UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

NOV 0 9 2017

REPLY TO THE ATTENTION OF:

WN-15J

MEMORANDUM

SUBJECT: Wisconsin Legal Authority Review - Review and Recommendation of Resolution for Issue 8

FROM: Candice Bauer, Chief
NPDES Permits Branch Section 2

TO: File

Issue 8 (Hg Reasonable Potential)

In EPA's July 11, 2011 letter to the Wisconsin Department of Natural Resources (WDNR), Issue 8 stated the following:

> The Wisconsin rule at Wis. Admin. Code NR § 106.145 pertains to the establishment of WQBELs for mercury discharges. By letter of February 17, 2009, EPA disapproved certain aspects of this rule. Wisconsin must amend the rule to cure the disapproval.

Letter from Susan Hedman, Regional Administrator, U.S. EPA, to Cathy Stepp, Secretary, WDNR (July 11, 2011) (on file with U.S. EPA).

EPA's February 17, 2009 letter, mentioned above, disapproved of Wis. Admin. Code NR § 106.145 in three specific ways, as follows:

> Wis. Admin. Code NR § 106.145(2)(b)(2)
> EPA finds that Wis. Admin. Code NR § 106.145(2)(b)2 is not consistent with the Final Water Quality Guidance for the Great Lakes System at 40 C.F.R. Part 132, Appendix F, Procedure 5. Wis. Admin. Code § NR 106.145(2)(b)2 requires 12 monitoring results collected over 24 months before the State can determine whether a mercury effluent limitation is necessary. This provision prevents the State from imposing a mercury water quality-based effluent limit (WQBEL) when the minimum data requirements are not met, even if available information shows that a discharge will cause, have a reasonable potential to cause, or contribute to an exceedance of the mercury water quality criteria. EPA also finds that Wis. Admin. Code NR § 106.145(2)(b)2 does not conform to 40 C.F.R. § 122.44(d)(1) outside the Great Lakes System. Where minimum data requirements are not met, NR § 106.145(2)(b)2 prevents the State from imposing a mercury WQBEL, even if available information shows that a discharge will cause, have a reasonable potential to cause, or contribute to an exceedance of the mercury

water quality criteria. Accordingly, EPA disapproves this revision to the approved Wisconsin NPDES program within and outside the Great Lakes System.

Wis. Admin. Code NR § 106.145(3)
Wis. Admin. Code NR § 106.145(3) establishes procedures that are predicated on subpart (2). EPA disapproves this revision to the approved Wisconsin NPDES program to the extent that it authorizes the inclusion of a monitoring condition in lieu of WDNR determining the need for a WQBEL for mercury. This disapproval applies both within and outside the Great Lakes System.

Wis. Admin. Code NR § 106.145(7)(b)
Wis. Admin. Code NR § 106.145(7)(b) establishes procedures that are predicated on subpart (2) (among others). EPA disapproves this revision to the approved Wisconsin NPDES program to the extent that it authorizes the inclusion of a pollutant minimization plan in lieu of WDNR determining the need for a WQBEL for mercury. This disapproval applies both within and outside the Great Lakes System. EPA clarifies that this disapproval is not an objection to the use of pollution minimization plans as conditions of permits.

Letter from Bharat Mathur, Acting Regional Administrator, U.S. EPA, to Matthew Frank, Secretary, WDNR (February 17, 2009) (on file with U.S. EPA).

Analysis

To address Issue 8, WDNR modified and consolidated Wis. Admin. Code NR § 106.145(2)(b)(1) and (2) into Wis. Admin. Code NR § 106.145(2)(bm). The resulting Wis. Admin Code NR § 106.145(2) aligns the determination of mercury effluent limitations with the same procedure WDNR applies to determining the necessity for effluent limitations for toxic and organoleptic substances:[1]

(2) DETERMINING THE NECESSITY ~~OF~~FOR MERCURY EFFLUENT LIMITATIONS.

(a) The department shall determine whether a mercury effluent limitation is necessary using the procedures in s. NR 106.05.
(bm) For the determination under par. (a), the department shall use representative data that ~~comply with all of the following~~:

~~1. Data shall~~ meet the sampling and analysis requirements of subs. (9) and (10).
~~2. Data shall consist of at least 12 monitoring results spaced out over a period of at least 2 years.~~

Wis. Admin Code NR § 106.145(2). As demonstrated above, WDNR removed the minimum number of samples necessary to establish an effluent limit for mercury that is at the heart of Issue 8. With Wisconsin's new rule language, the necessity of mercury effluent limitations can be determined with

[1]Language added to Wis. Admin. Code NR § 106.145(2) is underlined, and language removed is ~~struck out~~.

fewer than 12 monitoring results collected in less than two years, which is consistent with the federal regulations.

The revised rule removes the minimum number of samples necessary for WDNR to determine that a mercury limit is necessary, providing WDNR with discretion to impose a limit and, additionally, caps the maximum discharge limit for mercury for any discharger.

Additionally, as excerpted in Acting Regional Administrator Mathur's letter above, both Wis. Admin. Code NR § 106.145(3) and (7)(b) were predicated on the mercury monitoring requirement of Wis. Admin. Code NR § 106.145(2)(b)(2) which allowed issuance of permits with pollutant minimization plans in lieu of final effluent limits. For example, Wis. Admin. Code NR § 106.145(3) provided in part:

> . . .If an applicant in any of the categories specified in this subsection does not have sufficient discharge data that meet the criteria of **sub. (2)** at the time of application for permit reissuance, the reissued permit shall require the permittee to monitor and report mercury at the following frequency and location. . .

Emphasis added. The reference in Wis. Admin. Code NR § 106.145(3) to Wis. Admin. Code NR § 106.145(2)(b)(2) would result in issuance of National Pollutant Discharge Elimination System permits that lacked final limits for mercury. WDNR has now cured this inadequacy and a similar shortcoming with Wis. Admin. Code NR § 106.145(7)(b) with its revisions to Wis. Admin. Code NR § 106.145(2)(b)(2).

Rule Package 3, Public Notice, Hearing, and Comment

WDNR published a public hearing notice on proposed revisions to Wis. Admin. Code chapter NR 106 on November 9, 2015 in the Wisconsin Administrative Register. 719A2 Wis. Admin. Register CR15-084 (November 9, 2015). The public comment period was open from November 10 through December 18, 2015, and a public hearing was held in Madison, Wisconsin on December 7, 2015. Wis. Nat. Res. Bd., Agenda Item No. 3.A.2 at 3, Dec. 15, 2015, Correspondence/Memorandum, Attachment to Order WT-31-10. At the December 7, 2015 public hearing, two members of the public attended but did not provide comments. Id. During the public comment period, written comments were received from the Wisconsin Legislative Council Rules Clearing House, Wisconsin Manufacturers Commerce, and EPA. Wis. Nat. Res. Bd., Agenda Item No. 3.A.2 at 1, Dec. 15, 2015, Response to Comments on Rule Package 3, Attachment to Order WT-31-10. WDNR responded to the written comments in a written response summary, which adequately explained the reasons why certain rule changes were made in response to comments received and why other comments did not warrant changes. Id.

Conclusion

Based on EPA's review of Wisconsin's provisions above, EPA concludes that Issue 8 is resolved.

Additional Comments

During the course of reviewing Issue 8, EPA discussed with WDNR the State's reasonable potential analysis procedures for situations where 10 or less samples are utilized. As describe below, EPA analyzed and approved WDNR's reasonable potential procedures for small sample sizes on November 6, 2000.

Reasonable Potential Analyses

Reasonable potential analyses (RPAs) are used to determine whether chemicals in effluents may cause or contribute to exceedences of water quality standards. The general procedure is to compare calculated preliminary effluent limits (PELs) to calculated projected effluent quality (PEQ). If the PEQs is greater than the PELs water quality-based effluent limits are required. Federal regulations requiring RPAs are found at 40 C.F.R. § 122.44(d)(1) and include the requirement that any RPAs must include consideration of effluent variability.

Federal and State Procedures

Federal

EPA provides guidance for conducting RPAs in two documents. The first, the 1991 Technical Support Document for Water Quality-based Toxics Control (TSD; PB91-127415), recommends that PEQs be calculated from as few as one data point and should be calculated by multiplying the maximum effluent concentration by multipliers provided in the TSD. The multipliers are dependent on the number of data points, the effluent variability determined as the coefficient of variation, and the level of protection desired. The TSD recommends defining the level of protection as the 99th percentile confidence level and probability basis of the estimated lognormal distribution of the effluent quality. While the TSD recommends the 99th percentile confidence level and probability basis, it also provides methods to calculate the PEQ at the 95th percentile confidence level and probability basis. (The 99th percentile will result in a PEQ larger than the PEQ calculated using the 95th percentile. A larger PEQ will make finding reasonable potential and the need for effluent limits more likely.) The TSD also includes a method similar to the above but assuming delta-lognormal distribution and censored data sets.

In 1995 EPA published the Great Lakes Water Quality Guidance (GLI, 40 C.F.R. Part 132, Appendix F) which contains methods similar to the 1991 TSD. The main differences between the two is that the GLI only applies in the Great Lakes basin and the recommended level of protection is the 95th percentile confidence level and probability basis. The GLI also offers that the PEQ can be simply the 95th percentile probability basis.

Wisconsin

Wisconsin conducts RPAs according to Wis. Admin. Code NR § 106.05. For each chemical in an effluent, where there are 11 or more data points Wisconsin compares PELs and PEQs to determine reasonable potential, as described above. If there is reasonable potential, effluent limits are required. Wisconsin calculates PEQs using the TSD's delta-lognormal distribution and censored data set approach, and projects the effluent quality as the 99th percentile confidence level and probability basis.

Where there are 10 or fewer data points Wisconsin will require effluent limits if the arithmetic mean of the effluent data exceeds 20% of the appropriate PEL. In effect, when there are fewer than 11 data points Wisconsin calculates the PEQ using the average (not the maximum) effluent concentration and a multiplier of 5.

Issues

Where there are more than 10 data points the State method is consistent with the Federal method in the 1991 TSD and is more stringent than that required under the GLI. However, where there are 10 or fewer data points the State's approach does not consider effluent variability, as set forth in 40 C.F.R. § 122.44(d)(1). Further, the State's approach establishes an effluent multiplier of five, which is lower than the TSD or GLI multipliers where the data sets are very small (less than four data points).

History

As required by 40 C.F.R. § 132.4, the Great Lakes States, including Wisconsin, were required to adopt requirements consistent with the GLI, including the GLI's reasonable potential procedures. The States could apply the GLI requirements only in the Great Lake basin, but Wisconsin applied the GLI state-wide.

EPA reviewed Wisconsin's adoption of the GLI and identified the same issues as identified above. In a letter dated June 13, 2000, EPA identified these issues and found that the State's rules were not consistent with the GLI. Wisconsin responded on October 11, 2000, with an analysis of 141 chemical-specific data sets from 42 different dischargers. The ratios of the 95th and 99th percentile confidence level and probability bases to the average effluent quality were calculated and the State concluded that using five times the average effluent quality is comparable to the 95th percentile confidence level of the 1 day 95th percentile value and is more protective than the 4-day or 30-day 95th percentile.

EPA reviewed Wisconsin's analysis and concluded the following:

1. Wisconsin's analysis was based on large data sets, but the State believed that the results could be extrapolated to small data sets.
2. The procedure to apply a multiplier of five is derived from and approximates a conventional method for statistically projecting the 99th percentile of effluent values.
3. The Wisconsin data demonstrate that applying Wisconsin's method results in values that in nearly all cases are at least as stringent as those that would result from application of the GLI.
4. Small data sets may not accurately portray effluent variability.
5. While Wisconsin's procedure is not strictly a statistical procedure where characterizing the distribution of data has consequences, the analysis submitted by the State shows that, in nearly all cases, this approach results in a reasonable potential determination that is at least as protective as that reached using the GLI.

Except for specific provisions in the State rules, on November 6, 2000, EPA approved Wisconsin's rules as being consistent with the GLI. This approval included the small data set reasonable potential issue.

Conclusion

EPA raised this issue with Wisconsin in 2000 as part of its review of the State rules for consistency with the GLI (40 C.F.R. Part 132). EPA ultimately concluded that the State rules were consistent with the GLI.