BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO,	)	
Petitioner,	)	
v.	)	PCB 14-103 (Calumet)
	)	PCB 14-104 (O'Brien)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY	)	(Permit Appeals - Water) (Consolidated)
Respondent.	)	

NOTICE OF ELECTRONIC FILING

To: see attached service list

PLEASE TAKE NOTICE that on October 31, 2014, the undersigned electronically filed a Reply in Support of District's Motion for Summary Judgment and in Response to IEPA's Cross-Motion for Summary Judgment on behalf of the Metropolitan Water Reclamation District of Greater Chicago, a copy of which is herby served upon you.

I HEREBY CERTIFY that I served this Notice and the above referenced Reply by placing a copy in an envelope, postage prepaid, and depositing it in the U.S. Mail, at 100 East Erie Street, at or before 5:00 p.m. on October 31, 2014.

Dated: October 31, 2014

Respectfully submitted,

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

/s/ Ronald M. Hill

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REPLY IN SUPPORT OF DISTRICT'S MOTION FOR SUMMARY JUDGMENT AND IN RESPONSE TO IEPA'S CROSS-MOTION FOR SUMMARY JUDGMENT

In accordance with the briefing schedule presented in Hearing Officer Bruce Halloran's October 14, 2014 order, Petitioner, Metropolitan Water Reclamation District of Greater Chicago ("District"), by its General Counsel, Ronald M. Hill, submits the following reply in support of its motion for summary judgment and in response to the cross-motion for summary judgment filed by the Illinois Environmental Protection Agency ("IEPA" or "Respondent"):

I. Introduction

The District is appealing (1) the conditions requiring 7-day sampling for fecal coliform in its NPDES permits for the Calumet Water Reclamation Plant ("Calumet plant") and Terrence J. O'Brien Water Reclamation Plant ("O'Brien Plant"), and (2) the condition requiring continuous sampling for dissolved oxygen ("DO") in its NPDES permit for the O'Brien plant.

Respondent fails to identify any provision in the Act or Board's regulations that expressly requires 7-day sampling for fecal coliform or continuous sampling for DO. Nor does it identify any other entity that is subject to these unduly burdensome sampling requirements in the State of

Illinois. In fact, IEPA provides no rationale of its own for these unnecessary conditions in the record; rather, its only justification for imposing these sampling requirements is because "USEPA said so."

Respondent's cross-motion for summary judgment fails to direct the Board to any evidence in the record demonstrating that it is entitled to judgment as a matter of law on these problematic conditions. Instead, it attempts to distract the Board from the absence of support in the record. For example, Respondent's only argument in defense of the 7-day sampling requirement for fecal coliform is that "there exists a substantial variance in the volume of daily flow at [the Calumet and O'Brien plants]." (Resp. Cross-Motion for SJ, 11). Yet, as demonstrated below, volume of flow has no bearing on the District's fecal coliform limits.

Respondent also fails to address the ambiguity of its continuous DO sampling condition for the O'Brien plant. Instead, it argues that the Board's averaging rules do not apply for purposes of determining compliance. Yet, if this is true, it only raises more questions regarding the permit's vague condition. Indeed, without any definition or explanation regarding this "continuous" sampling requirement, it is impossible for the District to discern how to comply with it. It is also impossible to determine whether compliance is even technically feasible. The condition is, therefore, void for vagueness.

In sum, nothing in the record suggests that these sampling conditions are necessary to accomplish the purposes of the Act, 415 ILCS 5/1 *et. seq*, or the Board's regulations, 35 Ill. Admin. Code §101.100 *et seq*. Accordingly, the District's motion for summary judgment should be granted and Respondent's cross-motion for summary judgment should be denied.

II. Argument

A. Daily sampling for fecal coliform is not necessary to accomplish the purposes of the Act or the Board's regulations

In its cross-motion for summary judgment, Respondent fails to identify any provision in the Act or Board's regulations that expressly requires daily sampling for fecal coliform. Indeed, the Board regulation governing the District's discharge of fecal coliform does not even set a minimum sampling frequency. 35 Ill. Admin. Code § 304.224 (2014). The Respondent does not dispute this.

Nor does Respondent deny that the record must contain evidence to support the conditions of an NPDES permit. *Des Plaines River Watershed Alliance, et al. v. IEPA*, 2007 WL 1266926, *11, PCB 04-88 (Apr. 19, 2007). Nevertheless, the only justification that Respondent offers for daily sampling in its cross-motion is its claim that "there exists a substantial variance in the volume of daily flow at [the Calumet and O'Brien plants]." (Resp. Cross-Motion for SJ, 11).

Yet, variance in volume of plant flow provides no basis for the increased sampling frequency because: (1) compliance is measured in terms of concentration, not volume; (2) nothing in the record suggests a correlation between high plant flow volume and concentration of fecal coliform; (3) nothing in the record suggests a correlation between day-of-the-week and plant flow; and (4) the method of calculating compliance (30-day geometric mean) would minimize the impact of any variations in concentration occurring on the weekends.

1. Compliance is measured in terms of concentration, not volume

Volume has no bearing on the District's effluent limits for fecal coliform. Whether the District discharges 1 gallon or 100 million gallons from its plants does not matter for purposes of determining compliance with fecal coliform limits. Rather, compliance is determined by the *concentration* of fecal coliform in the District's effluent.

As long as that concentration remains below the limit, the District complies with its permits and the Board's regulations. Indeed, as demonstrated below, it is entirely possible that a 100 million gallon discharge will have a lower concentration of fecal coliform than a 1 gallon discharge.

2. No correlation between high plant flow volume and concentration of fecal coliform

There is no evidence in the record which suggests that spikes in either plant's flow will result in higher fecal coliform concentrations. In fact, the opposite is often true. Significant increases in plant flow are typically due to wet weather, which tends to have a diluting effect on the sewage entering the District's treatment plants. Thus, higher volumes likely mean lower concentrations of fecal coliform. Respondent did not offer any evidence to suggest otherwise.

3. No correlation between day-of-the-week and plant flow

Respondent contends that variations in plant volume necessitate sampling effluent 7 days a week. Yet, nothing in the record suggests that variations in volume only occur on the weekends. As mentioned above, significant increases in plant flow are typically due to wet-weather events, which can occur at any time.

Moreover, Respondent has not identified any evidence in the record which demonstrates that the District discharges higher concentrations of fecal coliform on the weekends. Nor should this be expected in the future since the permits require that the District apply the same disinfection to its effluent every day of the week.

4. Geometric mean minimizes the impact of variations

Additionally, any variations in concentration occurring on the weekends would be virtually irrelevant because both the permits and regulations require the use of a 30-day

geometric mean to calculate compliance with the fecal coliform effluent limit.[1] The sole purpose of using a geometric mean is to reduce the influence of variations in the data.

Specifically, by averaging the logarithmic values of a data set, a geometric mean dampens the effect of very high or very low values, which might bias the analysis if a straight average (arithmetic mean) was used. Thus, the significance of any high-concentration samples on the weekends would be minimal.

For all the reasons stated above, variance in the volume of plant flow is irrelevant to the sampling condition for fecal coliform. That is presumably why the record lacks any mention of it as a basis for daily sampling (Respondent's first mention of this purported justification appeared in its cross-motion for summary judgment). Indeed, the District's other plants experience variations in volume similar to the plants at issue in this appeal, yet IEPA only requires those other plants to sample 5 days per week.

The only rationale for daily sampling ever provided by IEPA in the record is that 7-day sampling was "required by USEPA."(R. 2620-2623; 3308-3337). Yet, "because EPA said so" is no basis for upholding an agency decision that is not supported by the record. *Letourneau v. Department of Registration*, 212 Ill. App. 3d 717, 728 (1st Dist. 1991).

While there is no evidence in the record supporting a daily sampling requirement, there is evidence of the burden that such unnecessary sampling would impose on the District. In its April

[1] In addition to requiring the use of a geometric mean to calculate compliance with the 200 CFU per 100 mL limit on fecal coliform, the Board's regulations also place a ceiling on the percentage of samples that can exceed 400 CFU per 100 mL. Specifically, the Board's regulations state that "[i]f 10 or more samples are taken in a month, fecal coliform shall not exceed a 30-day geometric mean of 200 CFU per 100 mL, nor shall more than 10% of the samples during any 30 day period exceed 400 CFU per 100 mL." 35 Ill. Admin. Code § 304.224. Nothing in the record suggests that levels exceeding 400 CFU per 100 mL are more likely to occur on weekends or during periods of higher effluent volume. Accordingly, sampling on the weekends would theoretically make compliance with the 10% limit easier by increasing the pool of samples and, thus, decreasing the probability for abnormally high concentrations.

1, 2013 comments, the District explained that all fecal coliform testing at the District is performed at the District's Stickney water reclamation plant, and that sampling on the weekends would require the District to employ staff to transport and analyze samples for fecal coliform in light of the short six-hour holding time limitation from collection to analysis. (R. 2597, 3289). The record provides no evidence establishing the need for daily sampling to comply with the Board's regulations or the Act such that would justify this added expense to the taxpayer.

Even where "the record is unclear regarding the work week of the responsible personnel or the possibility of using other personnel on the remaining two days of the week," the Board has struck down daily sampling requirements, holding that it is "highly unlikely that the integrity of the data would be significantly jeopardized by a five day rather than a seven day provision." *Illinois Power Co. v. IEPA*, 1987 WL 55997, *4, PCB 86-154 (Apr. 1, 1987).

There is no evidence in the record which supports an additional two days of sampling. The variance in volume of plant flow is irrelevant to the sampling requirements in question. Accordingly, without any support in the record for its daily sampling requirements, the IEPA cannot overcome the District's motion for summary judgment. *Id.*; *Marathon Petroleum Co. v. IEPA*, 1989 WL 95840, **10-12, PCB 88-179 (Jul. 27, 1989) (Board held that record did not support quarterly monitoring imposed by IEPA in permit; semi-annual monitoring sought by permittee complied with regulatory minimums and there was no evidence in the record that anything more was necessary); *Village of Sauget v. IEPA*, 1988 WL 160840, *9, PCB 86-57 (Dec. 15, 1988) (nothing in the record supported continuous monitoring of total organic carbon).

B. Continuous sampling for DO is not necessary to accomplish the purposes of the Act or the Board's regulations

In its cross-motion for summary judgment, Respondent does not dispute the fact that no provision in the Act or Board's regulations expressly requires continuous sampling for DO. Nor

does Respondent identify any other entity that is subject to this novel sampling requirement in the State of Illinois. Moreover, it is not even clear what "continuous" sampling means for purposes of compliance with the District's O'Brien permit.

Respondent does not dispute, or even discuss, this ambiguity in its cross-motion. Instead, Respondent emphasizes that the District may not use the Board's averaging rules to establish compliance with the minimum DO requirements in the O'Brien permit. Yet, if compliance is not measured by averaging samples, how does IEPA determine a violation? The O'Brien permit provides no answer.

It also fails to designate the interval of sampling necessary to demonstrate compliance. While the O'Brien permit indicates a "continuous" frequency, it does not define this requirement. Accordingly, the District is left to wonder whether it must collect samples every hour, every minute, every second, or every millisecond at its O'Brien plant. Perhaps an even shorter interval is required. The permit simply provides no guidance.

Nor does it identify the type of equipment that can collect such DO samples accurately and reliably. Indeed, the question remains whether such equipment even exists.

Finally, if the permit requires non-stop sampling, what happens when there is an equipment malfunction? Does a malfunction automatically trigger a violation of the DO limits for every hour, minute, second, or millisecond that the equipment is down?

Neither the O'Brien permit nor the record provides answers to these critical questions. Accordingly, the District is left to guess at the meaning of the vague sampling condition and to wonder whether compliance is even feasible. This vague condition violates Illinois law and, therefore, is not necessary to accomplish the purposes of the Act or Board's regulations.

1. The continuous sampling condition is void for vagueness

a. Constitution and case law prohibit vague permit conditions

A permit is "unconstitutionally vague and violates due process" if it leaves the permit holder "unsure of what conduct is prohibited." *United Disposal of Bradley, Inc. v. Pollution Control Bd.*, 842 N.E.2d 1161, 1166 (Ill. App. 3d Dist. 2006) (citing *Smith v. Goguen,* 415 U.S. 566, 94 S.Ct. 1242, 39 L.Ed.2d 605 (1974)). Illinois courts will strike down a permit condition as "void for vagueness" if "persons of common intelligence must necessarily guess at its meaning and differ as to its application." *Halfway House v. City of Waukegan*, 267 Ill. App. 3d 112, 117 (2nd Dist. 1994). The Board has applied this precedent to strike down vague permit conditions. *Browning Ferris Indust. of Ill., Inc. v. Lake Co. Board of Supervisors*, 1982 WL 25646, *13, PCB 82-101 (Dec. 2, 1982) (sampling condition in permit was "so vague as to be unenforceable"); *Caterpillar Tractor Co. v. IEPA*, 1981 WL 21980, *3, PCB 80-3 (Jun. 10, 1981) (recognizing "general policy that [NPDES] permit should state with certainty the discharger's duty").

The District is unsure what conduct is prohibited by the "continuous" sampling requirement because the O'Brien permit provides no definition of that term. Nor does it provide any other guidance regarding the practical implementation of this requirement.

Accordingly, the District is left to guess as to the interval of sampling necessary to avoid a violation (e.g., every hour, every minute, every second, every millisecond). It also must guess as to the type of equipment necessary to satisfy this sampling requirement and as to the specific method required for calculating compliance.

This permit ambiguity is not cured by the record. To the contrary, it is exacerbated by the fact that IEPA never allowed the District a chance to comment on this novel sampling

requirement.[2] The O'Brien permit's ambiguity is also aggravated by the fact that IEPA's only stated rationale for imposing continuous sampling in the record was "to be consistent with the sample frequency and as required by the USEPA."[3] (R. 3309).

b. Regulations require informative sampling conditions

The Board's regulations do not require or define continuous sampling in the context of NPDES permits. In the *air* permitting context, however, the Board has required continuous sampling via regulations, and these regulations underscore the detail necessary when imposing such a demanding sampling requirement in a permit.

Specifically, in those regulations, the Board demands compliance with the federal government's "minimum emission monitoring requirements." 35 Ill. Adm. Code § 201.401 (citing 40 C.F.R. § 51 Appx. P). Importantly, these regulations expressly define the sampling intervals for the continuous emissions monitoring systems required for demonstrating compliance with the Clean Air Act. 40 C.F.R. § 51 Appx. P. Indeed, these regulations impose different sampling intervals depending on the type of air pollutant. *Id.*

For example, "[c]ontinuous monitoring systems for measuring oxides of nitrogen, carbon dioxide, oxygen, or sulfur dioxide shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15–minute period." *Id.* (emphasis added). Continuous monitoring systems measuring opacity, on the other hand, "shall complete a

[2] Perplexingly, Respondent argues that IEPA afforded the District an opportunity to comment on the continuous sampling condition with the revised permit released in March of 2013. (Resp. Cross-Motion for SJ, 17). Yet, Respondent nevertheless admits that the "sample type" designated in that draft permit was "grab", not continuous. (*Id.*). Indeed, it was not until it received a cover letter transmitting the final permit for O'Brien that the District discovered that IEPA would require it to sample continuously for DO. (R. 3308-3309). The District, therefore, did not have an opportunity to comment on this condition prior to the issuance of the final permit.

[3] Respondent mistakenly quotes the following passage in the O'Brien permit's fact sheet as support for the condition at issue in this appeal: "[r]eporting of continuous dissolved oxygen monitoring is necessary to ensure compliance with the minimum acceptable dissolved oxygen concentration." (Resp. Cross-Motion for SJ, 15). In fact, this excerpt from the fact sheet actually refers to the general monitoring of instream water quality discussed in Special Condition 10 of the permit, not the effluent sampling at issue in this appeal. (*See* R. 3308 and 3327).

minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 10–second period." *Id.* (emphasis added). Additionally, the corresponding Illinois regulations specify that *reporting* of these continuous opacity measurements, for purposes of compliance, "shall be based on six-minute averages..." 35 Ill. Adm. Code § 201.405 (emphasis added).

The federal regulations governing NPDES permits also demand that permits specify the monitoring intervals required. 40 C.F.R. § 122.48(b). Those regulations further mandate that NPDES permits specify "[r]equirements concerning the proper use, maintenance, and installation...of monitoring equipment." *Id.* at (a). Thus, the O'Brien permit's simple designation of "continouous" sample type and frequency for DO, without more, does not comply with the applicable regulations.

c. O'Brien permit provides guidance on compliance with other sampling requirements

IEPA has provided detailed information regarding the *composite* and *grab* samples required in its permit for the O'Brien plant. Specifically, in the cover letter transmitting the permit, IEPA states that "[c]omposite and grab samples are required to be taken in accordance with the requirements of 40 CFR Part 136 and Attachment H of this Permit." (R. 3308). Indeed, for the 110 priority pollutants that the District must monitor via grab and composite sampling, the permit advises that "[w]astewater samples must be handled, prepared, and analyzed by gas chromatograph/electron capture detector in accordance with USEPA Method 608 and by gas chromatograph/mass spectrometer in accordance with USEPA Methods 624 and 625 of 40 CFR 136 as amended." (R. 3319).

Furthermore, Attachment H of the permit comprehensively defines the terms "Grab Sample", "24-Hour Composite Sample", "8-Hour Composite Sample", and "Flow Proportional

Composite Sample." (R. 3334). For instance, "24-Hour Composite Sample" is defined to mean "a combination of at least 8 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period." (*Id.*).

IEPA fails to provide any such definition of the term "continuous sampling" in the O'Brien permit. Nor does it delineate the interval of sampling, type of monitoring equipment, or method of analysis required for its continuous sampling condition. Yet, without this level of detail, a regulated entity cannot determine what is necessary for compliance with a sampling condition. Nor can it discern whether it will be able to comply with the corresponding effluent limits.

Because the O'Brien permit's DO sampling condition leaves the District "unsure of what conduct is prohibited," and the District is left to "guess at its meaning," that condition is unconstitutionally vague and unenforceable. *United Disposal of Bradley, Inc. v. Pollution Control Bd.*, 842 N.E.2d at 1166; *Halfway House*, 267 Ill. App. 3d at 117; *Browning Ferris*, 1982 WL 25646 at *13.

2. Compliance with the continuous sampling requirement might not be feasible

Without any information on the specific interval of sampling required, it is impossible for the District to determine the type of equipment that it must install to comply with its permit. Indeed, such equipment may not even exist. Even if it does exist, that equipment may not provide sampling data accurately or reliably for purposes of demonstrating compliance.

For example, the District currently utilizes automated in-line probes for monitoring DO in the waterway. The District's experience with this technology has demonstrated that it is prone to malfunction. Fortunately, however, the use of this equipment is governed by a "monitoring plan" authored by the District for gauging the general condition of *instream water quality* (as

opposed to compliance with effluent limits). (R. 3327). Thus, malfunctions and errors associated with this equipment do not subject the District to any permit violations.

IEPA has not shown that this imperfect technology could serve as a mandatory and reliable means of sampling for compliance with the District's DO effluent limits. Nor does the record support the equipment's suitability for such purpose. Indeed, the physical and technical demands on any sampling equipment differ depending on the environment in which they reside. Obviously, the conditions in a stream differ from those at an outfall. Thus, it is entirely possible that the equipment's tendency to malfunction in a stream could be magnified at an outfall.

"The Board has previously found that arbitrary or unreasonable hardship would result where technically and economically feasible means of compliance have not been identified..." *Borden Chem. and Plastics Op. Ltd. v. IEPA*, 1997 WL 728141, *6 (Nov. 6, 1997). Even where the Board imposes continuous sampling by regulation for certain sources of air pollution, the Board provides an exception for permittees who can demonstrate that "continuous monitoring is technically unreasonable or infeasible," or "would impose an extreme economic burden." 35 Ill. Adm. Code § 201.402. One of the ways to demonstrate technical infeasibility under that exception is by showing that the continuous monitoring device "[w]ould not provide accurate determinations of [the pollutants being sampled]." *Id.* Additionally, even when this exception does not apply, the Board's continuous sampling requirements are not violated "during any period of a monitoring system or device malfunction..." 35 Ill. Adm. Code § 201.404.

Nothing in the record suggests that continuous sampling is a technically feasible means of demonstrating compliance with the District's effluent limits for DO. Remarkably, IEPA has imposed this novel sampling condition without any discussion in the record regarding technical

feasibility (or economic burden) of compliance. Nor is there any provision in the permit, or discussion in the record, that explains the consequence (if any) of equipment malfunctions.

"Whether a particular monitoring frequency level is appropriate depends upon whether it is reasonable in a given set of circumstances." *In the Matter of: NPDES Permit for the City of Middlesboro, Kentucky, Permittee*, 2 E.A.D. 24, *2 (E.P.A. May 2, 1985) (requirement for weekly monitoring of metals in NPDES permit was unreasonable). Without information regarding the technical feasibility of complying with IEPA's continuous sampling requirement, it is impossible for the Board to determine whether that condition is reasonable.

An unreasonable and unconstitutionally vague sampling condition is not necessary to achieve the purposes of the Act or Board's regulations. Accordingly, the Board must grant the District's motion for summary judgment and strike the IEPA's continuous sampling condition for DO in the O'Brien permit.

VI. Conclusion

For all the reasons stated above, the District requests that the Board enter summary judgment in its favor.

Dated: October 31, 2014

Respectfully submitted,

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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