BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

DES PLAINES RIVER WATERSHED ALLIANCE, LIVABLE COMMUNITIES ALLIANCE, PRAIRIE RIVERS NETWORK, and SIERRA CLUB Petitioners	)	
v.	)	**PCB 04-88 (APPEAL FROM IEPA (DECISION GRANTING NPDES PERMIT)**
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY and VILLAGE OF NEW LENOX Respondents.	)	

NOTICE OF FILING

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Hearing Officer
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PLEASE TAKE NOTICE that on **Wednesday, May 25, 2005,** we filed the attached **The Village of New Lenox's Memorandum of Law In Opposition To Petitioner's Motion For Summary Judgment** and **Response of Village of New Lenox To Petitioners' Statement Of Relevant Facts From The Agency Record** with the Clerk of the Pollution Control Board, a copy of which is herewith served upon you.

Respectfully Submitted,

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THIS FILING IS BEING SUBMITTED ON RECYCLED PAPER

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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Petitioners,	)	
v.	)	PCB 04-88 (NPDES Permit Appeal)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY and VILLAGE OF NEW LENOX	)	
Respondents.	)	

THE VILLAGE OF NEW LENOX'S MEMORANDUM OF LAW IN OPPOSITION TO PETITIONERS' MOTION FOR SUMMARY JUDGMENT

The Village of New Lenox urges the Illinois Pollution Control Board to deny the Petitioners' Motion for Summary Judgment. The Petitioners' motion relies on misstatement of what the law requires and a selective attention to their own comments in the record, all without properly considering Illinois EPA's response or evidence in opposition to those comments. Petitioners are not entitled to summary judgment.

Standard of Review

In a third party permit appeal, the petitioner is required to show that the permit at issued would violate the Act or Board regulations. *See Opinion and Order, Village of Lake Barrington v. Illinois EPA*, PCB 05-59 (April 21, 2005); *Prairie Rivers Network v. Illinois Environmental Protection Agency,* PCB 01-112 (August 9, 2001), affirmed by *Prairie Rivers Network v. Illinois Pollution Control Board*, 335 Ill. App.3d 391 (4th Dist. 2002). The Board's review is based on information before the Agency during the Agency's statutory review period. *Id.* It is Petitioners' burden to establish a *prima facie* case, and only at that point is it necessary for Illinois EPA to put forth evidence that contravenes the evidence of Petitioners. *See Browning-*

Ferris Industries, Inc. v. Pollution Control Board, 179 Ill. App.3d 598, 534 N.E.2d 616 (2d Dist. 1989). As the record will show, Petitioners cannot meet their initial burden, but even if they could, Illinois EPA had ample evidence to support the determinations it made concerning the limits to be included in the permit, and those limits advocated by Petitioners that were not necessary to accomplish the purposes of the Illinois Environmental Protection Act, 415 ILCS 5/1 *et seq.*.

With respect specifically to summary judgment, this motion is an inappropriate vehicle for resolution of a third party permit appeal. Summary judgment can only be granted where there are no disputed issues of fact, and the movant is entitled to judgment as a matter of law. See *Roger Stone v. Illinois EPA,* PCB 01-68 (January 18, 2001). What Petitioners have done here is simply excise snippets of statements that may be found in the record and intersperse those snippets with legal argument. That does not meet the requirement to establish undisputed facts. The response to Petitioners' Statement of Facts ought to be enough to defeat their motion. To the extent the Board may have a different view concerning whether summary judgment may be granted in a case such as this, New Lenox has responded with the memorandum of law.

Procedural Background

In June 2002, the Village of New Lenox applied to expand its treatment plant, constructed in 1973 and located at 301 North Cedar Road. SOF ¶ 2.[1] The plant was then operating at 85 percent capacity and expansion was necessary to ensure wastewater services were properly provided for projected development in New Lenox. The area to be served was within New Lenox's FPA, and New Lenox had received full approval from the Northeastern Illinois Planning Commission for its expansion. SOF ¶ 4.

[1] Citations refer to New Lenox's response to each cited paragraph of Petitioners' statement of facts.

The plant discharges into Hickory Creek, which is a general use water. Hickory Creek has a flow of 2.4 cubic feet per second ("cfs") during critical 7Q10 flow, and is rated a "C" stream under the Agency's Biological Stream Characterization ("BCS") system. SOF ¶ 1. Hickory Creek segment GG-02 is listed on the Illinois' impaired waters list, known as the 303(d) list. The potential causes of impairment at the time of listing were nutrients, phosphorus, nitrogen, salinity/TDS/Chlorides, TDS (chlorides), flow alterations, and suspended solids. The potential sources associated with the impairment are municipal point sources, combined sewer overflows, construction, land development, urban runoff/storm sewers, hydrological/habitat modification, and flow regulation/modification. SOF ¶ 4. It is not listed as a biologically significant water body in the Illinois Natural Survey publication *Biologically Significant Illinois Streams,* and does not support any threatened or endangered species. SOF ¶ 1.

On January 5, 2003, IEPA gave notice that it had made a tentative decision to renew the NPDES permit issued to the Village of New Lenox to discharge to Hickory Creek. SOF ¶ 23. The draft renewed permit allowed the New Lenox plant to increase its design average flow from 1.54 million gallons per day to 2.516 million gallons per day. During the course of the permit proceedings, New Lenox was asked to and did perform a Water Quality Assessment of Hickory Creek, which included sampling of Hickory Creek, and a macroinvertebrate survey to assess the effect of the discharge of aquatic life. SOF ¶ 16-20. New Lenox also reviewed alternatives to the discharge, including an analysis of spray irrigation. SOF ¶ 26. Based on these reports and on other information before Illinois EPA, Illinois EPA was able to complete its antidegradation assessment and conclude that expansion of the plant could proceed in compliance with regulatory requirements governing water quality. SOF ¶ 16. After having provided New Lenox

with an opportunity to review the proposed conditions of the draft NPDES permit, Illinois EPA issued the draft permit for public notice on January 5, 2003. SOF ¶ 23.

Based on the comments that were received, Illinois EPA elected to hold a Public Hearing, which took place on April 24, 2003. At the hearing, members of the public were provided with and opportunity to comment and ask questions of the Illinois EPA staff members involved with the permit. SOF ¶ 23. New Lenox was present at the Public Hearing, although as the applicant it did not provide comments to Illinois EPA during the hearing. SOF ¶ 24. In Petitioners comments, they made a variety of claims and requests, including request for nutrients limits, copper, ammonia, total dissolved solids. Petitioners commented on algae in Hickory Creek, the anti-degradation review, urbanization in New Lenox, the macroinvertebrate survey, and other matters. All of these issues were properly considered by Illinois EPA—to the extent they were relevant to the NPDES permit review—and were the subject of appropriate deliberation among Illinois EPA staff members. All comments were ultimately addressed by the Illinois EPA as part of the responsiveness summary or in the conditions of the final NPDES permit. SOF ¶ 29.

Illinois EPA issued its final NPDES permit on October 31, 2003. That permit included new limits on dissolved oxygen, total dissolved solids, and ammonia, which were included to satisfy concerns raised during the public notice and which New Lenox agreed to accept without contest. Based on Illinois EPA's determinations, no limitations were included for nutrients and copper. SOF ¶ 37.

The Board's review is heavily dependent on the Agency's findings of fact here and conclusions of law as found in its Responsiveness Summary and final NPDES permit, which differ materially from Petitioners comments and conclusions. Consequently, New Lenox will address specific public comments as part of its response to each Petitioner argument.

Argument

1. Illinois EPA Complied with Anti-Degradation Regulations

As part of the permit review, Illinois EPA conducted an anti-degradation assessment. Hickory Creek is not on the current list of biologically significant streams compiled by the Illinois Department of Natural Resources ("IDNR"), which is one relevant list for purposes of anti-degradation, and it is not an Outstanding Resource Water. No threatened or endangered species are present in the stream segment to which New Lenox discharges. See Resp. par. 1. During the course of these proceedings, Illinois EPA also reviewed the science underlying its listing of Hickory Creek on the 303(d) list, and concluded that "a review of the causes of impairment resulted in a new conclusion. Agency biologists now believe that only total dissolved solids can be implicated as a cause of whatever impairment may exist in this stream segment outside of the immediate area of the New Lenox outfall." Consequently, Illinois EPA requested that the permit incorporate limits on total dissolved solids, and New Lenox accepted those limits.

Illinois EPA performed its anti-degradation analysis by reference to standards governing waters that meet existing uses, and this is the appropriate classification for Hickory Creek. See PR. 601. Illinois EPA concluded that "[a]t the present time . . . the incremental nutrient loading anticipated to result from this project is not expected to increase algae or other noxious plant growth, diminish the present aquatic community, or otherwise aggravate existing stream conditions." Illinois EPA noted the continued work of the Nutrient Standards Workgroup, and the possibility that nutrient reduction requirements would be imposed on New Lenox upon adoption of state standards. PR. 602. Illinois EPA also concluded that alternatives to the discharge were not feasible, and also noted the economic and social need for the expansion.

Petitioner contends that Illinois EPA failed to comply with anti-degradation regulations because it did not ensure that reasonable controls were put on nutrients. As support for its argument, Petitioner cites the "High Quality Waters" provision of Illinois Anti-Degradation Regulations. Mem. 7. This is not the regulatory provision applicable to Hickory Creek. High Quality Waters are those whose existing quality exceeds the state's adopted water quality standards, which is not the case here, and Hickory Creek does not meet this standard. See Section 302.105(c). Instead, the antidegradation review should be based on the minimum level of protection at Section 302.105(a) applicable to waters that meet existing uses.

Illinois EPA made the determination that no nutrients standards were necessary. With respect to the uses in Hickory Creek, Petitioners argue that Illinois EPA "at a minimum should have determined what level of phosphorus and nitrogen removal were economically reasonable and imposed limits based on that determination." Mem. 9. Illinois EPA explicitly determined "the incremental nutrient loading anticipated to result from this project is not expected to . . . aggravate existing stream conditions." Illinois EPA completed the regulatory analysis required under regulations governing antidegradation and considered all the comments made by the public.

Illinois EPA also considered the nutrient data reported by New Lenox in connection with its study. New Lenox's effluent on the day it sampled was 2.76 milligrams per liter of total phosphorus. The four downstream samples taken as part of the study all showed phosphorus at values of 1.60 milligrams per liter, 1.63 milligrams per liter, 1.47 milligrams per liter, and 1.52 milligrams per liter. Addressing the available data, Illinois EPA concluded that there was nothing unusual about stream phosphorus values such as those reported for Hickory Creek. Further, the Illinois EPA concluded specifically in this case that "the incremental nutrient

loading anticipated to result from this project is not expected to increase algae or other noxious plant growth, diminish the present aquatic community or otherwise aggravate existing stream conditions."

More importantly, Petitioners' arguments concerning nutrients beg the question that regulators and the regulated alike are wrestling with. Illinois EPA and the scientific community in general have long recognized that the science concerning nutrients and their effect on waterbodies is both complicated and uncertain, and Illinois EPA has convened a work group to study the issue of nutrients and develop standards that would be proposed to govern dischargers in Illinois. Many factors come into play, including the nature of the stream and the discharge. There is no dispute and the Illinois EPA took into consideration that the existing New Lenox plant discharges nutrients, and increasing the capacity of the plant will increase the mass of nutrients, but it will also increase stream flows. In addition, during the course of the proceedings, Illinois EPA acknowledged "major knowledge gaps" in the science concerning nutrients. HR 356. In fact, the Board itself has concluded as much in the opinion concerning the technology-based interim standard for phosphorus recently proposed by the Board. See Opinion and Order, R 04-26 (April 7, 2005). Under these circumstances, it would be inappropriate to set nutrient standards in the context of an NPDES permit.

The Agency also fully considered the economic and technical feasibility of a range of alternatives, including spray irrigation at farmland and a golf course, as well as alternative discharge locations. PR 403, 634. Those alternatives were found to be economically unreasonable and technical unfeasible. With respect to Petitioners' claim that the acceptance by other environmental communities of phosphorus limits (see Mem. 10), the records of those proceedings are more likely to show that those communities accepted the limits not as a

consequence of Illinois regulatory requirements but instead as a consequence of the delay and expense associated with the public's regulatory involvement in the permit process, including the right to challenge permits. The record is also likely to show that the acceptance of permit limits by those communities to appease environmental groups, with the goal of allowing the community projects to proceed in an expeditious manner, has had no discernable impact on the quality of the streams to which those communities discharge.

2. Illinois EPA's Permit Complies with Water Quality Standards

As part of its determination concerning the permit's compliance with water quality standards, Illinois EPA requested and New Lenox voluntarily agreed to accept certain limits. These limits include dissolved oxygen, total dissolved solids, and ammonia. Illinois EPA also requested that New Lenox perform a study of the aquatic life in the creek. New Lenox performed that study, which demonstrated that Hickory Creek has fish populations that are not impaired by New Lenox's discharge, and Hickory Creek did not have fish populations indicative of low dissolved oxygen concentrations. HR 361. Illinois EPA concluded based on relevant data for 2003 that all measurements in Hickory Creek meet the water quality standard for dissolved oxygen. HR 364.

Illinois EPA nevertheless included a permit limitation governing dissolved oxygen, and notwithstanding Illinois EPA's determination, New Lenox elected not to challenge that permit limitation. Illinois EPA also recommended limitations for ammonia and total dissolved solids. Illinois EPA determined, however, that the other limits sought by Petitioners were not warranted or appropriate. These include limits for nutrients, pH and copper.

a. Illinois EPA made the determination that no permit limits were necessary to address "offensive conditions"

Illinois EPA made the determination that no limits were required to address offensive conditions. To the extent Petitioners claim that algal growth constitutes an offensive condition, Illinois EPA addressed algae in its Responsiveness Summary, explaining that algae is a vital part of the aquatic community and algae growth in itself is not a problem; it is in relation to dissolved oxygen and the adverse impact on fish that provides context for assessing algae. Illinois EPA stated that "Streams would be expected to exhibit either one kind of algal growth or another," depending on a variety of factors, and "the best measure of whether [fish are adversely impacted] is to look at the local fish population. Hickory Creek has fish populations that are not indicative of low dissolved oxygen concentrations." HR 361. Further, the Illinois EPA concluded specifically in this case that "the incremental nutrient loading anticipated to result from this project is not expected to increase algae or other noxious plant growth, diminish the present aquatic community or otherwise aggravate existing stream conditions." PR 565. So long as Illinois EPA has appropriately considered Petitioners comments and reviewed information on the water quality in Hickory Creek, its decision is reasonable and should be upheld. *See Ohio River Valley Environmental Coalition v. Callaghan*, 133 F.Supp.2d 442 (S.D. W. Va. 2001).

Even were Petitioners claims concerning algae as true, it is reasonable for Illinois EPA to determine that no nutrient limitations were appropriate for New Lenox. Illinois EPA is aware of other dischargers to the stream as well as conditions in the stream. Under these circumstances, a solution to any algae problem would be more appropriately imposed stream-wide, rather than imposing limitations on one discharger not expected to contribute to any existing problem. *See, e.g., Communities for a Better Environment v. State Water Resources Control Board*, 109 Cal. App.4th 1089, 1 Cal. Rptr. 3d 76 (Cal 1st Dist. 2003).

It is also worth noting that given the complicated and disputed nature of the science governing nutrients and their effects, including algae, Illinois EPA has convened a work group to perform the work necessary to propose scientifically defensible standards for Illinois. In any case, it is important that any nutrient standards be set in the context of a rulemaking, not a permit appeal before the Board. The question of what regulatory limits are appropriate for Illinois is unresolved and surrounded by scientific uncertainty. Contrary to Petitioners' arguments, for Illinois EPA to have set limits on phosphorus in New Lenox's permit in the absence of a rulemaking (and a better understanding of the science) would have been a reversible error. Illinois EPA made the determination that nutrient limitations were not necessary to accomplish the purposes of the Act. Other state courts have considered this issue and made the finding that application of such a standard would be rulemaking, requiring compliance with the procedural requirements governing an agency's issuance of a rule. *Simpson Tacoma Kraft Co. v. Washington Dept. of Ecol.,* 119 Wash.2d 640, 835 P.2d 1030, 1034-36 (Wash. 1992); *Wisconsin Elec. Power Co. v. Dept. of Natural Resources,* 287 N.W.2d 113 (Wis. 1980). Petitioners' citation of *PUD No. 1 of Jefferson County v. Washington Dept. of Ecol.,* 511 U.S. 700 (1994) is inapposite, as that case considered imposition of a standard requiring minimum stream flows, which is easily applied.

To the extent it is relevant, Illinois EPA also concluded that no permit limitations were necessary for pH. Sampling performed by Illinois EPA at the U.S.G.S. stream gauge in Joliet, approximately seven miles downstream from New Lenox's discharge point, showed that during the period of record, average pH was 7.8. PR 640. While there were a handful of pH levels detected above 9.0 during the extensive time period of this data, Illinois EPA pointed out that in some environments, a pH over 9.0 is not an unnatural condition. Illinois EPA also stated that its

monitoring station on the lower part of Hickory Creek may not have similar morphology to the area around New Lenox, and therefore drawing direct conclusions between sites may not be valid. HR 369. Finally, New Lenox's pH sampling in connection with its water quality report showed pH ranging from 6.77 to 8.21 in the vicinity of New Lenox's plant.

b. Illinois EPA determined that New Lenox did not have a reasonable potential to contribute to violations of copper limits

As part of Illinois EPA's review of New Lenox's application for expansion, Illinois EPA also considered whether New Lenox had the reasonable potential to violate water quality standards for copper. In its Responsiveness Summary, Illinois EPA concluded that for the chronic standard at issue here, on an average basis, the effluent is not likely to exceed the water quality standard and therefore would not cause a violation of that standard. HR 363.

Petitioners continue to advocate application of the U.S. EPA's "reasonable potential to exceed" analysis, notwithstanding that it is inappropriate for application here and would yield artificially high results. In Scott Twait's memorandum concerning water quality based effluent limits, Illinois EPA specifically considered the U.S. EPA method to assess the "reasonable potential to violate water quality standards," that Petitioners advocate. Illinois EPA applied its policy and decided that it would not use the high multiplier used in U.S. EPA's method because that method does not yield valid results when only a small sample population exists. Illinois EPA also concluded specifically concerning this facility that there was a low risk its effluent would have high levels of metals. PR 509. Illinois EPA's analysis of the sample results and its specific consideration of the type of facility and the nature of its discharge were the appropriate analysis to comply with the water quality standard. No permit limit was necessary for copper.

Conclusion

The Board must review the Illinois EPA's decision by deferring to the Agency's findings of fact here and conclusions of law, which differ materially from Petitioners arguments in its motion for summary judgment. Illinois EPA complied with all regulatory requirements in its issuance of the NPDES permit to New Lenox to allow expansion of its wastewater treatment facility. Hickory Creek is a general use stream, not a high quality water, and is properly assessed for purposes of antidegradation by applying regulatory standards to ensure the minimum level of protection. Illinois EPA properly completed that review by assessing its own information concerning Hickory Creek, as well as reviewing a Water Quality Assessment that it requested from New Lenox. New Lenox also provided information on alternatives to the discharge, including spray irrigation, and Illinois EPA properly concluded that those alternatives were not feasible. As a result of its review, Illinois EPA requested that the permit incorporate limits on dissolved oxygen, total dissolved solids, and ammonia. New Lenox accepted those limits.

The Board should also appreciate the complicated and disputed nature of the science governing nutrients and their effects, including algae, and the importance of setting those standards in a reasoned manner that is scientifically defensible. Illinois EPA has convened a work group to perform the work necessary to propose scientifically defensible standards for Illinois, and nutrient standards to be set in the context of a rulemaking, not a permit appeal before the Board.

Respectfully submitted,

The Village of New Lenox

By: _____
One of Its Attorneys

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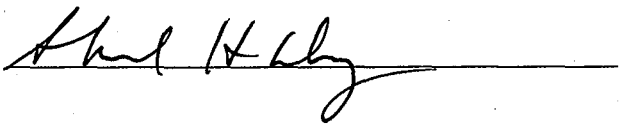
CERTIFICATE OF SERVICE

The undersigned certifies that a copy of the foregoing **Notice of Filing** and the attached **The Village of New Lenox's Memorandum of Law In Opposition To Petitioner's Motion For Summary Judgment** and **Response of Village of New Lenox To Petitioners' Statement Of Relevant Facts From The Agency Record** was filed by hand delivery with the Clerk of the Illinois Pollution Control Board and served upon the parties to whom said Notice is directed by electronic and regular mail on **Wednesday, May 25, 2005.**



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Respondents.	)	

RESPONSE OF VILLAGE OF NEW LENOX TO PETITIONERS' STATEMENT OF RELEVANT FACTS FROM THE AGENCY RECORD

1. Hickory Creek, a tributary of the Des Plaines River which flows in Will County, was once known for its exceptionally high water quality and biological integrity. Phillip Smith, a scientist of the Illinois Natural History Survey wrote in 1971 that "Prairie and Jackson Creeks have good species diversity, but Hickory Creek is the outstanding stream in the [Des Plaines River] system and contains populations of such unusual species as the northern hogsucker, rosyface shiner, and slender madtom." (HR115)

ANSWER:

The cited information appears to be a very brief conclusion in an abstract that was inserted into the record. New Lenox has no reason to agree or disagree with the cited conclusion, which is of limited relevance given the time period it references, the absence of the location along Hickory Creek and data on which it was based, the absence of the author in this proceeding, or other relevant information. However, for regulatory purposes it is important to note that Hickory Creek is not on the current list of biologically significant streams compiled by the Illinois Department of Natural Resources ("IDNR"), Natural History Survey in the publication *Biologically Significant Illinois Streams*. This list is relevant for purposes of anti-degradation, and IDNR has further concluded that no threatened or endangered species exist in the vicinity of the segment of Hickory Creek to

which New Lenox will discharge. See HR 005, 371. Hickory Creek is a general use and is rated as a "C" stream by Illinois EPA under its Biological Stream Characterization System. HR 005, 115.

2. New Lenox Sewage Treatment Plant #1 was built in 1973. (HR 81)

ANSWER:

New Lenox agrees with this fact and notes that its plant is located at 301 North Cedar Road. HR 005.

3. Dr. David Bardack, formerly of the University of Illinois at Chicago Circle, wrote in 1982 that "Studies of the Hickory Creek ecosystem are widely recognized beyond the Chicago area. In fact, Hickory Creek has attained the status of a classic biological study area.... As a relatively unpolluted and unaltered stream with a diversified fauna...." (HR 108)

ANSWER:

New Lenox has no reason to agree or disagree with the cited conclusion, which is of limited relevance given the time period it references, the absence of the location along Hickory Creek and data on which it was based, the absence of the author in this proceeding, or other relevant information. Hickory Creek is not on the current list of biologically significant streams compiled by the Illinois Department of Natural Resources, which is one list that by regulation is relevant for purposes of anti-degradation, and IDNR has further concluded that no threatened or endangered species exist in the vicinity of the segment of Hickory Creek to which New Lenox will discharge. See HR 371, 699.

4. New Lenox Sewage Treatment Plant #1 has been expanded since 1991. (HR 5)

ANSWER:

New Lenox agrees with this fact. At the time of the application for expansion at issue in this proceeding, the plant was operating at 85 percent capacity, and expansion was necessary to ensure wastewater services were properly provided for projected development in New Lenox. The area to be served was within New Lenox's FPA, and New Lenox received full approval from the Northeastern Illinois Planning Commission for its expansion. HR 005.

5. Hickory Creek is found on the draft 2002 Illinois 303(d) list of impaired waters. "The causes of impairment given ... at that time were nutrients, phosphorus, nitrogen, salinity/TDS/Chlorides, TDS (chlorides), flow alterations, and suspended solids. The sources associated with the impairment are municipal point sources...." (HR 5) In the Illinois Water Quality Report 2004, Hickory Creek is listed as impaired with the potential causes of impairment being silver, nitrogen, pH, sedimentation/siltation, total dissolved solids, chlorides, flow alterations, physical-habitat alterations, total fecal coliform bacteria, total suspended solids, excess algal growth, and total phosphorus.

ANSWER:

New Lenox agrees that Illinois EPA reported that Hickory Creek is found on the draft 2002 Illinois 303(d) list, reportedly based on a study performed in 1991. The selected quote is misleading in that it omits the numerous other sources generally associated with the listing. Discovery in this case could be expected to show the basis for the listing, the additional sources to the stream, and other information relevant to this case. In addition, Illinois EPA concluded during the permit proceedings that "a review of the causes of impairment resulted in a new conclusion. Agency biologists now believe that only total dissolved solids can be implicated as a cause of whatever impairment may exist in this stream segment outside of the immediate area of the New Lenox outfall." HR 360. New

Lenox voluntarily agreed to accept a limit in the permit on total dissolved solids. New Lenox notes that the cited 2004 Water Quality Report was issued after the NPDES permit challenged in this case was issued. In addition, Illinois EPA has reported that the inclusion of pH as a potential cause of impairment was a mistake based on an erroneous database entry of 0.87 instead of 7.87.

6. A number of witnesses gave reports of algal blooms in Hickory Creek including nearby resident Kim Kowalski. (HR 76)

ANSWER:

This statement is a mischaracterization of the comment in this proceeding. New Lenox agrees that a few commenters reported "algae," but "algal blooms" have not been the subject of comment. Further, as pointed out by New Lenox's consultant, sampling performed in August 2002 for purposes of the water quality study observed there were no visible signs of organic growth or over-nutrification at the plant discharge site. PR 515, 633.

Comments concerning algae were considered by Illinois EPA, and addressed in its Responsiveness Summary. In the Responsiveness Summary, Illinois EPA stated that algae is a vital part of the aquatic community and algae growth in itself is not problematic; it is in relation to dissolved oxygen and the adverse impact on fish that provides context. Illinois EPA stated that "Streams would be expected to exhibit either one kind of algal growth or another, [i.e. planktonic or periphyton]" depending on a variety of factors, and "the best measure of whether [fish are adversely impacted] is to look at the local fish population. Hickory Creek has fish populations that are not indicative of low dissolved oxygen concentrations." HR 361. Illinois EPA also concluded based on relevant data for

2003 that all measurements in Hickory Creek meet the water quality standard for dissolved oxygen. HR 364. Finally, to the extent algae was observed in August, those observations were more likely due to low flow conditions and solar heating, not to nutrients discharged by the plant. PR 639.

7. Jim Bland, Director of Integrated Lakes Management, testified that "[I] should comment that as recently as August of this year I saw something unique in-stream, something I have not seen before. The entirety of the stream is covered from Pilcher Park almost all the way up to Cedar Street with Hydrodictyon and algae on the surface of it. So here you have a running stream covered almost completely and a running stream that's really a very, very viable and important resource, pretty sadly degraded by the sorts of nutrient discharge that we are seeing." (HR 80)

ANSWER:

See response to par. 6. Additionally, New Lenox disagrees that Mr. Bland "testified," as his comments were unsworn and not subject to questioning or cross-examination. In addition, Pilcher Park, which is located about two miles as the crow flies from New Lenox, is the location of a dam. Dams are one aquatic feature that are associated with algae.

8. Community resident Brad Salamy testified at the hearing that, "Last summer, and this was alluded to earlier, the creek was greener than I had ever seen it, a little patch down the center was liquid, the rest of it was completely green like you could walk on it." (HR 82-3)

ANSWER:

See response to par. 6. New Lenox disagrees that Mr. Salamy "testified," as his comments were unsworn and not subject to questioning or cross-examination.

9. Phosphorous concentrations are high in the creek. In addition to the IEPA impaired water data discussed above (¶5), the U.S. Geological Survey database shows that for the period of '92 to '97 total phosphorus exceeded Illinois' EPA trigger value for more than 20 percent of the samples. Illinois EPA's trigger is approximately eight times higher than the USEPA's recommended criterion. Furthermore, data collected in August 2002 by the Village of

New Lenox indicate the total phosphorus instream on that particular day when they sampled was between 1.49 and 1.63 milligrams per liter. These concentrations are approximately 20 times the USEPA-recommended criterion and more than twice Illinois EPA's trigger. (Wentzel Testimony HR 67)

ANSWER:

This paragraph's characterization of phosphorus values as "high" in the Creek does not constitute a fact but merely a characterization by the statement's author. The cited data is from Illinois EPA's samples at U.S.G.S. gauge 05539000 in Joliet, Illinois, which is published by U.S.G.S. under mutual agreement with Illinois EPA. HR 129, 365. This monitoring station is located approximately seven miles downstream of New Lenox's discharge and the latest data is from six years before the permit was issued.

Neither Illinois EPA's "trigger value" nor a criterion recommended by U.S. EPA constitute regulatory standards in Illinois or are relevant here. Illinois EPA's trigger value is a tool for ranking streams. It is based on the 85th percentile of values recorded for phosphorus. It has absolutely nothing to do with the impact of phosphorus on a stream or a cause/effect relationship. Illinois EPA noted that even within the various ecoregions utilized by U.S. EPA, "the national criteria recommendations are based on statistical distribution and recurrence frequencies, not direct relationship to detrimental or impaired stream conditions." HR 365. See also PR 639.

Illinois EPA properly weighed Petitioners' comments, and concluded that there is nothing unusual about stream phosphorus values such as those reported for Hickory Creek. Illinois EPA is also aware of the other dischargers to the Creek, and their location both upstream and downstream of New Lenox, and discovery could be expected to address these dischargers.

10. Sampling by the applicant's contractor, Earth Tech, conducted in August of 2002 found 2.76 milligrams per liter of total phosphorus in the effluent, almost twice the upstream

concentration on that day and six times the average over time for that particular stream. (Wentzel Testimony HR 68)

ANSWER:

New Lenox agrees that the results of a grab sample of its effluent were 2.76 milligrams per liter of total phosphorus in the effluent on the date sampled, and notes that the four downstream samples showed phosphorus at values of 1.60 milligrams per liter, 1.63 milligrams per liter, 1.47 milligrams per liter, and 1.52 milligrams per liter. See PR 513, 545. As New Lenox's consultant pointed out, it is misleading to compare concentrations in the creek and in the plant effluent when the flows are not the same, and had flows been considered, the total phosphorus from the plant effluent would have been on fourth of the upstream total phosphorus. PR. 632-33.

Concentrations of phosphorus in effluent can be highly variable and dependent on flows, the time of day and a host of other facts, and a grab sample can be expected to result in limited information. New Lenox notes that phosphorus is not an acute pollutant, and it is long-term average values that would be more critical. In addition, the Illinois EPA is aware of other dischargers upstream and downstream of New Lenox.

11. Comments by Professors David Jenkins and Michael Lemke of the Biology Department, University of Illinois at Springfield stated:

— Based on the New Lenox August data, the current plant releases an average of 64.7 kg of nitrate+nitrite per day and 16.1 kg of total P [total phosphorus] into Hickory Creek.

— Based on long-term average August flow data from USGS and USGS Schmuhl Road nutrient analyses, current Hickory Creek nutrient loads upstream from the WWTP#1 are 151 kg nitrate+nitrite, and 22.7 kg total P.

— Therefore, the plant is responsible for 30% of downstream nitrate+nitrite load in Hickory Creek, and 41% of the Hickory Creek total P load.

— As currently planned (and assuming nutrient levels in plant discharge remain the same), the new plant discharge will release 105.7 kg of nitrate+nitrite per day and 26.3 kg of total P per day into Hickory Creek. Assuming that Hickory Creek flow will not change for reasons other than the planned extra plant discharge, the new plant discharge will release 41% of the stream nitrate+nitrite load, and 53.7% of the stream P load on an average basis.

— More importantly, the same-sized receiving stream will be bearing 170% the levels of nitrate+nitrite upstream of the plant, and 216% of the total P levels upstream of the plant. These levels of nutrient loading will have substantial effects on downstream water quality, not only in Hickory Creek, but also the Des Plaines River and the Illinois River. The Hickory Creek channel will also be receiving substantially more flow, which will have effects on stream habitat and biota that are separate from nutrient effects.

Summary of Hickory Creek Water Quality Information, David Jenkins and Michael Lemke (HR 304-305)

ANSWER:

New Lenox does not dispute that the Professors made the cited statements. However, the conclusions in these comments are based on questionable or undisclosed assumptions, and discovery would be necessary to show what support these comments are based on, mathematically and otherwise. New Lenox's consultant pointed out several areas where the Professors used incorrect assumptions, including the flow used and invalid data comparisons. PR 635. The conclusion that there will be "substantial effects on downstream water quality" in Hickory Creek, the Des Plaines River and the Illinois River is of very questionable and undisclosed scientific and mathematical support. In any case, the Illinois EPA considered these comments and is aware of point and non-point sources of nutrients to all of these waterbodies.

12. Published treatises placed in the record show that elevated nutrient levels cause impairment of streams.

> "Eutrophication is a fundamental concern in the management of all water bodies.... There is now also considerable interest in the enrichment of streams and rivers (see discussion by Dodds and Welch 2000). For example in 1992, the United States Department of Agriculture National Water Quality Inventory

reported that enrichment and sedimentation were the most significant causes of water quality degradation in 44% of >1,000,000 km of streams and rivers surveyed in the US (http://www.usda.gov/stream_restoration). Management problems caused by [nutrient] enrichment, and associated benthic algal proliferations, include aesthetic degradation..., loss of pollution-sensitive invertebrate taxa through smothering of substrata by algae ..., and degradation of water quality (particularly dissolved oxygen and pH) resulting in fish kills...."

Biggs, B.J.F. 2000. Eutrophication of streams and rivers: dissolved nutrient-chlorophyll relationships for benthic algae. *J. North Am. Benthol. Soc.* 19:17-31. (HR 187)

"Reasons for nutrient criteria include: 1) adverse effects on humans and domestic animals, 2) aesthetic impairment, 3) interference with human use, 4) negative impacts on aquatic life, and 5) excessive nutrient input into downstream systems."

Dodds, W. K. and E.B. Welch. 2000. Establishing nutrient criteria in streams. *J. North Am. Benthol. Soc.* 19:186-196. (HR 177)

"High algal growth can affect fish distribution by altering the physical (algal mass accumulation) and chemical (dissolved oxygen, pH) characteristics of the river system."

Sabater, S., J. Armengol, E. Comas, F. Sabater, I Urrizalqui, and I. Urrutia. 2000. Algal biomass in a disturbed Atlantic river: water quality relationships and environmental implications. *Science of the Total Environment.* 263:185-195. (HR 210)

There is a positive correlation between nutrients in streams and algal activity.

"The present analysis suggests that managing nutrient supply could not only reduce the magnitude of maximum biomass, but also reduce the frequency and duration of benthic algal proliferations in streams."

Biggs, B.J.F. 2000. (HR 187)

"... our study indicates that there is a generally positive relationship between Chl [chlorophyll] and TP [total phosphorus] in temperate streams ..."

Van Nieuwenhuyse, E.E. and J.R. Jones. 1996. Phosphorus-chlorophyll relationship in temperate streams and its variation with stream catchment area. *Can. J. Fish. Aquat. Sci.* 53:99-105. (HR 206)

"If streams are not turbid, preventing maximum benthic chlorophyll levels from exceeding 200 mg/m2 is reasonable because streams with higher levels are not aesthetically pleasing, and their recreational uses may be compromised. For benthic chlorophyll to remain below 200 mg/m2 at the very least, TN should remain below 3 mg/L and TP below 0.4 mg/L."

Dodds, W. K. and E.B. Welch. 2000. (HR 184)

"Photosynthesis and respiration are the two important biological processes that alter the concentration of oxygen and carbon dioxide. In highly productive waters, such as slow moving rivers with abundant macrophytes, oxygen is elevated and carbon dioxide is reduced during the daytime, while the reverse occurs at night."

Allan, J. D., 1995. *Stream Ecology: structure and function of running waters.* Chapman & Hall, New York (HR 163)

"Diel (24 h) changes in oxygen concentration provide a means of estimating photosynthesis and respiration of the total ecosystem..."

(Allan, J. D. HR 163)

"Carbon dioxide likewise tends to deviate from atmospheric equilibrium in highly productive lowland streams where luxuriant growths of macrophytes and microbenthic algae can result in diel shifts in dissolved CO2.... Because of the interdependence of CO2 concentration and pH ..., mid-day pH can increase by as much as 0.5 units."

(Allan, J. D. HR 164)

"Dissolved O_2 deficit and high pH are perhaps the most severe algal-related problems affecting the aquatic life-support characteristics of a river or stream. Deficits of DO can occur when respiration of organic C produced by photosynthetic processes in the stream exceeds the ability of reaeration to supply DO."

(Dodds, W. K. and E.B. Welch. HR 180)

"The contribution of algal biomass to the diel dissolved oxygen (DO) variability in rivers is common in systems receiving high nutrient inputs...."

Sabater, S., J. Armengol, E. Comas, F. Sabater, I Urrizalqui, and I. Urrutia. 2000. (HR 216)

ANSWER:

New Lenox agrees that the state in response to draft criteria by U.S. EPA is moving forward to develop nutrient standards and has convened a study group that includes stakeholders from numerous areas, including persons that commented in this proceeding. New Lenox agrees that published statements were placed in the record by Petitioners, but they are of limited usefulness since they are not directed at this stream or this effluent, they

are unsworn and unverified, and they are generally more appropriately considered in the context of setting generally applicable standards for nutrients, not deriving water quality limits for one discharger along a stream with many dischargers. The provided snippets of statements from these studies do not change the fact that the science concerning nutrients, algal growth, dissolved oxygen levels, stream types, and other factors is both complicated and uncertain, and Illinois EPA has acknowledged "major knowledge gaps." HR 356. Further, the Illinois EPA concluded specifically in this case that "the incremental nutrient loading anticipated to result from this project is not expected to increase algae or other noxious plant growth, diminish the present aquatic community or otherwise aggravate existing stream conditions." PR 565. Finally, both Illinois EPA and the Board have concluded as much with respect to the uncertain science surrounding nutrients in the opinion concerning the Board's proposal of a technology-based interim standard for phosphorus. See Opinion and Order, R 04-26 (April 7, 2005).

13. It is likely that nutrient discharges from New Lenox WWTP #1 are already adversely impacting Hickory Creek and that reductions of nutrient discharges are needed to prevent further impact. (Statement of Professors Jenkins and Lemke HR 305)

ANSWER:

See responses to 11 and 12. This statement is an unfounded characterization and conclusion, submitted in an unsworn comment, and is contrary to Illinois EPA's conclusion. The conclusion does not explain what the adverse impacts are, and New Lenox's studies and submissions showed the opposite. HR 361, 364. Based on the macroinvertebrate survey performed by New Lenox at the request of Illinois EPA at the location of the discharge, pollution intolerant organisms are present both upstream and downstream of the existing discharge. PR 572.

14. The IEPA at the hearing on the draft permit acknowledged that it was "very possible" that supersaturated oxygen levels found during the daytime hours in Hickory Creek are due to algae saturation photosynthesis. (HR 67)

ANSWER:

New Lenox agrees that Mr. Bob Mosher of Illinois EPA acknowledged that it is "very possible that algae saturation photosynthesis *had a part* in levels of supersaturated dissolved oxygen levels during the period of 1979 to 1997" as reported in the data taken at the U.S.G.S. stream gauge approximately seven miles in Joliet downstream from New Lenox. To put the statement in context, in response to follow up questioning and in the Responsiveness Summary, Mr. Mosher also stated that he was not aware of any studies that show gas bubble disease in fish from supersaturation. HR 068 and 361.

15. Hickory Creek also violated pH standards by exceeding a pH of 9, likely as the result of algal activity. (HR 126)

ANSWER:

This conclusory statement is based on an unsworn comment from Petitioners in the record. It appears to be derived from Illinois EPA's sampling at the U.S.G.S. stream gauge in Joliet, approximately seven miles downstream from New Lenox's discharge point. New Lenox's consultant pointed out that during the period of record, average pH was 7.8, only 3 pH values were 9.0 or higher, with two at 9.0 and one at 9.1. PR 640. New Lenox's pH sampling in connection with its water quality report showed pH ranging from 6.77 to 8.21 in the vicinity of New Lenox's plant. Illinois EPA also properly considered its data concerning pH, and pointed out that in some environments, a pH over 9.0 is not an unnatural condition. Illinois EPA also stated that its monitoring station on the lower part of Hickory Creek may not have similar morphology to the area around New Lenox, and therefore drawing direct conclusions between sites may not be valid. HR 369.

16. IEPA did not analyze the effects of the existing New Lenox discharge with a recent valid study. The Antidegradation Assessment Memorandum from Scott Twait to Abel Haile, Nov. 26, 2002 states that "The most recent facility related stream survey conducted by the Agency was on June 10, 1991. The facility related stream survey is not representative of the stream conditions that exist at this time, since the facility has been expanded since the 1991 facility related stream survey was conducted." (HR 5)

ANSWER:

This statement is inaccurate. Illinois EPA requested and received a recent valid study from New Lenox, performed by its consultant Earth Tech.

17. The applicant' contractor, Earth Tech, performed a biological study for the Village of New Lenox (HR 513-519) at IEPA's request (HR 660.5). There is extensive discussion in the Hearing Record among IEPA staff regarding deficiencies in the Earth Tech study. (HR 537, HR 556-558, HR 561, HR 661-698).

ANSWER:

New Lenox agrees that its consultant performed a biological study, and it was subject to extensive discussions and appropriate internal agency deliberation about the information it provided as well as general discussions about the manner in which these studies are performed. The conclusion that the study was "deficient" is an inappropriate characterization, and omits substantial parts of Illinois EPA's thoughtful and thorough deliberations. The agency's deliberations reflect that there are various methodologies for performing MBIs, and there were initially differences between Illinois EPA staff members' practice and New Lenox's consultant, which were addressed by Illinois EPA and New Lenox's consultant. Those differences included the manner in which the MBI was calculated and the tolerance values assigned to certain species, as well as procedures,"beyond [the staff members"] own familiarity and practice." Illinois EPA has also recognized the difficulty of performing an MBI assessment and the variations in acceptable methods that nevertheless may still not be perfect. For example, one of the Illinois EPA staff members cited by Petitioners has stated that even its own "bug-sampling

methods (as they are currently defined) fall short of adequately addressing how to control for habitat or flow influences on macroinvertebrate samples collected at difference sites." PR 665; See also 671, 674-75.

As recognized by Illinois EPA, there is no regulatory method to perform the MBI. See PR 674-75. New Lenox's consultant was nevertheless able to satisfy Illinois EPA's concerns about the study and Illinois EPA made a decision to rely on the study as part of the information that informed its decision. The consultant revised the MBI values to accord with the Illinois EPA's preferred methodology, which produced a relatively minor difference from the originally calculated MBI. HR 370. Illinois EPA subsequently verified the validity and acceptability of the survey to characterize the current condition of Hickory Creek. HR 370; PR 019.

18. A Sept. 24, 2002 internal IEPA email from Howard Essig to Roy Smoger states, "The macroinvertebrate memo prepared by Earth Tech is one of the poorest studies I have seen in a while." It is further stated that "Statements made by Earth Tech on page 3 of their report are all without merit. They do not back up any of their statements with data. For example they attribute differences in taxa between stations to variations in stream flow, dissolved oxygen levels and habitat types- but they provided no stream flow or dissolved oxygen data." It is still further stated in this email that "Earth Tech also indicated that the current baseflow of Hickory Creek is adequate to dilute the volume discharged from the WWTP. They did not provide any flow data on Hickory Creek or the New Lenox WWTP to back up this claim." (HR 666-7)

ANSWER:

See resp. to par. 17. The discussion within Illinois EPA is evidence of proper internal deliberations in this matter between various staff members prior to the time Illinois EPA made a decision, and the cited memorandum is evidence of one staff members' views and comments early in the process. It was not Illinois EPA's ultimate conclusion with respect to the study. There were ongoing discussions between New Lenox and Illinois EPA, and Illinois EPA was ultimately satisfied that the study was sound notwithstanding minor variations in procedure.

19. Another internal IEPA memo, the Oct. 9, 2002 Memorandum from Roy Smoger to Bob Mosher, summarizes the reviews by Smoger, Howard Essig and Mark Joseph of the Earth Tech study and recommends that the study be conducted again. This memo states, "We find it difficult to judge the validity of the analyses and conclusions because the study used different collection methods, different taxon-tolerance values, and different criteria for interpreting MBI scores than those typically used by Illinois EPA. In addition, the report does not contain enough specific information on habitat, water chemistry, and flow." The memo concludes, "Therefore we recommend that Earth Tech conduct the survey again following the guidelines listed below." (HR 559-560).

ANSWER:

See Resp. par. 17 and 18. In addition, New Lenox notes that the preferred procedures and guidelines of certain staff members that reviewed the study have not been adopted as regulation, and to the extent New Lenox's consultant used different procedures, its study was ultimately determined to be sound by Illinois EPA, and is evidence properly relied upon by Illinois EPA.

20. A Nov. 25, 2002 email indicates confusion on whether IEPA field staff would redo the study. (HR 700) A Nov. 26, 2002 email from IEPA's Gregg Good shows IEPA's decision to ignore the Earth Tech study, stating, "Therefore, forget using the contractor's bug study." On the same day, IEPA referenced the study in the Antidegradation Assessment. Antidegradation Assessment Memorandum from Scott Twait to Abel Haile, Nov. 26, 2002 (HR 5): "New Lenox sponsored a macroinvertebrate survey of Hickory Creek at this location in August 2002. Pollution intolerant organisms were found both upstream and downstream of the existing discharge." (HR 562)

ANSWER:

This paragraph contains inappropriate characterizations on the state of mind of Illinois EPA field staff that are not supported by the record. Illinois EPA did not make a decision to ignore the Earth Tech study but, having asked for it, utilized and relied on it as useful and important information for purposes of the Anti-Degradation Assessment. As explained by Gregg Good in the cited email, Illinois EPA also went back and reviewed the basis for listing Hickory Creek as "partial impairment," and determined that the basis for

the listing was violation of standards governing total dissolved solids. Illinois EPA therefore recommended and New Lenox agreed to accept a limitation for total dissolved solids. Finally, the cited email is evidence of the extensive internal deliberations that properly occurred. They should not be used as evidence of "confusion," nor do internal agency deliberations change the appropriate analysis and conclusions of the Agency reflected in the NPDES Permit, Responsiveness Summary and the Anti-Degradation Assessment.

21. The record does not contain any study of the potential effect of increased discharges from the plant on Hickory Creek or the Des Plaines River. In an email of September 9, 2002, IEPA's Robert Mosher wrote, "There is no good way to predict what impact the expansion may have (antidegradation)...." (HR 660.5)

ANSWER:

The record contains extensive evidence of appropriate Agency deliberations, including by Bob Mosher, concerning the water quality in Hickory Creek and the plant's effect on it. After the Agency weighed all of the information before it, it was able to make a decision that the current cause of impairment in the Creek was total dissolved solids, and a permit limit was included in the permit. With respect to the Des Plaines River, consideration of potential impacts would be entirely speculative.

22. In the reasonable potential analysis for copper done for this permit modification (Memorandum of July 16, 2002 from Scott Twait to Abel Haile), the concentration of the highest sample was 20.5 µg/l while the chronic standard for copper at the hardness level found in Hickory Creek is 20.6 µg/l. IEPA's calculation of the reasonable potential for a violation of water quality standards for copper using the U.S. EPA method revealed that there was a reasonable potential for the level of copper to be more than double the acute water quality standard for copper and to exceed the chronic standard by a factor of over 3.7. (HR 508)

ANSWER:

Illinois EPA considered the U.S. EPA method as well as this comment. In its Responsiveness Summary, Illinois EPA concluded that for the chronic standard at issue here, on an average basis, the effluent is not likely to exceed that value. HR 363. In Scott Twait's memorandum concerning water quality based effluent limits, Illinois EPA determined in accordance with Agency policy that it would not use the high multiplier used in U.S. EPA's method because that method does not yield valid results when only a small sample population exists. Illinois EPA also concluded that this facility had been previously identified as having a low risk for high levels of metals. PR 509. Further, based on Illinois EPA's knowledge of other dischargers to the Creek and a known problem with copper in at least some segments of Hickory Creek, which could be expected to be explored through discovery, Illinois EPA reasonably concluded that the New Lenox discharge would not be likely to cause a violation of water quality standard.

23. On January 5, 2003, IEPA gave notice that it had made a tentative decision to renew a NPDES permit to New Lenox to discharge into Hickory Creek. The draft renewed permit allowed the New Lenox plant to increase its design average flow from 1.54 million gallons per day to 2.516 million gallons per day. (HR 1-15)

ANSWER:

New Lenox agrees with this paragraph.

24. After reviewing a copy of the draft permit, Petitioners commented through testimony given at a public hearing held on the draft permit on April 24, 2003 in the New Lenox Council Chambers. (HR 61-87)

ANSWER:

New Lenox agrees with this paragraph.

25. No one appeared at the hearing on behalf of the applicant, which chose not to participate in the hearing. (HR 61-87).

ANSWER:

New Lenox disputes that it did not appear at the Public Hearing. The attendance sheet shows that Mike Turley, the Wastewater Treatment Plant Superintendent, was present at the hearing. HR 055. New Lenox was not requested to provide comment at the hearing, and in light of the fact that the purpose of the hearing is for Illinois EPA to provide information to the public and accept public comments, this is consistent with the regulations governing the hearing. As the applicant, under the regulations New Lenox is not in the same position as a member of the public. The record reflects the extensive information provided to Illinois EPA prior to the hearing to enable it to hold an informative and meaningful public hearing and comment period, as evidenced by Petitioners' extensive participation and voluminous submittals.

26. At the hearing, IEPA answered that it had done no studies of alternatives to allowing the discharge other than to review a study of land treatment done by the applicant's contractor and that it had not made any study of the cost of removing phosphorus or nitrogen at the plant. (HR 73-4)

ANSWER:

As noted by this paragraph and discussed at the hearing, New Lenox's consultant performed an analysis of spray irrigation either at farmland or on a golf course as alternatives to the discharge, and New Lenox also considered alternative discharge locations. PR 403, 634; HR 372-374. In addition, as noted at the hearing, the Illinois Associated of Wastewater Agencies (IAWA) at the request of Illinois EPA performed a study concerning cost and efficiency of nutrient treatment, which was before Illinois EPA at the time it made its decision and is consequently properly part of the record. HR 74. All parties involved in this proceeding are aware of the content of that study.

27. In their comments and testimony, Petitioners raised legal and scientific issues regarding flaws in the draft permit and in IEPA's consideration of the draft permit including:

a. The draft permit allowed discharges of phosphorus and nitrogen that cause, have a reasonable potential to cause or contribute to violations of the water quality standards regarding offensive condition, 35 Ill. Adm. Code 302.203, in violation of 40 CFR 122.44(d) and 35 Ill. Adm Code 309.141. Nutrients are the likely cause of algal blooms and other unnatural plant growth that have been reported in the creek. (HR 68)

b. Evidence, never disputed in the record, that Hickory Creek now violates state water quality standards regarding offensive conditions because of algal blooms. (see ¶¶ 6-9 above)

c. That the draft permit allowed discharges that may cause, have a reasonable potential to cause or contribute to violations of state water quality standards regarding dissolved oxygen, 35 Ill. Adm 302.206, and copper, 35 Ill. Adm. Code 302.208(e) in violation of 40 CFR 122.44(d) and 35 Ill. Adm. Code 309.141. (HR 68, HR 265-6)

d. That the draft permit and the studies and lack of studies that led to the creation of the draft permit did not comply with Illinois antidegradation rules protecting the existing uses of the receiving waters. 35 Ill. Adm Code 302.105(a) because studies were not properly conducted to determine the potential effect of the draft permit on existing uses of the stream and because IEPA took no steps to determine if existing recreational uses of the stream might be impacted by the lack of disinfection of wastewater from the plant in months outside of May through October. (HR 265, HR 82)

ANSWER:

New Lenox agrees that Petitioners availed themselves of the opportunity to provide extensive public comment and raised various arguments including those cited in this paragraph, all of which were fully considered by Illinois EPA. To the extent raised in the motion, the characterization of these issues as "flaws" in the draft permit constitutes (a) a legal argument, not a fact and (b) these arguments were rejected by Illinois EPA, as fully explained in its Responsiveness Summary. HR 352-376.

28. Further, Petitioners urged that the IEPA take the steps necessary to comply with 35 Ill. Adm. Code 302.105(c). Petitioners presented comments that the alternatives to allowing the increase in pollution were not reasonably weighed prior to the issuance of the draft permit and that many of the costs of proceeding under the draft permit were ignored. William Eyring, Senior Engineer for the Center of Neighborhood Technology, raised concerns about the social and economic costs of expanding the plant in the center of the Village. (HR 120-1) Jim Bland testified that the environmental effects of the kinds of development that would be facilitated by

the plant expansion were not considered. (HR 78-79, HR 109) Petitioners testified that the estimated costs of alternatives (e.g. land treatment and land application of treated wastewater) to allowing the increased discharge were unreasonably inflated and the costs of minimizing nutrient discharges were not considered. Environmental economist Jeff Swano requested a life cycle analysis be performed on all considered alternatives as an appropriate economic assessment of the costs to provide a better cost-benefit analysis and to provide the public with a costs-per-treated-volume figure. (HR 70-2)

ANSWER:

New Lenox does not dispute the general summary of Petitioners' comments, but Petitioners' characterization of "the steps necessary to comply with" regulations and its advice to Illinois EPA concerning same constitutes a legal argument, not a fact. New Lenox disagrees that any Petitioners "testified," as public comments represent unsworn statements by parties not subject to cross examination. New Lenox disputes that these particular comments are relevant to the extent they concern the "kinds of development that would be facilitated by the plant expansion," which is a consideration outside the scope of Illinois EPA's review of the impact of this particular treatment plant, not the land use considerations that are properly within the discretion of New Lenox. New Lenox is not aware of Mr. Swano's credentials or qualifications as an "environmental economist." New Lenox disputes that its estimated cost of alternatives were unreasonably inflated, and notes that Mr. Swano's comments concerning land application were not the result of his own independent analysis but were based on information from Schaffer International, a company in the business of selling land application systems. HR 71.

29. Petitioners asked that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loadings be incorporated into the permit and that the permit be improved in a number of respects including that;

a. It provide for economically feasible controls on the discharge of nutrients including phosphorus and nitrogen;

b. The limits in the permit be improved to prevent discharges that could cause or contribute to violations of water quality standards regarding offensive conditions and dissolved oxygen;

c. That proper biological studies be conducted to assure that the discharge would not adversely affect existing uses of the stream;

d. That IEPA seriously consider whether the increased discharge was actually necessary in light of potential alternatives; and

e. That IEPA seriously consider alternatives to allowing the levels of pollutants in the streams that would be allowed by the draft permit.

(HR 112-3, 120-1, 126, 265-267)

ANSWER:

New Lenox does not dispute the general summary of Petitioners comments presented by this paragraph. New Lenox believes that Illinois EPA did seriously consider alternatives in this matter, as noted in its Responsiveness Summary at HR 372-374.

30. In particular, Jim Bland, an expert on eutrophication, testified on behalf of the Des Plaines River Watershed Alliance at the public hearing that "Data concerning increased nutrient loading, especially phosphorus is not included in the proposed permit.... On a long term basis the proposed increase in discharge will increase the "attached algae" (periphyton that covers the rocks and bottom rubble that are characteristic of this reach (c.f. Ecological Effects of Wastewater, E.B. Welch). This increase in stream productivity has the capacity to dramatically alter the character of the invertebrate communities downgradient from the STP." (HR 110)

ANSWER:

New Lenox moves to strike the statement that Mr. Jim Bland is "an expert on eutrophication," as this has not been established by his comments. Further, New Lenox disagrees that Mr. Bland "testified" in this case, as he was unsworn and not subject to cross-examination. New Lenox does not dispute that Mr. Bland made the quoted comments, which show a lack of understanding of the relationship between appropriate permit considerations as opposed to what would be considered in a rulemaking or setting a TMDL. Illinois EPA fully considered the comments, and stated that "Streams would be

expected to exhibit either one kind of algal growth or another, [i.e. planktonic or periphyton]" depending on a variety of factors, and "the best measure of whether [fish are adversely impacted] is to look at the local fish population. Hickory Creek has fish populations that are not indicative of low dissolved oxygen concentrations." HR 361. Illinois EPA also concluded based on relevant data for 2003 that all measurements in Hickory Creek meet the water quality standard for dissolved oxygen. HR 364.

31. In addition, Mr. Bland asked that IEPA "Speed up the analysis of nutrient loading influences and apply this analysis to the existing permit specification. Document the direct influences of phosphorus which already exist at the stream." (HR 113)

ANSWER:

See resp. to par. 30. New Lenox does not dispute that Mr. Bland made the quoted comments. New Lenox notes that Illinois EPA fully considered them as part of its permit proceedings. New Lenox also notes that Illinois EPA has convened a work group, and this comment is more properly directed in the context of that proceeding than a specific permit proceeding.

32. In post hearing comments, Beth Wentzel of the Prairie Rivers Network stated that "The literature supports the claim that excess nutrients, nitrogen and phosphorus, can impair streams by affecting dissolved oxygen concentrations, causing nuisance algal blooms and causing other problems." (HR 125) She concluded that "As described at the hearing, the existing facility discharges nitrogen and phosphorus to Hickory Creek at concentrations that exceed instream concentrations. According to USGS flow data, Hickory Creek is regularly dominated by effluent flow. As demonstrated above and through testimony provided by local residents at the public hearing, there is reasonable potential that instream concentrations cause violations of water quality standards. Because the discharge from New Lenox STP #1 contributes to these violations, the existing discharge is illegal and an expansion of the discharge would be illegal. Prior to issuance of this permit, IEPA must determine water quality based effluent limits for nitrogen and phosphorus that ensure that water quality standards will be satisfied instream. Alternatively, the applicant must adopt an alternative that does not require discharge of nutrients to Hickory Creek." (HR 126)

ANSWER:

New Lenox does not dispute that Ms. Wentzel made the above comments and conclusions, although New Lenox disagrees with their content and notes that they constitute a legal conclusion. In any case, Illinois EPA fully considered these comments. See resp. to par. 5, 6, 9, 10, 11-15.

33. At the public hearing, Albert Ettinger of the Environmental Law & Policy Center asked the Agency to provide an estimate of the cost of removing phosphorus and the cost of removing nitrogen from the discharge. (HR 73-4)

ANSWER:

New Lenox does not dispute that Mr. Ettinger made the above request and also submitted comments in this proceeding. New Lenox notes that Illinois EPA had before it the study prepared by the Illinois Association of Wastewater Agencies at the request of Illinois EPA, which contained information on the cost associated with removing nutrients. See resp. to par. 26.

34. Cynthia Skrukrud Ph.D. testified on behalf of the Sierra Club that "using the standard USEPA method where you use a multiplier to come up with a 95 percent ... reasonable potential, the copper suggested that there should be further analysis. But then further in the memorandum, it's reported that all copper samples reported were less than the acute and chronic water quality standards and the conclusion was that no regulation of copper is necessary and no monitoring beyond routine requirements is needed. My concern is that there were only two samples taken. And of those two samples, I only know what one of them was. But one of them, the sample measured 20.5 micrograms per liter. The chronic standard is 20.6 micrograms per liter. It certainly would seem given that you have only two samples, and you are so close to a violation of the chronic standard there, that I would think that there is a reasonable potential for violation of the chronic standard, and that because there were ... so few samples that it needs to be investigated further." (HR 70)

ANSWER:

New Lenox does not dispute that Ms. Skrukrud made the above comments and conclusions, although New Lenox disagrees with their content. See resp. to par. 22.

35. In a post-hearing letter and attachments (HR 264-265), Skrukrud wrote:

Reasonable Potential Analysis to Exceed Water Quality Standards

The USEPA recommended method for Reasonable Potential Analysis is to use a multiplier to determine the potential to exceed a given standard when a small number of samples have been collected. It is precisely because so few data are collected that the multiplier is needed. IEPA's decision to abandon the method recommended by USEPA in *Technical Support Document for Water Quality Based Toxics Control* is not acceptable. IEPA should either use the multiplier in their analysis or require that more samples be collected ...

...Yet IEPA concludes from this limited data set that there is no need for additional copper monitoring. If the measured value had been 20.7 µg/l instead of 20.5, would further investigation have been required? Are we then to believe that IEPA considers 20.5 and 20.7 µg/l to be statistically different? The confusing situation which exists with IEPA's method of direct comparison of sample values to standards is exactly why the statistical method recommended by USEPA should be employed."

ANSWER:

New Lenox does not dispute that Ms. Wentzel submitted the above comments, although New Lenox disagrees with their content. See resp. to par. 5, 6, 9, 10, 11-15.

36. Skrukrud further commented:

Inadequate Consideration of Alternatives

In addition to the other flaws in the antidegradation analysis, the analysis makes no serious effort to consider alternatives or to rationally weigh whether the proposed new discharge is socially or economically necessary.

Nutrient removal is already required for New Lenox by the Clean Water Act and Illinois law given that the discharge is plainly causing or contributing to violations of state narrative water quality standards and probably state dissolved oxygen standards. Although the Agency is not now requiring nutrient removal, it concedes that requirements for nutrient removal are likely to go into effect during the life of the proposed expansion. It is, thus, unreasonable to decide on the merits of permitting this expansion without explicit consideration of the costs of nutrient

removal. The Agency wrongly rejects land treatment and other options as too expensive both by overpricing land treatment and by ignoring potentially huge future capital and operation costs that will be incurred by permitting this discharge expansion." (HR 267)

ANSWER:

New Lenox does not dispute that Ms. Skrukrud submitted the above comments, although New Lenox disagrees with their content. See resp. to par. 5, 6, 9, 10, 11-15.

37. On October 31, 2003, Illinois EPA issued the permit that is subject to the current appeal. The final permit contains some changes from the draft including required levels of dissolved oxygen in the effluent and a limit on total dissolved solids. The final permit did not place any limits on the discharge of phosphorus, nitrogen or copper. (HR 341-50)

ANSWER:

New Lenox agrees that Illinois EPA issued the permit subject to the current appeal on October 31, 2003. In response to comments made during the public comment period and to information before Illinois EPA, the agency recommended and New Lenox agreed to accept certain limits without challenge. New Lenox notes that it did not challenge the limits, but this does not mean those limits were not challengeable or were required. They include limits on dissolved oxygen, total dissolved solids, and ammonia.

38. The permit set no limit for copper. (HR 343) No explanation appears in the record as to why the Agency proceeded in conflict with the U.S. EPA recommended method for determining the reasonable potential to violate the acute copper standard. No study was done under 35 Ill. Adm. Code 302.102 to develop a mixing zone analysis. Regarding the chronic standard, the New Lenox Responsiveness Summary states "It is important to remember that this comment is dealing with reasonable potential to exceed a chronic water quality standard. By definition, a chronic standard must not be exceeded in the receiving stream by the average of at least four samples." (HR 363) Yet there is no discussion of the possibility of requiring more samples than the two provided.

ANSWER:

New Lenox agrees that no permit limit was set for copper.

39. The final permit allowed a monthly daily average increase of 82 lbs of CBOD5 and did not place any limit on the discharge of CBOD5 other that the effluent limit of 35 Ill. Adm. Code.304.120. (HR 342-3)

ANSWER:

New Lenox disagrees that no permit limit was set for CBOD5. See PR 652, which shows the permit does contain a daily average and a daily maximum value for CBOD5.

40. No limits were set for phosphorus or nitrogen. (HR 343) Other than to mention that a study done by the Illinois Association of Wastewater Agencies (never placed in the record) indicating that the combined costs of treating nitrogen to an unmentioned level and phosphorus to the level of 0.5 mg/L might cost capital costs of $5.4 million (HR 358), IEPA never discussed the cost of treating phosphorus. No mention appears in the record of any analysis of the cost, feasibility or reasonableness of any level of phosphorus treatment alone (without nitrogen treatment) or of any level of phosphorus treatment other than 0.5 mg/L.

ANSWER:

New Lenox agrees that no permit limit was set for phosphorus or nitrogen. Further, New Lenox disagrees with the statement that the study performed by the Illinois Association of Wastewater Agencies was not part of the record, as the record properly includes everything before the Illinois EPA at the time it made its decision. The study is clearly referenced and disclosed by Illinois EPA in the documents filed in this proceeding.

41. No limits are placed in the permit to prevent violation of the "offensive conditions" narrative standard. The Responsiveness Summary indicates that the Agency would only place limits on nutrients in the permit after numeric standards are set. (HR 356) The IEPA declines to attempt to place limits in the permit to satisfy the narrative standard on plant and algal growth because "This is a very difficult standard to apply to a permit." (HR 357)

ANSWER:

New Lenox agrees that no limits were placed in the permit concerning "offensive conditions." Further, no limits are required to address offensive conditions. To the extent Petitioners claim that algal growth constitutes an offensive condition, Illinois EPA

addressed algae in its Responsiveness Summary, explaining that algae is a vital part of the aquatic community and algae growth in itself is not itself a problem; it is in relation to dissolved oxygen and the adverse impact on fish that provides context. Illinois EPA stated that "Streams would be expected to exhibit either one kind of algal growth or another," depending on a variety of factors, and "the best measure of whether [fish are adversely impacted] is to look at the local fish population. Hickory Creek has fish populations that are not indicated of low dissolved oxygen concentrations." HR 361. Illinois EPA also concluded based on relevant data for 2003 that all measurements in Hickory Creek meet the water quality standard for dissolved oxygen. HR 364. Given the complicated and disputed nature of the science governing algae, both Illinois EPA and the Board have concluded that a work group is necessary to study the issue of nutrients and proposed standards that would govern dischargers in Illinois. Further, the Illinois EPA concluded specifically in this case that "the incremental nutrient loading anticipated to result from this project is not expected to increase algae or other noxious plant growth, diminish the present aquatic community or otherwise aggravate existing stream conditions." PR 565. Finally, Petitioners do not address the impact of numerous other dischargers to the stream.

Respectfully submitted,

The Village of New Lenox

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