Huff opines that IEPA's decision conflicts with USEPA's best available treatment determination of categorical treatment standards for refineries, which requires no mercury control. *Id*.

On December 22, 2011, IEPA issued Phillips a revised NPDES permit for the refinery. R.Doc. 52. The permit noted that mercury would remain limited to ensure compliance with Section 302.208 (35 Ill. Adm. Code 302.208). R.Doc.54 at 1. Further, Special Condition 27 was included which states:

> Project Description: Permittee [Phillips] shall achieve compliance with the effluent limitations for Mercury in three phases. In Phase I Permittee shall sample and analyze potential sources of wastewater mercury at the refinery, and/or incoming crudes. Permittee may also perform modeling to identify mercury disposition and partitioning in process and wastewater streams. In Phase II Permittee shall identify additional technology if necessary to comply with the annual average mercury concentration and load limits listed on pages two and three of this permit. In Phase III Permittee shall design and implement the selected technology. Operation level must be obtained by the completion date of Phase III. If no technology is identified which would allow Permittee to comply with the limit, the Permittee may apply to the Illinois Pollution Control Board for an adjusted standard or site specific rule change. R.Doc. 54 at 15.

LEGAL BACKGROUND

NPDES Permits and Permit Appeals

The Act prohibits any contaminant discharge to surface waters in Illinois without an NPDES permit or in violation of the terms and conditions of such permit. 415 ILCS 5/12(f) (2010). Section 402 of the Federal Water Pollution Control Act (33 U.S.C. §1342) established the NPDES as the national framework for permitting wastewater discharges. With its 1977 amendments, the Federal Water Pollution Control Act became commonly known as the "Clean Water Act" (CWA).[4] Under the NPDES, a facility that discharges from a point source directly to surface waters is required to obtain a permit.[5] Generally, in the NPDES permit, levels of control are imposed on the effluent, including both technology-based and water quality-based requirements.

In Illinois, IEPA is the permitting authority, responsible for administering regulatory programs to protect the environment, including the NPDES. If IEPA denies a permit or grants one with conditions, the permit applicant may appeal IEPA's determination to the Board. 415 ILCS 5/4, 5, 39, 40(a)(1) (2010); 35 Ill. Adm. Code 105, 301, 304, 309. The petitioner has the burden of proof on appeal. 415 ILCS 5/40(a)(1) (2010); 35 Ill. Adm. Code 105.112(a). Board hearings are based exclusively on the record before IEPA at the time IEPA issued its permit determination. 35 Ill. Adm. Code 105.214(a). Accordingly, though the Board hearing affords a permit applicant the opportunity to challenge IEPA's reasons for denying or conditionally granting the permit, information developed after IEPA's determination typically is not admitted at hearing or considered by the Board. Alton Packaging Corp. v. PCB, 162 Ill. App. 3d 731, 738, 516 N.E.2d 275, 280 (5th Dist. 1987); Community Landfill Co. & City of Morris v. IEPA, PCB 01-170 (Dec. 6, 2001), *afff'd sub nom*. Community Landfill Co. & City of Morris v. PCB & IEPA, 331 Ill. App. 3d 1056, 772 N.E.2d 231 (3rd Dist. 2002).

The Act states that:

> All NPDES permits shall contain those terms and conditions, including but not limited to schedules of compliance, which may be required to accomplish the purposes and provisions of this Act. 415 ILCS 5/39(b) (2010).

To prevail in its appeal of a permit condition, the petitioner "must show IEPA's imposed modifications 'were not necessary to accomplish the purposes of the Act, or, stated alternatively, [the petitioner] had to establish that its plan would not result in any future violation of the Act and the modifications, therefore, were arbitrary and unnecessary.'" IEPA v. Jersey Sanitation Corp., 336 Ill. App. 3d 582, 593, 784 N.E.2d 867, 876 (4th Dist. 2003), quoting Browning-Ferris Industries of Illinois, Inc. v. IPCB, 179 Ill. App. 3d 598, 603, 534 N.E.2d 616, 620 (2nd Dist. 1989). Once a permittee establishes a *prima facie* case that a permit condition is unnecessary, IEPA must refute the *prima facie* case, though the ultimate burden of proof that the condition is

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[4] "CWA" means the Federal Water Pollution Control Act, as amended by the "Clean Water Act." 35 Ill. Adm. Code 301.240.

[5] "Point source" is defined as "any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged." 40 C.F.R. §122.2.

unnecessary rests with the permittee. John Sexton Contractors Co. v. PCB, 201 Ill. App. 3d 415, 425-26, 558 N.E.2d 1222, 1229 (1st Dist. 1990).

Board's Regulations

Pertinent portions of Section 302.102 provide:

a) Whenever a water quality standard is more restrictive than its corresponding effluent standard, or where there is no corresponding effluent standard specified at 35 Ill. Adm. Code 304, an opportunity shall be allowed for compliance with 35 Ill. Adm. Code 304.105 by mixture of an effluent with its receiving waters, provided the discharger has made every effort to comply with the requirements of 35 Ill. Adm. Code 304.102.

b) The portion, volume and area of any receiving waters within which mixing is allowed pursuant to subsection (a) shall be limited by the following:

* * *

9) No mixing is allowed where the water quality standard for the constituent in question is already violated in the receiving water.

* * *

d) Pursuant to the procedures of Section 39 of the Act and 35 Ill. Adm. Code 309, a person may apply to the Agency [IEPA] to include as a condition in an NPDES permit formal definition of the area and volume of the waters of the State within which mixing is allowed for the NPDES discharge in question. Such formally defined area and volume of allowed mixing shall constitute a "mixing zone" for the purposes of 35 Ill. Adm. Code: Subtitle C. Upon proof by the applicant that a proposed mixing zone conforms with the requirements of Section 39 of the Act, this section and any additional limitations as may be imposed by the Clean Water Act (CWA) (33 USC 1251 et seq.), the Act or Board regulations, the Agency [IEPA] shall, pursuant to Section 39(b) of the Act, include within the NPDES permit a condition defining the mixing zone. 35 Ill. Adm. Code 302.102(a), (b)(9), (d).

Section 302.208(c) provides:

The human health standard (HHS) for the chemical constituents listed in subsection (f) shall not be exceeded when the stream flow is at or above the harmonic mean flow pursuant to Section 302.658 nor shall an annual average, based on at least eight samples, collected in a manner representative of the sampling period, exceed the HHS except for those waters in which the Agency

[IEPA] has approved a mixing zone or in which mixing is allowed pursuant to Section 302.102. 35 Ill. Adm. Code 302.208(c).

Section 302.208(f) sets forth the human health standard for mercury at 0.012 micrograms per liter (µg/L). 35 Ill. Adm. Code 302.208(f).

Section 304.102 provides:

a) Dilution of the effluent from a treatment works or from any wastewater source is not acceptable as a method of treatment of wastes in order to meet the standards set forth in this Part. Rather, it shall be the obligation of any person discharging contaminants of any kind to the waters of the state to provide the best degree of treatment of wastewater consistent with technological feasibility, economic reasonableness and sound engineering judgment. In making determinations as to what kind of treatment is the "best degree of treatment" within the meaning of this paragraph, any person shall consider the following:

1) What degree of waste reduction can be achieved by process change, improved housekeeping and recovery of individual waste components for reuse; and

2) Whether individual process wastewater streams should be segregated or combined.

b) In any case, measurement of contaminant concentrations to determine compliance with the effluent standards shall be made at the point immediately following the final treatment process and before mixture with other waters, unless another point is designated by the Agency [IEPA] in an individual permit, after consideration of the elements contained in this section. If necessary the concentrations so measured shall be recomputed to exclude the effect of any dilution that is improper under this Section. 35 Ill. Adm. Code 304.102.

STIPULATION

On October 19, 2012, IEPA and Phillips filed a document that included an agreed stipulation. In that document, the "parties agree and stipulate" to modifications of several permit conditions. Specifically the stipulation provides that the permit shall be modified:

1) to delete the stated effluent limits and any monitoring requirements for Dissolved Oxygen from the Permit;

2) to delete that portion of the heading of Special Condition 15 which states "for outfalls 004, 005, 006, 007, 008 and 009" and replace it with "for all storm water except that which is treated and discharged through Outfalls 001, 002, and 003";

3) to delete all of Special Condition 21 relating to Smith Lake;

4) to modify Special Condition 28 relating to the schedule of compliance for Fecal Coliform. Stipulation at 1-2.

The Board has previously discussed stipulations in the context of a permit appeal. For example, in Marathon Oil Company v. IEPA, PCB 83-26 (Nov. 21, 1985), the Board stated:

> The Board has a series of prior Opinions rejecting settlement agreements in permit appeals. The rationale and history was most recently articulated in Electric Energy v. IEPA, PCB 85–14 (June 13, 1985):
>
> The Board has had difficulty in dealing with settlements in permit appeal cases which involve Agency [IEPA] issuance of negotiated permits containing conditions for which no record exists 'setting out sufficient technical facts and legal assertions to allow the Board to exercise its independent judgment and to make proper findings of fact and conclusions of law.' Caterpillar Tractor Co. v. IEPA, PCB 79-180, Interim Order, June 2, 1983, p. 1–2. The Board has not issued Orders incorporating the terms of such stipulations as the Board does in enforcement cases. The Board has issued Orders dismissing the appeal and allowing ratification of a 'voidable permit, *e.g.*, Caterpillar, *supra*, Final Order, June 14, 1982; an Order simply dismissing the appeal, Village of Sauget v. IEPA, PCB 79-87, July 19, 1984; and an Order remanding the permit to the Agency [IEPA], Caterpillar Tractor Co. v. IEPA, PCB 83-58, March 7, 1985.

The Board notes that Illinois Supreme Court has held that an administrative agency has no inherent authority to amend or change a decision and may undertake a reconsideration of a decision only where authorized by statute. Reichhold Chemicals, Inc. v. PCB, 204 Ill. App. 3d 674, 678, 561 N.E.2d 1343, 1345 (3rd Dist. 1990), *citing* Pearce Hospital v. Public Aid Comm'sn 15 Ill. 2d 301, 154 N.E. 2d 691 *see also* Caldwell v. Nola, 167 Ill. App. 3d 1057, 522 N.E. 2d 175 (1st Dist. 1988). The Illinois Supreme Court also stated:

> It has consistently been held that an administrative agency may allow a rehearing, or modify and alter its decisions only when authorized to do so by statute. [Citation omitted.] The unlimited scheme of reconsideration of determinations of eligibility set forth by the Department [of Labor], no matter how logical or desirable it may seem, is simply not authorized by the Act and is found nowhere within the clear and common meaning of its language. Reichhold, 204 Ill. App. 3d at 678, *quoting* Weingart v. Department of Labor, 122 Ill.2d 1,15, 521 N.E. 2d 913, 919-20.

Reichhold went on to hold that the IEPA does not have the authority to reconsider its decisions. Reichhold, 204 Ill. App. 3d at 678.

Section 40(a)(1) of the Act (415 ILCS 5/40(a)(1) (2010)) has been amended to allow for an extension of the original appeal period for up to 90 days if the applicant and the IEPA agree. This amendment appears to allow some reconsideration by the IEPA. However, in this case IEPA is revisiting the permit decision outside of the statutory authority provided for in Section 40(a)(1) of the Act (415 ILCS 5/40(a)(1) (2010)). Therefore, the Board finds that IEPA, pursuant to Reichhold, cannot revisit its decision in the permit appeal.

Furthermore, in reviewing an appeal of permit conditions, the Board must determine whether or not absent the condition the permit would violate the Act or Board regulations. *See* Jersey Sanitation Corp., 336 Ill. App. 3d 582, 593. Nowhere in the stipulation do the parties address whether or not the conditions as included in the permit were not necessary to meet the requirements of the Act or Board regulations.

In addition to the prior case law regarding stipulations and IEPA's ability to reconsider, the Board notes that Section 40(e) of the Act (415 ILCS 5/40(e) (2010)) provides for third party appeals of an NPDES permit. Such an appeal includes allowing a third party to challenge conditions in a permit. A stipulation regarding conditions in a permit, where the Board is unable to determine that the conditions were unnecessary to meet the purposes of the Act, seems to circumvent this appeal right.

Given the Board's role in a permit appeal, and based on prior precedent, the Board cannot accept the stipulation. The Board declines to accept the stipulation and the permit conditions will remain unchanged.

ISSUES

The first issue the Board must examine is one not directly raised by the parties but is implicit in one of IEPA's arguments. That issue is what impact, if any, the 2009 permit modification and Phillips' decision not to appeal that permit may have on this permit appeal.

The next issue the Board must decide is whether a mixing zone is appropriate for mercury in the Mississippi River, or whether the record establishes that the human health water quality standard is exceeded in the area that Phillips is seeking for use as a mixing zone. Mixing zones cannot be granted if the water quality standard is exceeded in the receiving waters. *See* 35 Ill. Adm. Code 302.102(b)(9). Whether a technology is best degree of treatment is only an issue if mixing can be granted.

ARGUMENTS

The Board first summarizes the public comment received in this case and then moves to the arguments raised by Phillips in its opening brief. Next the Board summarizes IEPA's arguments. The Board will conclude this section by summarizing Phillips's reply.

Illinois Environmental Regulatory Group Comment

The Illinois Environmental Regulatory Group (IERG) filed a comment raising two issues. First, IERG is concerned about IEPA's policy not to allow mixing zones for mercury. PC at 2. IERG finds the concept that IEPA would develop such a policy troubling as such a policy is contrary to the Board's rules and circumvents administrative law. *Id*. IERG notes that Board rules do not allow IEPA to adopt a ban on mixing zones for mercury or any other bioaccumulative chemical of concern. PC at 3. IERG points out that the Board has, by rule, adopted a ban on mixing zones for bioaccumulative chemical of concern for new dischargers to the Lake Michigan Basin, but the Board specifically rejected such a ban for the whole state. *Id*., citing Proposed Amendments to 35 Ill. Adm. Code Subtitle C (Water Toxics and Bioaccumulation), R92-8 (Apr. 4, 1996).

IERG argues that the Board's regulations and court precedent establish that a mixing zone is a right, subject to certain limiting factors, to which a discharger is entitled. PC at 4. IERG quotes the Supreme Court which stated:

> The Agency [IEPA], as permit issuer and enforcer of the Board's regulations, has authority to make mixing determinations where the Board has provided for alternative methods of compliance. [Internal citation omitted]. The regulations provide directives to the Agency [IEPA] in making these determinations and limit its discretion in that, if a discharger can prove that the proposed mixing zone or ZID [zone of initial dilution] conform to the general mixing regulations, the Agency [IEPA] *must* grant the permit condition. Granite City Division of National Steel Company, et al. v. The Illinois Pollution Control Board, 155 Ill. 2d 149 at 179

IERG opines that IEPA's policy clearly does not reflect the Board's regulations or the Supreme Court's interpretation of IEPA's duty. PC at 4.

IERG claims that there is also confusion regarding the status of IEPA's policy banning mixing zones for mercury. IERG notes that testimony in this proceeding indicated the policy is no longer in effect. PC at 4. However, an email after IEPA agreed to drop the policy in the rulemaking indicated that IEPA would continue not to allow mixing for mercury, and this was communicated in meetings as late as October and November of 2011. PC at 5. For these reasons IERG "encourages the Board" to address this issue. *Id*.

IERG also expresses concern with IEPA's equating affordability with economic reasonableness. PC at 6. IERG opines that economic reasonableness is a term that is widely-used throughout the Act and the Board's regulations. PC at 7. The phrase is not explicitly defined, but IERG offers that "economic reasonableness" requires an objective balancing of various costs and benefits in reaching a determination. *Id*., *referring to* 415 ILCS 5/17.10(c)(1), 22.6(c), 22.51(f)(1), 27(a), and 39(h). IERG agrees that party-specific factors may weigh into the economic reasonableness analysis. However, a single factor that can vary significantly from year-to-year such as, how much money a party happens to be in possession of at any given time, should not be the sole basis for the determination. IERG argues that IEPA's insistence that Phillips perform an affordability analysis and IEPA's apparent reliance on the absence of any affordability information should not satisfy the Board in its evaluation of economic

reasonableness. IERG encourages the Board to provide IEPA with direction in that regard and provide future permit applicants with a degree of certainty. *Id.*

Phillips's Arguments

Phillips asks that the Board remand the permit to IEPA with directions to modify the permit. Br. at 1. Phillips notes that its original petition raised four issues, but three of those issues were resolved by the stipulation, and the only issue remaining concerns the requirement to meet the mercury human health water quality standard in its effluent. *Id*. Phillips argues that the mercury condition is not necessary to meet the requirements of the Act and Board regulations. *Id*.

Standard of Review

Phillips opines that the Board must reverse IEPA's imposition of a condition if the Board determines that the condition is not necessary to accomplish the purposes of the Act. Br. at 8. Phillips further opines that the Board may also strike a condition if a petitioner demonstrates that the permit issued without the condition will not result in any future violation of the Act and the condition is therefore "arbitrary and unnecessary". *Id*., citing City of Quincy v. IEPA, PCB 08-96 (Mar. 4, 2010)). Phillips argues that in this case IEPA's decision to reject the request for a mixing zone for mercury is incorrect. Br. at 8-9.

IEPA's Decision Was Not Necessary to Accomplish the Purposes of the Act

Phillips argues that the basis for IEPA's denial of a mixing zone for mercury in both the 2009 permit and the 2011 permit appears to be the implementation of an unpromulgated rule. Br. at 9, citing Quincy, PCB 08-96 (Mar. 4. 2010). Phillips maintains that the Act allows only the Board to set water quality standards. Br. at 9, citing Granite City Division of National Steel Company v. IPCB, 613 N.E.2d 719, 721 (1993). Phillips argues that the Board rules authorize mixing zones for mercury, and that the Board specifically rejected a regulation intended to prohibit mixing zones for bioaccumulative chemicals of concern such as mercury. Br. at 9-10. Phillips maintains that as a result the Board's rules do not prohibit a mixing zone for mercury. Br. at 10.

Phillips asserts that despite the clarity of the Board's rules and the statute, IEPA adopted a "rule" prohibiting mixing zones for mercury, even though the Board's rules specifically allow for a mixing zone. Br. at 10. Phillips points out that Mr. Mosher testified about the policy and then claimed that the policy has been withdrawn. *Id*. Phillips notes that IERG filed a public comment that indicates that policy may not have been withdrawn. *Id*.

Phillips maintains that even if the policy has been withdrawn, IEPA's action on the 2011 permit demonstrates a "continued and unlawful animus to granting" Phillips a mixing zone. Br. at 10. Phillips argues that IEPA departed from the Board's regulations and its own procedures in deciding that Phillips failed to establish that granular media filtration was not the best degree of treatment for mercury. Br. at 11. Furthermore, IEPA ignored USEPA's determination that the best available treatment does not require control of mercury, according to Phillips. *Id*.

Phillips argues that IEPA's stated basis for denying a mixing zone in the 2011 permit relied on a misreading and misapplication of the best degree of treatment requirement. Br. at 11.

Phillips notes that the Board's rules require an applicant seeking a mixing zone to make every effort to comply with the water quality standards using the "best degree of treatment of wastewater consistent with technological feasibility, economic reasonableness and sound engineering judgment." *Id*., citing 35 Ill. Adm. Code 304.102. Phillips opines that IEPA found the treatment in use by Phillips was not the best degree of treatment because a pilot study demonstrated that granular media filtration showed potential compliance with the mercury human health water quality standard. *Id*. However, Phillips asserts that IEPA rejected its claims that the cost of granular media filtration, at $6.9 million per pound of mercury removed, was economically unreasonable. *Id*. Phillips claims that IEPA's rejection of Phillips' economic reasonableness position is because Phillips never demonstrated to IEPA that the costs for compliance were not affordable to Phillips using USEPA guidance. *Id*.

Phillips argues that IEPA's staff has no experience in imposing a mercury limit as no such limit has been imposed in the past. Br. at 11. As a result of the lack of experience, Phillips maintains IEPA "stuck to its preconceived notion that mercury must be controlled and that treatment was available." *Id*. Phillips opines that IEPA ignored other information that could have an impact on IEPA's decision. *Id*.

Phillips maintains that IEPA ignored Phillips data and misapplied the Board's economic reasonableness test. Br. at 12. Specifically, Phillips maintains that IEPA ignored the fact that the technology had never been shown to be effective on a full scale, full time basis, despite Phillips' questioning such effectiveness. *Id*. As to the costs, Phillips maintains that the cost alone is sufficient grounds to reject the technology as the cost of the equipment was between $9 million and $14 million, to remove 0.2 pounds of mercury a year. *Id*. Projected over the 20 year equipment life span, this is a cost of $6.9 million per pound of mercury removed. *Id*. Phillips argues this cost is even more extraordinary as the current system removes 98% of the influent mercury. Br. at 13.

Phillips notes that IEPA's basis to find that the cost for granular media filtration was reasonable is based on Phillips failure to address the affordability of the technology using a USEPA guidance document and IEPA's own affordability assessment based on Phillips capitalization. Br. at 13. Phillips argues that IEPA's assessment of economic reasonableness by looking only at affordability has no basis in the Act, Board regulations or prior Board decisions. Br. at 13. Phillips opines that courts have found that economic reasonableness involves balancing of cost and benefits. *Id*., citing IEPA v. IPCB, 721 N.E.2d 723, 730 308 Ill. App. 3d 741, 749 (2nd Dist. 1999). Furthermore, Phillips opines that the Board has consistently looked at all available factors of costs and benefits, and the Board has never limited the assessment to affordability. *Id*. Specifically, Phillips argues that the Board has rejected controls as economically unreasonable based solely on the costs per pound of removal. *Id*., citing for a list Petition of Grief Packaging for an Adjusted Standard from 35 Ill. Adm. Code 218 Subpart TT, AS 11-11 slip op. 13 (Apr. 5, 2012)

Phillips asserts that limiting economic reasonableness assessments to affordability would "contradict and frustrate" a central purpose of the Act of encouraging decisionmaking based on an assessment of costs and benefits. Br. at 14. Phillips offers that IEPA's claim that any technology a company can afford is economically reasonable, "subverts this required statutory

approach". Br. at 14. Phillips also notes that IEPA questioned the cost of the technology, wondering if the entire waste stream needed to be treated and if the current lagoon system should be bypassed. However, it is unclear when these issues may have been raised with Phillips; although answers could have been made available. *Id.*

Phillips maintains that IEPA ignored the long-time determination by USEPA that the best available treatment for the refinery category does not require mercury treatment. Br. at 14. IEPA relied on USEPA's standards to establish other effluent standards in the permit, but IEPA did not apply best available treatment to mercury. Br. at 14-15. Phillips asserts that this failure is in contrast to IEPA's demand that Phillips demonstrate economic reasonableness by supplying a USEPA guidance document. Br. at 15.

Phillips acknowledges that best available treatment and best degree of treatment are not identical. However, Phillips asserts it was arbitrary for IEPA to ignore USEPA's best available treatment for mercury determination. *Id*. Phillips maintains that USEPA's evaluation is nationwide and more expansive than IEPA's, and IEPA provides no basis for adopting best available treatment in some areas but rejecting it for mercury. Br. at 15-16. Phillips opines that as a result IEPA's decision that granular media filtration was the best degree of treatment is unsupported and arbitrary.

Mercury Can Be Included In a Mixing Zone

Phillips asserts that IEPA was incorrect in denying a mixing zone as IEPA already determined that Phillips was eligible for a mixing zone for constituents other than mercury. Phillips opines that those same determinations are valid for mercury. Br. at 16. Phillips argues that the only issue IEPA raised concerning a mixing zone for mercury was whether or not granular media filtration was the best degree of treatment, and Phillips addressed that issue. *Id*.

Phillips maintains that for the first time at hearing in this proceeding IEPA raised the issue that a mixing zone for mercury would violate the prohibition against a mixing zone where the water quality standard is already exceeded. Br. at 16. Phillips notes that Mr. Mosher indicated that the "level of detection for" the water quality data used in the mixing zone and Antidegradation Analysis (R.Doc. 100) was not sufficient to document compliance with the human health standard at the point of discharge. *Id*. Phillips takes issue with this claim, noting that IEPA is limited to its basis for denial for a mixing zone to the record. Br. at 17, citing Freedom Oil Company v. IEPA, PCB 10-46 slip op. 14 (Aug. 9, 2012). Phillips asserts that at no point did IEPA indicate that the data from its own water quality network were insufficient. *Id*.

Phillips additionally asserts that IEPA has never claimed that there is a possibility that the water quality in the Mississippi River was impaired for the human health water quality standard for mercury. Br. at 17. Phillips acknowledges that IEPA has listed the Mississippi River as impaired for fish consumption, but there is no correlation between this determination and whether or not the human health water quality standard is achieved. *Id*. Phillips argues that it should not have to prove that the water quality standard is met to be allowed a mixing zone. *Id*.

Phillips claims that IEPA's failure to raise the issue of the potential that the water quality standard would be exceeded during the application process is further prohibited now because Phillips did not have the opportunity to gather information on the water quality. Br. at 17. Phillips maintains that it attempted to address IEPA's concerns, which included revising the Antidegradation Analysis. *Id*.

Phillips argues that IEPA has failed to address issues regarding mercury while at the same time claiming a concern for mercury water quality. Br. at 18. Specifically, Phillips asserts that IEPA has not taken action on the water quality monitoring system, which is inadequate to address mercury, but rather IEPA stopped testing for mercury. *Id*. Further, IEPA dropped the "rule" that would have prohibited mixing zones for mercury. Phillips maintains that these actions undercut the concern for mercury in Phillips's discharge. Phillips argues that IEPA has made no finding that the human health water quality standard is being violated and has stopped any effort to make the determination. *Id*. Therefore, Phillips argues IEPA cannot claim that a mixing zone should not be granted because Phillips has not proven that the human health water quality standard would be exceeded. *Id*.

IEPA's Decision to Adopt a Mass Limit for Mercury

Phillips asserts that IEPA made two arbitrary decisions with respect to a mass limit. Br. at 19. The first was imposing a mass limit, and the second was setting the limit at a level not based on a representative assessment of the actual effluent limit. *Id*. Phillips agrees that Mr. Rabin's testimony that the Board's rules require a mass limit for all constituents is correct.

Phillips argues that IEPA arbitrarily set the standard at 7.8×10^{-4} lb/day based on the averaging of the 14 mercury samples taken in 2007. Br. at 19. Mr. Rabins testified that this was set in order to ensure what he believed was an agreement by Phillips not to increase discharges as a result of the plant expansion. Br. at 19-20. Phillips argues that IEPA did not set a mass limit on several other constituents for which mixing was granted and there is no basis in the record for treating mercury differently. Br. at 20.

Phillips' Conclusion

Phillips argues that the record demonstrates that IEPA determined not to allow a mixing zone for mercury to Phillips after a public hearing in 2006, no matter what information Phillips might present. Br. at 20. Phillips maintains that the Act and Board rules do not prohibit allowance of a mixing zone and in fact allow for mixing zones in waters away from the Lake Michigan basin. Br. at 21. Phillips asks the Board to remand this permit to IEPA with directions to allow for a mixing zone for mercury.

IEPA's Arguments

Standard of Review

IEPA argues that unless Phillips can prove that the mercury limits and the denial of the mixing zone are not necessary to accomplish the purposes of the Act and Board regulations, the

Board must uphold the permit limits and conditions. Resp. at 19, citing Noveon, Inc. v. IEPA, PCB 91-17 (Sept. 16, 2004); Browning-Ferris Industries of Illinois Inc. v IPCB, 179 Ill. App. 3d 598, 534 N.E. 2d 616 (2d Dist. 1989). Furthermore, IEPA notes that the Board is limited to the record before IEPA at the time the permit issued, and new information is typically not admitted before the Board. Resp. at 19, citing Quincy, PCB 08-86.

IEPA's Decisions to Deny a Mixing Zone and Impose a Mass Limit

IEPA argues that the Act places a burden on a discharger to prevent pollution and maintain compliance with State and Federal law. Resp. at 20, *referring to* 415 ILCS 5/2 and 11 (2010). Further, IEPA argues that a basic "tenet of federalism" is that a State may impose more strict standards than the federal counterpart. Resp. at 21. Thus, IEPA opines requiring installation of technology beyond USEPA's best available treatment is not arbitrary. *Id*.

IEPA asserts that the Act is very clear that the burden to protect the environment from adverse effects is "borne by those who cause them". Resp. at 21. IEPA maintains that since Phillips is the discharger Phillips must establish that its discharge will not adversely impact the environment and the human health water quality standard, which was implemented to prevent adverse effects to humans by preventing bioaccumulation in fish. Resp. at 21. IEPA argues that protecting human health is a specific goal of the Act. *Id*.

IEPA opines that the Act requires treatment or control to prevent pollution and the only "caveat to an absolute bar on pollution is that dischargers could be made subject to conditions which achieve and maintain compliance with State and Federal law." Resp. at 21. IEPA maintains that the overall goal is to prevent pollution, and Phillips has failed to show that the load limit is unnecessary to prevent mercury pollution in the Mississippi River. *Id*. In addition, IEPA maintains that Phillips has failed to establish that use of a mixing zone with the existing treatment would not result in a violation of the human health standard, and that factor is sufficient to support IEPA's decision.

IEPA's Decision to Deny Mixing Zone is Consistent with Board Regulations

IEPA notes that the Board's regulations allow mixing zones only if the discharger makes every effort to comply with Section 304.102. Resp. at 21-22. Section 304.102(a) allows for mixing zones if the discharger provides the best degree of treatment of the wastewater. IEPA points out that the human health water quality standard for mercury is more stringent than the effluent standard and mixing would be allowed if the discharge provides the best degree of treatment. Resp. at 22. However, IEPA argues Phillips has not demonstrated every effort to comply with the best degree of treatment was made. *Id*.

Phillips has failed to show that IEPA's decision that granular media filtration is technically feasible and of sound engineering judgment is arbitrary. IEPA argues that the purpose of the pilot study required by the 2009 permit was to determine if there was technology that would reduce the discharge of mercury. Resp. at 23. IEPA points out that language was included in the 2009 permit that called for Phillips to seek an adjusted standard if technology

could not be found. IEPA further points out that Phillips did not appeal the 2009 permit and the 2011 permit contains the same language. *Id.*

IEPA maintains that Phillips identified technology that would allow Phillips to comply with the mercury limit. Resp. at 23. Specifically, in the pilot study Phillips demonstrated that granular media filtration would reduce the concentration of mercury in the effluent to 2 to 3 ng/L, far below the permit limits. *Id.* Therefore, IEPA's decision that there is a technically feasible technology was not arbitrary. *Id.*

IEPA acknowledges that prior to the pilot study and again after identifying a technology, Phillips raised concerns about the technology. Resp. at 23-24. Those issues included variation of the mercury in the crude feed and the impact of processing on the distribution of mercury. Resp. at 24. IEPA claims that these problems are why end of the pipe treatment options were explored rather than other treatment options. *Id.*

IEPA also addresses Phillips concern with mercury species, solubility, and mercury behavior and finds those concerns "puzzling" in light of the Antidegradation Analysis (R.Doc. 100) and findings from the pilot study. Resp. at 24. IEPA claims that the Antidegradation Analysis and pilot study addressed the issue of soluble mercury and the pilot study concentered on particulate mercury as the current system seemed to be dealing with the soluble form. *Id.*

Phillips failed to show that IEPA's determination that granular media filtration was economically reasonable was arbitrary. IEPA agrees the economic reasonableness is not defined in the Act and notes that the Board has addressed economic reasonableness in a number of cases. Resp. at 25. IEPA points out that generally the cases where the Board has examined economic reasonableness have involved implementation of a particular control technology or compliance with a rule. *Id.* IEPA asserts that this case involves Section 304.102(a) of the Board's rules and the question is whether IEPA, not the Board, has been reasonable in determining that granular media filtration is economically reasonable. *Id.*

IEPA notes that the variety of Board cases dealing with economic reasonableness include adjusted standards and rulemaking matters. Resp. at 25. IEPA acknowledges that the Board has used the cost per pound analysis involving air pollution; however, IEPA claims that other concerns should factor into the cost analysis. Resp. at 25-26. IEPA argues that the Board should look to any "non-speculative, tangible benefits of installing the subject technology". Resp. at 26, citing IEPA v. IPCB, 721 N.E.2d at 730, 308 Ill. App. 3d at 749. Also, IEPA argues that costs for compliance and the environmental harm addressed by the control technology should be in context with other operating costs and environmental problems addressed by existing operations. Resp. at 26, citing Central Ill. Light Co. (CILCO) v. IPCB, 511 N. E. 2d 269, 159 Ill. App. 3d 389 (3d Dist. 1987). IEPA maintains that the Board has also found affordability or the economic impact to be a factor when considering the appropriate technology. Resp. at 26.

IEPA explains that in IEPA v. IPCB, IEPA asked that the Board consider benefits that would accrue to a petitioner as a result of implementing a control technology, and in that case the benefit was settlement of an enforcement action. Resp. at 26. IEPA claims that the court "agreed" that "the Board should take into consideration tangible benefits that have been

established with some certainty" and are not "purely speculative". Resp. at 26, 27, quoting IEPA v. IPCB, 721 N.E.2d at 730, 308 Ill. App. 3d at 749.[6] IEPA argues that if granular media filtration is used to remove mercury, there would be no additional cost for treating fecal coliform at Phillips' facility. Resp. at 27. IEPA asserts that "it is reasonable to conclude" that IEPA assumed granular media filtration was the preferred treatment method for fecal coliform as the compliance dates for fecal coliform were extended to the same dates as compliance with mercury. *Id*. Furthermore, IEPA claims that while Phillips did not provide cost estimates for each alternative treatment method, "it is a logical conclusion that using the same system for both mercury and fecal coliform" would result in a "significant" cost savings. *Id*. IEPA states that because the fecal coliform issue has been "settled", it does not affect the considerations at the time that the permit decision was made. *Id*. IEPA asserts that at the time the permit was issued, IEPA determined that Phillips would have tangible benefit from the granular media filtration treatment for mercury. *Id*.

IEPA notes that the courts have also affirmed the Board when the Board looked at the cost of compliance compared to environmental harm. Resp. at 28, citing CILCO, 511 N.E.2d at 273, 159 Ill. App. 3d at 394-95 (3rd Dist. 1987). In CILCO, IEPA explains that the company documented capital expenditures for a treatment system, representing 17% of its operating budget for the year. *Id*. IEPA further explains that the court indicated that the company had failed to put the costs into perspective and affirmed the Board's decision. *Id*.

IEPA argues that while the cost per pound of removal of mercury is a large number, putting the number into perspective is necessary. Resp. at 28. IEPA argues that while the cost per pound is relevant so is the relation to the total operating costs. *Id*. Likewise, IEPA argues while the amount of mercury removed seems to be a small number, the number must be placed in perspective. *Id*. IEPA states that mercury does not become less of a threat to aquatic life with dilution, and mercury persists in the environment through bioaccumulation. *Id*. IEPA further states that a very small amount of mercury is toxic to humans. Resp. at 29.

IEPA takes issue with the Antidegradation Analysis (R.Doc. 100) by arguing that outdated data was used to determine whether the human health standard would be met at the edge of the mixing zone. Resp. at 29. Based on this data, IEPA claims that Phillips "summarily claims" that additional treatment is economically unreasonable. IEPA asserts that Phillips failed to put the cost of granular media filtration into perspective. IEPA claims that the cost of adding granular media filtration to the wastewater treatment expansion would have represented only about 12% of the capital upgrades to the system. *Id*. Further, IEPA claims that operating costs represent only 5% of the annual additional cost for operating the wastewater treatment. *Id*. IEPA maintains that Phillips failed to provide any accurate assessment regarding the impact of the discharge of its effluent on the Mississippi River. Resp. at 30.

IEPA argues that affordability can be a component in determining economic reasonableness. Resp. at 30. IEPA argues that completion of USEPA guidance would have been

[6] The Board notes that in IEPA v. IPCB, 721 N.E.2d 723, 308 Ill. App. 3d at 741, the court affirmed the Board's decision declining to consider benefits the manufacturer would allegedly receive from installing a powder coating system.

relevant and helpful in a cost/benefit analysis and the guidance is merely a more complete way to look at costs. Resp. at 31. IEPA asserts that there is no rule that prevents IEPA from using the guidance and with the "little" information IEPA was able to obtain, IEPA determined that the treatment was economically reasonable. Resp. at 31-32.

IEPA asserts that in looking at economic reasonableness the Board must be convinced that other alternatives have been evaluated. Resp. at 32. Mr. Mosher recalls asking Phillips about partial filtration, and Mr. Allen agreed it is feasible. *Id*., citing Tr. at 94 and 43. IEPA argues that Phillips has not provided any objective data demonstrating that partial filtration is not feasible and that the standard could be met. *Id*.

Summary. IEPA asserts that Phillips did not meet its burden proving that granular media filtration economically unreasonable. Specifically IEPA argues that Phillips failed to:

1) take into account the tangible benefit of fecal coliform treatment;

2) take a reasoned look at the cost relative to other treatment costs;

3) provide IEPA with additional economic information to aid in the evaluation of costs and benefits, and

4) provide objective data to support or deny methods of partial compliance.

IEPA's Decision to Include a Mass Limit for Mercury is Not Arbitrary

IEPA maintains that if an effluent has the reasonable potential to cause, or contribute to an exceedance of any State water quality standard, the Board's regulations provide for limiting contaminants in mass. Resp. at 33, citing 35 Ill. Adm. Code 309.143(a)-(b). IEPA explains that Section 309.143(b) provides that:

> in the application of effluent standards and limitations, water quality standards and other applicable requirements, the Agency [IEPA] shall ... specify ... quantitative limitations ... in terms of weight. .... The Agency [IEPA] may, in its discretion ... specify other limitations, such as average or maximum concentration limits . . ..

IEPA asserts that the Board's rules require it to limit in mass, where there is an appropriate application of a water quality standard. Resp. at 33.

IEPA argues that it determined that Phillips' effluent had a reasonable potential to exceed the human health standard for mercury and it applied a load limit for mercury. Resp. at 33, citing R.Doc. 93; R.Doc. 94. In addition, IEPA claims that there was an agreement from Phillips to hold contaminants to existing levels, including mercury. Resp. at 33, citing Tr. 139-140, and 155. However, IEPA notes that the mercury mass limit was calculated using an incorrect flow value. IEPA states that the mercury mass limit should have been calculated using the permitted flow prior to the CORE project. Resp. at 33. As such, IEPA concedes that to the extent that the

mass limit calculations may have used inaccurate flow rate, the permit should be remanded to IEPA for a new calculation. *Id*.

Phillips Reply

IEPA's Contentions About Mercury not Addressed in IEPA Record

Phillips asserts that IEPA's reliance on Mr. Mosher's testimony is misplaced; specifically his testimony regarding: 1) the impact of mercury on the environment, 2) the error of Phillips using IEPA monitoring data, and 3) Phillips failure to show that the ambient water quality was already compliant with the human health water quality standard. Reply at 1-2. Phillips argues that IEPA uses these statements to support its determinations, when these statements should have no bearing on the Board's decision. Reply at 2. That is so, Phillips claims, because IEPA never used the issues prior to hearing as a basis for its decision. *Id*.

Phillips reminds that the Board's review is based solely on information before IEPA when the permit was issued. Reply at 2. Phillips claims that IEPA is significantly undermining the process by raising new issues and arguments for the first time at the permit hearing. *Id*. Phillips maintains that the record and testimony make clear that these concerns were not raised as a part of IEPA's decisionmaking process, and in light of this failure, Phillips opines that the Board can find that a mixing zone can be allowed. Reply at 3. Furthermore, Phillips claims courts have placed a duty on IEPA to identify additional facts necessary for a permit decision, and Mr. Huff indicated he assumed ambient water quality was not an issue and it was never raised by IEPA. Reply at 3, citing IEPA v. IPCB, 896 N.E. 2d 479, 486, 386 Ill. App. 3d 375 (3rd Dist. 2008).

Phillips notes that in another proceeding IEPA testified that the human health water quality standard is met near Phillips facility. Reply at 3, citing Proposed New 35 Ill. Adm. Code 225 Control of Emission from Large Combustion Sources (Mercury), R06-25 (Mercury Rules). Phillips points out that IEPA's testimony and documentation in the Mercury Rules establish that neither IEPA nor Phillips had any reason to believe that the mercury human health water quality standard was exceeded in the area that the mixing zone is being sought. Reply at 4. Phillips also points to testimony in the Mercury Rules by IEPA that there is no correlation between dissolved mercury in the water column and levels of mercury in fish tissue. Phillips claims that this testimony demonstrates that Mr. Mosher's testimony in this proceeding is an over simplification. Reply at 4-5. Phillips argues that IEPA's own water quality data establish that the human health water quality standard for mercury is met in the Mississippi River near Phillips' refinery. Reply at 5.

IEPA's Contentions Regarding Cost Fail to Demonstrate that Mercury Control is Economically Reasonable

Phillips argues that IEPA failed to apply USEPA's best available treatment without explanation, and the decision is arbitrary. Reply at 6. Phillips points out that best available treatment was applied by IEPA when setting other effluent standards for the permit, and Mr. Huff testified he has never seen IEPA identify a best degree of treatment more stringent than best

available treatment. *Id*. Phillips agrees that Illinois may adopt more stringent requirements than federal requirements, but IEPA is not authorized to adopt water quality or effluent standards. That authority lies with the Board. Reply at 7. If a more stringent requirement is to be adopted, that policy decision is to be made by the Board in a rulemaking proceeding, not by IEPA. *Id*.

Phillips argues that the issue here is not IEPA's authority, but rather the support and rationale in the record for IEPA's determination that granular media filtration is best degree of treatment in light of USEPA's decision that no control of mercury is required as best available treatment. Reply at 7. Phillips notes that USEPA's decision is based on an updated review of refineries and mercury controls. *Id*. In contrast, Phillips claims IEPA has not previously evaluated mercury limits, and IEPA's decision is based on one pilot test, ignoring technical issues presented by Phillips. *Id*.

Phillips asserts that IEPA's decision that the capital and operation costs of granular media filtration are economically reasonable is arbitrary. Reply at 8. Phillips notes that IEPA offers several arguments to support its claim, but "few are reflected in the record" and none support the claim. *Id*. Regarding tangible benefits, Phillips argues that it is not clear how such benefits would be measured, and Mr. Mosher's testimony regarding benefits of controlling mercury are not a part of the record. *Id*. Furthermore, Phillips claims the Board has already determined a mixing zone is appropriate, and requiring control of a condition that the Board has already approved is not a benefit. *Id*.

As to the control of fecal coliform, Phillips maintains that this concept is also not reflected in the record. Reply at 8-9. Phillips argues that the point of creating a record is so that no one need guess why IEPA made its decision, and the fact that IEPA is asking the Board to speculate disqualifies this issue from consideration. Reply at 9.

Phillips takes issue with IEPA's claims that the costs for treatment are unsupported because Phillips did not provide to IEPA technical data to support the cost assessment. Reply at 9. Phillips asserts that this claim is without basis as IEPA never sought the information from Phillips. *Id*. Phillips did address these issues at the Board's hearing. *Id*.

Phillips opines that IEPA did not evaluate any of the uncertainties of the granular media filtration in determining that the technology was technically feasible. Reply at 10. Therefore, Phillips asserts IEPA's decision was arbitrary and based on the results of one pilot test. *Id*.

Phillips maintains that IEPA's insistence that a USEPA guidance document on affordability is also arbitrary. Reply at 10. The USEPA guidance is not mandated by the Act or Board regulations, and the guidance is "mostly focused on whether the economic impact component of the antidegradation assessment is met." Reply at 10-11. Phillips argues that the record is clear that IEPA relied solely on affordability in determining that the granular media filtration was economically reasonable and such reliance is legally baseless. Reply at 11-12.

IEPA's Decision to Impose Mass Limit was Arbitrary and Capricious

Phillips argues that IEPA did not assign mass limits to other constituents and its decision to do so with mercury is arbitrary and capricious. Reply at 14.

DISCUSSION

2009 Permit

While IEPA and Phillips do not directly address the issue that the 2009 permit modification included the same conditions on appeal in this proceeding, IEPA did note in its brief that the 2009 conditions were not appealed. Phillips also indicated in the petition for appeal that IEPA "agreed to review its legal and factual basis for this [Special condition 28] in the context of this permit renewal." Pet. at 5. However, the Board can find no support for this statement in the record.

As a general principle, a condition imposed in a previous permit, which is not appealed to the Board, may not be appealed in a subsequent permit. Jersey Sanitation Corp. v. IEPA, PCB 00-82 slip op 7 (June 21, 2001), *aff'd* IEPA v. Jersey Sanitation Corp., 336 Ill. App. 3d 582, 593, 784 N.E.2d 867, 876 (4th Dist. 2003) (finding conditions in post-closure care permits could be appealed even though identical conditions were placed in prior operating/closure permits). Illustrations of that general principle are found in the following Board cases: Bradd v. IEPA, PCB 90-173 (May 9, 1991); Centralia Environmental Services, Inc. v. IEPA, PCB 90-173 (Oct. 25, 1990); and Panhandle Eastern Pipe Line Company v. IEPA, PCB 98-102, slip op. at 13 (Jan. 21, 1999), *aff'd* Panhandle Eastern Pipe Line Company v. IEPA and IPCB, 314 Ill. App. 296, 734 N.E.2d 18 (4th Dist. 2000).

In Bradd, the petitioner's requested certification of closure for the facility was denied, since petitioner failed to perform groundwater monitoring in accordance with the closure plan. Mr. Bradd sought review of the groundwater-monitoring plan that was included in the closure permit issued a number of years before. The Board declined to review that plan because "[t]o do otherwise would encourage permit applicants to delay appealing an Agency [IEPA] denial until a subsequent appeal arises." Bradd, PCB 90-173 slip op. at 10.

In Centralia, a petitioner sought an operating permit in 1989 that was denied in part because petitioner failed to meet the requirements of a condition imposed in a 1988 permit. The Board found that the petitioner waived its argument on the condition in the 1989 permit appeal. Centralia, PCB 90-173 slip op. 4.

In Panhandle, the petitioner, in 1997, sought a construction permit that would raise emission limits originally set in a 1988 permit. The petitioner sought to raise the emission limits to avoid certain requirements of the Clean Air Act (42 U.S.C. §§ 7470 thorough 7492 (1994)). The challenged condition had been placed on a construction permit and several subsequent construction and operating permits. The Board found that it could not review IEPA's permit determination as Panhandle did not appeal those condition in the construction permit pursuant to

Section 40(a)(1) of the Act (415 ILCS 5/40(a)(1) (2010)). Panhandle, PCB 98-102, slip op. at 13.

The Board again reviewed the issue of waiver in Jersey Sanitation, PCB 00-82. In that instance, the Board found that the permit sought by the petitioner was a different kind of permit, and the waiver argument did not apply. IEPA appealed the Board decision, and the court looked at each of the cases discussed above in affirming the Board's decision. Jersey Sanitation Corp., 336 Ill. App. 3d 582.

Section 40(a)(1) of the Act provides, in part:

> If the Agency [IEPA] refuses to grant or grants with conditions a permit under Section 39 of this Act, the applicant may, within 35 days after the date on which the Agency [IEPA] served its decision on the applicant, petition for a hearing before the Board to contest the decision of the Agency [IEPA]. However, the 35-day period for petitioning for a hearing may be extended for an additional period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Agency [IEPA] within the initial appeal period. 415 ILCS 5/40(a)(1).

In this instance, Phillips made the decision to accept a permit condition in the 2009 permit modification that related to mercury effluent limits and a compliance plan. Phillips did not appeal the IEPA's imposition of that condition. In the 2011 permit renewal, IEPA's letter states, "mercury will remain limited in the renewal permit . . . to ensure compliance with 34 I[ll.] A[dm.] Code 302.208." Special condition 27 of the 2011 permit renewal is substantively identical to Special Condition 28 in the 2009 permit modification.

Since the 2009 permit modification, Phillips has undertaken certain steps in the compliance plan. Based on Phillips' assertions, it has been unable to find a technology that will treat mercury that is economically reasonable and technically feasible. Special Condition 28 included provisions for such an outcome and would allow Phillips to seek an adjusted standard. Nothing in Special Condition 27 allows for a challenge to the condition in a subsequent permit. The Board finds that this situation is factually more aligned with Panhandle than Jersey Sanitation. Therefore the Board finds that Phillips waived its argument against the imposition of Special condition 27 in the 2011 permit renewal by accepting and not appealing the same condition in the 2009 permit.

Water Quality Upstream of Discharge

The Board's rules prohibit mixing zones if the water quality standard is exceeded in the receiving stream. *See* 35 Ill. Adm. Code 302.102(b)(9). In this record, the only evidence regarding mercury in the Mississippi River, the receiving stream, is found in the Antidegradation Analysis (R.Doc. 100, Pet. Exh. 6, Resp. Exh. G). The Antidegradation Analysis provides data from IEPA monitoring stations. Tr. at 115-16. The mercury data have not been collected on a regular basis because IEPA's laboratory is not capable of analyzing for mercury in accordance with USEPA Method 1631. Tr. at 116-117.

The data in the Antidegradation Analysis indicate that while mercury levels have been "historically low", the maximum reported mercury at the Grafton station, which is upstream of the Phillips refinery, has been 30 ng/L [7] . R.Doc. 100 at 42. The average value at Grafton station is reported as 20 ng/L. *Id*. at 43, 69. Additionally, the predicted total concentration of mercury at the edge of the zone of initial dilution is 31.3 ng/L, and the predicted dissolved concentration is 26.6 ng/L. *Id*. at 69. The predicted total concentration of mercury at the edge of the mixing zone is 20 ng/L, and the predicted dissolved concentration is 17 ng/L. *Id*. at 70. The predicted mercury concentrations at the edge of the zone of initial dilution, and the edge of mixing zone are above the human health water quality standard for mercury is 12 ng/L. 35 Ill. Adm. Code 302.208(f).

The Board recognizes that questions have been raised regarding the validity of the mercury data. According to Mr. Mosher, the mercury data reported in the Antidegradation Analysis is "not only outdated, but it's insufficient for purposes of trying to evaluate whether the human health water quality standard is being met or not." Tr. 105. He explained that most of the results were below detection limits because the data were derived from an older mercury laboratory method with a detection limit not appropriate for evaluating mercury. Mr. Mosher stated that USEPA Method 1631 should have been used to evaluate mercury. *Id.* Mr. Huff agreed that the analytical method used in 2002 was less sensitive with a detection limit of greater than the human health standard. Tr. at 78-79. .

The law is well settled that in a permit appeal, the petitioner has the burden of proof, and the Board hearings are based exclusively on the record before IEPA at the time IEPA issued its permit determination. 415 ILCS 5/40(a)(1) (2008); 35 Ill. Adm. Code 105.112(a). To prevail in its appeal of a permit condition, Phillips "must show IEPA's imposed modifications 'were not necessary to accomplish the purposes of the Act, or, stated alternatively, [Phillips] had to establish that its plan would not result in any future violation of the Act and the modifications, therefore, were arbitrary and unnecessary.'" Jersey Sanitation, 336 Ill. App. 3d at 593, 784 N.E.2d at 876. The Board has to make its determination regarding the mixing zone based on the information in the record. As noted by Mr. Mosher, the upstream mercury concentration (20 ng/L) used in the Antidegradation Analysis is above the 12 ng/L human health water quality standard. In effect, the data in the record indicate that there is no assimilative capacity to define a mixing zone for mercury. Further, the mixing zone analysis shows that the predicted mercury concentration at the edge of the mixing zone is above the mercury human health standard.

The Board finds that based on the record, Phillips failed to establish that in this instance, the human health mercury water quality standard is being met in the receiving stream for which Phillips is seeking a mixing zone. Therefore, the Board finds that, based on this record, Phillips failed to establish that allowing a mixing zone would not violate the provisions of Section 302.102(b)(9). The Board finds that IEPA properly included a condition requiring that the mercury human health water quality standard be met in Phillips effluent.

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[7] The Board is using "nanograms per liter" as unit of measurement for concentration in this discussion because Board regulations at 35 Ill. Adm. Code 302.208(f) uses same unit of measurement for the human health standard for mercury.

Best Degree of Treatment

As the Board determined, based on this record, that a mixing zone cannot be granted because the human health standard for mercury is exceeded in the receiving stream, the Board need not reach the other issues in this case. Because mixing is not allowed, whether or not Phillips is exercising the best degree of treatment or whether granular media filtration is the best degree of treatment need not be examined. *See* 35 Ill. Adm. Code 302.102. Therefore, the Board makes no findings on the issue of best degree of treatment.

Mass Limit

Phillips takes issue with IEPA's use of a mass limit for mercury. Phillips asserts that IEPA did not impose mass limits for other constituents, and the standard was based on incorrect data. IEPA argues that the Board's rules required mass limits, but agrees that to the extent the calculation were incorrect, the permit should be remanded to IEPA.

The Board agrees with IEPA that the Board's rules allow for mass limits to be set. The Board is unconvinced by Phillips argument that just because IEPA did not set such limits for other constituents, the decision to do so for mercury is arbitrary. However as IEPA has conceded that the calculation may be incorrect the Board will remand the permit to IEPA with directions to correct the calculations.

CONCLUSION

After examining the record in this permit appeal and reviewing the parties' arguments, the Board affirms IEPA's imposition of a condition requiring that Phillips meet the human health water quality standard for mercury in its effluent. The Board finds that Phillips waived arguments regarding the inclusion of a condition regarding mercury in the 2011 permit when Phillips accepted the same condition as a part of a permit modification in 2009. Further, based on the information provided in this record, the Board finds even if the arguments had not been waived, Phillips cannot be granted a mixing zone for mercury because Phillips failed to establish that the human health mercury water quality standard is being met in the receiving stream, for which Phillips is seeking a mixing zone.

The Board declines to accept the stipulations regarding amendment of permit conditions, as stipulations regarding permit conditions are not appropriate in the context of a permit appeal. Those conditions remain in effect as those conditions were included in the permit issued in 2011.

The Board finds that Phillips failed to show that IEPA's imposition of a mass limit was not necessary to accomplish the purposes of the Act; however consistent with IEPA's concern regarding the calculation of the limit, the Board will remand the permit to address this condition.

ORDER

The Board affirms the imposition of Special Condition 27 in Phillips 66 Company's NPDES permit issued on December 22, 2011. As the Illinois Environmental Protection Agency (IEPA) concedes that the calculation of the effluent limit for mercury may be incorrect, the Board remands the permit for recalculation of that limit.

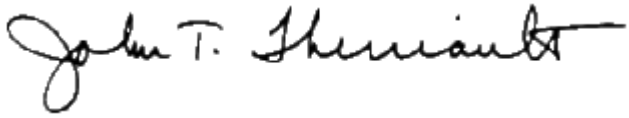
The Board declines to accept the stipulation, and the conditions which are subject to the stipulation remain as issued in the December 22, 2011 permit.

IT IS SO ORDERED.

Board Member J. A. Burke abstains.
Chairman T. A. Holbrook abstains.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/41(a) (2010); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, John T. Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above order on March 21, 2013, by a vote of 3-0.



John T. Therriault, Assistant Clerk
Illinois Pollution Control Board