

**IN RE UPPER BLACKSTONE WATER POLLUTION
ABATEMENT DISTRICT**

NPDES Appeal Nos. 08-11 to 08-18 & 09-06

***ORDER DENYING REVIEW IN PART AND REMANDING IN
PART***

Decided May 28, 2010

Syllabus

On August 22, 2008, U.S. Environmental Protection Agency Region 1 (the “Region”) issued to Upper Blackstone Water Pollution Abatement District (the “District”) a National Pollution Discharge Elimination System (“NPDES”) permit, number MA0102369 (the “Permit”). The District owns and operates a wastewater treatment plant located in Millbury, Massachusetts (the “Treatment Plant”), which collects and treats sewage and wastewater from the surrounding area, including from collection systems owned by nearby municipalities. The Permit would authorize, subject to the Permit’s conditions, pollutant discharges from the Treatment Plant into the Blackstone River. The District, several municipalities and a governmental entity that discharge to the District’s Treatment Plant, several environmental groups, and the Massachusetts Department of Environmental Protection (“MassDEP”) filed petitions requesting that the Environmental Appeals Board (“Board”) review the Permit’s conditions.

The parties request EAB review of the Permit’s conditions on five principle grounds. First, the District and the municipalities challenge the Permit’s provisions making certain municipalities co-permittees on the Permit. Second, Conservation Law Foundation (“CLF”), the District, and MassDEP challenge the Permit’s limits for total nitrogen, phosphorous, fecal coliform, and aluminum. Third, the District challenges the sampling and monitoring requirements for a variety of pollutants. Fourth, the District argues that the Permit should include compliance schedules establishing when the District must comply with the new more stringent permit limits. And, fifth, the District argues that the Region did not provide adequate opportunity for public comment by environmental justice communities.

Held: the Board denies review in all respects except one; the Board remands the Permit’s provisions adding, as co-permittees subject to the Permit’s conditions, certain municipalities served by the District’s Treatment Plant.

1) The Permit makes certain entities “co-permittees,” thereby extending standard Permit conditions governing operation, maintenance, and reporting to these sewage collection systems not owned or operated by the District, but instead owned and operated by the municipalities listed in the Permit. There is no similar provision in the prior 2001 permit under which the District is currently authorized to discharge treated wastewater into the Blackstone River. The Board concludes that, here, where the Region has abandoned its historical

practice of limiting the permit only to the legal entity owning and operating the wastewater treatment plant, the Region has not sufficiently articulated in the record of this proceeding the statutory, regulatory, and factual bases for expanding the scope of NPDES authority beyond the treatment plant owner and operator to separately owned and operated collection systems that do not discharge directly to waters of the United States, but instead that discharge to the treatment plant.

2) The Board concludes the Region did not clearly err or abuse its discretion in establishing the Permit's total nitrogen limit. The Board concludes that the record is sufficient to support the Region's determination pursuant to 40 C.F.R. § 122.44(d)(1)(i) that nitrogen is present in the District's effluent at a concentration that causes, has the reasonable potential to cause, or contributes to a violation of Rhode Island's narrative water quality criteria. The Board also concludes that, contrary to the contention of one petitioner, that petitioner has not shown that a limit more stringent than 5.0 mg/l is necessary to ensure compliance with applicable water quality standards. And, the Board concludes, contrary to other Petitioners' contentions, scientific uncertainty in the record regarding fate and transport of the District's total nitrogen discharges does not establish that the Region clearly erred or abused its discretion in setting the Permit's limit at 5.0 mg/l pursuant to 40 C.F.R. § 122.44(d)(1)(vi). It also was not unreasonable for the Region to conclude that consistency with Rhode Island's interpretation of its narrative requirement warranted expressing the Permit's limit as a concentration rather than as a mass limit.

3) The Board concludes that the petitioners have not shown clear error or an abuse of discretion in the Region's decision setting the Permit's total phosphorus limit. The Board rejects the District's contention that the Region failed to connect the phosphorus discharges with specific impairments in designated uses. The Region identified the designated uses that are impaired as well as the criteria that are violated and explained why it concluded there is a reasonable potential that the District's discharges cause the observed violations. The Board also concludes that the specific arguments challenging the Permit's limit as not sufficiently stringent were not preserved for appeal. The Board further concludes that the Region properly applied 40 C.F.R. § 122.44(d)(1)(vi)(B) when the Region referred to EPA criteria in setting the total phosphorus limit and that the record supports the Region's decision setting the Permit's total phosphorus limit. In particular, the District has not pointed to any EPA or Massachusetts numeric criteria, nor any other relevant record evidence, that would support a total phosphorus limit of 0.75 mg/l as sufficient to control cultural eutrophication immediately and further downstream from the District's discharge point. Further, the Region appropriately relied on the severe phosphorus-driven cultural eutrophication violating water quality criteria and impairing the Blackstone River's designated uses in setting a stringent permit limit at this time without waiting for further data.

4) The Board concludes that the District has not shown clear error or an abuse of discretion in the Region's decision to set the Permit's limit for fecal coliform for the period of November 1 through March 31 at a monthly geometric mean of 571 cfu/100 ml and a daily maximum of 1429 cfu/100 ml. The Board concludes that there is no ambiguity in Rhode Island's law establishing a year-round designated use for the Blackstone and Seekonk Rivers for both primary and secondary contact recreational activities, and that there is no ambiguity, or seasonal exception, in Rhode Island's numeric criterion for fecal coliform for these waters. The District also has not established clear error or an abuse of discretion in the Region's determination that the District's fecal coliform discharges have the reasonable potential to violate Rhode Island's numeric criterion for fecal coliform.

5) The Board concludes that the District has not shown clear error or an abuse of discretion in the Region's decision to set the Permit's aluminum limit at 87 g/l. The District's arguments based on information introduced for the first time on appeal must be rejected. The

Region was required to make its decision on the administrative record established pursuant to 40 C.F.R. § 124.18, and whether the Region committed clear error is measured by the record that was before the Region at the time it made its decision. Because the record evidence the District cites does not refute the Region's response to comments, the Board must reject the District's contention that the Region clearly erred in concluding that it must apply EPA's nationally recommended criterion of 87 ug/l for aluminum in the Blackstone River.

6) The Board denies review of the District's challenges to various metals limits and sampling and monitoring requirements. The Board also concludes that the Region appropriately rejected the District's request for compliance schedules to be included as terms of the Permit, and the Region gave appropriate consideration to environmental justice issues.

Before Environmental Appeals Judges Charles J. Sheehan, Kathie A. Stein, and Anna L. Wolgast.

Opinion of the Board by Judge Wolgast:

On August 22, 2008, U.S. Environmental Protection Agency Region 1 (the "Region") issued to Upper Blackstone Water Pollution Abatement District (the "District") a National Pollution Discharge Elimination System ("NPDES") permit, number MA0102369 (the "Permit"). The District owns and operates a wastewater treatment plant located in Millbury, Massachusetts (the "Treatment Plant"), which collects and treats sewage and wastewater from the surrounding area including from collection systems owned by nearby municipalities. The Permit would authorize, subject to the Permit's conditions, pollutant discharges from the Treatment Plant into the Blackstone River.

The following organizations filed petitions requesting that the Environmental Appeals Board ("Board") review the Permit's conditions: 1) the District; 2) the Town of Holden, Massachusetts ("Holden"); 3) the Town of Millbury, Massachusetts ("Millbury"); 4) the City of Worcester, Massachusetts ("Worcester"); 5) the Northern RI Chapter 737 Trout Unlimited ("Trout Unlimited");¹ 6) the Conservation Law Foundation ("CLF"); 7) the Massachusetts Department of Environmental Protection ("MassDEP"); and 8) Cherry Valley Sewer District ("Cherry Valley"). The Rhode Island Department of Environmental Management ("RIDEM") also requested, and the Board granted, permission to participate in this proceeding as Amicus Curiae.

¹ In response to Trout Unlimited's petition, the Region issued on April 15, 2009, a modification establishing the Permit's conditions for total aluminum discharge and monitoring. The District filed a second petition requesting that the Board review the modified total aluminum discharge and monitoring conditions. By Order dated August 7, 2009, the Board consolidated the original petitions and the District's second petition for administrative purposes.

For the reasons discussed below, the Board remands the Permit's provisions that add, as co-permittees subject to the Permit's conditions, certain municipalities served by the District's Treatment Plant, and the Board denies review of all other Permit conditions.

I. BACKGROUND

The Clean Water Act ("CWA") generally prohibits anyone from discharging pollutants into navigable waters, CWA § 301(a), 33 U.S.C. § 1311(a), and it authorizes EPA to issue NPDES permits allowing certain pollutant discharges subject to the limits and conditions required by the CWA. CWA § 402, 33 U.S.C. § 1342. Pertinent to this case, section 301 requires pollutant discharge limits necessary to implement applicable state water quality standards.² CWA § 301(b)(1)(C), 33 U.S.C. § 1311(b)(1)(C). Specifically, section 301(b)(1)(A) requires technology-based limitations and section 301(b)(1)(C) requires any more stringent limitations "including those necessary to meet water quality standards."³ The CWA prohibits EPA from issuing a permit that does not "insure" compliance with the water quality standards of both the state where the discharge originates and all affected states. *See* CWA § 401(a)(1), (2), 33 U.S.C. § 1341(a)(1), (2).⁴

EPA regulations implementing these statutory requirements specifically prohibit the Region from issuing a permit "[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States." 40 C.F.R. § 122.4(d). EPA's implementing regulations also require that the Permit must include conditions "necessary" to "[a]chieve water quality standards established under section 303 of the CWA, including State narrative

² Water quality standards, adopted by states and approved by EPA under the CWA, are designed to protect the public health or welfare, enhance water quality, and advance the purposes of the CWA. CWA § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A). They consist of these three components: (1) one or more "designated uses" for each water body or water body segment; (2) water quality "criteria"; and (3) an antidegradation policy. *See id.*; 40 C.F.R. §§ 131.10 to 131.12. Water quality criteria – the component at issue in the present case – can consist of numerical concentration levels and/or narrative statements specifying the amounts of various pollutants that may be present in a water body without impairing the "designated uses" of that water body. *See* Office of Water, U.S. EPA, *NPDES Permit Writer's Manual* § 6.1.1, at 89 (1996).

³ These water quality-based limits apply when technology-based limits required by section 301(b)(1)(A) are insufficient to meet the applicable state water quality standards. EPA may not issue an NPDES permit if the permit does not meet CWA section 301's effluent limitations requirements. *In re City of Fort Worth*, 6 E.A.D. 392, 394 (EAB 1996).

⁴ CWA section 401(a)(2) requires EPA to notify any state that may be affected by the proposed discharges and to "condition such license or permit in such manner as may be necessary to insure compliance with applicable water quality requirements." CWA § 401(a)(2), 33 U.S.C. § 1341(a)(2).

criteria for water quality.” 40 C.F.R. § 122.44(d)(1).⁵ Further, “[I]mitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the [Region] determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.” *Id.* § 122.44(d)(1)(i).

These provisions apply to, among others, discharges from publicly owned treatment works (“POTW”), such as the District’s Treatment Plant and the associated collection system at issue in the present case.⁶ The District’s Treatment Plant discharges into the Blackstone River, a navigable interstate water flowing from its origin in Massachusetts south into Rhode Island where it discharges into the Seekonk River, a marine water. Fact Sheet for the Draft Permit at 1, 5 (“Fact Sheet”). The Seekonk discharges into the Providence River, which flows into Narragansett Bay. *Id.* The Treatment Plant’s effluent contains a variety of pollutants, including fecal coliform, ammonia-nitrogen, phosphorus, cadmium, copper, and zinc. *Id.* at 2 & Attach. A. The District is currently authorized to discharge pollutants to the Blackstone River pursuant to an NPDES permit EPA issued on September 30, 1999, and modified on December 19, 2001. Because the District timely filed an application for permit renewal, the District’s previous, but now expired, 2001 NPDES permit remains in effect authorizing the District’s discharges until the present permitting proceeding is resolved. 40 C.F.R. § 122.6.

⁵ Section 122.44(d)(1) provides in relevant part as follows:

[E]ach NPDES permit shall include conditions meeting the following requirements when applicable.

* * *

(d) *Water quality standards and State requirements*: any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of CWA necessary to:

(1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.

40 C.F.R. § 122.44.

⁶ The term “publicly owned treatment works” is defined by the regulations at 40 C.F.R. § 403.3(o) as a municipality- or state-owned “treatment works” as defined under CWA section 212. The regulatory definition specifically includes the “POTW Treatment Plant” and the sewers, pipes and other conveyances that convey wastewater to the POTW Treatment Plant. The term “POTW Treatment Plant” is defined as the portion of the POTW designed to provide treatment of municipal sewage and industrial waste. 40 C.F.R. § 403.3(p). One of the central disputes in this case concerns the scope of the collection system that is properly included within the Permit’s requirements. These issues are discussed in Part II.C below.

This case arises out of the District's application for renewal of its NPDES permit. After receiving the District's application for permit renewal, the Region prepared a draft permit and, on March 23, 2007, the Region opened public comment on the draft permit. During the public comment period, which closed on May 25, 2007, the Region received comments from the District and from numerous other organizations and individuals. In August, 2008, the Region issued its responses to the public comments and its final Permit decision, and the parties subsequently filed their petitions requesting the Board review the Permit's conditions.

When initially issued in August 2008, the Permit did not include a limit for total aluminum. In its response brief, the Region stated that it "plans to issue a draft permit modification to establish an aluminum effluent limit," Respondent Region 1's Memorandum in Response to Petitions for Review at 133 ("Region's Resp. Br."), and on April 15, 2009, the Region issued a Permit modification setting the Permit's aluminum limit. On May 20, 2009, the District filed a petition seeking review of the aluminum limit. *See* Petition for Review of Revised Permit Conditions and Motion of the Permittee, Upper Blackstone Water Pollution Abatement District, to Consolidate this Petition with Others Related to this Permit, NPDES Appeal No. 08-11 (May 20, 2009) (herein "Dist. Al Pet."). By order dated August 6, 2009, the Board consolidated the District's petition for review of the Permit modification with the District's petition for review of other conditions of the Permit. *See* n.1.

The Board held oral argument in this matter on October 29, 2009. Subsequently, the District filed a motion seeking to correct alleged errors in the transcript of the District's argument at oral argument, and the Region and CLF filed responses stating that if any part of the transcript is corrected, all parts should be corrected. The Board denies the request to correct the oral argument transcript. The alleged transcription errors the District identifies appear to be insubstantial and are not material to the Board's decision as set forth below. The Board's decision is based on the administrative record at the time the Region issued its decision. 40 C.F.R. § 124.18. Oral argument provides the Board an opportunity to better understand the parties' arguments as set forth in the petitions and response briefs; oral argument does not supplement the record established under section 124.18. Where the Board quotes the oral argument transcript in this decision, the Board has compared the transcript to the audio recording and determined that the transcript accurately represents the arguments made. Because the Board concludes the transcription errors are insubstantial and not material to the Board's decision set forth below, it is not necessary for the Board to determine whether the numer-

ous deletions and additions the District proposes are in fact accurate.⁷

II. DISCUSSION

The parties request EAB review of the Permit's conditions on five principal grounds. First, the District, Holden, and Worcester, supported by Millbury and Cherry Valley as *amicus curiae*, challenge the Permit's provisions making Holden, Millbury, Worcester, and Cherry Valley and other municipalities co-permittees on the Permit. Second, CLF, the District, and MassDEP challenge the Permit's limits for total nitrogen, phosphorous, fecal coliform, and aluminum. Third, the District challenges the sampling and monitoring requirements for a variety of pollutants. Fourth, the District challenges the Region's determination that it is not authorized to include schedules establishing when the District must comply with the new more stringent permit limits. And, fifth, the District challenges the Region's response to the District's public comments regarding the effect of the Permit on environmental justice communities.

A. Millbury and Cherry Valley Standing

The initial question before the Board is whether Millbury and Cherry Valley have standing to contest the Permit's terms. The regulations that govern permit appeals require petitioners to have standing to appeal, which means that the petitioner must have participated in the public review process either by filing written comments or by participating in a public hearing. 40 C.F.R. § 124.19(a). If a petitioner did not participate in the public review process, it may only appeal issues pertaining to changes from the draft to the final permit. *Id.*; see also *In re American Soda, LLP*, 9 E.A.D. 280, 288 (EAB 2000); *In re Envotech, L.P.*, 6 E.A.D. 260, 266 (EAB 1996) (quoting *In re Beckman Prod. Servs.*, 5 E.A.D. 10, 16 (EAB 1994)). In the present case, Millbury and Cherry Valley do not indicate that they participated in the public review process by submitting written comments on the draft permit or by presenting testimony at the public hearing, and their arguments are not focused on changes between the draft and final permits. As such, Millbury and Cherry Valley have failed to demonstrate standing to file an appeal of the Permit under 40 C.F.R. §§ 124.13 and 124.19(a). 40 C.F.R. §§ 124.13, .19(a); see, e.g., *American Soda*, 9 E.A.D. at 288 (dismissing petitions on standing grounds); *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121,173 (EAB 1999) (discussing standing). Nevertheless, the Board generally has allowed the permittee to participate in appellate proceedings by filing a response to petitions pending before the Board and, thus, in the present context where Millbury and Cherry

⁷ If any party believes there is an error in the transcript that would have affected the Board's decision as rendered, that party should file, within 10 days after this decision is issued, a Motion for Reconsideration pointing out the alleged error and how it relates to the Board's decision.

Valley are listed as co-permittees under the Permit's terms, they will be recognized as *amici curiae* and their filings considered *amicus* briefs.

B. *Standard of Review*

The burden of persuading the Board that it should review a permit rests with the petitioner, who must demonstrate that any issues and arguments it raises on appeal have been preserved for Board review, unless the issues or arguments were not reasonably ascertainable before the close of public comment. 40 C.F.R. §§ 124.13, .19(a); see *In re City of Moscow*, 10 E.A.D. 135, 141 (EAB 2001); *In re City of Phoenix*, 9 E.A.D. 515, 524 (EAB 2000), *appeal dismissed per stip.*, No. 01-70263 (9th Cir. Mar. 21, 2002).⁸

The Board has frequently emphasized that, to preserve an issue for review, comments made during the comment period must be sufficiently specific. *In re New Eng. Plating Co.*, 9 E.A.D. 726, 732 (EAB 2001); *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 230-31 (EAB 2000); *In re Maui Elec. Co.*, 8 E.A.D. 1, 9 (EAB 1998). On this basis, the Board often has denied review of issues raised on appeal that the commenter did not raise with the requisite specificity during the public comment period. See, e.g., *New Eng. Plating*, 9 E.A.D. at 732; *Maui*, 8 E.A.D. at 9-12; *In re Fla. Pulp & Paper Ass'n*, 6 E.A.D. 49, 54-55 (EAB 1995); *In re Pollution Control Indus. of Ind., Inc.*, 4 E.A.D. 162, 166-69 (EAB 1992).

Assuming that the issues have been preserved, the petitioner must state its objections to the permit and explain why the permit issuer's previous response to those objections is clearly erroneous, an abuse of discretion, or otherwise warrants review. 40 C.F.R. § 124.19(a); see *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 668 (EAB 2001); *In re Haw. Elec. Light Co.*, 8 E.A.D. 66, 71-72 (EAB 1998). In reviewing NPDES permits, the Board is guided by the concept articulated in the preamble to the part 124 permitting regulations, which states that the Board's power of review "should be only sparingly exercised" and that "most permit conditions should be finally determined at the [r]egional level." 45 Fed. Reg. 33,290, 33,412 (May 19, 1980); accord *City of Moscow*, 10 E.A.D. at 141. A petitioner may not simply reiterate comments made during the public comment period, but must substantively confront the permit issuer's subsequent explanations. *In re Peabody W. Coal Co.*, 12 E.A.D. 22, 33 (EAB 2005); accord, *In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 666 (EAB 2006).

⁸ In other words, the regulations require that persons who seek review of a permit decision "must raise *all reasonably ascertainable issues* and submit *all reasonably available arguments* supporting their position by the close of the public comment period" on the draft permit. 40 C.F.R. § 124.13 (emphases added).

Finally, a petitioner seeking review of issues that are technical in nature bears a heavy burden because the Board generally gives substantial deference to the permit issuer on questions requiring scientific or technical judgment. *Town of Ashland*, 9 E.A.D. at 667; *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. U.S. EPA*, 185 F.3d 862 (3d Cir. 1999).

C. Challenges to the Permit's Co-Permittee Provisions

The District, Holden, and Worcester, supported by Millbury and Cherry Valley participating as *amici curiae*, seek review of the Permit's condition that makes certain entities "co-permittees." The Permit states as follows:

The City of Worcester, the Towns of Millbury, Auburn, Holden, West Boylston and Rutland, and the Cherry Valley Sewer District discharge wastewater into the [District's] facility and are co-permittees for Part D and Part E and are responsible for implementation of the operation and maintenance and reporting requirements of Parts D and E related to their respective system. The Towns of Sutton, Shrewsbury, Oxford and Paxton are also authorized to discharge wastewater into the [District's] facility. Only municipalities specifically listed above are authorized to discharge wastewater into the [District's] facility.

Permit at 1. This provision extends standard Permit conditions governing operation, maintenance, and reporting to sewage collection systems not owned or operated by the District, but instead owned and operated by the listed municipalities and Cherry Valley. There is no similar provision in the prior 2001 permit under which the District is currently authorized to discharge treated wastewater into the Blackstone River. The Region states, "historically, the Region has issued an NPDES permit only to the legal entity owning and operating the wastewater treatment plant."⁹ The Region added the co-permittees to the Permit to control inflow

⁹ The Region's response to comments explains that the Permit's co-permittee provision departs from prior practice – the Region stated:

As [the District] is well aware, historically, the Region has issued an NPDES permit only to the legal entity owning and operating the wastewater treatment plant, which is only a portion of the 'treatment works' serving the communities for whom the [District] provides wastewater treatment. The Region has now chosen to provide a more comprehensive approach to permitting these facilities to ensure proper operation and compliance of the entire treatment works, not a portion of it.

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and infiltration (“I/I”)¹⁰ in sewage collection systems transporting wastewater to the District’s Treatment Plant.¹¹

The parties and *amici* challenge this new co-permittee provision from several vectors. The parties and *amici* argue that the Region does not have the authority to add the co-permittees because the co-permittees did not sign the permit application. *See, e.g.*, Dist. Supp. Pet. at 63. The parties and *amici* also argue that the Region acted arbitrarily in determining which satellite systems to include as co-permittees and which to exclude altogether (e.g., Massachusetts Department of Conservation and Recreation) or simply list, but not add as co-permittees (e.g., Sutton, Shrewsbury, Oxford, and Paxton). Dist. Supp. Pet. at 64. They argue further that the District is improperly made liable for reporting activities associated with satellite collection systems it does not own or control and over which its enabling legislation prohibits it from exercising control. Dist. Supp. Pet. at 61-62. The District additionally argues in its reply brief that the co-permittees do not “discharge [] a pollutant” within the meaning of the statute and regulations and that the collection systems that connect to the District’s system and Treatment Plant “are exempt indirect discharges under 40 C.F.R. § 122.3.” Reply of the Permittee, Upper Blackstone Water Pollution Abatement District, to Region 1’s Memorandum in Opposition to Petitions for Review, the Amicus Curiae Brief of Rhode Island Department of Environmental Management and Other Petitions for Review (“Dist. Reply Br.”) at 9-10, 16.

(continued)

Region’s Response to Comments at 84-85 (“RTC”). Although the Region acknowledged that the inclusion in this Permit of co-permittees owning collection systems is a departure from the Region’s prior practice, the Region has informed the Board that it has taken this approach in other recently issued permits. *See* Letter from Karen McGuire, U.S. EPA Region 1, to Eurika Durr, Clerk of the Board, U.S. EPA Environmental Appeals Board (Nov. 10, 2009).

¹⁰ “Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems.” Fact Sheet at 19. “Significant I/I in a collection system uses conveyance and treatment capacity that will then not be available for sanitary flow, thereby reducing the capacity and the efficiency of the treatment works and increasing the possibility of sanitary sewer system overflows (SSO) from the collection system.” *Id.*

¹¹ The Region described the requirements imposed on the co-permittees as “reporting of unauthorized discharges including SSOs [sanitary sewer system overflows], maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to separate sewer collection systems (combined sewers are not subject to I/I requirements) to the extent necessary to prevent SSOs and I/I related effluent violations at the wastewater treatment plant, and maintaining alternate power where necessary.” Fact Sheet at 19. The Region explained that these operation and maintenance requirements are authorized by 40 C.F.R. § 122.41(e), (d), and that the Permit’s specific inflow and infiltration conditions are required by Massachusetts’ state certification issued under section 401 of the CWA. *Id.* at 18-19

At bottom, the central issue regarding the co-permittee requirement is: did the Region satisfactorily articulate a rule-of-decision, or interpretation, for expanding the Permit to encompass separately owned and operated collection systems that discharge into the District's Treatment Plant and identify a sufficient statutory and regulatory basis for that expansion?

The Region contends that it did articulate a satisfactory rationale, pointing to its interpretation of the definition of "publicly owned treatment works," which includes "sewers, pipes, and other conveyances." 40 C.F.R. §§ 122.2, 403.1; *see also* CWA § 212(2)(A), 33 U.S.C. § 1292 (definition of "treatment works" includes "sewage collection systems"). In its response to comments, the Region stated that this definition provides authority to "to regulate the entire POTW (including the treatment plant and collection systems)." RTC at 86. Following this logic, any collection system that ultimately discharges to the Treatment Plant is subject to NPDES permitting. The Region attempted to narrow this universe of potential NPDES permittees at oral argument.

At oral argument, in response to questions asking how far up the collection systems the Region's legal reasoning would allow the Region to impose co-permittee requirements, the Region stated that the Region "would regulate it in the same way" as a single-entity POTW. EAB Oral Argument Transcript ("Tr.") at 70. "We can regulate that which is legally part of the POTW that falls within the definition of POTW." Tr. at 71. When the Board sought further clarification and asked whether a public entity could be made a co-permittee, the Region responded:

No. If its part of – we're regulating here the same way we would if this were just the City of Worcester and it owned the treatment works. So we're taking the authority just as far as we would in that case – what fits within the publicly-owned treatment works in that case. So, we're not trying to go to users whether they be publicly owned.
* * * We are handling this the same way we do for the many permits we have where one municipality owns the whole thing."

Tr. 80.

The trouble with the Region's analogy, or reference, to permits issued to an entity that "owns the whole thing" is that neither this answer nor its briefs identifies criteria demarcating what is, and what is not, part of "the whole thing" in this case where the Region has, without apparent explanation, abandoned its historical practice of limiting the permit "only to the legal entity owning and operating the wastewater treatment plant." In addition, the undefined terms "collection system" and "user" do not add an analytical basis for categorizing as co-permittees certain,

but not all, entities that discharge solely to a treatment plant and employ equipment that fits within the definition of “publicly owned treatment works.” Both users and collection systems ultimately discharge to the District’s Treatment Plant,¹² and because users seemingly employ collection systems within their structures in the form of branch drainpipes that collect and transport wastewater from fixtures to the main drainpipe, there is no self-evident distinction between the “collection system” and the “user.” Indeed, what the Region left unanswered at oral argument is precisely the question that the Board asked, namely under the Region’s reasoning, how far up collection systems does the regulatory jurisdiction to impose NPDES requirements on co-permittee reach.

Even assuming that, in permits involving a single-entity POTW, the Region applies a reasonably precise distinction, other than property boundaries, identifying where the collection system ends and a user begins, that distinction is not expressed in the administrative record of this proceeding. *See, e.g., In re Deseret Elec. Power Coop.*, 14 E.A.D. 212, 250-56 (EAB 2008) (denying appeal where rationale was not articulated in the administrative record); *see also Dominion*, 12 E.A.D. at 523-24 (denied petitioner’s argument based on documents not in the administrative record); *In re Kendall New Century Dev.*, 11 E.A.D. 40, 55 (EAB 2003) (rejecting petitioner’s argument based on evidence submitted in a different permit proceeding).

¹² The Region stated in the Fact Sheet that “[b]ecause Worcester, Millbury, Auburn, Holden, West Boylston, Rutland, and Cherry Valley Sewer District each own and operate collection systems that discharge to [the District’s] treatment plant, these entities have been included as co-permittees” for the specific permit conditions in Part I.D and I.E of the Permit. Fact Sheet at 19.

The Region’s failure to articulate in the Fact Sheet a more complete rationale for its decision does not, on its own, necessitate a remand even though “the fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit.” 40 C.F.R. § 124.8(a). As explained in *Attleboro*, “the permitting authority is not required to provide comprehensive details in a fact sheet” because “[t]he rules governing permit proceedings specifically allow the permitting authority to add materials to the administrative record during its review of comments on the draft permit to address new points or new materials” and the “appeals process affords petitioners the opportunity to question” the new material. *In re City of Attleboro, MA, Wastewater Treatment Plant*, 14 E.A.D. 462-63 (EAB 2009). The preamble to the rulemaking proposal for section 124.8 stated that, although the fact sheet must “explain[] the basis for the draft permit in some detail,” nevertheless “[b]ecause there are practical limits to EPA’s ability to explain each of the permits it issues in comprehensive detail, *the discussion in the fact sheet * * * should be proportional to the importance of the issues involved and the degree of controversy surrounding them.*” Consolidated Permit Regulations, 44 Fed. Reg. 34,244, 34,264 (proposed June 14, 1979) (emphasis added). In the present case, although a more detailed discussion in the Fact Sheet was not per se error, these subsequent appeals illustrate that the Region’s brief statement on the issue quoted above was not proportional to the importance of the legal and factual issues and degree of controversy of the Region’s decision to depart from its prior practice limiting the NPDES permit’s scope to collection system owned or operated by the permit applicant. A more thorough explanation would have been helpful to public participation and the appellate process.

The Region's following explanation in its response to comments, likewise, is inadequate: "wastewater from the treatment works (including the collection system) is discharged through the outfalls at [the District's] treatment plant. Therefore, the treatment works (including the collection system) is subject to permitting." RTC at 86. This explanation also does not identify where the "collection system" ends and a "user" begins, or in any other way identify the extent to which collection systems not owned by the entity owning or operating the treatment works are subject to NPDES permitting.

The Region also did not articulate in its response to comments a legal rationale for distinguishing between the particular municipalities named as co-permittees and other municipalities that were not so named. Instead, the Region offered a pragmatic explanation for distinguishing between the two groups. The Region explained that it obtained the list it used to identify the co-permittees from the District's answers to certain questions on the permit application and, when additional municipalities were identified during the public comment period, the Region stated that "[a]s the contributions from these [additional] municipal systems are relatively smaller than the other satellite systems, EPA will not include these four [additional] municipalities as 'co-permittees' in this permit." RTC at 88. While in some circumstances EPA has authority to exclude de minimis impacts from permitting requirements,¹³ such a pragmatic explanation does not satisfy the Region's obligation to provide a legal rationale identifying the extent to which the NPDES requirements apply to collection systems that do not discharge directly to waters of the United States, but instead discharge to another entity's collection system and ultimately to the treatment plant, and that are owned by entities other than the owner of the treatment plant.¹⁴

Upon consideration, the Permit's co-permittee provision is remanded. The Region has not sufficiently articulated in the record of this proceeding a

¹³ See, e.g., *Alabama Power Co. v. Costle*, 636 F.2d 323, 400 (D.C. Cir.1979). Here, however, the Region has not provided record evidence supporting its conclusion that the excluded municipalities provide materially smaller contributions. There is no evidence regarding the relative size of these municipalities' contributions, no criteria for a de minimis determination, nor any evidence that such contributions are de minimis.

¹⁴ Likewise, although the Region's following statements at oral argument and in its response to comments may provide a practical reason for extending the Permit to include co-permittees, these statements do not identify a limiting legal principle for the geographic reach of jurisdiction proposed here in which some seemingly similarly situated entities were made co-permittees and others were not. At oral argument, the Region stated that "no one is contesting that it makes sense to do this work in light of O&M [operation and maintenance requirements]. The need for O&M is to reduce the occurrence of the tank and sewer overflows * * * ." Tr. at 72. In its response to comments, the Region explained that various regulatory provisions authorize EPA "to require appropriate operation and maintenance of collection systems" (citing 40 C.F.R. § 122.41(d), (e)) and "[s]ince the District does not own or operate some of the collection systems that discharge to the treatment works, it is appropriate to apply these conditions to the owners/operators as co-permittees." RTC at 86.

rule-of-decision, or interpretation, identifying the statutory and regulatory basis for expanding the scope of NPDES authority beyond the treatment plant owner and operator to separately owned and operated collection systems that discharge to the treatment plant.

In remanding the Permit's co-permittee provision, the Board does not pass judgment on the Region's explanation, in its response to comments, for rejecting the District's contention that the District's status as owner and operator of the treatment plant defines the scope of the NPDES authority, limiting that authority to the treatment plant and collection system owned by the District. Specifically, pointing to CWA section 212(2)(A), which defines "treatment works" as including "sewage collection systems," and to the similar regulatory definition of the term "publicly owned treatment works" found at 40 C.F.R. §§ 122.2 and 403.1, the Region explained that the treatment plant "is only a portion of the 'treatment works.'" RTC at 84. The Region stated further that it "has now chosen to provide a more comprehensive approach to permitting these facilities to ensure proper operation and compliance of the entire treatment works, not a portion of it." *Id.* at 84-85. This explanation for the Region's conclusion that it has legal authority to extend the Permit's requirements beyond what the District owns and operates must be considered, as an integrated whole, together with the Region's full legal analysis, which it has not yet provided, identifying the extent to which the NPDES requirements apply to collection systems.

The Board also reserves judgment at this time on both (1) the Region's reasons for rejecting concerns expressed in the public comments regarding whether the Region's decision to add the named co-permittees is consistent with the application signature requirements set forth in the regulations¹⁵ and (2) the District's additional argument raised in its reply brief that the co-permittees do not "discharge [] a pollutant" within the meaning of the statute and regulations and that the collection systems that connect to the District's system and Treatment Plant "are exempt indirect discharges under 40 C.F.R. § 122.3." Dist. Reply Br. at 9-10, 16. The question of consistency with the regulatory scheme is not ripe until the Board has before it the Region's full explanation identifying the extent to which the NPDES requirements apply to collection systems that do not discharge directly to waters of the United States, but instead discharge to a collection system leading to the Treatment Plant, and that are owned by entities other than the District.

¹⁵ The Region explained in its response to comments that "EPA is authorized to regulate the entire POTW (including the treatment plant and collection system). That [the District] and its member communities have decided to maintain separate ownership of the treatment plant and collection system does not require the EPA to solicit separate signatures from each of the satellite systems." RTC at 86.

Accordingly, the Permit's co-permittee provision is remanded for the Region to reconsider the extent to which the NPDES requirements apply to collection systems that discharge to the treatment plant and are owned by entities other than the District, and to fully articulate its decision in the administrative record. On remand, the Region may re-issue the Permit with, or without, the co-permittee provision as the Region determines is appropriate.¹⁶ However, in the event the Region determines to re-issue the Permit with the co-permittee provision, the Region's analysis should address the issues discussed above and it should provide sufficient detail for the Board to evaluate whether the Region's rationale is consistent with the statute and the regulatory scheme.¹⁷

D. Challenges to the Permit's Limits for Total Nitrogen

The District, CLF, and MassDEP seek review of several Permit conditions the Region established in order to ensure compliance with Rhode Island and Massachusetts water quality criteria, one of three components of state water quality standards. The parties seek review of the Region's decision establishing the Permit's limits for total nitrogen, phosphorous, fecal coliform, and aluminum. These challenges generally question whether the Permit complies with the statutory requirements for permit limits under CWA section 301 and 402 and the statutory prohibition of CWA section 401 on issuing permits that do not "insure" compliance with state water quality standards. This subsection addresses the challenges to the Permit's total nitrogen limit. Challenges to the limits applicable to phosphorus, fecal coliform, and aluminum will be addressed in the following Parts II.E, .F, and .G, respectively.

The Region found that the Treatment Plant's discharges of total nitrogen would cause or contribute to violations of Rhode Island's water quality standards, and the Region established in the final Permit a numeric limit for total nitrogen discharges of 5.0 mg/l monthly average for the months of May through October

¹⁶ There is no indication in the record of this proceeding whether the Region's historical practice of issuing NPDES permits only to the treatment plant owner was announced as a policy or interpretation.

¹⁷ Among other things, the Region's analysis should address the references to "municipality" in the regulatory definition of POTW, and the definition's statement that "[t]he term also means the municipality * * * which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works." 40 C.F.R. § 403.3(o). The Region's analysis should also explain how its rationale is consistent with the permit application signature requirements, 40 C.F.R. §§ 122.21(j)(10), 122.22, the exclusion from the permitting requirements for indirect dischargers, *id.* § 122.3(c), and the definitions of "discharge," "discharge of a pollutant," and "indirect discharger," *id.* § 122.2, including the regulatory history of those provisions (e.g., National Pollutant Discharge Elimination System, 44 Fed. Reg. 32,854, 32901 (June 7, 1979) (defining "indirect discharger" as "a non-municipal, non-domestic discharger * * *"); Consolidated Permit Regulations, 45 Fed. Reg. 33,290, 33,421 (May 19, 1980) (defining "indirect discharger" as "a nondomestic discharger * * *").

and a narrative limit specifying treatment optimization for November through April. Fact Sheet at 14. The District, CLF, and MassDEP seek Board review of this Permit condition on several grounds. CLF argues that the limit is not sufficiently stringent. CLF Pet. at 7-16. The District and MassDEP argue that the Region did not have an adequate scientific basis for the limit it chose, and the District argues further that the Region should delay its decision until there is greater scientific certainty. Dist. Supp. Pet. at 7-32; Massachusetts Department of Environmental Protection Supplemental Petition for Review ("MassDEP Supp. Pet.") at 12-16. MassDEP also argues that the limit is improperly stated as a concentration of the pollutant in the discharge and, instead, should be stated as a limit on the total mass of the pollutant that may be discharged. MassDEP Supp. Pet. at 7-12.

CLF bases its call for a more stringent total nitrogen limit on a statement in a key scientific report prepared by RIDEM, *Evaluation of Nitrogen Targets and WWTF Load Reductions for the Providence and Seekonk Rivers*, Office of Water Resources (Dec. 2004) (the "2004 RIDEM Report"), which at one point states that requiring total nitrogen controls at the limit of technology, 3.0 mg/l, will not achieve water quality compliance in portions of the Providence and Seekonk Rivers. As CLF presents it, where the record contains such a "definitive statement," CLF Reply at 2-3, there is no justification for the Region to set the Permit's limit at a less stringent 5.0 mg/l, thereby allowing the District to discharge at a concentration 1.67 times higher than the limit of technology.

In contrast, the District argues that the Region's decision is scientifically unsound and finalization of any numeric limit on total nitrogen discharges should be delayed. Dist. Supp. Pet. at 19-27. The effect of the District's request for delay would be to allow the District to continue discharging under its current permit with no limit on total nitrogen discharges. RTC at 24.¹⁸ The District does not even argue for a less stringent limit, such as a limit of 8.0 mg/l to 10 mg/l,¹⁹ which would allow total nitrogen to be discharged at concentrations 2.67 to 3.33 times higher than achievable at the limit of technology. Rather, as the District presents it, the Region does not have the authority to impose any limit whatsoever until there is a "fully developed model of the Bay," that is a mathematical model or "a TMDL that can replicate the physical and chemical conditions observed in the Narragansett Bay." Dist. Supp. Pet. at 24-25. The District argues that the Region must make this "demonstration before imposing numeric limits." Dist. Reply

¹⁸ The District's 2001 permit contains a limit for ammonia-nitrogen. Fact Sheet at 10-11.

¹⁹ The Region states that the District's Treatment Plant would be able to achieve limits in the range of 8 mg/l to 10 mg/l, after completion of upgrades that were in process during the time the Region was making its decision. RTC at 30.

at 4.²⁰

As explained in detail below, the Board concludes the Region made no clear error or abuse of discretion in the Region's analysis or decision. Briefly, CLF overstates the 2004 RIDEM Report's certainty regarding the need for controls at the limit of technology, and CLF ignores the Report's ultimate recommendation that the District's limit be set at 5.0 mg/l. Conversely, the uncertainty the District and MassDEP point to fails to show that the Region clearly erred or abused its discretion in setting the Permit's limit at 5.0 mg/l.²¹

In short, there is more than sufficient evidence in the record to establish that the Narragansett Bay and the Providence and Seekonk Rivers are severely impaired by nitrogen-driven eutrophication. The record also is sufficient to establish that the District is a significant discharger of nitrogen to the Blackstone River, which discharges into the most heavily impaired part of the upper Narragansett Bay, the Providence and Seekonk Rivers. Thus, as explained more fully below, there is no clear error in the Region's conclusion that the District's discharges of total nitrogen cause, have a reasonable potential to cause, or contribute to violations of the Rhode Island water quality standards. The Board also concludes that the limit the Region selected of 5.0 mg/l is reasonable in light of the relevant available scientific analysis and data in the administrative record, and there is no clear error or abuse of discretion in the Region's determination to state the Permit's total nitrogen limit as a limit on the concentration of total nitrogen allowed in the District's effluent. Accordingly, as explained below, the Board denies review of the Permit's total nitrogen limit.

²⁰ The District also objects to the narrative treatment optimization requirement applicable during the months of November to April (i.e. "reduce the discharge of total nitrogen * * * to the maximum extent possible."). Dist. Supp. Pet. at 52-53 (quoting Permit n. 9). The District argues that the cold-weather optimization requirement should refer to the District's "best judgment" to ensure "compliance with effluent limits," rather than requiring reductions "to the maximum extent possible." *Id.* The District has not shown clear error or an abuse of discretion. The phrase "maximum extent possible" is sufficiently certain in its meaning. A reference to the District's "best judgment" would be less certain in meaning. Accordingly, review of this issue is denied.

²¹ The Board rejects the District's argument that the Region improperly communicated with RIDEM when the Region and RIDEM communicated regarding the Fiscal Year 2006-2007 Performance Partnership Agreement. Dist. Supp. Pet. at 7-9. The District contends that the communication between the Region and RIDEM violates 5 U.S.C. § 557(d)(1), which prohibits ex parte communication in matters governed by section 557(a). The District's argument, however, must fail. The Region's permitting decision is not governed by section 557, which applies only to proceedings required to be conducted in accordance with APA section 556. 5 U.S.C. § 557(a). NPDES permitting proceedings are not required to be conducted in accordance with APA section 556. *In re USGEN New England, Inc., Brayton Point Station*, 11 E.A.D. 525, 529-30 (EAB 2004) (denying motion for formal evidentiary hearing under APA section 556), *aff'd sub nom Dominion Energy Brayton Point, LLC v. Johnson*, 443 F.3d 12 (1st Cir. 2006); Amendments to Streamline the National Pollutant Discharge Elimination System Program Regulations: Round Two, 65 Fed. Reg. 30,886 (May 15, 2000).

1. *The Region's "Reasonable Potential" Determination is Supported by the Record*

Regulatory section 122.44(d)(1) requires that the Permit must include conditions "necessary" to "[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality." 40 C.F.R. § 122.44(d)(1).²² Subparagraph (d)(1)(i) governs which pollutants must be made subject to a water quality-based effluent limit: "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the [Region] determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." *Id.* § 122.44(d)(1)(i). Factors to be taken into account in the "reasonable potential" analysis are described more specifically by subparagraph (d)(1)(ii).²³ If a pollutant discharge is found to cause, have the reasonable potential to cause, or contribute to exceedances of numeric or narrative state water quality criteria, then as discussed more fully in the next part, the permit writer must establish the limit as provided in subparagraphs (iii) through (vii). 40 C.F.R. § 122.44(d)(1)(iii)-(vii).

²² Section 122.44(d)(1) provides in relevant part as follows:

[E]ach NPDES permit shall include conditions meeting the following requirements when applicable.

* * *

(d) *Water quality standards and State requirements*: any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of CWA necessary to:

(1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.

40 C.F.R. § 122.44(d)(1).

²³ The standards governing the "reasonable potential" analysis are set forth in 40 C.F.R. § 122.44(d)(1)(ii), which provides as follows:

When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.

Id.

The Region described the two-step process governing the establishment of the Permit's water quality-based effluent limits as follows: "An NPDES permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic and whole effluent toxicity) that is or may be discharged at a level that causes or has a 'reasonable potential' to cause or contribute to an excursion above any water quality criterion. Where EPA makes such a determination, it then proceeds to establish an appropriate effluent limit." RTC at 76. The Region's "reasonable potential" analysis will be discussed in this Part II.D.1, and the Region's analysis supporting the specific numerical limit will be discussed in the following Part II.D.2.

The Region established the Permit's total nitrogen numeric effluent limit to achieve compliance with Rhode Island's narrative water quality criteria. Fact Sheet at 11-12. Specifically, the Region determined pursuant to 40 C.F.R. § 122.44(d)(1)(i) that nitrogen is present in the District's effluent at a concentration that causes, has the reasonable potential to cause, or contributes to violation of Rhode Island's narrative criteria. *Id.* at 12-14. The Region confirmed this determination in its response to comments. *See, e.g.*, RTC at 76.

The District argues that the Region clearly erred in making its "reasonable potential" determination. Dist. Supp. Pet. at 27. The District contends that "[b]ecause a proper assessment of total nitrogen has not yet been completed, Region 1 has not met its obligation to demonstrate the need for these numeric limitations." *Id.* The District presents this argument as part of a broader, undifferentiated argument²⁴ generally contending that the Region's decision does not rest on an adequate scientific foundation, specifically that a total nitrogen limit cannot be imposed without science sufficient for an analysis equivalent to a "total maximum daily load" or "waste load allocation"²⁵ for total nitrogen in the waters impacted by

²⁴ The District has not differentiated its argument to recognize the different legal rules, as described more fully in the text, governing the Region's "reasonable potential" analysis under 40 C.F.R. § 122.44(d)(1)(i) and (ii) from the Region's determination of the 5.0 mg/l Permit limit under 40 C.F.R. § 122.44(d)(1)(vi).

²⁵ Under section 303(d) of the Clean Water Act, states are required to identify those water segments where technology-based controls are insufficient to implement the applicable water quality standards, and which are therefore "water quality limited" or impaired. *See* CWA § 303(d)(1)(A), 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.2(j). Once a segment is identified as water quality limited, the state is further required to establish total maximum daily loads ("TMDLs"). CWA § 303(d)(1)(C), 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. § 130.7. A TMDL is a measure of the total amount of a pollutant from point sources, nonpoint sources, and natural background, which a water quality limited segment can tolerate without violating the applicable water quality standards. *See* 40 C.F.R. § 130.2(i). The portions of a receiving water's loading capacity that are allocated to existing or future point sources of pollution are known as waste load allocations ("WLAs"). *Id.* § 130.2(h). On the other hand, the portions attributed to existing or future nonpoint sources of pollution or to natural background sources are known as load allocations ("LAs"). *Id.* § 130.2(g). Thus, a TMDL is, in simple terms, the sum of WLAs and LAs.

the District's discharges. *Id.* at 19-27.

Notably, the District does not challenge or contest significant parts of the Region's "reasonable potential" analysis. Specifically, the District has not identified any error in the Region's description of the water quality conditions of the Providence and Seekonk Rivers and Narragansett Bay. The Region explained that the Narragansett Bay and the Providence and Seekonk Rivers have suffered severe cultural eutrophication for many years that have resulted in periodic low dissolved oxygen levels and fish kills and other impacts on fish and wildlife. *Id.* at 11-12. The Region stated as follows:

It is clear that eutrophication in the Seekonk and Providence Rivers and Narragansett Bay has reached a level where it is adversely affecting the composition of fish and wildlife; adversely affecting the physical, chemical, or biological integrity of the habitat, interfering with the propagation of fish and wildlife; adversely altering the activities of fish and wildlife; and causing dissolved oxygen to drop well below 5.0 mg/l. The effects of eutrophication, including algae blooms and fish kills, are also interfering with the designated uses of the water. Eutrophication has, therefore, reached a point where it is causing violation of water quality standards.

Fact Sheet at 12. The Region reinforced this determination in its response to comments: "The upper sections of Narragansett Bay (including the Providence and Seekonk rivers), are no longer able to support a healthy aquatic community. At times, dissolved oxygen levels decline dramatically and significant fish kills are becoming regular occurrences. Only a small fraction of the historic eelgrass habitat remains." RTC at 80. The Region further found that "the Blackstone River discharges into the relatively poorly flushed areas at the head of the Upper Bay." *Id.*

The District also has not challenged the Region's conclusion that these eutrophic and associated conditions existing in the Narragansett Bay and the Providence and Seekonk Rivers violate Rhode Island's narrative water quality criteria. Fact Sheet at 12; RTC at 79-80. The Rhode Island water quality criteria state that "[t]otal phosphorus, nitrates and ammonia may be assigned site-specific permit limits * * *," and that nutrients shall not be allowed "in such concentration that would impair any usages specifically assigned to said Class, or cause undesirable or nuisance aquatic species associated with cultural eutrophication." Fact Sheet at 12 (quoting 12-190-001 R.I. Code R. Tbl.2 § 8.D.(3)10). Rhode Island water quality criteria also state that waters shall be free of pollutants in concentrations or combinations or from anthropogenic activities that "[a]dversely affect the composition of fish and wildlife," "[a]dversely affect the physical, chemical, or biolog-

ical integrity of the habitat,” “[i]nterfere with the propagation of fish and wildlife,” or “[a]dversely alter the life cycle functions, uses, processes and activities of fish and wildlife.” Fact Sheet at 11 (quoting 12-190-001 R.I. Code R. § 8.D.(1)).²⁶ The Region correctly supported its decision by noting that Rhode Island has listed the Seekonk River and Providence River on its section 303(d) list of waters impaired for nutrients, low dissolved oxygen, and excess algal growth/chlorophyll(a). *Id.* at 7. Rhode Island has also listed the Providence River as impaired for pathogens. *Id.*

²⁶ Rhode Island’s regulations state as follows:

Water Quality Criteria – The following physical, chemical and biological criteria are parameters of minimum water quality necessary to support the surface water use classifications of rule 8.B. and shall be applicable to all waters of the State.

(1). General Criteria – The following minimum criteria are applicable to all waters of the State, unless criteria specified for individual classes are more stringent:

(a). At a minimum, all waters shall be free of pollutants in concentrations or combinations or from anthropogenic activities subject to these regulations that:

- i. Adversely affect the composition of fish and wildlife;
- ii. Adversely affect the physical, chemical, or biological integrity of the habitat;
- iii. Interfere with the propagation of fish and wildlife;
- iv. Adversely alter the life cycle functions, uses, processes and activities of fish and wildlife; or
- v. Adversely affect human health.

(b). Aesthetics – all waters shall be free from pollutants in concentrations or combinations that:

- i. Settle to form deposits that are unsightly, putrescent, or odorous to such a degree as to create a nuisance, or interfere with the existing or designated uses;
- ii. Float as debris, oil, grease, scum or other floating material attributable to wastes in amounts to such a degree as to create a nuisance or interfere with the existing or designated uses;
- iii. Produce odor or taste or change the color or physical, chemical or biological conditions to such a degree as to create a nuisance or interfere with the existing or designated uses; or,
- v. Result in the dominance of species of fish and wildlife to such a degree as to create a nuisance or interfere with the existing or designated uses.

The District also has not challenged the Region's determination that nitrogen is a significant cause and contributing factor in creating the eutrophic and associated conditions that violate water quality standards observed in the Narragansett Bay and the Providence and Seekonk Rivers. The Region explained that excessive loadings of nitrogen in marine water causes or contributes to eutrophication and water-quality-damaging plant growth. RTC at 79-80, 92 106; Fact Sheet at 8-12. Indeed, the District specifically states that it does not dispute the "basic relationship between excessive nutrients and environmental impairment." Dist. Supp. Pet. at 22.²⁷

The District also has not identified any error in the Region's conclusion that "[t]he predominant sources of the nitrogen loading in the Providence and Seekonk Rivers are municipal wastewater treatment facilities in Rhode Island and Massachusetts." Fact Sheet at 12. The Region explained as follows:

Numerous scientific studies conducted over the last 15 – 20 years have documented that excessive discharges of nitrogen are causing the impairment and wastewater discharges are the dominant source of nitrogen. *See also Nutrient and Bacteria Pollution Panel, Initial Report, Governor's Narragansett Bay and Watershed Planning Commission, March 2, 2004 at page 3 (summarizing studies).*

RTC at 80.

The District also has not identified any record evidence that would contradict the Region's determination that the District's effluent "is the dominant source of nitrogen loadings to the Blackstone River." Fact Sheet at 12-13. The Region explained that:

[T]he UBWPAD – with a permitted design flow of 56 MGD – is one of the largest sources of nitrogen to Narragansett Bay. The loadings data utilized in DEM's 2004 study indicate that UBWPAD represented approximately 64% of the nitrogen load discharged to the Blackstone River from municipal wastewater treatment facilities for the period of time considered in the study.

²⁷ The District specifically acknowledges that "[t]he relationship between productivity, as measured by chlorophyll-a, and concentrations of nutrients is well established by the MERL data." Dist. Supp. Pet. at 21.

RTC at 80.²⁸ Although the District states that it “disagrees with the Region’s characterization of the District’s relative contribution of loadings,” Dist. Supp. Pet. at 13 (quoting RTC at 53), the District has not identified any evidence in the record showing error in the Region’s conclusion that the District is the dominant nitrogen source.

Instead, the District attempts to carry its entire burden of showing clear error in the District’s “reasonable potential” analysis by pointing to uncertainty regarding the precise relative contribution of the District’s nitrogen discharges to the overall eutrophication problem in Narragansett Bay and the Providence and Seekonk Rivers. See Dist. Supp. Pet. at 27. That is simply not sufficient where the applicable legal standard looks not only to whether the District’s discharges “cause,” but also whether those discharges either “contribute to” or have a “reasonable potential” to cause, a violation of Rhode Island’s water quality standards.

The requirement to impose a permit limit is not only premised on a finding that the pollutant discharges “are” at a level that “causes” violation of the applicable water quality standards, but the requirement is also triggered by a finding that the facility’s pollutant discharges “may” be at a level that “contributes” to or has the “reasonable potential” to cause a violation. 40 C.F.R. § 122.44(d)(1)(i). The juxtaposed contrasts between “are” and “may,” and between “cause” and both “contribute” and “reasonable potential,” indicate that the Region is not limited, as the District contends, to acting only where there is certainty of an existing causal link between a specific discharge and a particular violation of water quality standards. Instead, the regulation requires water quality-based effluent limits even when there is some degree of uncertainty regarding both the precise pollutant discharge levels and the potential causal effects of those discharges, so long as the record is sufficient to establish that there is a “reasonable potential” for that discharge to cause or contribute to a violation of water quality standards.²⁹ Agency guidance and the Board’s decisions have also stated that the reasonable potential analysis must be based on the “worst-case” effluent conditions. *In re Wash. Aqueduct Water Supply Syst.*, 11 E.A.D. 565, 584 (EAB 2004); *accord Am. Iron & Steel Inst. v. EPA*, 115 F.3d 979, 1001 (D.C. Cir. 1997) (discussing EPA’s policy that the reasonable potential analysis be based on the worst case scenario). The regulations, thus, require a precautionary approach when determining whether the permit must contain a water quality-based effluent limit for a particular pollutant.

The District’s references to uncertainty or lack of precision in the Region’s determination of the District’s contribution to the problem relative to the contribu-

²⁸ The acronym UBWPAD stands for Upper Blackstone Water Pollution Abatement District, the petitioner in this case.

²⁹ “Reasonable potential” requires some degree of certainty greater than a mere possibility, but it leaves to the permit writer’s scientific and technical judgment how much certainty is necessary.

tions of non-point sources of nitrogen and other municipal waste treatment plants are simply insufficient to overcome the substantial weight of scientific evidence in the record that, even if the precise relative contribution is uncertain, the District's discharges are a significant contributor of nitrogen to the Blackstone River, which discharges to the Seekonk and Providence Rivers, thereby contributing to those rivers' nitrogen-driven eutrophication problem that frequently violates Rhode Island's water quality criteria. The Region specifically found as follows:

Numerous scientific studies conducted over the last 15 – 20 years have documented that excessive discharges of nitrogen are causing the impairment and wastewater discharges are the dominant source of nitrogen. *See also Nutrient and Bacteria Pollution Panel, Initial Report*, Governor's Narragansett Bay and Watershed Planning Commission, March 2, 2004 at page 3 (summarizing studies). The UBWPAD – with a permitted design flow of 56 MGD – is one of the largest sources of nitrogen to Narragansett Bay. The loadings data utilized in DEM's 2004 study indicate that UBWPAD represented approximately 64% of the nitrogen load discharged to the Blackstone River from municipal wastewater treatment facilities for the period of time considered in the study. In addition, the Blackstone River discharges into the relatively poorly flushed areas at the head of the Upper Bay, which has exacerbated the impact of nutrients. Based on review of these various reports and studies of impairments in the Upper Bay and sources and loadings of nutrients, EPA concluded that discharges of nitrogen from the UBWPAD facility are causing or have the reasonable potential to cause or contribute to violations of Rhode Island's water quality standards.

RTC at 80. The District does not cite any data or scientific analysis that would contradict the data and analysis the Region relied upon.

The District is simply wrong when it asserts both that the Region did not identify an effects based relationship between nitrogen and eutrophication and that the Region did not "link the relationship to any impairment of designated uses in the receiving water or downstream." Dist. Reply at 3. The Region provided an extensive explanation of the impact of eutrophication on "the composition of fish and wildlife," interference with "propagation of fish and wildlife," fish kills, and impaired growth of eel grass. Fact Sheet at 12; RTC at 21, 27, 29-30, 80; *accord* RTC at 114 ("The nitrogen reductions required through this permit will have substantial environmental benefits, including significant reductions in algal growth

and associated dissolved oxygen impairments that have severely impaired the marine fish community and recreational use of Narragansett Bay.”).

A complete assessment of, and development of a mathematical model that precisely predicts the fate and transport of nitrogen throughout the Narragansett Bay system is not necessary for the Region to have had a sufficient scientific basis for its finding that the District’s nitrogen discharges contribute to, or have the reasonable potential to cause, the undisputed water quality impairments observed in the Seekonk River, and further downstream in the Providence River and Narragansett Bay.³⁰ Accordingly, the District has failed to sustain its burden to show clear error or abuse of discretion in the Region’s determination that the total nitrogen in the District’s discharges causes, contributes to, or has the reasonable potential to cause violations of Rhode Island’s narrative water quality criteria.

2. The Total Nitrogen Discharge Limit of 5.0 mg/l Is Supported by the Record

When a pollutant discharge is found to cause, have the reasonable potential to cause, or contribute to exceedances of numeric or narrative state water quality criteria, as the Region found for the District’s total nitrogen discharges in the present case, then the permit writer must include in the permit a water quality-based effluent limit determined as provided in 40 C.F.R. § 122.44(d)(1)(iii)-(vii).³¹ Subparagraph (vi) provides three alternative methods for establishing the specific per-

³⁰ The District also argues that, while the Region acknowledges that other sources are contributing to nutrient loadings, the Region does not account for those other sources. Dist. Supp. Pet. at 13, 24-25. The District states further, “the Region makes no attempt to determine how various nutrient loadings from various sources would affect the causal factors, and how the response of these causal factors impairs designated uses.” Dist. Reply at 3. The District argues that “these other sources * * * prevent the system from meeting standards.” Dist. Supp. Pet. at 13. As explained in *Attleboro*, “section 301(b)(1)(C) requires each point source to achieve effluent limitations necessary to meet water quality standards and does not make allowance for failure of other sources to comply.” *Attleboro*, slip op. at 43 (citing *In re Blue Plains Sewage Treatment Plant*, 1 E.A.D. 531, 540 (Adm’r 1979), 14 E.A.D. at 430. Accordingly, the District’s arguments regarding discharge levels of other sources or point sources do not show clear error in the Region’s decision and do not provide justification for delay in imposing more stringent limits on the District. *Id.*

³¹ To assist permit issuers in their development of water quality-based effluent limits, EPA published technical guidance documents that propose methods for classifying, sampling, analyzing, and calculating relevant parameters. *See, e.g.*, Office of Water, U.S. EPA, EPA 822-B-01-015, *Ambient Water Quality Criteria Recommendations: Rivers and Streams in Nutrient Ecoregion 8* (Dec. 2001); Office of Water & Office of Science & Technology, U.S. EPA, EPA-822-B-00-002, *Nutrient Criteria Technical Guidance Manual: Rivers and Streams (July 2000)*; Office of Water Regulations & Standards, U.S. EPA, EPA 440/5-86-001, *Quality Criteria for Water: 1986* (May 1, 1986) (the “Gold Book”); Memorandum from Geoffrey Grubbs, Director, Office of Science & Technology, U.S. EPA, to Water Directors, EPA Regions 1-10, et al. (Nov. 14, 2001); Office of Water, U.S. EPA, EPA-833-B-96-003, *U.S. EPA NPDES Permit Writers’ Manual*, chs. 6, 10.2, at 87-114, 176-178 (Dec. 1996).

mit limit in circumstances where the state's water quality standard is narrative, not numeric, as is the case here. *Id.* § 122.44(d)(1)(vi)(A)-(C).³²

In the present case, the Region determined the Permit's total nitrogen effluent limit of 5.0 mg/l applying paragraphs (A) and (B) using a wide range of relevant information, including EPA technical guidance, state laws and policies applicable to the narrative water quality criterion, and site-specific studies. RTC at 28, 94. The Region paid particular attention to the 2004 RIDEM Report. Fact Sheet at 12.³³ This Report explains that, because the Rhode Island Department of Environmental Management was not able to develop a computer-based numerical model for the Providence and Seekonk Rivers, the Report focused instead on the results of, and adjustments to, a physical model experiment conducted in the early 1980s by the Marine Ecosystems Research Laboratory ("MERL") at the University of Rhode Island. 2004 RIDEM Report at 1. The MERL experiment was designed to study the relationship between nitrogen and phosphorus loading and va-

³² Section 122.44(d)(1)(vi) provides:

Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:

(A) Establish effluent limits using a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use. Such a criterion may be derived using a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents; or

(B) Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information; or

(C) Establish effluent limitations on an indicator parameter for the pollutant of concern * * * .

40 C.F.R. § 122.44(d)(1)(vi)(A)-(C).

³³ The 2004 RIDEM Report both provides a review of the available science and provides RIDEM's interpretation of what total nitrogen limits and reductions are required to achieve compliance with Rhode Island water quality standards. That report generally recommends a total nitrogen limit of 5.0 mg/l for the larger treatment plants discharging into the portions of the Narragansett Bay and river system that are most impaired. Brief of Amicus Curiae Rhode Island Department of Environmental Management ("RIDEM Br.") at 5.

rious response variables in a tank system structured to model the Narragansett Bay system. Fact Sheet at 12-13; RTC at 29. Based on its analysis of this information and other information in the record, the Region determined that “a seasonal reduction of nitrogen to no more than 5.0 mg/l is required at the [District’s Treatment Plant] in order to achieve water quality standards.” Fact Sheet at 14. The Region specifically determined that “the limits on total nitrogen are necessary to ensure compliance with Rhode Island Water Quality Standards.” RTC at 19. The Region recognized that there are uncertainties in its analysis, but concluded that “[t]here is no realistic likelihood, * * * that water quality standards could be met with a less stringent nitrogen limit than the one proposed.” Fact Sheet at 14; *see also* RTC 29-32, 50, 94. The Region also stated that “no less stringent limit could be imposed that would still ensure compliance with water quality standards in light of the severe existing eutrophic condition in the Providence/Seekonk River system, indicating that it is significantly overallocated for nitrogen.” RTC at 50.³⁴

The District challenges this determination, arguing that the Region chose the limit “without sufficient technical basis to determine whether such limit is appropriate and necessary to address impairments to waterways within Massachusetts or Rhode Island.” Dist. Supp. Pet. at 24; *see also id.* at 14. The District contends that setting a water quality-based effluent limit for total nitrogen should be “deferred to the future completion of a total maximum daily load (“TMDL”).” Dist. Supp. Pet. at 11. The District also challenges the Region’s reliance on the MERL experiment and the District argues that the Region failed to adequately make numerous adjustments to account for differences between the physical model and the actual Rivers’ conditions. Dist. Supp. Pet. at 19-27. In contrast, CLF challenges the Permit’s total nitrogen limit as not sufficiently stringent to ensure compliance with water quality standards.

³⁴ In the Fact Sheet, the Region stated, “[b]ased on the available evidence, including nitrogen loadings from the [District’s Treatment Plant] and the discharge of the Blackstone River to the Seekonk River, where the greatest impacts have been measured, EPA has concluded that a seasonal reduction of nitrogen to no more than 5.0 mg/l is required at the [District’s] facility in order to achieve water quality standards.” Fact Sheet at 14. The Region also stated in its response to comments that “[t]he reductions required at the [District’s] facility through this permit in conjunction with reductions at other facilities * * * and improvements are necessary to address the ongoing severe impairments to the marine fish community and to restore the recreational use of Narragansett Bay.” RTC at 30. Further, “[o]f the various loading scenarios available to it, EPA determined that a concentration-based limit of 5 mg/l would be necessary to address the excessive loading from the facility, which both EPA and Rhode Island have determined are contributing to ongoing water quality impairments in the Narragansett Bay system.” *Id.* at 49. “EPA determined that a limit of 5.0 mg/l total nitrogen for [the District’s] discharge is necessary in order to achieve water quality standards. *Id.* at 54. “The Region has concluded, however, that a nitrogen limit at least [as] stringent as 5.0 mg/l for the [District’s Treatment Plant] is necessary to prevent further degradation of the Bay.” *Id.* at 61.

This subsection first looks, in Part (a), at the question whether the District has shown clear error or an abuse of discretion in the Region's decision to move forward with establishing the limit at this time without waiting for additional scientific data and analysis, including a TMDL. Part (b), next, considers whether the administrative record supports the Region's decision setting the limit at 5.0 mg/l, and Part (c) looks at the converse question, whether the record requires a more stringent limit.

a. *Further Delay in Setting the Limit Is Not Justified*

The District argues that the Permit's total nitrogen limit "should be based on accepted, reliable data and analysis, or if such is not currently available, deferred to the future completion of a total maximum daily load ('TMDL')." Dist. Supp. Pet. at 11. Although the District clearly states that it "does not contest" the Region's statement that the Region is not required to wait for a TMDL to be developed, the District nevertheless argues that the Region should have waited for a TMDL. For example, the District states as follows:

The results of the 1981-84 MERL laboratory tank studies are not an acceptable substitute for a TMDL to establish total nitrogen effluent limits. RIDEM should complete the federally-required TMDL before Region 1 imposes the proposed total nitrogen permit modification.

Dist. Supp. Pet. at 25. The District also contends that the technical analysis required for establishing numeric permit limits under section 122.44(d)(1)(vi) is the same as required for establishing a TMDL or wasteload allocation and that, therefore, the Region committed clear error by not waiting for the development of more certain science capable of establishing a TMDL or wasteload allocation for the Narragansett Bay system. *Id.* at 15.

The Board rejects any suggestion that the Region's decision to proceed without waiting to develop a TMDL or wasteload allocation was clear error or an abuse of discretion. The regulations specifically contemplate that permit issuers will establish numeric permit limits when there is no TMDL or wasteload allocation. Subsection (vii) requires the permitting authority to "ensure" that effluent limits are consistent with "any *available* wasteload allocation." 40 C.F.R. § 122.44(d)(1)(vii) (emphasis added). By using the phrase "any available," the regulations expressly recognize that a TMDL or wasteload allocation may not be available.

This reading of the regulation is compelled by the Agency's interpretation set forth in the preamble to 40 C.F.R. § 122.44(d)(1), which expressly outlines the relationship between subsections (vi) governing the setting of limits based on nar-

rative criteria and (vii), which requires consistency with “any available” waste load allocation or TMDL:

The final point about paragraph (vi) is that, *in the majority of cases where paragraph (vi) applies, waste load allocations and total maximum daily loads will not be available* for the pollutant of concern. Nonetheless, any effluent limit derived under paragraph (vi) must satisfy the requirements of paragraph (vii). Paragraph (vii) requires that all water quality-based effluent limitations comply with “appropriate water quality standards,” and be consistent with “available” waste load allocations. *Thus for the purposes of complying with paragraph (vii), where a wasteload allocation is unavailable, effluent limits derived under paragraph (vi) must comply with narrative water quality criteria and other applicable water quality standards.*

54 Fed. Reg. 23,868, 23,878 (June 2, 1989) (emphases added). This formal Agency interpretation set forth in the preamble at the time the regulation was promulgated expresses the Agency’s expectation that, while wasteload allocations may not uniformly be available, effluent limits must be established without waiting for a TMDL or wasteload allocation.

There also is no clear error in the Region’s conclusion that the statute does not contemplate a delay in processing applications for permit renewal to wait for development of a wasteload allocation or TMDL. The Region stated that “[t]he clear intent of the statute is to ensure that permit requirements are updated on a regular basis rather than left in effect, unexamined and unchanged for long periods of time.” RTC at 31. The Region correctly observed that “[t]he CWA and EPA’s regulations require that permits be issued for fixed periods of time not to exceed five years.” RTC at 31 (citing 33 U.S.C. §§ 1342(a)(3), (b)(1)(B); 40 C.F.R. § 12.46(a)). Notably, the statute states an ambitious goal of eliminating pollution discharges by 1985, CWA § 101(a)(1), 33 U.S.C. § 1251(a), and it generally makes the discharge of any pollutant unlawful, and requires there to “be achieved” “not later than July 1, 1977, any more stringent limitation, including those necessary to meet water quality standards.” CWA § 301(a), (b)(1)(C), 33 U.S.C. § 1311(a), (b)(1)(C). The statute also prohibits the issuance of a permit “[i]f the imposition of conditions cannot insure such compliance” with applicable water quality requirements of affected states. CWA § 402(a)(2), 33 U.S.C. § 1341(a)(2).

The District has cited no law, regulation, or Agency policy that would allow a permit application to remain pending for an indefinite, unlimited extension of time to allow additional scientific data or analysis to be developed to support the

applicant's claim that its discharges will not violate the water quality standards of affected states. To the contrary, scientific uncertainty is not a basis for delay in issuing an NPDES permit. The Board has specifically held that "[i]n the face of unavoidable scientific uncertainty, the Region is authorized, if not required, to exercise reasonable discretion and judgment." *In re Dominion Energy Brayton Point, LLC*, 13 E.A.D. 407, 426 (EAB 2007).

The federal courts in reviewing Agency decisions have similarly recognized that scientific uncertainty is not a bar to administrative decisionmaking: "We do not demand certainty where there is none. There may be no strong reason for choosing [a particular numerical standard] rather than a somewhat higher or lower number. If so, we will uphold the agency's choice of a numerical standard if it is within a 'zone of reasonableness.'" *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 525 (D.C. Cir. 1983) (citation omitted); *see also Hercules, Inc. v. EPA*, 598 F.2d 91, 116-17 (D.C. Cir. 1978). More than three decades ago, the D.C. Circuit aptly described the CWA's balance when confronted with a difficult situation and the obligation to eliminate water quality impairments: "EPA may issue permits with conditions designed to reduce the level of effluent discharges to acceptable levels. This may well mean opting for a gross reduction in pollutant discharge rather than the fine-tuning suggested by numerical limitations. *But this ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.*" *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977) (emphasis added) (finding unlawful a rule that would have exempted certain discharges from permitting requirements based on the difficulty in setting limits). Here, the District's "wait and see" approach would allow the District to continue discharging without any limit on total nitrogen discharges – effectively abdicating the responsibility to set permit limits when faced with difficulty establishing the limit.

The Region also explained that "[i]t is not appropriate to adopt a 'wait and see' approach" in the circumstances of this case where the record demonstrates "there is no reasonable likelihood that water quality standards relative to eutrophication will be achieved with less stringent limits." RTC at 32. Further, "[w]ith regard to the Upper Narragansett Bay, for the past decade or more RIDEM expended significant resources in an attempt to simulate the estuary through the use of mathematical models and had concluded that the system was too complicated to simulate with available mathematical models." RTC at 96.³⁵ The Region also explained that its "decision to move forward now with a nitrogen limit" takes into

³⁵ The Board rejects the District argument that merely because the Region referred to the so-called Kester model, the Region in effect acknowledged that a useful model for the rivers exists. Dist. Supp. Pet. at 27. As the Board stated in *Attleboro*, there is "no indication that the Kester Model will adequately address nutrient impacts or that it would be helpful in deriving nitrogen permit limits." *Attleboro*, 14 E.A.D. at 415.

consideration “the existing severe nitrogen-driven cultural eutrophication in the receiving waters and the tendency for nitrogen to not only exacerbate existing water quality impairments but to persist in the environment in a way that contributes to future water quality problems. In light of these factors, delay in establishing permit limits is inappropriate.” RTC at 96. As described below, the Region based its determination to set a total nitrogen limit of 5.0 mg/l on a substantial body of record evidence.

All of these reasons – the regulation’s direction to establish water quality-based effluent limits even in the absence of a TMDL or wasteload allocation, the statute’s directive and policy to move forward expeditiously to address pollution problems in the Nation’s waters, and the specific facts here regarding the severe impairment of the affected waters and the lack of current ability to mathematically model the fate and transport of nitrogen in those waters – are more than sufficient to defeat the District’s argument that the Region committed clear error or abuse of discretion in declining to wait any longer before establishing the Permit’s water quality-based effluent limit for total nitrogen.

b. The Data and Analysis in the Record Support a 5.0 mg/l Total Nitrogen Limit

This part considers the District’s and MassDEP’s challenges to the specific information, data, and analysis the Region used to explain its decision setting the Permit’s water quality-based effluent limit for total nitrogen at 5.0 mg/l. The District argues that the Region clearly erred in utilizing the results of the MERL physical model experiment, because the MERL experiment was designed to model the Narragansett Bay and, according to the District, is not appropriate to be used as a physical model of the Providence and Seekonk Rivers. Dist. Supp. Pet. at 19-27. The District argues that the differences between the physical model and the Rivers demonstrate that it was not appropriate for the Region to consider the MERL data. The District further argues that, even if use of the MERL model were appropriate, the Region did not make appropriate and sufficient adjustments to account for the differences. *Id.* Specifically, the District argues that “river systems are entirely different than bays” and “the conditions in the Providence and Seekonk River are materially different than the conditions under which the experiments were conducted.” *Id.* at 19-20. The District identifies concerns regarding attenuation and flushing that it believes the Region failed to adequately take into account. MassDEP raises similar arguments. In short, the District and MassDEP argue that the imprecision and uncertainty in the data and analysis in the record preclude the Region’s decision setting the Permit’s limit at 5.0 mg/l and require a remand. As explained below, none of these arguments demonstrate clear error in the Region’s decision.

In general, the selection of representative data for the analysis under section 122.44(d)(1) is a technical judgment that falls within the permit issuer’s discretion

and technical expertise. See *In re Wash. Aqueduct Water Supply Sys.*, 11 E.A.D. 565, 583 (EAB 2004); accord *American Iron & Steel Inst. v. EPA*, 115 F.3d 979, 1006 (D.C. Cir. 1997). Similarly, the use of a physical model, instead of a mathematical model or other site-specific model, to derive effluent limitations is a technical judgment that also falls within the Region's discretion and expertise. *Attleboro*, 14 E.A.D. at 411. In addition, the applicable regulation in the present case authorizes the Region to consider "relevant" information in establishing numeric permit limits to achieve narrative state water quality criteria. 44 C.F.R. § 122.44(d)(1)(vi)(A), (B). As such, the petitioner bears a particularly heavy burden to establish clear error or an abuse of discretion because the Board generally defers to the permit issuer on questions of technical judgment. *Attleboro*, 14 E.A.D. at 411; *Dominion*, 12 E.A.D. at 510; *In re Peabody W. Coal Co.*, 12 E.A.D. 22, 33-34 (EAB 2005); *In re Teck Cominco Alaska, Inc.*, 11 E.A.D. 457, 473 (EAB 2004).

For technical issues, the Board determines whether the record demonstrates that the permit issuer duly considered the issues raised in the comments and whether the approach ultimately adopted by the permit issuer is rational in light of all the information in the record. *Attleboro*, 14 E.A.D. at 411; *Dominion*, 12 E.A.D. at 510; *In re Gov't of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002) ("DC MS4"); *NE Hub*, 7 E.A.D. at 568. If the Board is satisfied that the permit issuer gave due consideration to comments received and adopted an approach in the final permit decision that is rational and supportable, the Board typically will defer to the permit issuer. *NE Hub*, 7 E.A.D. at 568. Thus, the question here is whether the Region explained its determination to rely on the MERL data and whether the Region's analysis is rational and supported in the record.

In its response to comments, the Region rejected the suggestion that it cannot use the MERL experiment because it is a physical model, not mathematical: "[t]hat the MERL tank experiments were a physical rather than mathematical model and could not completely simulate the complex natural setting of Narragansett Bay does not undermine the relevance and validity of the model to the nitrogen limits here." RTC at 96. The Region's position in this regard is consistent with EPA policy:

There are many other examples of empirical models used to relate environmental forcing functions to ecological responses, especially nutrient load/concentration and response relationships. Much of the professional aquatic ecological literature reports on use of empirical models (e.g., Chapters 2 and 3). Empirical models have their limitations, but when judiciously applied, they offer a highly useful tool to water quality managers.

Office of Water, U.S. EPA, EPA-822-B-01-003, *Nutrient Criteria Technical Guidance Manual, Estuarine and Coastal Marine Waters* at 9-2 (Oct. 2001). Empirical modeling is a simplified representation of a system, such as the MERL physical model, from which observational or experimental data is collected.

The Region also explained that the MERL data is particularly relevant here to understanding the extent of existing nitrogen impairment and required nitrogen reductions:

The basic relationship demonstrated by the MERL tank experiments between the primary causal and response variables relative to eutrophication corresponds to what is actually occurring in the Providence/Seekonk River system. Both the MERL tank experiments and the data from the Providence/Seekonk River system indicate a clear correlation between nitrogen loadings, dissolved oxygen impairment and chlorophyll *a* levels.

RTC at 48.

The Region explained the observed consistency between the MERL experiment and the conditions in the Providence and Seekonk Rivers with respect to dissolved oxygen ("DO") as follows:

Low dissolved oxygen levels, as well as supersaturated dissolved oxygen levels, are indicators of cultural eutrophication. Figures 1 through 3 in the Evaluation of Nitrogen Targets and WWTF Load Reductions for the Providence and Seekonk Rivers show the dissolved oxygen measurements taken from MERL tank experiment and demonstrate that the range and variability of DO increases with increased nutrient loading. As described in the text of the report, and shown in Figure 13, the DO in the Seekonk River showed patterns of DO variability similar to that of the high enrichment tanks in the MERL experiments.

Id. The Region explained the observed consistency between the MERL experiment and the conditions in the Providence and Seekonk Rivers with respect to chlorophyll *a* as follows:

Phytoplankton, as measured by chlorophyll *a* levels, is an even stronger response indicator of cultural eutrophication than DO. Coastal areas without high nutrient loads are expected to have chlorophyll *a* levels in the 1 to 3 g/l range

* * * . Massachusetts has identified chlorophyll *a* levels of less than 3 g/l as representing excellent water quality and chlorophyll *a* levels similar to the levels in the Providence/Seekonk River system as representing significantly impaired waters * * * . Peak chlorophyll *a* levels in the Providence/Seekonk River system have exceeded 200 g/l * * * . The MERL tank experiments showed a correlation between nitrogen loading rates and chlorophyll *a* levels * * * . These results were consistent with RIDEM data from 1995-96, which indicate that mean photoplankton chlorophyll *a* levels in the three Seekonk River monitoring stations ranged from 14 g/l to 28 g/l, with the highest levels in the upper reaches of the river and the lowest levels in the lower reaches of the river * * * . These chlorophyll *a* levels correlate with total nitrogen levels and with the dissolved inorganic nitrogen levels * * * .

Id. (citations omitted). There is no clear error in these reasons for considering the MERL data in the Region's analysis of an appropriate effluent limitation for nitrogen given the observed consistency between nitrogen levels and the response variables of DO and chlorophyll *a*. Neither the District, nor MassDEP, directly challenge the Region's articulated reasons for utilizing the MERL data. Instead, both the District and MassDEP argue that the MERL experiment did not model a number of River features that they contend would impact concentration of nitrogen in the River environment, namely dilution, attenuation, and contribution of other sources. As explained below, the District's and MassDEP's arguments are not sufficient to show that the Region committed clear error or abused its discretion.

Both the District and MassDEP argue that the MERL experiment used a "flushing rate" – the rate at which water flows in and out of the system – that is different from the Rivers' flushing rate and that understates dilution of nitrogen discharges in the River environment. Dist. Supp. Pet. at 21-22, 24; MassDEP Supp. Pet. at 14. Both observe that the Rivers flush at a rate of several days – that is, the total volume of inflow and outflow equals the Rivers' volume in several days time – whereas the MERL experiment used a flushing rate of 27 days. Dist. Supp. Pet. at 21-22, 24; MassDEP Supp. Pet. at 14. While MassDEP does not explain how it believes a different flushing rate would impact nitrogen-laden discharges in the Rivers, the District attempts such an explanation in a footnote. Dist. Supp. Pet. at 21 n.3. As described below, the District's explanation, however, is unpersuasive as an effort to demonstrate that the MERL data is irrelevant and that the Region did not take this difference into account.

The District explains that the flushing rate impacts the dilution of nitrogen-laden discharges – the District states that the interaction in the MERL experi-

ment between flushing rate of inflow water and grams of nitrogen added to the tank under the highest level, referred to as the 32x loading, would produce an ambient nitrogen concentration at equilibrium of 2.68 mg/l. Dist. Supp. Pet. at 21 n.3 (calculating the equilibrium point under the MERL experiment 32x loading). The District asserts that a more rapid flushing rate will produce a lower equilibrium nitrogen concentration. *Id.* That statement is correct for an experiment where a more rapid flushing rate is achieved by mixing the same mass of nitrogen with a higher volume of inflow water, as the District describes in its example. *Id.* In the District's example, the lower equilibrium is a direct consequence of a lower concentration of nitrogen in the inflow (the nitrogen is diluted by a higher volume of inflow). The District has not, however, identified a source of inflow water that will dilute the District's discharge to produce a lower ambient concentration. As noted above, under low flow conditions, the District's discharge dominates the Backstone River's flow.³⁶

Significantly, the Permit's discharge concentration limit of 5.0 mg/l is almost two times higher than the concentration level the District calculates was present in the MERL experiment's most severely impaired 32x tanks. The District's argument does not demonstrate how the Rivers' flushing rate will dilute the 5.0 mg/l discharge concentration to produce an ambient concentration low enough at the point of impact to achieve the DO and chlorophyll *a* levels that would be consistent with a healthy marine environment. The MERL experiment at both the 32x loading and at the lower 16x loading produced ambient nitrogen concentrations that were correlated with DO and chlorophyll *a* levels consistent with a severely impaired waterway. Compare 2004 RIDEM Report at 1-8 with RTC at 48 (discussing and citing Office of Water, US EPA, EPA-822-B-01-003, *Nutrient Criteria Technical Guidance Manual: Estuarine and Coastal Marine Waters* (Oct. 2001), and MassDEP, Univ. of Mass. Dartmouth School of Marine Science and Tech., *Massachusetts Estuaries Project – Site-Specific Nitrogen Thresholds for Southeastern Massachusetts Embayments: Critical Indicators* (Interim Report, July 21, 2003)).

Both the District and MassDEP contend that the 2004 RIDEM Report identified an inconsistency between the MERL data and the observed River conditions based on flushing rate. See Dist. Supp. Pet. at 22; MassDEP Sup. Pet. at 14. The 2004 RIDEM Report noted that mean dissolved inorganic nitrogen ("DIN") observed in 1995/1996 River data was lower than would be expected from the mean MERL data. See 2004 RIDEM Report at 12. While MassDEP points to this inconsistency as showing that the MERL experiment failed to "account for real-world variables," MassDEP Sup. Pet. at 14, the District argues that the MERL data

³⁶ It is undisputed that in low flow conditions, the District's Treatment Plant, with a design capacity of 56 million gallons per day, dominates the Blackstone River's flow of 5.5 million gallons per day. Fact Sheet at 2.

“substantially overstate the impact of the 1995/1996 loading” and that the lower observed DIN “is entirely consistent with more rapid flushing times of the River systems, which result in far lower ambient concentrations.” Dist. Supp. Pet. at 22.

These arguments, however, do not address the 2004 RIDEM Report’s observation that the lower River DIN data may be attributable to factors other than flushing, such as DIN uptake by macroalgae and denitrification in the bottom waters. 2004 RIDEM Report at 12. The Region, in its response to comments, also identified other explanations for the discrepancy in DIN values, including “stratification,” RTC at 49, and the 2004 RIDEM Report’s discussion of the Rivers’ flushing rate in low flow conditions, 2004 RIDEM Report at 12. More important, the District’s and MassDEP’s arguments do not show error in the Region’s reasons for finding the MERL data relevant, namely the consistency between the MERL data and Rivers’ data with respect to the correlation between nitrogen levels and DO and chlorophyll *a*. RTC at 48. Finally, the Region acknowledged that differences in flushing rate is one source of uncertainty that warranted rejecting a permit limit based on the limit of technology, 3.0 mg/l, and setting the limit at the less stringent level of 5.0 mg/l. RTC at 49. In short, the arguments do not show clear error in the Region’s decision in setting the 5.0 mg/l limit, to take some uncertainty on flushing rates into account.

The District and MassDEP argue that the Region made errors in the calculation of attenuation – the rate at which nitrogen is lost in the river flow between the point of discharge and where the water impairing impact is observed. MassDEP Sup. Pet. at 14-15; Dist. Supp. Pet. at 32. As explained in *Attleboro*, there is no entitlement for a permit limit to be reduced on account of attenuation. *Attleboro*, 14 E.A.D. at 425-26. In particular, the District mistakenly assumes that the Region determined that water quality compliance will be achieved by “an equivalent 5 mg/l discharge at the mouth of the Blackstone River” and that the concentration in the District’s discharges can be adjusted upward to account for the attenuation that occurs in the River. Dist. Supp. Pet. at 31. The Region made no such determination, and the District’s assumption is contradicted by evidence in the record. Specifically, the Region explained as follows:

Both the Woonsocket and UBWPAD discharges enter Upper Narragansett Bay through the headwaters of the Seekonk River, which is the most impaired section of Upper Narragansett Bay. The RIDEM 2004 study indicates that this segment of the Bay currently receives nitrogen loads at a rate 24 times higher than the average Bay-wide loading. The limit EPA believes necessary to attain water quality standards (i.e., 5.0 mg/l) will result in a loading to the Seekonk River of 6.5 times the Bay-wide loading. UBWPAD is the dominant source of nitrogen to the Blackstone, even after accounting for attenuation, from

the Blackstone to the Seekonk. In addition, the estimated nitrogen delivery factor for the Blackstone River will increase in the future as actions are taken to address phosphorus driven eutrophication.

RTC at 54. The Region's analysis speaks to how much the District's total nitrogen discharges must be reduced in order to address the identified water quality problems. Notably, the 2004 RIDEM Report indicates significant eutrophication in the Seekonk and Providence Rivers, as evidenced by low DO and high chlorophyll *a* mean values, at a mean total nitrogen concentration in the River ranging from only 0.63 mg/l to 1.46 mg/l. 2004 RIDEM Report at 12, tbl.3. The District's and MassDEP's arguments are simply insufficient to establish that the concentration of total nitrogen in the District's discharges can be higher than 5.0 mg/l at the point of discharge and not cause or contribute to nitrogen-driven eutrophication violations in the Seekonk and Providence Rivers when significant impairment was observed at ambient concentrations in the River of 0.63 mg/l to 1.46 mg/l.

Moreover, the District and the Region have not identified any record evidence sufficient to show clear error in the Region's statement that "the current evidence indicates that attenuation of nitrogen in the Blackstone River is small and further reductions in phosphorus-driven eutrophication levels in the Blackstone are likely to result in even lower nitrogen attenuation rates in the future." RTC at 30. More specifically, the Region explained as follows:

Significantly, the second analysis showed that as phosphorus discharges to the river are reduced, the delivery of nitrogen increased. The reason for the reduced attenuation for nitrogen is that phosphorus-driven algal growth is the primary cause of nitrogen uptake. Given that the two largest sources of phosphorus to the River (UBWPAD and Woonsocket) are both proposed to have limits of 0.1 mg/l total phosphorus (which are more stringent than the 0.75 mg/l limit on which RIDEM's analysis was based) and that other point sources will also be required to reduce phosphorus loadings, a further increase in the delivery of nitrogen to Narragansett Bay can be expected.

RTC at 45-46. The District and MassDEP have not pointed to any record evidence showing the Region is clearly wrong in stating that there will be less nitrogen attenuation as phosphorus discharges are reduced. In addition, the Board concludes that MassDEP's identification of a temporal difference between two data sets the Region used in its attenuation analysis, MassDEP Supp. Pet. at 14-15, does not show clear error in the Region's determination that the data sets are representative. The selection of representative data for the analysis is a technical judgment

that falls within the permit issuer's discretion and technical expertise. *In re Wash. Aqueduct Water Supply Sys.*, 11 E.A.D. 565, 583 (EAB 2004).

The question before the Board in this appeal is not whether the Region, in taking differences between the model and the natural environment into account, including dilution and attenuation, could have selected a somewhat higher or lower number than 5.0 mg/l, but rather the question is whether the Region's decision falls so far outside a zone of reasonableness that it constitutes clear error or abuse of discretion. *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 525 (D.C. Cir. 1983) ("We do not demand certainty where there is none. There may be no strong reason for choosing [a particular numerical standard] rather than a somewhat higher or lower number. If so, we will uphold the agency's choice of a numerical standard if it is within a 'zone of reasonableness.'"); *see also Hercules, Inc. v. EPA*, 598 F.2d 91, 116-17 (D.C. Cir. 1978). Here, the Region explained that "[i]n establishing the nitrogen limit in the permit, EPA took into account uncertainties in extrapolating the physical model to a complex, natural setting such as Upper Narragansett Bay." RTC at 30. The Region explained further, "[b]ecause the physical model does not generate a definitive level of nitrogen control that can be applied to a real world discharge, but instead a range of loading scenarios which are subject to some scientific uncertainty, EPA was required to exercise its technical expertise and scientific judgment based on the available evidence when translating these laboratory results and establishing the permit limit." RTC at 49. As explained above, the District's and MassDEP's arguments fail to show that the Region's use of the MERL data bear no rational relationship to the natural environment of the Narragansett Bay and Providence and Seekonk Rivers, or that the Region's adjustments are clearly erroneous. *Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 923 (D.C. Cir. 1998) ("An agency's use of a model is arbitrary if that model 'bears no rational relationship to the reality it purports to represent.'" (quoting *Am. Iron and Steel*, 115 F.3d at 1005)); *Chemical Mfrs. Ass'n v. EPA*, 28 F.3d 1259, 1265 (D.C. Cir. 1994).

As highlighted by CLF's arguments discussed below in Part II.D.2.c(ii), but for concerns regarding uncertainty in the analysis, the 2004 RIDEM Report would have concluded that reducing nitrogen discharges to the limit of technology, or 3.0 mg/l, would be required. The Region chose to take the uncertainty into account by Permitting the District's discharges at a concentration that is 1.67 times higher than the limit of technology. The Board finds unpersuasive the District and MassDEP's arguments that the uncertainty and imprecision in the Region's analysis precludes the Region's decision and requires a remand, thereby allowing the District to continue discharging without any limit on total nitrogen. Long ago, the D.C. Circuit interpreted the CWA as authorizing EPA, in setting permit limits, to require "a gross reduction in pollutant discharges rather than the fine-tuning suggested by numerical limitations" because "this ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all." *NRDC v. Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977). The Re-

gion's decision is consistent with Rhode Island's interpretation of what is required to comply with its water quality standards. RTC at 50; 2004 RIDEM Report at 28. Although the Region's decision setting the limit at 5.0 mg/l in the present case is based on an analysis that does not render a precise numerical calculation and has some uncertainty, the District and MassDEP have not shown that the Region's determination is clearly erroneous or an abuse of discretion. Accordingly, the Board denies review of the Region's decision that 5.0 mg/l is the appropriate numerical value for the total nitrogen limit.

c. The Region Made an Adequate Finding that the 5.0 mg/l Limit Will "Ensure" Compliance with Water Quality Standards

CLF argues that the Permit's total nitrogen limit of 5.0 mg/l is not sufficiently stringent for the months of May through October and also that a numeric limit must be applied year-round. Conservation Law Foundation Petition ("CLF Pet.") at 15-16.³⁷ For the following reasons, CLF has not demonstrated clear error or abuse of discretion in the Region's determination that the Permit's total nitrogen limit is sufficient to ensure compliance with water quality standards. The analysis begins by considering whether the Region made an adequately clear determination that the Permit's total nitrogen limit will "ensure" compliance with applicable water quality standards as required by 40 C.F.R. § 122.4(d) and CWA section 401(a)(2). Because, as explained below in subpart (i), the Region did make an adequately clear "ensure" determination, the Board next considers in subpart (ii) whether CLF has shown clear error or abuse of discretion in the Region's determination.

(i) The Region's Finding Is Adequately Clear that the 5.0 mg/l Total Nitrogen Limit is Sufficient to "Ensure" Compliance

Generally, because the Board gives substantial deference to the permit issuer on questions of scientific or technical judgment, a petitioner bears a heavy burden when requesting review of a permit issuer's decision on issues that are technical in nature – such as the Region's finding in the present case that the

³⁷ CLF contends that the Permit's limit for total nitrogen of 5.0 mg/l does not meet the standards set forth in 40 C.F.R. §§ 122.4(d) and .44(d)(1), which prohibit the issuance of a permit where the permit's conditions do not ensure compliance with applicable state water quality standards and where the permitted discharges cause or contribute to a violation of water quality standards. *Id.* at 8. CLF also argues that the narrative treatment optimization limit for November through April does not comply with these requirements. CLF Pet. at 15-16. CLF argues that "the total nitrogen and phosphorus limits on the Facility are inadequate to either assure attainment of water quality standards in the receiving waters or eliminate the Facility's contribution to water quality violation in the Blackstone River or the downstream salt water influenced systems." CLF Pet. at 6-7.

Permit's total nitrogen limit of 5.0 mg/l is necessary and sufficient to ensure compliance with Rhode Island's water quality standards as required by 40 C.F.R. § 122.4(d) and CWA section 401(a)(2). See *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 667 (EAB 2001); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998), review denied sub nom. *Penn Fuel Gas, Inc. v. U.S. EPA*, 185 F.3d 862 (3d Cir. 1999). The Board, however, requires that the permit issuer clearly articulate its determination for it to be accorded this deference. See *In re City of Marlborough, Mass. Easterly Wastewater Treatment Plant*, 12 E.A.D. 235, 248-52 (EAB 2005); *DC MS4*, 10 E.A.D. at 342.

In *Marlborough*, the Board remanded a permit because "the Region [had] not sufficiently explained where or how it [the ensure finding] is reflected in the record before us." *Marlborough*, 12 E.A.D. at 252. The Board rejected as inadequate the Region's determination because the Region merely found that "it may be possible to meet" water quality standards. *Marlborough*, 12 E.A.D. at 249 (quoting the applicable fact sheet in that case). The Board held that "a mere possibility of compliance does not 'ensure' compliance" as required by the statute and regulations. *Id.* at 250. Likewise, in *DC MS4*, the Board explained that "[w]ithout an articulation by the permit writer of his analysis, we cannot properly perform any review whatsoever of that analysis and, therefore, cannot conclude that it meets the requirement of rationality." *DC MS4*, 10 E.A.D. at 342-43. The Board found inadequate the permit issuer's conclusion that the permit condition was "reasonably capable" of achieving water quality standards. *DC MS4*, 10 E.A.D. at 342, 343. The Board explained that "the 'reasonably capable' formulation, accepting as it is of the potential that the Permit will not, in fact, attain water quality standards, does not appear to be entirely comparable to the concept of ensuring compliance." *Id.*³⁸

The *DC MS4* and *Marlborough* cases appropriately reflect that, when the permit writer either was unable on the permitting record before it or failed to clearly articulate a conclusion conforming to the statute and regulations, the Board will not extend to the permit issuer's equivocal statements a more certain or unambiguous meaning. Because the Board generally defers to the Region's "determination of issues that depend heavily upon the Region's technical expertise and experience," *In re Envotech, L.P.*, 6 E.A.D. 260, 284 (EAB 1996), the Board expects permit writers to express the "ensure" finding with clear, unambiguous, declarative words supported by appropriate analysis and references to record evidence. *Marlborough*, 12 E.A.D. at 252 (permit remanded where the permit issuer

³⁸ The Board also explained that "more importantly, even accepting the Region's suggestion that ensuring compliance was what the permit writer had in mind, we find nothing in the record, apart from [the State's] section 401 certification, that supports the conclusion that the Permit would, in fact, achieve water quality standards," and the Region did not dispute that there was a "body of information drawing the certification into question." *DC MS4*, 10 E.A.D. at 342-43.

failed to “sufficiently explain[] where or how it [the ensure finding] is reflected in the record”).

The Region’s statements in the present case may be distinguished from the permitting decisions in both *DC MS4* and *Marlborough* where the Board found that the permit issuer failed to make an adequately clear finding that the permit would ensure compliance. Here, the Region’s response to comments is adequately clear in its meaning. The Region began by expressly identifying its duty “to ensure compliance with applicable water quality standards” and, in the body of the same paragraph, the Region pointed to record evidence supporting its conclusion stated at the end of the paragraph that the Permit’s total nitrogen limit is “reasonable and sufficiently stringent to comply with the CWA.” RTC at 50. The Board concludes that, although the Region could have chosen wording that would have been more clear and specific in its meaning,³⁹ nevertheless a fair and logical reading of this paragraph is that the Region determined, based on the record before it, that the Permit’s total nitrogen limit is sufficient to “ensure” compliance with applicable water quality standards.

This meaning is also supported by the Region’s statement at another place in its response to public comments, where the Region stated that “the significant nitrogen reductions required by the permit, as well as other permits in the watershed, are consistent with achieving water quality standards. *Further limitations * * * are not warranted at this time.*” RTC at 6 (emphasis added). Although the Region’s finding of “consistent” with achieving water quality standards may be ambiguous and, therefore, on its own, would not be clear, the Region also specifically found that “further limitations * * * are not warranted,” thereby clarifying the Region’s conclusion that, based on the record, the Permit’s total nitrogen limit is sufficiently stringent to achieve water quality standards. *Id.*⁴⁰ Thus, to the extent that CLF argues the Board should remand the present case for the same reason the Board remanded in *Marlborough*, CLF’s Reply at 8-9, the Board must reject CLF’s contention. Here, the Region stated its determination more clearly and consequently the Board concludes that the Region made an adequately clear finding that the total nitrogen Permit limit is sufficient to ensure compliance with applicable water quality standards. The Board next considers whether CLF has met its burden to show that the 5.0 mg/l limit is clearly erroneous.

³⁹ The Region is encouraged to choose clear and direct wording to express whether a permit’s conditions ensure compliance with applicable water quality standards.

⁴⁰ The Region stated its preliminary finding in the Fact Sheet that “b]ased on the available evidence, * * * EPA has concluded that a seasonal reduction of nitrogen to *no more than* 5.0 mg/l is required at the [District’s] facility in order to achieve water quality standards.” Fact Sheet at 14 (emphasis added).

(ii) *The 2004 RIDEM Report Does Not Show that the Region Committed Clear Error or an Abuse of Discretion in Finding that 5.0 mg/l is Sufficiently Stringent*

CLF argues that the evidence in the record, namely the 2004 RIDEM Report, requires the Region to set the Permit limit for total nitrogen at 3.0 mg/l, the limit of technology, and to impose additional controls. CLF Pet. at 10. CLF argues that the Region “has not provided any lawful justification for failing to impose [total nitrogen] effluent limitation at the limit of technology consistent with the RIDEM Study.” CLF Pet. at 10. At bottom, CLF’s appeal depends on two erroneous propositions: first, CLF contends that “the record is clear that there is no uncertainty with regard to the fact that the permit limits necessary to obtain water quality standards require implementation of the limit of technology,” Trans. at 7, and, second, CLF contends that, even if there is uncertainty, the Board’s *Marlborough* decision requires the Region to “err on the side of stronger limits” and to choose “the most protective limits achievable in light of the scientific uncertainty,” CLF Reply at 9. Based on this, CLF argues that the Permit limit must be set at the limit of technology of 3.0 mg/l and that the Permit must require other enforceable controls and offsets to meet water quality standards. CLF Pet. at 10. As explained below, the Board rejects the first argument as an inaccurate characterization of the administrative record in this case, and the Board rejects the second argument as an attempt to place improper limits on the Region’s exercise of reasonable scientific and technical discretion and judgment in setting permit limits.

CLF argues that “the record is clear that there is no uncertainty with regard to the fact that the permit limits necessary to obtain water quality standards require implementation of the limit of technology.” Tr. at 7.⁴¹ CLF contends that “[t]he RIDEM study unequivocally states that even a limit of 3 mg/l would not result in attainment of water quality standards.” CLF Reply at 4. Upon scrutiny, however, CLF’s argument must fail because the 2004 RIDEM Report, in fact, concludes that there is uncertainty regarding whether the limit of technology, 3.0 mg/l, is necessary to achieve Rhode Island’s water quality standards.

According to CLF, the 2004 RIDEM Report found that “[t]his analysis [referring to a discussion of the MERL physical model] indicates that even if the [Massachusetts and Rhode Island waste water treatment plant] discharges are reduced to the limit of technology (total nitrogen of 3 mg/l), the Seekonk River and portions of the Providence River would not fully comply with existing water qual-

⁴¹ According to CLF, the 2004 RIDEM Report relied upon by the Region in its permitting decision provides the “one definitive statement in the record relevant to setting a total nitrogen limit.” CLF Reply at 2-3.

ity standards (minimum of 5.0 mg/l, except as naturally occurs) * * * .” CLF Pet. at 9; *see also* CLF Reply at 2-3. The Board has not been able to locate this exact quote in the 2004 RIDEM Report,⁴² but it does contain a similar statement: “[t]his analysis indicates that the limit of technology is required but will not fully meet existing water quality standards.” 2004 RIDEM Report at 27. While this statement does support CLF’s concern regarding whether the Permit’s limit of 5.0 mg/l is sufficiently stringent, this statement from the 2004 RIDEM Report is not the definitive, unequivocal conclusion that CLF characterizes it to be. The 2004 RIDEM Report goes on to state in a subsequent paragraph:

While we believe that the MERL tank results provide an adequate representation of the relationship between nitrogen and oxygen levels in the Providence and Seekonk Rivers, *some uncertainty remains regarding predicted water quality improvements and loading reductions necessary to meet water quality standards.*

2004 RIDEM Report at 27. Thus, contrary to CLF’s characterization, the 2004 RIDEM Report, in fact, found that while the MERL experiment was a “fair representation” of conditions and would suggest a limit of 3.0 mg/l, the Report also found that there is “some uncertainty” regarding whether effluent limitations based on the limit of technology are necessary to ensure attainment of water quality standards. It is this uncertainty that the Region identified when explaining why it chose a Permit limit less stringent than the limit of technology. RTC at 49.⁴³

⁴² It appears that this quote actually comes from a subsequent report. *See* Rhode Island Department of Environmental Management, *Plan for Managing Nutrient Loadings to Rhode Island Waters*, at 3 (Feb. 1, 2005). This subsequent report does not provide a scientific analysis of the available data and research; it merely refers to the earlier 2004 RIDEM Report as part of the 2005 report’s identification of steps Rhode Island has taken and is planning to take to reduce nitrogen in Rhode Island’s waters.

⁴³ The Region further stated:

When evaluating whether it had met its obligations under section 301(b)(1)(C) and 401(a)(2) to ensure compliance with applicable water quality standards, including those of affected states, EPA also accounted for the fact that Rhode Island, when assigning permit limits to facilities within its own borders in accordance with its own water quality standards, did not conclude more stringent limits would be necessary or appropriate at this time. Under Rhode Island’s permitting approach, limits of 5 mg/l and 8 mg/l have been imposed on various Rhode Island POTWs whose discharges impact Narragansett Bay, and Rhode Island has recommended that similar limits be placed on certain Massachusetts facilities that are impacting the Bay. *See Evaluation of Nitrogen Targets and WWTF Load Reductions for the Providence and Seekonk Rivers*, RIDEM, December 2004. In arriving at its decision to impose a nitrogen

Continued

Accordingly, the 2004 RIDEM Report is not at odds with the Region's decision, and it does not demonstrate clear error as CLF argues.

The Board also rejects CLF's argument that the Board's *Marlborough* decision requires that "[w]hen there is any amount of uncertainty, EPA must err on the side of stricter limits." CLF's Reply at 9. To the contrary, *Marlborough's* holding is narrower: the Board held that a permit must be remanded if the permit issuer failed to "sufficiently explain[] where or how it [the ensure finding] is reflected in the record." *Marlborough*, 12 E.A.D. at 252.⁴⁴

Not only does CLF's argument lack support in *Marlborough*, it also must be rejected because it is at odds with the Region's exercise of reasonable discretion and judgment – it would establish a rigid rule requiring the Region to select the most stringent achievable limit when there is any conflict or uncertainty in the record regarding attainment of water quality standards. The Board has never adopted such an inflexible rule, nor is one required by the statute or regulations. To the contrary, "[i]n the face of unavoidable scientific uncertainty, the Region is authorized, if not required, to exercise reasonable discretion and judgment." *Dominion*, 13 E.A.D. at 426. Nothing in the regulations or our prior case law remove the Region's discretion to resolve the conflict in the evidence.

As explained above in discussing the District's and MassDEP's arguments, the statute and regulations do authorize, and to a certain extent require, the Region to take a precautionary approach. *See e.g.*, 40 C.F.R. § 122.44(d)(1) (referring to "reasonable potential"); *id.* § 122.4(d) (requiring the permit to "ensure" compliance with water quality standards); CWA § 401(a)(2) (requiring permit to "insure" compliance with water quality standards). The statutory word "insure" and the comparable regulatory term "ensure" make clear that the permit issuer should have a high degree of confidence in the determination, but there is no discernable intent to remove all discretion, particularly with respect to scientific and technical determinations that are inherently not free from all doubt. These provisions provide boundaries to the Region's discretion; these provisions do not remove all discretion and technical judgment as would an interpretation that requires the permit writer to impose the limit of technology whenever there is *any* uncertainty.

(continued)

effluent limit of 5 mg/l on the District facility, EPA regarded Rhode Island's position as additional evidence that the limit was reasonable and sufficiently stringent to comply with the CWA.

RTC at 50.

⁴⁴ Once the Region has clearly articulated its finding, the Board is able to consider it on appeal, giving due deference to the "determination of issues that depend heavily upon the Region's technical expertise and experience." *Envotech*, 6 E.A.D. at 284.

In considering arguments on appeal involving matters requiring scientific or technical expertise, “the Board looks to determine whether the record demonstrates that the permit issuer duly considered the issues raised in the comments and whether the approach ultimately adopted by the permit issuer is rational in light of all the information in the record.” *Attleboro*, 14 E.A.D. at 411 (citations omitted). “If the Board is satisfied that the permit issuer gave due consideration to comments received and adopted an approach in the final permit decision that is rational and supportable, the Board typically will defer to the permit issuer.” *Id.* Giving deference to the permit issuer’s scientific and technical judgment “serves an important function within the framework of the Agency’s administrative process; it ensures that the locus of responsibility for important technical decision-making rests primarily with the permitting authority, which has the relevant specialized expertise and experience.” *Peabody*, 12 E.A.D. at 33; *see also In re Carlota Copper Co.*, 11 E.A.D. 692, 708 (EAB 2004) (explaining that “a petitioner seeking review of issues that are technical in nature bears a heavy burden because the Board generally defers to the Region on questions of technical judgment”)); *Envotech*, 6 E.A.D. 260, 284 (EAB 1996) (“absent compelling circumstances, the Board will defer to a [r]egion’s determination of issues that depend heavily upon the [r]egion’s technical expertise and experience”).

Here, the Region’s response to comments acknowledged and rejected CLF’s contention that the record requires a total nitrogen limit set at the limit of technology. As explained above, the Region found that the Permit’s total nitrogen limit of 5.0 mg/l is sufficient to ensure compliance with Rhode Island’s water quality standards. RTC at 6, 47-51. The Region explained that “[d]espite the severe nitrogen-related impairments in the receiving waters, EPA opted not to impose a limit based on more stringent loading scenarios at this time in order to account for uncertainties associated with the physical model.” RTC at 49. It is noteworthy that the Region identified the same reasons for finding uncertainty in the MERL experiment’s results as the 2004 RIDEM Report identified. *Compare* 2004 RIDEM Report at 27⁴⁵ with RTC at 6, 17, 29-30, 47-51, 55, 73, 94-96. The Region ex-

⁴⁵ The 2004 RIDEM Report indicates that the following factors create “some uncertainty” regarding “predicted water quality improvements and loading reductions necessary to meet water quality standards”:

[S]ignificantly lower mean DIN [dissolved inorganic nitrogen] concentrations were observed in the Providence and Seekonk Rivers as compared to the MERL experiment for an equivalent loading rate, which may be the result of large differences between the field and experimental flushing times, uptake by macroalgae and denitrification in the bottom waters. Also the MERL experiment DO [dissolved oxygen] sampling protocol does not provide sufficient data to fully assess compliance with the recently established EPA guidelines regarding cumulative periods of low dissolved oxygen.

2004 RIDEM Report at 27.

plained that “when evaluating the adequacy of the limit, EPA was also aware that the particular approach it adopted possesses conservative elements which enhance the protectiveness of the permit beyond [what was contemplated by the MERL tank experiments].” RTC at 49.⁴⁶ There is no apparent irrationality or clear error in these reasons for finding the Permit’s 5.0 mg/l total nitrogen limit sufficient to ensure compliance with Rhode Island’s water quality standards, and CLF has not shown clear error in any of these reasons the Region gave for its decision.

As noted above, the Region also placed particular emphasis on “the fact that Rhode Island, when assigning permit limits to facilities within its own borders in accordance with its own water quality standards, did not conclude more stringent limits would be necessary or appropriate at this time * * * and Rhode Island has recommended that similar limits be placed on certain Massachusetts facilities.” RTC at 50. It is appropriate for the Region to take into consideration the views of Rhode Island, as an affected state, regarding what is required to achieve compliance with Rhode Island’s own water quality standards.

Specifically, the Region is required by regulation to determine whether the Permit’s limits will “ensure” compliance with the water quality standards of affected states. 40 C.F.R. § 122.4(d); *see also* CWA § 401(a)(2). The statute’s prohibition under section 401(a)(2) of issuing a permit that does not “insure” compliance with water quality standards of all affected states serves a largely parallel function to the certification requirement under section 401(a)(1), which the permit applicant must obtain from the state where the discharge originates. It is noteworthy that, for state certifications under section 401(a)(1), the Region is under a duty to defer to the requirements the state deems necessary to comply with its water quality standards.⁴⁷ This prevents EPA from relaxing any requirements, limitations or conditions imposed by state law and made a condition of the state’s certification. *See, e.g., Teck Cominco*, 11 E.A.D. at 488-89; *In re City of Moscow, Idaho*, 10 E.A.D. 135, 151 (EAB 2001); *In re City of Jacksonville, Dist. II Wastewater Treatment Plant*, 4 E.A.D. 150, 157 (EAB 1992). Although section 401(a)(2) does not require certification from downstream affected states and the Region was not required to defer to the affected state’s interpretation of its water quality standards, nevertheless, it certainly was appropriate for the Region to consider and take into account Rhode Island’s interpretation of Rhode Island law

⁴⁶ The Region explained that the use of a concentration limit, rather than a mass limit, provides additional protection while the District’s discharges remain below the Treatment Plant’s design capacity. RTC at 49-50. As discussed below, both MassDEP and the District have requested review of the Region’s use of a concentration limit, rather than a mass limit. *See below* Part II.D.3.

⁴⁷ Specifically, the regulatory provisions pertaining to state certification provide that EPA may not issue a permit until a certification is granted or waived by the state in which the discharge originates, 40 C.F.R. § 124.53(a), and that “[w]hen certification is required * * * no final permit shall be issued * * * [u]nless the final permit incorporates the requirements specified in the certification,” *id.* § 124.55(a).

when the Region made its determination. Not only has Rhode Island generally not required facilities located in Rhode Island to reduce nitrogen discharges to the limit of technology, but also in the 2004 RIDEM Report, Rhode Island recommended a 5.0 mg/l total nitrogen limit for the District.

Accordingly, the Board concludes that CLF's arguments do not show clear error or abuse of discretion in the Region's determination that the Permit's total nitrogen limit of 5.0 mg/l is sufficient to ensure compliance with Rhode Island's water quality standards.⁴⁸ The Board also rejects CLF's call for a year-round numeric limit and additional controls beyond the numeric permit limit, which CLF based on the same erroneous contention regarding the 2004 RIDEM Report's certainty.

3. The Record Supports the Region's Decision to State the Total Nitrogen Limit as a Mass, Not Concentration, Limit

MassDEP argues that 40 C.F.R. § 122.45(f)(1) requires permit limits to be stated in terms of mass, unless one of three exceptions applies, and MassDEP contends that none of the exceptions have been established in this case. MassDEP Supp. Pet. at 3, 7-10. MassDEP also argues that the Region violated EPA policy when it selected a total nitrogen limit stated as a concentration, rather than stated in terms of mass. *Id.* at 3, 10-12.

The Region explained in its response to comments that section 122.45(f)(1)(ii) allows a limit to be stated as a concentration "when applicable standards and limitations are expressed in terms of other units of measurement," one of the three exceptions under section 122.45(f)(1). RTC at 17. The Region explained that "[i]n this instance, we believe expression of limits on total nitrogen as concentration limits is necessary to meet Rhode Island's water quality standards." RTC at 17. As explained below, in reaching this conclusion the Region relied on Rhode Island's interpretation of its narrative water quality standard.

On appeal, MassDEP argues that the phrase "applicable standards and limitations" as used section 122.45(f)(1)(ii) is a defined term and the Region's interpretation is an "impermissible reinterpretation of the plain language of the regulation." MassDEP Supp. Pet. at 7. "*Applicable standards and limitations* means all

⁴⁸ The Board likewise rejects the District's argument that the total nitrogen limit of 5.0 mg/l "very well may not lead to standards attainment" and therefore "[is] not necessary to attain standards." Dist. Supp. Pet. at 11. The District has not shown any clear error or abuse of discretion in the Region's determination, based on the administrative record of this matter, that the Permit's total nitrogen limit is sufficient to ensure compliance with Rhode Island's water quality standards. Moreover, the District's argument is specious because rather than leading to a delay in imposing more stringent requirements, as the District argues, a finding that the Permit cannot ensure compliance with applicable water quality standards would require denial of the District's permit application.

State, interstate and federal standards and limitations to which a 'discharge' * * * is subject under the CWA, including 'effluent limitations,' water quality standards, standards of performance, toxic effluent standards or prohibitions, 'best management practices,' [and] pretreatment standards * * * under sections 301, 302, 303, 304, 306, 307, 308, 403 and 405 of CWA." 40 C.F.R. § 122.2. MassDEP argues that, because the Rhode Island water quality standards are narrative, "they are not "expressed" in terms of a concentration and therefore this exception does not apply in the present case. MassDEP Supp. Pet. at 9.

MassDEP is correct that Rhode Island's water quality standard is expressed as a narrative description of water quality. See 12-190-001 R.I. Code R. § 8.D.(1). However, Rhode Island has interpreted this narrative standard, as applied to control of nitrogen, in terms of a concentration of the pollutant in effluent discharges. 2004 RIDEM Report at 23-27. In other words, Rhode Island's interpretation of its narrative criterion is "expressed" in terms of a concentration of nitrogen in effluent discharges. Accordingly, it was not unreasonable for the Region to conclude that consistency with Rhode Island's interpretation of its narrative requirement warranted expressing the Permit's limit as a concentration.

The Region's response to comments included a discussion of policy reasons favoring this interpretation in the particular circumstances of this case:

In this instance, we believe expression of limits on total nitrogen as concentration limits is necessary to meet Rhode Island's water quality standards. A key report underlying the proposed permit limits is the December 2004 report, *Evaluation of Nitrogen Targets and WWTF Load Reductions for the Providence and Seekonk Rivers*, completed by RIDEM. The report documents that the Seekonk River is the most nutrient impacted area of Narragansett Bay: current total nitrogen loads to the Seekonk River are 24 times higher than the total nitrogen load to all of Narragansett Bay on a per unit area basis. If the concentration limitations recommended by the report were used to establish mass limits using the design flows of the waste water treatment facilities, the Seekonk River would receive nitrogen loads of approximately 10 times higher than the Bay-wide loads per unit area. With the limitations established as concentration limits, at current flows the Seekonk River would receive nitrogen loads of approximately 6.5 times higher than the Bay wide load. * * * Setting the limits in terms of concentration will enable assessment of the response to a loading of 6.5 times the Bay-wide loading.

RTC at 17-18. The Region described the use of a concentration limit for nitrogen as a “conservative element” that enhances the Permit’s “protectiveness.” RTC at 49.⁴⁹

4. *The Region Followed Proper Procedures and Gave Sufficient Notice in Setting the Total Nitrogen Limit*

The District argues that the Region did not follow the proper procedures and notice provisions when the Region determined the Permit’s numeric effluent limit for total nitrogen. Dist. Supp. Pet. at 16-19. Specifically, the District argues that, by translating Rhode Island’s narrative water quality standard into a numeric permit limit, the Region in effect adopted a numeric water quality standard for the state, which the District argues may only be accomplished as provided by CWA section 303(c)(4) through formal rulemaking. *Id.* at 16-17. The District also argues that the Region committed clear error by failing to follow the procedures of 40 C.F.R. § 131.11(a)(2) for developing numeric permit limits for toxic pollutants to comply with narrative water quality standards. *Id.* at 17-19. The District points to both provisions in an effort to invoke various procedural requirements, including publication in the Federal Register, as a bar to the Region’s determination of the Permit’s numeric effluent limit for total nitrogen. *Id.* at 16-19. Both arguments must be rejected as relying on inapplicable law. This proceeding is governed by CWA section 402 and 40 C.F.R. § 122.44(d)(1)(vi) and 40 C.F.R. part 124, which provide opportunity for public hearing and due process appropriate for the issuance of a permit.

First, the District’s argument based on CWA section 303(c)(4) conflates the determination of numeric permit limits in this permitting proceeding arising under CWA section 402 with federal promulgation of a state water quality standard under CWA section 303(c)(4). The statutory section the District cites, section 303(c)(4), by its terms applies only to circumstances where EPA is required to promulgate a state water quality standard because the state has failed to promulgate one complying with the CWA’s requirements. CWA § 303(c)(4), 33 U.S.C. § 1313(c)(4).⁵⁰ Here, the state of Rhode Island promulgated an applica-

⁴⁹ Here, there also is no utility in remanding this Permit to require the Region to impose a mass limit in addition to the concentration limit the Region found necessary to comply with Rhode Island’s water quality criteria, which may not be the case in other circumstances.

⁵⁰ CWA section 303(c)(4) provides as follows:

The Administrator shall promptly prepare and publish proposed regulations setting forth a revised or new water quality standard for the navigable waters involved -

(A) if a revised or new water quality standard submitted by such State under paragraph (3) of this subsection for such waters is determined by

Continued

ble water quality standard that EPA long ago determined complies with the CWA's requirements. *See* 12-190-001 R.I. Code R. § 8.B.(1)-(2), 8.D.(1); *see also* State and Tribal Water Quality Standards: Notice of EPA Approvals and Announcement of EPA Internet Repository, 66 Fed. Reg. 29,951 (June 4, 2001); http://www.epa.gov/waterscience/standards/wqslibrary/ri/ri_1_wqr.pdf. Accordingly, Rhode Island's water quality standards govern and CWA section 303(c)(4) is altogether inapplicable.

Likewise, the District's argument based on 40 C.F.R. § 131.11(a)(2) conflates "toxic" pollutants with pollutants, such as nitrogen, that have not been designated as "toxic." Specifically, section 131.11(a)(2) governs the process for determining numeric permit limits for "toxic pollutants" where the applicable water quality criteria is narrative. 40 C.F.R. § 131.11(a)(2). The term "toxic pollutants" is defined as "those pollutants listed by the Administrator under section 307(a) of the Act." 40 C.F.R. § 131.3(d). Nitrogen is not on the Administrator's list of pollutants under CWA section 307(a). 40 C.F.R. § 401.15.⁵¹ Accordingly, section 131.11(a)(2), by its terms, does not apply in the present case to the Region's determination of the Permit's numeric effluent limit for total nitrogen.

Contrary to the District's citation to the inapplicable CWA section 303(c)(4) and 40 C.F.R. § 131.11(a)(2), this permitting proceeding and the Region's determination of the Permit's effluent limitation for total nitrogen is governed by CWA section 402, 33 U.S.C. § 1342(a), and 40 C.F.R. § 122.44(d)(1)(vi) and the part 124 procedural rules. In particular, these rules require the Region to provide "opportunity for public hearing," 33 U.S.C. § 1342(a)(1), the specific requirements of which are set forth in 40 C.F.R. part 124, and these rules specifically authorize the Agency, pursuant to that process, to determine numeric permit limits for specific pollutants where the state criterion is narrative. 40 C.F.R. § 122.44(d)(1)(vi). The preamble for the Federal Register notice promulgating section 122.44(d)(1)(vi) confirms that this provision is appropriately applied "to

(continued)

the Administrator not to be consistent with the applicable requirements of this Act, or

(B) in any case where the Administrator determines that a revised or new standard is necessary to meet the requirements of this Act.

The Administrator shall promulgate any revised or new standard under this paragraph not later than ninety days after he publishes such proposed standards, unless prior to such promulgation, such State has adopted a revised or new water quality standard which the Administrator determines to be in accordance with this Act.

CWA § 303(c)(4), 33 U.S.C. § 1313(c)(4).

⁵¹ Nitrogen also is not on the list of "priority pollutants" published at 40 C.F.R. § 423, App. A.

set effluent limits to control discharges (in the absence of state numerical water quality criteria for all pollutants of concern).” Nat’l Pollutant Discharge Elimination System, Surface Water Toxics Control Program, 54 Fed. Reg. 23,868, 23,878 (June 2, 1989). In promulgating this regulation, EPA explained that “EPA’s legal obligation to ensure that NPDES permits meet all applicable water quality standards, including narrative criteria, cannot be set aside while a state develops [numeric] water quality standards.” 54 Fed. Reg. at 23,877. The District may not, in this or any permitting proceeding, challenge this regulation granting the Region the authority to set a numeric effluent limit to achieve Rhode Island’s narrative water quality criterion. *See* CWA § 509(b)(1), 33 U.S.C. § 1369(b)(1); *see also In re City of Irving, Texas, Municipal Separate Storm Sewer System*, 10 E.A.D. 111, 123 (EAB 2001), *review denied sub nom City of Abilene v. EPA*, 325 F.3d 657 (5th Cir. 2003). In fact, this regulation was challenged and upheld. *American Paper Inst., Inc. v. EPA*, 996 F.2d 346, 348, 351 (D.C. Cir. 1993); *see also American Iron and Steel Inst. v. EPA*, 115 F.3d 979, 990-91 (D.C. Cir. 1997).

Indeed, in upholding 40 C.F.R. § 122.44(d)(1)(vi), the D.C. Circuit specifically considered and rejected an argument that the regulation violated the provisions governing promulgation of state water quality standards and criteria. The Court explained:

[T]he regulation does not supplant – either formally or functionally – the CWA’s basic statutory framework for the creation of water quality standards; rather, it provides alternative mechanisms through which *previously adopted* water quality standards containing narrative criteria may be applied to create effective limitations on effluent emissions. As long as narrative criteria are permissible * * * and must be enforced through limitations in particular permits, a permit writer will inevitably have some discretion in applying the criteria to a particular case. The general language of narrative criteria can only take the permit writer so far in her task. Of course, that does not mean that the language of a narrative criterion does not cabin the permit writer’s authority at all; rather, it is an acknowledgement that the writer will have to engage in some kind of interpretation to determine what chemical-specific numeric criteria – and thus what effluent limitations – are most consistent with the state’s intent as evinced in its generic standard. The EPA’s new regulation merely requires that permit writers engage in this task to create chemical-specific limitations on discharges of pollutants and gives those writers three tools with which to do this work in a fairly regularized fashion. The regulation thus seems to provide an eminently reasonable means

of effectuating the intent of the previously adopted narrative criteria as well as Congress' own intent, made explicit in section 301 of the CWA, that *all* state water quality standards be enforced through meaningful limitations in individual NPDES permits.

American Paper Inst., 996 F.2d at 351 (citations omitted).

In the present case, the Region stated that the Permit's total nitrogen numeric effluent limit is established to achieve compliance with Rhode Island's narrative water quality criterion, Fact Sheet at 11-12, and the Region expressly applied 40 C.F.R. § 122.44(d)(1)(vi) in establishing the Permit's numeric limit. The District has not alleged that the notice of opportunity for public comment and public hearing the Region held during the public comment period, which extended from March 23, 2007 through May 25, 2007, was in any way not in compliance with the part 124 rules. Accordingly, the District has failed to show any clear error or abuse of discretion in the notice or hearing opportunity afforded the District.

E. Challenges to the Permit's Total Phosphorus Limit

The Region set the Permit's total phosphorus limit at 0.1 mg/l (100 ug/l) for April 1 to October 31, and 1.0 mg/l for November through March. Fact Sheet at 10. The Region established this limit applying 40 C.F.R. § 122.44(d)(1)(vi)(B) to ensure compliance with the Massachusetts' narrative water quality criteria. *Id.* at 8-9. In reaching its decision, the Region considered, among other things, two EPA documents providing guidance on numeric criteria for the Nation's waters: 1) Office of Water, U.S. EPA, *Quality Criteria for Water*, EPA 440/5-86-001 (May 1, 1986) (the "*Gold Book*"); and 2) Office of Water, U.S. EPA, *Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Nutrient Ecoregion XIV*, EPA-822-B-00-022 (Dec. 2000) ("*Ecoregion XIV Criteria*").

CLF challenges the Region's decision arguing that the Permit's phosphorus limit is not sufficiently stringent. CLF Pet. at 6-7, 17-18. CLF argues that the maximum applicable criterion should be 0.05 mg/l, not 0.1 mg/l, and that this more stringent limit should apply year-round. *Id.* In contrast, the District argues that the phosphorus limit is too stringent and that its expired permit's less stringent limit of 0.75 mg/l should be retained. Dist. Supp. Pet. at 32-39. For the following reasons, neither CLF, nor the District, has shown clear error or abuse of discretion in the Region's decision setting the Permit's total phosphorus limit at 0.1 mg/l for April 1 to October 31 and at 1.0 mg/l for November through March.

1. *The Region's Reasonable Potential Analysis*

The Region concluded that conditions indicative of cultural eutrophication observed in the Blackstone River immediately downstream from the District's discharge point and more generally throughout the River, combined with the fact that the District's discharges dominate the Blackstone River's flow, establish that the District's discharges have the reasonable potential, under 40 C.F.R. § 122.44(d)(1)(i) and (ii), to violate Massachusetts' water quality criteria. RTC at 107; Fact Sheet at 8-9. Although the District primarily challenges the particular numeric value the Region established for the Permit's total phosphorus limit, the District does appear to challenge the Region's reasonable potential determination in one respect. The District argues that "it is improper to simply cite cultural eutrophication as the basis for imposition of a numeric permit limit. Rather, the limit must be justified by connecting the reduced level of phosphorus with a specific impairment in designated uses." Dist. Supp. Pet. at 34. As explained below, this argument does not show clear error or abuse of discretion in the Region's "reasonable potential" determination.

Contrary to the District's argument, the Region identified the particular water quality criteria and designated uses violated by the District's total phosphorous discharges. Specifically, the Region explained that Massachusetts' narrative water quality criteria provide that nutrients "[s]hall not exceed the site specific limits necessary to control accelerated or cultural eutrophication" and that "[a]ny existing point source discharge containing nutrients in concentrations which encourage eutrophication or growth of weeds or algae shall be provided with the highest and best practicable treatment to remove such nutrients." Fact Sheet at 8 (citing 314 C.M.R. 4.04 & 4.05(5)(c)). The Region stated further that "the Blackstone River has been designated by Massachusetts as a habitat for fish, other aquatic life and wildlife and for primary (e.g. swimming) and secondary (e.g. fishing and boating) contact recreation." RTC at 106 (citing 314 C.M.R. §§ 4.05(3)(b) & 4.06 (tbl. 11)). The Region also explained that such waters must be "free of floating, suspended or settleable solids that are aesthetically objectionable or could impair uses" and that "[c]hanges to color or turbidity of the waters that are aesthetically objectionable or use-impairing are also prohibited." RTC at 107 (citing 314 C.M.R. § 4.05(3)(b)(5), (6)).

The Region also identified the particular phosphorous-driven conditions observed in the Blackstone River that violate Massachusetts' criteria and designated uses. In particular, the Region determined that the Blackstone River is currently impaired by excessive phosphorus loadings resulting in violations of minimum dissolved oxygen criteria, high levels of chlorophyll *a* and high levels of macrophyte and periphyton growth. Fact Sheet at 8-9 (citing U.S. EPA Region 1, *Blackstone River Initiative Report* (May 2001); MassDEP, *Blackstone River Basin 1998 Water Quality Assessment Report* (2001); MassDEP, *Blackstone River Watershed 2003 DWM Water Quality Monitoring Data* (May 2005); U.S. Army

Corps of Engineers, *Phase I: Water Quality Evaluation and Modeling of the Massachusetts Blackstone River* (Draft Mar. 2004); MassDEP, *Blackstone River Watershed 2003 Biological Assessment* (Apr. 4, 2006)). The Region also noted Massachusetts and Rhode Island have included the Blackstone River on their section 303(d) lists of impaired waters. Fact Sheet at 8. The Region explained that “[t]he Blackstone River is listed as impaired for * * * nutrients, organic enrichment/low dissolved oxygen (DO), flow alterations and other habitat alterations, pathogens, suspended solids, turbidity, and objectionable deposits.” RTC at 107. More specifically, the Region explained that at low flow in the summer of 2003, the following conditions were observed:

At the first station downstream of the UBWPAD discharge, instream aquatic vegetation was described as being “extremely abundant, covering virtually the entire river bottom and dominated by rooted submergent macrophytes (coontail, *Ceratophyllum* sp.; waterweed, *elodea* sp.; pondweed, *Potamogeton crispus*). Slight turbidity in the water column was noted during sampling. A luxuriant algal community was also observed, with green filamentous algae attached to submergent vegetation and a brown flock covering much of the rocky substrates.”

Id. at 35. The Region determined that these phosphorus-driven conditions observed immediately downstream from where the District discharges, and more generally throughout the Blackstone River, combined with the fact that the District’s discharges dominate the Blackstone River’s flow, establish that the District’s discharges have a reasonable potential to violate Massachusetts’ water quality criteria. RTC at 107; Fact Sheet at 8-9.

This analysis the Region provided in the Fact Sheet and Response to Comments identified specific phosphorus-driven conditions observed in the River that violate the Massachusetts water quality standards for both designated uses and narrative criteria. Thus, contrary to the District’s contention, the Region did not “simply [cite] cultural eutrophication as the basis for imposition of a numeric permit limit” rather than “connecting the reduced level of phosphorus with a specific impairment in designated uses.” Dist. Supp. Pet. at 34. The Region identified the designated uses that are impaired as well as the criteria that are violated and explained why it concluded there is a reasonable potential that the District’s discharges cause the observed violations.

The District has identified no record evidence that would refute the Region’s conclusion that the identified conditions in the River immediately downstream from where the District discharges are attributable at least in part to the District’s discharges, and the District has not explained why it believes these conditions do not evidence violation of Massachusetts’ narrative criteria and desig-

nated uses. Accordingly, the District has failed to show clear error in the Region's conclusion that the District's discharges are or may be at a level that causes, contributes to, or has the reasonable potential to cause violations of Massachusetts' water quality standards. 40 C.F.R. § 122.44(d)(1)(i), (ii).

2. *The Region's Decision to Set the Total Phosphorus Limit at 0.1 mg/l For Warm-Weather Months and 1.0 mg/l for Cold-Weather Months*

The Region set the following total phosphorus numeric limit: 0.1 mg/l (100 ug/l) for the warm-weather period of April 1 to October 31, and 1.0 mg/l for the cold-weather period of November through March. Fact Sheet at 10. CLF argues that this limit is not sufficiently stringent both for the warm- and cold-weather periods. CLF Pet. at 6-7, 17-18. In contrast, the District argues that the phosphorus limit is too stringent and that the limit in the District's expired permit of 0.75 mg/l should be retained. Dist. Supp. Pet. at 32-39. For the reasons explained below, CLF and the District have not shown that the Region clearly erred or abused its discretion in establishing the Permit's numeric limit.

a. *CLF Did Not Preserve for Appeal Its Objections to the Phosphorus Limit*

CLF challenges the Permit's phosphorus limit arguing that it is not sufficiently stringent both for the warm- and cold-weather periods. CLF Pet. at 6-7, 17-18. CLF's arguments on appeal are rejected because CLF has not shown that these issues and arguments were raised during the public comment period. CLF's letter submitted during the public comment period, which stated that "the final permit's warm weather total phosphorus limit should be no higher than 0.1 mg/l," would not have alerted the Region to CLF's disagreement with the Region's proposed decision to set the limit at 0.1 mg/l. See Letter from Peter Shelley, esq., et al, on behalf of CLF to NPDES Permits Unit, U.S. EPA at 2 (May 23, 2007).

On appeal, CLF now raises much more detailed issues and arguments challenging the Region's decision. For example, where CLF's comment letter stated that the warm-weather limit "should be no higher than 0.1 mg/l," *id.*, CLF now argues on appeal that the maximum applicable criterion should be 0.05 mg/l, CLF Pet. At 6-7, 17-18. CLF argues that "[g]iven the severity of the pollution issues in these receiving waters and the pollution loads resulting from the inadequate limit in the Permit, there is simply no justification for EPA Region 1's failure to require that [the District] implement limit-of-technology controls at the Facility." CLF Pet. at 18. CLF argues further that the Permit's phosphorus limit is "dramatically higher than the applicable standards" – and that the Region should have adopted the *Ecoregion IV Criteria* recommendation of 0.024 mg/l or the *Gold Book* recommendation of 0.05 mg/l for streams directly discharging into a lake or impoundment. *Id.* at 18, 20. CLF also states on appeal that "[t]here is simply no

justification for applying a ‘Gold Book’ criterion applicable to a free-flowing stream to the Blackstone River – a stream that is extensively impounded.” *Id.* at 18. CLF also points to a “ecoregional criterion of 24 g/l expressly developed by EPA for use within Ecoregion XIV, Eastern Coastal Plains.” *Id.* CLF argues further that the Region acknowledges that phosphorus discharged during winter months is likely to settle and accumulate in the downstream impoundments and contribute to impairments during the summer and that, therefore, the Region must impose a more stringent limit than the Permit’s limit of 1.0 mg/l applicable during winter months. *Id.* at 21. None of these detailed arguments were stated in CLF’s comments submitted during the public comment period.

The regulation governing permit appeals provides that the petition for review shall include “a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by these regulations,” 40 C.F.R. § 124.19(a), and the regulation governing public comment provides that:

All persons, including applicants, who believe any condition of a draft permit is inappropriate * * * *must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position* by the close of the public comment period (including any public hearing) * * * .

40 C.F.R. § 124.13 (emphasis added). The Board has routinely applied these provisions to deny review where the issue or argument “was reasonably ascertainable but was not raised during the comment period on the draft permit.” *In re Shell Offshore, Inc.*, 13 E.A.D. 357, 394 (EAB 2007); *accord In re Christian County Generation, LLC*, 13 E.A.D. 449, 457 (EAB 2008); *In re BP Cherry Point*, 12 E.A.D. 209, 218-20 (EAB June 21, 2005); *In re Kendall New Century Develop.*, 11 E.A.D. 40, 55 (EAB 2003).

This “is not an arbitrary hurdle, placed in the path of potential petitioners simply to make the process of review more difficult; rather, it serves an important function related to the efficiency and integrity of the overall administrative scheme. As the Board has explained in the past, “[t]he intent of these rules is to ensure that the permitting authority * * * has the first opportunity to address any objections to the permit, and that the permit process will have some finality.” *BP Cherry Point*, 12 E.A.D. at 219 (quoting *In re Sutter Power Plant*, 8 E.A.D. 680, 687 (EAB 1999)).

The permitting process requires a specific time for public comment so that issues may be raised and “the permit issuer can make timely and appropriate adjustments to the permit determination, or, if no adjustments are made, the permit issuer can include an explanation of why none are necessary.” *In re Union County*

Res. Recovery Facility, 3 E.A.D. 455, 456 (Adm'r 1990); *accord Sutter Power*, 8 E.A.D. at 687. The opportunity for public comment serves an important role in establishing the proper staging of the permit decision process:

If an issue is not raised during the notice and comment process, * * * the permitting authority is provided no opportunity to address the issue specifically prior to permit issuance. In such instances, if the Board were to exercise jurisdiction, it would become the first-level decisionmaker as to such newly raised issues, contrary to the expectation that "most permit conditions should be finally determined at the [permit authority] level." *Knauf I*, 8 E.A.D. at 127 (quoting 45 Fed. Reg. 33,290, 33,412 (May 19, 1980)). Alternatively, the Board might remand such issues back to the permitting authority for initial determination at that level, potentially resulting in an unnecessarily protracted permitting process, where each time a final permit is issued and a new issue is raised on review, the permit must be sent back to the permit issuer for further consideration. Such an approach would undermine the efficiency, predictability, and finality of the permitting process.

BP Cherry Point, 12 E.A.D. at 219-20. In short, "[t]he effective, efficient, and predictable administration of the permitting process demands that the permit issuer be given the opportunity to address potential problems with draft permits before they become final." *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 250 (EAB 1999).

In the present case, the Region mentioned both the *Gold Book* and the *Ecoregion XIV Criteria* in the Fact Sheet made available to the public prior to the public comment period. Fact Sheet at 9. The Region also specifically stated that those documents recommended criteria ranging from 0.024 mg/l to 0.1 mg/l and the Region explained why it was selecting a criterion at the upper end of that range. *Id.* at 9-10. As noted, CLF's own comment letter merely stated that "the final permit's warm weather total phosphorus limit should be no higher than 0.1 mg/l." Letter from Peter Shelley, esq., *et al.*, of CLF to NPDES Permits Unit, U.S. EPA at 2 (May 23, 2007). CLF did not mention anywhere in its comment letter the arguments it now raises on appeal, specifically that the Region should apply the criterion of 0.024 mg/l recommended by the *Ecoregion IV Criteria*, nor did CLF mention the *Gold Book* 0.05 mg/l recommendation for streams that discharge directly into a lake or impoundment. *Id.* Although CLF's letter and the attachment to its letter did make reference to the limits of technology, it did not do so in a manner that would have alerted the Region to the contentions CLF now makes on appeal that the Permit is required to have a limit set as stringent as is

achievable under available technology. CLF also has not identified any other person's public comments that raised the issues CLF now raises.⁵² Accordingly, CLF's petition fails to include the required "demonstration that any issues being raised were raised during the public comment period * * * to the extent required by these regulations," 40 C.F.R. § 124.19(a), which includes submitting "all reasonably available arguments" by the close of public comment, *id.* § 124.13. Therefore, CLF's petition with respect to the phosphorus limit must be dismissed.

b. The Region's Decision to Establish a New Limit More Stringent than the District's Expired Permit's Limit

The District argues that the 0.1 mg/l warm-weather total phosphorus limit is too stringent and that the expired permit's limit of 0.75 mg/l should be retained. Dist. Supp. Pet. at 32-39. The District argues that the Region should wait and collect data showing the effects of the District's Treatment Plant improvements the District made to meet the 2001 permit's limit. Dist. Supp. Pet. at 33. The District's arguments, however, are not well-aimed at either the regulatory requirements governing the Region's decision or the Region's rationale for its decision, and therefore, as explained below, the District's arguments miss their mark.

The Region applied 40 C.F.R. § 122.44(d)(1)(vi)(B) to establish the Permit's water quality-based numeric effluent limit to comply with Massachusetts' narrative water quality criteria. Fact Sheet at 9. As explained above, that regulation provides as follows:

Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:

* * *

(B) Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under sec-

⁵² Likewise, CLF's statement in its comment letter that "[t]he limited flushing capacity of this system, combined with the persistence of phosphorus and nitrogen in the system, warrant consideration of year round application of controls," simply was not sufficient to alert the Region that CLF objected that the most stringent achievable limit should be applied year-round rather than the Permit's year-round application of controls in the form of a 0.1 mg/l limit during the warm-weather months and a limit of 1.0 mg/l during the cold-weather months. *See* Letter from Peter Shelley, esq., *et al.*, of CLF to NPDES Permits Unit, U.S. EPA at 2 (May 23, 2007).

tion 304(a) of the CWA, supplemented where necessary by other relevant information * * * .“

40 C.F.R. § 122.44(d)(1)(vi)(B). Following the regulation’s direction, the Region used EPA’s water quality numeric criteria guidance set forth in the *Gold Book* and *Ecoregion XIV Criteria*, supplemented with other relevant information. Fact Sheet at 9-10. The Region observed that the *Gold Book* recommends total phosphorus criteria ranging from 0.025 mg/l to 0.1 mg/l, depending on the characteristics of the water body, and that the *Ecoregion XIV Criteria* states that 0.024 mg/l would represent waters in the region minimally impacted by human activities and without cultural eutrophication. *Id.* The Region selected the least stringent criterion within this range, 0.1 mg/l, as the Permit’s warm-weather limit.

Although the District does not directly argue that the Region should not have used the *Gold Book* and *Ecoregion XIV Criteria*, the District does state that those Agency criteria documents are based on old data, and the District argues that the Region should wait for the development of additional site-specific data and a TMDL or other mathematical model for phosphorus in the Blackstone River. Dist. Supp. Pet. at 32-33, 37-39. The Board rejects this contention, first, because, in referring to the criteria guidance in the *Gold Book* and *Ecoregion XIV Criteria*, the Region followed the regulation’s direction to use EPA criteria. *See* 40 C.F.R. § 122.44(d)(1)(vi)(B). The District has not pointed to record evidence of another available, relevant method authorized under section 122.44(d)(1)(vi) that the Region could have used to identify a numeric criterion for the Blackstone River. *See* 40 C.F.R. § 122.44(d)(1)(vi)(A), (B), (C) (authorizing permit limits to be based on draft state criteria and EPA’s water quality criteria, supplemented with other relevant information, or based on an indicator parameter).

The District’s argument that the Region should wait to allow time to collect data showing the effects of the 0.75 mg/l limit imposed in 2001, Dist. Supp. Pet. at 33, simply misapprehends the basis of the Region’s decision. A limit of 0.75 mg/l does not fall within the criteria range the Region identified from EPA’s criteria documents, which is a regulatorily-authorized method for determining the numeric permit limit.

Further, the District’s references to the expired permit’s limit and analysis underlying that limit, including the previously-used mathematical model, referred to as QUAL2E, Dist. Supp. Pet. at 32-33, 39, only address the control of low dissolved oxygen levels and do not address other cultural eutrophication problems identified by the Region. *See* RTC at 41. The Region explained: “The model was not used to develop effluent limitations addressing cultural eutrophication in the new permit because efforts to update the model in light of new data were unsuccessful.” *Id.* The Region explained that the 2001 permit’s “0.75 mg/l total phosphorus limit was based on meeting dissolved oxygen criteria in the Blackstone

River only and did not address eutrophication related impairments in either the Blackstone River or Narragansett Bay.” RTC at 25; *see also id.* at 35.

The Region identified new data the Army Corps of Engineers collected in 2003 showing that macrophytes dominate the Blackstone River immediately below the District’s discharge point – “[t]he plants that dominated these reaches all have in common that they grow in dense, thick, and long masses and are all indicators of eutrophic freshwater.” *Id.* The Region explained that the QUAL2E model cannot be used to analyze this problem: “Since the model [QUAL2E] is not able to simulate rooted aquatic plants, efforts to update the model based on the new Corps of Engineers data were unsuccessful relative to simulating instream phosphorus levels.” *Id.*

To address the specific problems identified in the Blackstone River, the Region followed the direction of 40 C.F.R. § 122.44(d)(1)(vi) and utilized EPA’s water quality numeric criteria guidance found in the *Gold Book* and *Ecoregion XIV Criteria* in setting the numeric limit for phosphorus. In attacking the Region’s decision, the District has not sought to meet the standard established by 40 C.F.R. § 122.44(d)(1)(vi). The District has not pointed to any EPA or Massachusetts numeric criteria, nor any other relevant record evidence, that would support a total phosphorus limit of 0.75 mg/l as sufficient to control cultural eutrophication immediately and further downstream from the District’s discharge point.

The Board also rejects the District’s effort to introduce on appeal certain output from a mathematical model currently in development by the District. *See* Dist. Supp. Pet. at 38 & ex. G. As noted in the response to comments, development and testing of the model has not been completed, and was therefore not utilized in setting a phosphorus limit for this Permit. RTC at 76.

More generally, the Board rejects the District’s request for delay in establishing the phosphorus limit for the same reasons the Board rejected similar arguments calling for delay with respect to the total nitrogen limit – specifically, the regulations direct the permit issuer to establish water quality-based effluent limits even in the absence of a TMDL or wasteload allocation and the statute favors expeditious efforts to address water quality problems, rather than delay. *See* Part II.D.2.b(ii)(a). The Region also appropriately and sufficiently identified the existing severe phosphorus-driven cultural eutrophication violating water quality criteria and impairing the Blackstone River’s designated uses as a further reason for imposing a stringent permit limit at this time without waiting for further data. RTC at 40-41. The Region was not required to wait for further data, development of a TMDL, or development of a mathematical model for total phosphorus in the Blackstone River.

The Region also considered whether site-specific data collected in 2003 would support a permit limit at 0.75 mg/l, even though that limit would not fall

within the recommendation of the *Gold Book* and *Ecoregion XIV Criteria*. Specifically, the Region noted that data collected by MassDEP and the Army Corps of Engineers in 2003 do not support a 0.75 mg/l limit. RTC at 35. The Region explained that the District discharged at close to the 0.75 mg/l level in 2003 and yet the Blackstone River exhibited characteristics of significant eutrophication. *Id.* (identifying an August 2003 monthly average discharge concentration of 0.8 mg/l). The District attempts to attack the Region's analysis by arguing that the observations regarding River conditions were not made in the same month when the District's discharges were near the 0.75 mg/l level, and that therefore the 2003 data do not show use-impairing cultural eutrophication at that discharge level. Dist. Supp. Pet. at 36. The District's argument, however, must fail for two reasons. First, the record contains multiple observations of severe cultural eutrophication throughout the 2003 summer⁵³ indicating that the River observations are sufficiently aligned with the discharge data. Second and more important, even if the District's argument were to show that there is a misalignment between the 2003 River condition observations and the District's discharge near the 0.75 mg/l level, there would still be no identified evidence in the record showing that a limit of 0.75 mg/l is sufficient to ensure compliance with Massachusetts' water quality standards. In other words, without the 2003 information, the most relevant information in the record regarding appropriate numeric criteria would still be the recommendations of the *Gold Book* and *Ecoregion XIV Criteria*. Accordingly, these arguments do not show clear error in the Region's decision to apply to the Blackstone River the criteria range of 0.024 mg/l to 0.1 mg/l taken from the *Gold Book* and the *Ecoregion XIV Criteria*.

The District's argument that the Region should have taken into account dilution of the District's discharges in the River at high flows and at seasonal average flow also does not show clear error in the Region's analysis. Dist. Supp. Pet. at 36-37, 39. The Region explained that Massachusetts regulations require the dilution value to be based on the known or estimated lowest average flow that occurs for seven consecutive days with a recurrence interval of once in ten years (known as the 7Q10 low flow rate). Fact Sheet at 4, 9-10 (citing 314 CMR 4.03(3)). The District cites no law or regulation authorizing the Region to consider dilution at flow conditions other than the 7Q10 flow rate and, thus, the District has not identified any regulatory basis for the Region to consider high or average flow rates.

Nevertheless, the Region explained that the data regarding ambient phosphorus concentrations in River flows at higher than 7Q10 indicate that there is no or little dilution available in the River flow. The Region explained that the Dis-

⁵³ See U.S. Army Corps of Engineers, *Phase I: Water Quality Evaluation and Modeling of the Massachusetts Blackstone River* (Draft 2004); MassDEP, *Blackstone River Watershed 2003 DWM Water Quality Monitoring Data* (May 2005).

trict's "discharge dominates the flow in the river under low flow conditions and during most storm events." RTC at 60. Specifically, the Region explained:

Wet weather monitoring conducted by MassDEP under its Smart Monitoring program at a water quality station (Middle River) just upstream of the UBWPAD discharge, at a time when the Worcester Combined Sewer Overflow Facility upstream was not discharging, resulted in total phosphorus concentrations ranging from 45 – 330 g/l with an average of 132 g/l (MassDEP Smart Monitoring data: 9/20/2000, 11/20/2003, 4/28/2004, 6/23/2004). The lack of dilution and the elevated background concentrations of phosphorus during wet weather events supports the applicability of the 0.1 mg/l total phosphorus limit under all flow conditions.

RTC at 60.

The District argues that the Region's response to comments inappropriately excluded data points that would have produced lower mean and median values. Dist. Supp. Pet. at 37. The District, however, fails to state that the excluded data points are not representative of high flow, or wet weather events, and therefore are not relevant to the issue the Region was analyzing, namely whether the District's discharges would be diluted during high flows. There is no clear error in the Region's decision to exclude these data points for that analysis. Similarly, there is no clear error in the Region's decision to consider one somewhat higher data point as representative of the River's high flow conditions. The District's argument that this data point is an "outlier," without more, is not a persuasive explanation as to why the data utilized by the Region is not representative. Absent such an explanation, the Board will not unseat the Region's technical judgment on representative data. *In re Wash. Aqueduct Water Supply Syst.*, 11 E.A.D. 565, 584 (EAB 2004) (selection of representative data is a technical judgment that falls within the permit issuer's discretion and technical expertise).⁵⁴

For all of these reasons, the Board concludes that the District has not demonstrated that the Region's decision to set the Permit's total phosphorus limit at 0.1 mg/l is clearly erroneous or an abuse of discretion.

⁵⁴ Even utilizing the data the District advocates at most would result in a background River concentration that is a few hundredths of a mg/l lower than the identified 0.1 mg/l criterion. Dist. Supp. Pet. at 37. The District has not shown that such a small amount of possible dilution would allow a materially higher Permit limit.

F. *The Permit's Fecal Coliform Limit*

The Region set the water quality-based effluent limit for fecal coliform at 200 colony forming units (“cfu”)/100 ml as a monthly geometric mean and 400 cfu/100 ml as a daily maximum for the period of April 1 through October 31, and for the period of November 1 through March 31, the Region set the limit at a monthly geometric mean of 571 cfu/100 ml and a daily maximum of 1429 cfu/100 ml. Permit at 4, 8 n. 6. The District does not object to the warm-weather limit for the period of April 1 to October 31; but the District does object to the cold-weather limit applicable to November 1 through March 31. Dist. Supp. Pet. at 39-43. The District states that the cold weather limit has the effect of requiring disinfectant treatment year-round and the District believes that this is not necessary to ensure compliance with Rhode Island’s water quality standards.

The District, in effect, argues that the Region should have ignored Rhode Island’s water quality standard⁵⁵ because it designates a use for these waters – primary human contact – that does not occur in cold weather. The District argues as follows:

Even if winter disinfection were necessary to protect primary contact recreation in Rhode Island, there are no places for engaging in such which might be impacted by the District’s discharge. The winter effluent limit has been set to protect a use that does not occur in areas not designated for that use.

Dist. Supp. Pet. at 40. The District also connects this argument regarding the River’s designated use with challenges to the sufficiency of the data the Region used in its reasonable potential analysis – the District states that the Region “attempt[s] to protect a non-existent use with unsound science.” *Id.* at 43. Specifically, the District asserts that the Region relied on data that is both old and limited in number. *Id.* at 41. The District argues further that the Region’s analysis failed both to account for dilution of the Region’s discharge in the Blackstone River and to take into account, and control, other sources of fecal coliform. *Id.* at 41-42.

The District’s arguments, however, fail to demonstrate clear error or abuse of discretion in the Region’s decision. The District’s argument regarding what it

⁵⁵ The District asserts, without citation to any legal authority, that “the Region must exercise its own judgment and analysis in determining the impact on a downstream state, not merely implement that state’s regulation in its stead. Here, given the absence of any real evidence connecting the District’s discharge to impairment of designated uses, the CWA does not authorize the imposition of water quality-based effluent limits based on Rhode Island standards.” Dist. Supp. Pet. at 43.

asserts is the “non-existent use” of the Rivers for primary human contact during the cold-weather period conflates the notion of “existing use” with that of “designated use.” Rhode Island law defines “designated uses” as “those uses specified in water quality standards for each waterbody or segment whether or not they are being attained.” 12-190-001 R.I. Code R. § 7. This meaning is confirmed by contrast with the definition of “existing use,” which means the uses “*that are actually attained* in a waterbody on or after November 28, 1975.” *Id.* (emphasis added).

Here, Rhode Island water quality standards classify the Blackstone River as “B1” and the Seekonk River as “SB1.” Both class B1 and SB1 waters “are *designated* for primary and secondary contact recreational activities.” 12-190-001 R.I. Code R. § 8.B.(1)(d), (2)(c) (emphasis added). Because this regulation uses the word “designated,” rather than “existing,” it unambiguously describes the waters falling within these classes as having a designated use of primary human contact, and because this is the designated use, it applies “whether or not [the uses] are being attained.” 12-190-001 R.I. Code R. § 7. The applicable Rhode Island water quality regulations also do not contain a seasonal exclusion for a cold-weather period. 12-190-001 R.I. Code R. § 8.B.(1)(d), (2)(c). Thus, there is no ambiguity in Rhode Island’s law establishing a year-round designated use for the Blackstone and Seekonk Rivers as including both primary and secondary contact recreational activities.

There is also no ambiguity, or seasonal exception, in Rhode Island’s numeric criterion for fecal coliform for these waters. Class B1 waters must comply with the following numeric criterion for fecal coliform: “Not to exceed a geometric mean value of 200 [MPN/100 ml] and not more than 20% of the total samples taken shall exceed 500 [MPN/100 ml].” 12-190-001 R.I. Code R. § 8.D.(2) tbl.1.⁵⁶ Class SB1 waters must comply with a criterion of 50 MPN/100ml, geometric mean. *Id.* tbl.2.

The applicable federal regulations also are not ambiguous: those regulations require that the Permit the Region issues “shall include” water quality-based effluent limits to “[a]chieve water quality standards” established by Rhode Island. 40 C.F.R. § 122.44(d)(1). Specifically, “[I]mitations *must control* all pollutants” that may cause, contribute to, or have a reasonable potential to cause a violation of Rhode Island’s water quality standards. *Id.* § 122.44(d)(1)(i) (emphasis added). The District has cited no legal authority – and none exists – for the Region to ignore these clear requirements of the federal NPDES permitting regulations and Rhode Island’s water quality standards. Thus, the Board must reject the District’s argument that the Region has authority to issue a permit with a seasonal exception

⁵⁶ The Region based its decision on a version of Rhode Island’s water quality standards that has subsequently been replaced by Rhode Island and approved by EPA with a more stringent fecal coliform criteria providing that not more than 10% of the samples may exceed 400 MPN/100 ml.

for controlling fecal coliform in cases, like the present one, where the Region determined that the fecal coliform discharges have the reasonable potential to violate Rhode Island's water quality standards.

The District also has not established clear error or abuse of discretion in the Region's determination that the District's fecal coliform discharges have reasonable potential to violate Rhode Island's numeric criterion for fecal coliform. The Region based its interpretation on water quality sampling collected in the Blackstone River in 2005 and 2006 at the "last accessible point on the main stem of the Blackstone River prior to its crossing the MA-RI border." Fact Sheet at 8. The Region described the data and its conclusions drawn from the data as follows:

This sampling included monthly samples collected during dry weather from November 2005 through February 2006, a period during which the upstream Massachusetts POTWs were not disinfecting. Fecal coliform counts of 1700, 1300, 700, and 1700 MPN/100 ml were recorded during this period. The geometric mean of these samples is 1273 MPN/100 ml, and all four of the samples exceeded 500 MPN/100 ml, therefore violating RI water quality standards. During dry weather, the only significant sources of fecal coliform bacteria in the river are upstream POTWs. The sampling also included monthly samples collected during April 2005 and October 2005, a period during which upstream POTWs are disinfecting; samples collected during this time indicate the criteria were generally met. EPA believes that the discharge from [the District], being the dominant point source on the river, has the reasonable potential to cause or contribute to violations of Rhode Island Water Quality Standards.

Fact Sheet at 8. In its response to comments, the Region also discussed data showing a similar nearly uniform violation of water quality standards during wet weather, or high flow, events. RTC at 63-64. The Region also explained that there is effectively no dilution available – the Region reached this conclusion by observing that, in periods when the POTWs are disinfecting, the River flow is in compliance with the fecal coliform criteria during low flow conditions, but is in violation during wet weather conditions. *Id.* Thus, the Region concluded that, during wet weather conditions, the River is in violation from other sources and the District's discharges would not be diluted by a less polluted River flow.

Other than arguing that the wet-weather data are too old and that there are not a sufficient number of samples, Dist. Supp. Pet. at 41, the District does not identify any error in the Region's analysis. Notably, the District does not point to any record evidence that would contradict the data the Region relied upon. Mere

argument about data age, without evidence of changed conditions, or mere argument about the number of samples, without evidence showing that the number of samples is inadequate, is not sufficient to establish clear error in the Region's technical determination that these data are representative. *In re Wash. Aqueduct Water Supply Syst.*, 11 E.A.D. 565, 584 (EAB 2004) (selection of representative data is a technical judgment that falls within the permit issuer's discretion and technical expertise).

The Board also rejects the District's contention that the Region failed to appropriately take into account "other sources of coliform in the River." Dist. Supp. Pet. at 42. The Region's analysis shows that it considered whether other sources would be a significant contributor during low flow conditions and the Region concluded that "[d]uring dry weather, the only significant sources of fecal coliform bacteria in the river are upstream POTWs" and the District is the dominant one. Fact Sheet at 8. The Region additionally considered the existence of other sources in its analysis of dilution during wet weather conditions. RTC at 64. The Board also rejects the District's contention that the Region's analysis "puts the entire burden of coliform compliance on the District." Dist. Supp. Pet. at 42. The Permit's conditions only require the District to control the fecal coliform discharged from the District's outfall; the Permit does not require the District to limit or control fecal coliform in the background River flow or from any source other than the District's own discharges. Accordingly, the District has failed to show clear error or abuse of discretion in the Region's determination that the District's fecal coliform discharges have the reasonable potential to cause or contribute to violations of Rhode Island's water quality standards or the Region's establishment of the Permit's numeric limit for fecal coliform.

G. *The Permit's Aluminum Limit*

The Permit, when initially issued, did not include a limit for total aluminum, and Trout Unlimited filed a petition challenging the absence of an aluminum limit. In its response brief, the Region stated that it "plans to issue a draft permit modification to establish an aluminum effluent limit," Region's Resp. Br. at 133, and on April 15, 2009, the Region issued a Permit modification setting the Permit's aluminum limit at 87 g/l. The Region explained that this limit is required by Massachusetts' water quality standards and EPA's chronic⁵⁷ aluminum criteria recommended in Office of Water, U.S. EPA, *National Recommended Water Quality Criteria: 2002*, EPA 822-R-02-047 (Nov. 2002) ("EPA's 2002 National Criteria"). In essence, the Region determined that the Permit's limit must be set at

⁵⁷ The Region explained that permit limits based on numeric criteria within state water quality standards typically use both the acute and chronic criteria: "Maximum daily limits are generally derived from acute aquatic life criteria, and average monthly limits are generally derived from chronic aquatic life criteria." 2009 Permit Modification Statement of Basis at 5 (hereinafter "AI SOB").

the level of EPA's aluminum criterion because Massachusetts' regulations require use of EPA's criterion and both the background River flow and the District's discharges exceed the criterion level, thus indicating that any discharge by the Region will contribute to the existing violation of the criterion. AI SOB at 7-8; 2009 Permit Modification Response to Comments ("AI RTC") at 5-6.

On May 20, 2009, the District filed a petition seeking review of the aluminum limit. *See* Petition for Review of Revised Permit Conditions and Motion of the Permittee, Upper Blackstone Water Pollution Abatement District, to Consolidate this Petition with Others Related to this Permit, NPDES Appeal No. 08-11 (May 20, 2009) (herein "Dist. AI Pet."). By order dated August 6, 2009, the Board consolidated the District's petition for review of the Permit modification with the District's petition for review of other conditions of the Permit.

The District challenges both the water quality criterion the Region applied in its analysis and the data the Region used in determining that the District's discharges have a reasonable potential to cause violations of that criterion. The District argues that correcting the criterion and correcting what it alleges are data errors demonstrate that the District's aluminum discharges do not cause, contribute to, or have the reasonable potential to cause violations of Massachusetts water quality standards and that the particular numeric limit the Region selected, 87 g/l, is too stringent. District's AI. Pet. at 4. The District argues that it was clear error for the Region to apply an aluminum criterion drawn from EPA's 2002 *National Criteria*, and the District contends that the Region, instead, should develop a site-specific criterion based on data regarding "naturally occurring background concentrations" in the River, which the District argues would produce a criterion higher than the aluminum concentration found in the District's discharges. Dist. AI Pet. at 2-3.⁵⁸ The District argues that its discharges are consistently below the background level and, thus, would not violate a criterion reflecting the background concentration and no limit would be required. Alternatively, the District argues that the limit should be set at the higher background level. These arguments, however, fail to show that the Region committed clear error or abused its discretion.

Massachusetts water quality standards require "additional minimum criteria" as follows:

⁵⁸ Finally, the District argues that the Region's decision to modify the District's Permit just six months after issuing the Permit raises public policy questions that the Board should review. District's AI. Pet. at 14-16. The District argues that the Region has changed its position merely in response to Trout Unlimited's original petition for review and not based on any new or different scientific analysis. *Id.* The District further contends that the Region's sudden change frustrates the District's efforts at capital planning and restricts the District's options for controlling phosphorus. *Id.*

All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife. For pollutants not otherwise listed in 314 CMR § 4.00, the *National Recommended Water Quality Criteria: 2002*, EPA 822R-02-047, November 2002 published by EPA pursuant to Section 304(a) of the Federal Water Pollution Control Act, are the allowable receiving water concentrations for the affected waters, unless the Department either establishes a site specific criterion or determines that naturally occurring background concentrations are higher.

314 C.M.R. § 4.05(5)(e). In responding to public comments, the Region explained that “[a]luminum has not been ‘otherwise listed’ in 314 CMR § 4.00 and no site-specific criteria for the Blackstone River have been developed for this pollutant.” Al RTC at 6. The District does not dispute this conclusion; instead, the District argues that, while the the Massachusetts’ regulations generally require application of EPA’s national criteria, there is an exception to this requirement applicable where the “naturally occurring background concentrations are higher” and, in such cases, “the background concentration of aluminum becomes the relevant water quality standard.” Dist. Al Pet. at 3.

The Region addressed this contention by stating in its response to comments that the District had not shown that elevated background aluminum levels in the Blackstone River are, in fact, naturally occurring. Specifically, the Region explained as follows:

[W]e also do not see any demonstration in the graph (or elsewhere in the comments) that the aluminum levels are naturally occurring. The presentation does not factor in, or even acknowledge the multitude of industrial and commercial indirect dischargers to the wastewater system and the addition of aluminum by the City of Worcester, UBWPAD’s largest member community, as part of its drinking water treatment process. Similarly, given the highly urbanized nature of the watershed above the discharge, including numerous industrial and commercial sites with storm water runoff and some with direct wastewater discharges to the river, including the City of Worcester discharging aluminum to the receiving water as part of the water supply treatment process, the commenter has not made a sufficient case that the ambient levels are naturally occurring.

Al RTC at 3.

On appeal, the District attempts to refute the Region's determination that the District had "not made a sufficient case that the ambient levels are naturally occurring" by citing data that is not part of the administrative record. *See* Dist. Al Pet. at 9-14. Specifically, the District cites data collected by the Worcester Water Department from a point between the Kendall Reservoir and the Holden Reservoir. *Id.* at 11-12. The District's arguments based on this information introduced for the first time on appeal must be rejected. The Region was required to make its decision on the administrative record established pursuant to 40 C.F.R. § 124.18, and whether the Region committed clear error is measured by the record that was before the Region at the time it made its decision. *Deseret Power*, 14 E.A.D. at 7 n.3; *In re Kendall New Century*, 11 E.A.D. 40, 55 (EAB 2003); *In re Steel Dynamics*, 9 E.A.D. 165, 230 (EAB 2001); *In re Maui Elec. Co.*, 8 E.A.D. 1, 9-10 (EAB 1998).

The District's arguments based on the data and analysis that is included in the administrative record do not show clear error in the Region's determination. The District characterizes the record data as evidencing a "correlation" between elevated aluminum concentrations in the District's discharges and elevated aluminum concentrations in the background River flow. Dist. Al Pet. at 10; Letter from Robert D. Cox, Jr., Attorney for the District, to Meredith Timony, U.S. EPA Region 1 NPDES Unit, at 3 (Feb. 27, 2009) (hereinafter "Dist. Al Comment Letter"). The District has inappropriately presented the data, which were collected on specific days separated by many months, on a line graph, leaving the false impression of continuity between the data points. Properly analyzed as independent data points, the data reveal that on some days there were narrow differences and on other days a wide difference between the concentrations in the River and in the District's discharges. Thus, the Region correctly rejected the District's assertion, stating in its response to comments that the District's graph does not show a direct correlation between the aluminum concentration in the District's discharge and the concentration in the River flow. Al RTC at 3. Moreover, the Region also correctly stated in its response to comments that the identification of a correlation, in any event, does not speak to the question whether the background aluminum concentration is "naturally occurring" rather than caused by the variety of anthropogenic sources the Region mentioned in its response to comments. Al RTC at 3. The District's recitation on appeal of its assertion that there is a direct correlation is simply not sufficient to demonstrate that the Region clearly erred in rejecting the District's "naturally occurring" theory by observing that the data do not show a direct correlation and do not address the many anthropogenic sources in the watershed that may be responsible for changes in the background aluminum concentration.

The one study the District attached to its comment letter merely mentioned acidic precipitation as a possible cause of aluminum found in rivers and streams in the northeast – it does not speak either to whether acidic precipitation is "naturally occurring" rather than caused by human activity or, more importantly, to

whether acidic precipitation causes the aluminum concentrations in the Blackstone River rather than the anthropogenic sources the Region mentioned in its response to comments. Compare Al RTC at 3 with Monette, M.Y. & McCormick, S.D., *Impacts of Short-term Acid and Aluminum Exposure on Atlantic Salmon (Salmo Salar) Physiology: a Direct Comparison of Parr and Smolts*, 86 *Aquatic Toxicology* 216-226 (2008). Because the record evidence the District cites does not refute the Region's response to comments, the Board must reject the District's contention that the Region clearly erred in concluding that it must apply EPA's nationally recommended criterion of 87 ug/l for aluminum in the Blackstone River.⁵⁹

To determine whether the District's discharges may exceed the criterion of 87 ug/l, and therefore, have the potential to cause a violation of Massachusetts' water quality standards, EPA's guidance recommends that the permit issuer use the maximum concentration of the pollutant measured in the discharger's effluent. Office of Water, U.S. EPA, *U.S. EPA NPDES Permit Writers' Manual*, ch. 6.3.2 (Dec. 1996). Here, the Region determined that "the concentration of aluminum in the effluent exceeded the chronic criterion" on numerous occasions and "[t]herefore, there is reasonable potential for the discharge to cause or contribute to an excursion above the criteria in the downstream receiving water even if the ambient concentration were assumed to be zero." Al SOB at 7. The Region also concluded that the average concentration of aluminum in the District's effluent during typical low flow periods was 127 ug/l, well above the criterion of 87 ug/l, also indicating a reasonable potential for the District's discharges to cause or contribute to violations of the criterion. *Id.* The District challenges this determination on appeal by identifying three types of data errors it contends establish clear error and require remand. Dist. Al Pet. at 4-13. Notably, however, the District does not challenge the Region's determination that the data demonstrate that the Region's discharges exceeded the 87 ug/l criterion on some occasions; instead, the District only argues that its average discharge concentration is lower than 127 ug/l. *Id.* The Board does not need to reach the specific arguments the District makes on appeal⁶⁰ – it is sufficient that the Region correctly observed that the District's dis-

⁵⁹ Rhode Island's water quality standard for aluminum, which is applicable to the Blackstone River's lower reaches, also is 87 g/l. *Rhode Island Water Quality Regulations*, Rule 8, App. B.

⁶⁰ Specifically, the District argues that the Region included in its averages data taken when the river was flowing at a high level and excluded data from actual low-flow periods falling outside of typical low flow months. Dist. Al Pet. at 4-6. The District also argues that the Region's analysis inappropriately used in its averaging the method detection limit for some of the data points of 100 ug/l, thereby increasing the average. *Id.* at 7-9. The Region adequately addressed these comments in the Region's response to public comments. Al RTC at 2-4. On appeal, the District raises a new argument that one data point is an "outlier" reflecting a "plant upset" and thus not representative. Dist. Al Pet. at 6. Notably, the District included this data point in its own calculation of its average aluminum concentration as presented in the District's public comment letter. Dist. Al Comment Letter at 3, tbl. 1.

Continued

charges have been measured exceeding the applicable 87 ug/l criterion. This is sufficient to support the Region's conclusion setting the Permit limit at the level of the criterion consistent with EPA guidance. Moreover, the District's own calculation of its average concentration as presented in the District's public comments was 92 ug/l, exceeding the criterion and justifying the Permit's limit. Dist. Al Comment Letter at 3, tbl. 1.

For the foregoing reasons, the Board concludes no clear error in the Region's determination establishing the Permit's total aluminum limit at 87 ug/l.

H. The Various Metals Limits and Sampling and Monitoring Requirements Are Appropriate

In a series of short sections beginning on page 51 and extending to page 57 of its Supplemental Petition, the District raises a number of separate issues. The Board rejects these issues. The District has not shown that the issues were raised during the public comment period, or the issues are not sufficiently specific, or lack record support, or the District failed to address the Region's explanation of its decision and response to comments.

Specifically, the District mentions total residual chlorine and states the District's understanding of the Permit's sampling requirements, but the District does not identify any specific error or problem with the Permit's terms. Dist. Supp. Pet. at 54. Accordingly, the District's statements regarding total residual chlorine do not appear to raise an issue requesting Board review and therefore review of the total residual chlorine Permit conditions are denied.

The District states that it is concerned about what it refers to as the Permit's rigid schedule for WET testing, stating that "strict adherence to this schedule may prove difficult or impossible at times" and requesting that language be added to the Permit to address its concern. Dist. Supp. Pet. at 51-52. The District, however, fails to explain why the following statement in the Permit is clearly erroneous or an abuse of discretion: "[o]ccasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented in correspondence appended to the applicable discharge monitoring report." Permit at 6. Accordingly, review of the WET test schedule is denied.

The District objects to the wet weather fecal coliform sampling requirements on the grounds of the difficulty in performing the EPA-approved sampling

(continued)

Because the District did not raise its issues and arguments concerning this data point during the public comment period and those arguments were reasonably ascertainable at that time, the District is barred from raising its challenges for the first time on appeal. Moreover, the District has not provided evidence demonstrating that the conditions resulting in this "outlier" data point will not reoccur.

protocol. Dist. Supp. Pet. at 51-52. The District observes that the EPA-approved protocol requires trained laboratory personnel and that another test available on the market can be performed by the District's staff. *Id.* The District's argument, however, fails to address the regulatory requirement that monitoring be conducted using EPA-approved methods. *See* 40 C.F.R. § 122.44(i)(1)(iv). Accordingly, the District has failed to demonstrate clear error in the monitoring requirements the Region included in the Permit and review of this requirement is denied.

The District argues that the ammonia limit should not be stated both as a mass limit and also as a concentration limit. Dist. Supp. Pet. at 53-54. The District demonstrates that during the public comment period it asked for clarification regarding which limit would be controlling, but the District does not demonstrate that it objected to the limit expressed both as a mass limit and as a concentration limit. The regulations authorize the Region to impose limits stated both as mass limit and simultaneously as a concentration limit. 40 C.F.R. § 122.45(f)(2). In addition, the Permit's limit for ammonia is identical to the limit in the District's previous 2001 permit. Fact Sheet at 10-11. Because this issue was not preserved for appeal by being raised during the public comment period and since it was clearly ascertainable at that time, review is denied. *See* Part II.E.2.a above (discussing requirements for issues and arguments to be raised on appeal).

The District objects that the copper limit is based on dilution at the point of discharge, but should instead be based on dilution at the Rhode Island border. Dist. Supp. Pet. at 54-55. The District has made no demonstration that this issue was raised during the public comment period or demonstrated that this issue was not ascertainable during the public comment period. The District only demonstrated that it commented during the public comment period that the copper limit should be based on the Massachusetts site-specific water quality standard. *Id.* The final permit limit is the same as proposed in the draft permit, and the Region explained why adjusting the copper limit based on the Massachusetts site-specific criteria would not ensure compliance with Rhode Island's water quality standards. RTC at 13-14. Accordingly, review of the copper limit is denied. *See* Part II.E.2.a above (discussing requirements for issues and arguments to be raised on appeal).

The District argues that the Permit should not impose a cadmium effluent limit that is below the levels that existing technology can detect. Dist. Supp. Pet. at 55. Although the District demonstrates that New England Plating's public comments noted that the cadmium limit is below the current technology detection limit, the District has not demonstrated that any public comments requested that the Permit's cadmium limit be made less stringent for this or any other reason. Accordingly, this issue was not preserved for appeal and review of the cadmium limit is denied. *See* Part II.E.2.a above (discussing requirements for issues and arguments to be raised on appeal).

The District objects to the Permit's new monitoring requirements for lead. Dist. Supp. Pet. at 56. The District notes that the lead monitoring requirements were not included in the draft permit and, therefore, the District may raise issues regarding this requirement even if it did not raise them during the public comment period. *Id.* The District argues, without providing any evidence support, that its lead discharge levels are "consistently below levels of concern" and therefore monitoring is not necessary. *Id.* The Region fully explained in its response to comments why it determined that monitoring lead is necessary. RTC at 14-15. Specifically, the Region explained that although the District's lead discharges have been below the detection levels of the test the District has used (ranging from 5-10 ug/l), these "detection levels are higher than the ambient criteria values." *Id.* Specifically, Massachusetts criterion for lead is 1.8 ug/l. 31 C.M.R. § 405(5)(e). Because the District has provided no evidence to refute the Region's rationale articulated in its response to comments, the District's petition lacks sufficient support, and review of the lead monitoring requirement is denied.

The District objects to the Permit's monitoring requirement for nickel. Dist. Supp. Pet. at 56. The District notes that the nickel monitoring requirements were not included in the draft permit and, therefore, the District may raise issues regarding this requirement even if it did not raise them during the public comment period. *Id.* The District argues, without providing any evidence support, that its nickel discharge levels are "consistently below levels of concern" and therefore monitoring is not necessary. *Id.* The District, however, does not address the Region's statement in its response to comments that the monitoring requirement for nickel only requires the District to separately include nickel in its monitoring reports showing the results of nickel monitoring otherwise already required as part of the WET tests. *See* RTC at 15. The District has not demonstrated any clear error or abuse of discretion in the Region's decision to require separate reporting of monitoring already conducted as part of the WET test and, accordingly, review of this issue is denied.

The District also objects to the Permit condition requiring the District to complete an infiltration and inflow control plan within six months. Dist. Supp. Pet. at 57. The District, however, has failed to provide any evidence supporting its objection that six months is an inadequate time. Nevertheless, because this condition applies both to the District and to the co-permittees and because the Board is remanding the Permit's co-permittee condition, the Board remands this requirement for preparation of an inflow and infiltration plan as it relates to the co-permittees, and the Board denies review of this provision with respect to the District, which remains obligated to control inflow and infiltration. The Region explained that these operation and maintenance requirements are authorized by 40 C.F.R. § 122.41(e), (d), and that the Permit's specific inflow and infiltration conditions are required by Massachusetts' state certification issued under section 401 of the CWA. Fact Sheet at 18-19.

I. *The Region Did Not Abuse its Discretion in Denying Compliance Schedules for the Nitrogen and Phosphorus Limits to be Included as Permit Conditions*

The District argues that the Region clearly erred or abused its discretion in issuing the Permit without providing a schedule for delayed compliance with the total phosphorus and total nitrogen limits. Dist. Supp. Pet. at 44-51. The District argues that the Region clearly erred in interpreting Rhode Island law and abused its discretion under Massachusetts law. *Id.* The District acknowledges that the federal NPDES permitting regulations, 40 C.F.R. § 122.47(a), grant the permit issuer discretion to include a compliance schedule in a permit only where the applicable state regulations authorize the permit to contain a schedule for compliance. *Id.* at 48. The District argues that Massachusetts law governing the Permit's phosphorus limit grants the permit issuer discretion to include a compliance schedule and that the Region abused its discretion in denying a compliance schedule in the present case where it is clear that the District cannot immediately comply with the Permit's total phosphorus limit. *Id.* at 45-46. The District also argues that the Region clearly erred in concluding that Rhode Island law governing the Permit's total nitrogen limit does not authorize a compliance schedule to be included in the permit. *Id.* at 46-48. The District does acknowledge that Rhode Island has interpreted its law as not authorizing compliance schedules, but the District argues that the Region should ignore Rhode Island's interpretation and, instead, should adopt the interpretation of Rhode Island law the District offers in its supplemental petition. *Id.*

Contrary to the District's contention, the Region did not err in following Rhode Island's interpretation of its regulations governing compliance schedules. A Region's authority to delay compliance with state water quality standards through a compliance schedule made part of an EPA-issued NPDES permit is limited to those circumstances in which the applicable state's water quality standards or its implementing regulations "can be fairly construed as authorizing a schedule of compliance." *In re Star-Kist Caribe, Inc.*, 3 E.A.D. 172, 175 (Adm'r 1990), *modification denied*, 4 E.A.D. 33, 34 (EAB 1992); *In re City of Ames, Iowa*, 6 E.A.D. 374, 380 (EAB 1996). The Administrator explained that "Congress intended the States, not EPA, to become the proper authorities to define appropriate deadlines for complying with their own State law requirements. Just how stringent such limitations are, or whether limited forms of relief such as variances, mixing zones, and compliance schedules should be granted are purely matters of State law, which EPA has no authority to override." *Star-Kist*, 3 E.A.D. at 182.

Absent authority for delay granted by the applicable state water quality standard, the NPDES permit must require compliance with state water quality standards immediately upon issuance. 40 C.F.R. § 122.4(d); *see In re J & L Specialty Prods. Corp.*, 5 E.A.D. 333, 344 (EAB 1994). "[T]he only instance in which

the permit may lawfully authorize a permittee to delay compliance after July 1, 1977, pursuant to a schedule of compliance, is when the water quality standard itself (or the State's implementing regulations) can be fairly construed as authorizing a schedule of compliance." *Star-Kist*, 3 E.A.D. at 175.⁶¹ Accordingly, in this case, the Region's capacity to provide a compliance schedule for total nitrogen and total phosphorus discharge limits is circumscribed by what Rhode Island's and Massachusetts' water quality standards allow. Here, the Region explained as follows:

Rhode Island's Water Quality Standards do not include provisions allowing for schedules in permits; Rhode Island's practice is to incorporate schedules in an Administrative Compliance Order or a Consent Agreement. Because the nitrogen limit in the UBWPAD permit is based on Rhode Island's standards, EPA is not including a compliance schedule in the permit.

RTC at 58. The District does not dispute that Rhode Island's interpretation and practice incorporates compliance schedules, not in permits, but instead in compliance orders or consent agreements. *See* RTC at 58. There is no clear error in the Region's statement – the Rhode Island state regulation the District cites does not specifically mention compliance schedules for water quality-based effluent limits and it does not authorize extending compliance beyond the statutory deadline. *See* 12-190-001 R.I. Code R. §§ 20.01, .02(a).

The Region did note that Massachusetts law applicable to the Permit's total phosphorus limit does authorize, at the permit issuer's discretion, a compliance schedule to be included in the permit. However, the Region explained that "[i]n this matter, there are many overlapping issues related to the planning, design and construction of facilities to meet the limits for phosphorus and nitrogen. * * * In light of these overlapping issues and the fact that Rhode Island standards do not include provisions allowing for schedules, EPA intends to issue a compliance schedule to meet both the phosphorus and nitrogen limits in a separate administrative order." RTC at 19. There is no clear error or abuse of discretion in this approach.

J. The Region Appropriately Considered Environmental Justice Issues

The District argues that the Region committed "clear error in not adhering to Executive Order 12898 and the local implementing policy and action plan."

⁶¹ The Board rejects the District's contention that Rhode Island's law governing compliance schedules is procedural and not part of Rhode Island's water quality standards. *See* Dist. Supp. Pet. at 64-65.

Dist. Supp. Pet. at 68. The District argues that the Region failed to comply with the President's Executive Order on environmental justice and with the Regional environmental justice action plan. The District contends that these directives provide for additional notice or hearing opportunity to environmental justice populations that may "bear the burden of increased rates that will be necessary to fund the facility upgrades required by the Permit." Dist. Supp. Pet. at 66.

The District's arguments are unpersuasive. Although environmental justice issues are considered in permitting proceedings, and the Board has remanded a permit for further environmental justice analysis, *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 174-75 (EAB 1999) (remand to provide an environmental justice analysis to supplement the Clean Air Act permitting record); *see also In re Shell Offshore, Inc.*, OCS Appeal Nos. 07-01 & 07-02 (EAB Sept. 14, 2007); *In re AES Puerto Rico, L.P.*, 8 E.A.D. 324, 351 (EAB 1999), *aff'd sub nom Sur Contra La Contaminacion v. EPA*, 202 F.3d 443 (1st Cir. 2000), nevertheless, the District is not correct in its characterization of the Region's environmental justice obligation. Executive Order 12898 instructs federal agencies to address, as appropriate, "disproportionately high and adverse *human health or environmental effects* of [their] programs, policies, and activities on minority and low-income populations * * *." Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Exec. Order 12898, 59 Fed. Reg. 7629 (Feb. 11, 1994). The Executive Order, thus, speaks to human health and environmental effects; it does not require federal agencies to consider issues regarding cost or rate changes as the District argues. Here, the District's arguments on appeal do not allege any facts showing a "disproportionately high" impact on environmental justice populations, and the District's arguments do not allege "adverse human health or environmental effects" on those populations. Thus, the District has not raised an environmental justice issue cognizable under Executive Order 12898. The District's arguments also do not address the Region's response to comments regarding its consideration of environmental justice issues. *See RTC* at 23, 113-14. Accordingly, review is denied.

III. CONCLUSION

For the reasons discussed below, the Board remands the Permit's provisions governing the requirements imposed upon co-permittees. The Board concludes the Region made no clear error with respect to all other issues raised on appeal. The Board also concludes no issues involving either the Region's exercise of discretion or an important policy consideration that warrant a change to the conditions of the permit. An appeal of the Region's decision on remand is required to exhaust administrative remedies. 40 C.F.R. § 124.19(f)(1)(iii).

So Ordered.