burden of proof is on EPA [not the District], and EPA has not done this. Pursuant to 40 C.F.R. §122.44(d)(1), a water quality-based permit requirement is justified only if it is determined that the discharge will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. Since EPA has not made any showing that the proposed limits in the Draft Permit are needed to prevent violations of, or that they will lead to attainment of, Rhode Island water quality, there is no legal basis for those limits.

Response #F43: EPA's May 23rd correspondence does not state or suggest that UBWPAD has the obligation or authority to determine whether its discharge of nitrogen and phosphorus "will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard" pursuant to 40 C.F.R. §122.44(d)(1). Similarly, the Region appreciates it is not UBWPAD's regulatory responsibility to conduct a TMDL. In our May 23rd letter, the Region simply explained that, based on the information provided regarding the modeling efforts and the documented extent of impairments to receiving waters, delay in permit issuance pending completion of the model is not warranted. The fate and transport of nutrients is very difficult to simulate in a dynamic system such as the Blackstone River. It is far from certain that the model can be calibrated and verified for low-flow, 7Q10 conditions or be a useful tool to evaluate the impact of the UBWPAD discharge on water quality, particularly in the marine waters in Rhode Island. This is necessary in order for EPA to use the model results to establish water quality-based effluent limits. Additional challenges in this regard were discussed in previous responses. *See* Response # F7 relative to nitrogen.

Understandably, UBWPAD does not suggest that the results of the model will be akin to an approvable TMDL with final point source allocations, nor would we expect the UBWPAD to undertake such an effort. Again, if the results of the effort yields information indicating that any final effluent limit is more or less stringent than necessary to attain water quality standards, a permit modification can be pursued. *See* 40 CFR §122.62.

The comment also appears to confuse the "reasonable potential" analysis with the establishment of effluent limits. 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.
The comment asserts generally that EPA has failed to demonstrate that the discharge from UBWPAD causes or has the reasonable potential to cause or contribute to an excursion above state water quality standards for phosphorus and nitrogen and that the limits are necessary. The basis for these determinations is set forth in the Fact Sheet and the comment offers no specific facts or arguments to rebut the explanation in the Fact Sheet. *See also* Responses #F44, #F47(a)(1) and #F48 below.

Comment #F44: The District is concerned that EPA is moving too quickly on implementing nutrient limits more stringent than those required by state law, and more

stringent than those that will soon be achieved by the District in 2009, based on political considerations, insufficient or incorrect information, speculation and questionable scientific footing, which could cost the Blackstone River communities hundreds of millions of dollars without reaping discernable water quality benefits. Without explanation, EPA Region I seems to be rejecting the recommendation by EPA's national experts [the Science Advisory Board] that prior to installing expensive treatment technology, a comprehensive study of the watershed should be conducted to determine the need for and the effectiveness of other controls including, among others, non-point source controls, removing contaminated sediments, and dam removal modification.[15]

We disagree with the apparent approach of the Agency in allocating responsibility for waste load removal mainly to point source dischargers without a commensurate effort aimed at the other significant sources [e.g., non-point sources, contaminated sediments originating from past discontinued practices, the presence of dams]. In addition, the District questions whether certain segments of the Blackstone River (particularly the reach to which the District discharges) were properly listed under Section 303(d)(1)(A) of the CWA, rather than some other more appropriate section, such as Section 303(d)(3). The imposition of the Draft Permit's conditions to which the District objects exceeds the Agency's authority under the CWA, lacks sufficient support in the administrative record, is otherwise substantively and procedurally deficient, and based on an inappropriate exercise of discretion.

By imposing another state's water quality standards or legislative mandate [RI Gen. Laws §46-12-2(f); requiring that nitrogen discharges be reduced by 50% by December 31, 2008] on the District's facility, without the CWA-required demonstration that the District's discharge is causing or contributing to a violation of those out-of-state standards, is contrary to law. Among other things, it deprives the District and its ratepayers of their procedural due process rights to an adequate, meaningful opportunity to be informed of, and to participate in, the Rhode Island rulemaking process for the narrative standards upon which the total nitrogen limits are purportedly based. EPA's attempts to impose its own interpretation of state water quality standards, and its failure to respect and address the Massachusetts Department of Environmental Protection's ("DEP") objections and concerns regarding EPA's proposed nitrogen and phosphorus limits and conditions, violate constitutional federalism principles.

EPA has failed to consider or to adequately explain how the proposed nutrient limits which will cause the District to spend funds approaching $200 million [with no guarantee or scientific evidence to demonstrate that it will work] meets the requirements of the DEP regulations which require that the treatment be the best practical.

While costs are generally not given much weight in considering compliance with permit conditions where, as here, the costs are "wholly disproportionate" to the benefits [if any]

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[15] See EPA Draft Science Advisory Board (SAB) Report: Evaluation of the Blackstone River Initiative, prepared by the Ecological Processes and Effects Committee, EPA-SAB-EPEC-98-XX, June 25, 1998; and An SAB Report: Evaluation of the Blackstone River Initiative, EPA-SAB-EPEC-98-0 11, September 1998.

sought, the conditions should be deemed arbitrary and capricious.[16] The proposed permit limit changes of concern, here, constitute an unfunded mandate.

Response #F44: With regard to cost considerations in the establishment of water quality based effluent limits, *see* Responses #A9 and #F1. The commenter's reliance on *BASF Wyandotte Corp. v. Costle*, 598 F.2d 637, 656 (1st Cir. 1979), *cert. denied*, 444 U.S. 1096, 100 S. Ct. 1063, 62 L. Ed. 2d 784 (1980) for support that costs are to be considered in ***establishment*** of a water quality based-effluent limit (such as the nitrogen limit in this matter) is misplaced. *BASF Wyandotte* involves a challenge to EPA's development of technology-based effluent limitations guidelines for the pesticide industry pursuant to 33 U.S.C. §1311(b)(1)(A) and §1314(b)(1). For industrial sources, Sections 1314(b)(1)(A) and (B) direct EPA to establish national effluent limitation guidelines representing the level of treatment attainable through application of the best practicable control technology currently available for specific categories of industrial facilities and taking into account, among other things, the cost of the technology in relation to the effluent reduction benefits to be achieved. These guidelines are inapplicable to POTWs (such as UBWPAD), which are required, pursuant to Section 301(b)(1)(b), to meet limits based on secondary treatment, which is defined at 40 CFR Part 133. Moreover, in issuance of a NPDES permit, EPA is required to consider not only applicable technology-based limits, but also water quality-based requirements where necessary to comply with applicable water quality standards. 40 CFR §122.44(d)(1)(i). Cost considerations or technological feasibility are not permissible factors in setting water quality based effluent limits. *See United States Steel Corp. v. Train*, 556 F. 2d 822, 838 (7th Cir. 1977). *See also In re City of Moscow*, 10 E.A.D. 135, 168 (EAB 2001); *In re New England Plating Co.*, 9 E.A.D. 726, 738 (EAB, 2001). As noted above, UBWPAD can conduct an analysis of affordability issues for the purposes of determining whether a designated use cannot be obtained or for obtaining a variance. *See* Response #F2.

This permit issuance does not contravene recommendations of the SAB. As a preliminary matter, EPA did not use the 1997 Dissolved Oxygen model developed as part of the Blackstone River Initiative as the basis for the phosphorus or nitrogen limits in the current permit. As is explained in Response #F5, EPA established the Blackstone River Initiative (BRI) in 1991 to promote interstate assessment and cleanup of the Blackstone River. The BRI had a budget of approximately two million dollars and included an intensive environmental sampling and assessment program to describe interstate water quality, biology and toxicity in the river system under both dry and wet weather conditions, and to develop a wasteload allocation model and a toxics model to predict impacts of contaminant loadings to the system. It is one of several sources of data documenting the severe eutrophication in the Blackstone River and the significance of the nitrogen loadings to Narragansett Bay from the Blackstone River. The University of Rhode Island, MassDEP, and RIDEM all participated. At the request of the Region, the

[16] *See BASF Wyandotte Corp. v. Costle*, 598 F.2d 637, 656 (1st Cir. 1979), *cert. denied*, 444 U.S. 1096, 100 S. Ct. 1063, 62 L. Ed. 2d 784 (1980).

SAB reviewed the results of the BRI. In addition, the BRI participants submitted a response to the comments and recommendations raised by the SAB.[17]

Nowhere in its review did the SAB indicate that the Region should suspend issuance of NPDES permits pending completion of comprehensive studies of the watershed including non-point source controls, removal of contaminated sediments and dam removal. The SAB's recommendations for further study reflect an attempt to foster Regional adoption of integrated watershed management assessment approaches. More specifically, the SAB recommended that the Region undertake a second phase effort that would include: incorporation of the ecological risk assessment framework, limited additional monitoring, inclusion of biological information and the use of additional existing models for watershed-level analysis. We disagree that this permit issuance should await such TMDL-like efforts. *See also* Responses #E3 and #F6 for a discussion that the permit should not await completion of TMDLs or the modeling being conducted by UBWPAD. Where EPA determines that a discharge of a pollutant causes or contributes to an excursion above any State water quality standard, including State narrative criteria for water quality, EPA must include an effluent limitation in the permit for that pollutant.

In establishing the nitrogen limit in this permit, EPA adhered to the requirements of the CWA and the Agency's regulations. Section 301(b)(1)(C) of the CWA requires NPDES permits contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to comply with, among other things, any applicable state or federal water quality standards. EPA's regulation at 40 CFR §122.4(d) prohibits the issuance of an NPDES permit unless its conditions can "ensure compliance with the applicable water quality requirements of all affected States." In the context of this permit issuance, both Massachusetts and Rhode Island are "affected states." Section 401(a)(2) of the CWA and EPA's regulations at 40 CFR 122.44(d)(4) also require EPA to condition NPDES permits in a manner that will ensure compliance with the applicable water quality standards of a "downstream affected state,' in this case Rhode Island. The statute directs EPA to consider the views of the downstream state concerning whether a discharge would result in violations of the state's water quality standards. If, as in this matter, EPA agrees that a discharge would cause or contribute to such violations, EPA must condition the permit to ensure compliance with the water quality standards.

As is detailed in the Fact Sheet and this Response to Comments, the total nitrogen limit in this permit is necessary to ensure compliance with Rhode Island's water quality standards. Excessive loadings of nutrients stimulate the growth of aquatic plants and algae in downstream water bodies. The abundance of aquatic plants and algae deplete dissolved oxygen levels and impair the physical habitat of these water bodies.

Phosphorus is the primary nutrient of concern in fresh waters (such as the Blackstone River) and nitrogen is the primary nutrient of concern in salt waters (such as the Seekonk and Providence Rivers). Narragansett Bay is an important New England fishery and

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[17] *See* Letter dated February 4, 1999 from John P. DeVillars, Regional Administrator to Drs. Joan M. Daisey and Dr. Mark A. Harwell.

recreational resource. The designated uses of the Seekonk and Providence Rivers include primary and secondary contact recreational activities and fish and wildlife habitat. 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.

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.

EPA appropriately based the nitrogen limits on the requirements of Rhode Island's currently approved water quality standards. Rhode Island, like the vast majority of states, has not yet developed and EPA has not approved numeric total nitrogen criteria or numeric response variable criteria. Nor has Rhode Island developed site specific numeric criteria for total nitrogen or response variables for Narragansett Bay. Until then, EPA must base effluent limits on the criteria in the currently approved water quality standards, including applicable narrative criteria. *See* 33 U.S.C. §1311(b)(1)(C); 40 CFR 122.44(d)(1)(requiring limits on pollutants that have "a reasonable potential to cause or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.)" (emphasis added). Applicable criteria from Rhode Island Water Quality Standards are as follows:

"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...." Rule 8.D.(1).

> The dissolved oxygen shall be "not less than 5 mg/l at any place or time, except as naturally occurs. Normal seasonal and diurnal variations which result in *insitu* concentrations above 5.0 mg/l not associated with cultural eutrophication will be maintained in accordance with the Antidegradation Implementation Policy." Table 2, Rule 8.D.(3)1.
>
> There shall be no nutrients "in such concentration that would impair any usages specifically assigned to said Class, or cause undesirable or nuisance aquatic species associated with cultural eutrophication." Nutrients "shall not exceed site-specific limits if deemed necessary by the Director to prevent or minimize accelerated or cultural eutrophication. Total phosphorus, nitrates and ammonia may be assigned site-specific permit limits based on reasonable Best Available Technologies." Table 2, Rule 8.D.(3)10; see also Rule 8.D.(1)(d).

Additional relevant regulations include Rule 9.A. and B., which prohibit discharges of pollutants which alone or in combination will likely result in violation of any water quality criterion or interfere with one or more existing or designated uses, and prohibit discharges that will further degrade waters which are already below the applicable water quality standards.

In interpretation and application of these criteria, EPA considered, among other things, the physical model conducted by RIDEM assessing the impacts of total nitrogen on non-attainment of water quality standards in the Seekonk and Providence Rivers. EPA also considered loadings from the facility and the amount of nitrogen anticipated to be delivered from the point of discharge to the mouth of the Blackstone River. Further, EPA considered that the discharge flows to the area of the Upper Bay where the most impairments have been measured. *See also* Response #F6.

EPA did not rely on or apply the Rhode Island legislation at R.I. Gen. Laws § 46-12-2. This provision directs the state Department of Environmental Management to: " implement measures to achieve an overall goal of reducing nitrogen loadings from waste water treatment facilities by fifty percent (50%) by December 31, 2008…." Rather, EPA relied on Rhode Island's Water Quality Standards, consistent with 40 CFR §122.44(d), to impose nitrogen limits necessary to ensure attainment of Rhode Island's water quality standards. Moreover, RIDEM's 2004 study suggests that even more stringent limits (perhaps to the limit of technology) may be needed in future permit reissuances.[18]

The constitutional issues raised by UBWPAD in its comment do not need to be reached and, in any event, are not appropriately raised in this administrative permitting proceeding. More specific constitutional challenges are addressed below.

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[18] While EPA recognizes its independent obligation to establish protective permit limits, it is fully appropriate for EPA to consider the technical reports generated by RDIEM in the development of nitrogen limits for this permit. As noted above, the CWA expressly directs EPA to consider the views of a downstream state concerning whether a discharge would result in violations of the state's water quality requirements.

With regard to the comment that EPA should further evaluate non-point and other sources of nutrients before proceeding with permits for point sources, please see Responses #A8 and #C1.

With regard to its comment that Massachusetts incorrectly listed certain reaches of the Blackstone River on its 303(d) List of Impaired Waters, EPA has several responses. First, the comments provides no specific information that would call the listing into question. Second, the permit proceeding is not the appropriate forum for challenging the state's listing or EPA's approval of it. The permittee could have raised this issue during the listing process. Third, irrespective of a state's current 303(d) list, EPA is obligated to impose a water quality-based effluent limit for a pollutant if there is a reasonable potential that the discharge will cause or contribute to a violation of water quality standards. *See* 33 U.S.C. §1311(b)(1)(C) and 40 CFR §122.44(d)(5).

With reference to the comment that the new permit limits constitute unfunded mandates, *see* Response #B2.

Comment #F45: For several reasons (explained below), the co-permittees should be deleted from the proposed permit. The District challenges the proposed expansion of its NPDES permit to include co-permittees comprised of satellite sanitary sewer collection systems not owned or operated by the District or of any entity whose wastewater, septage or sludge the District accepts. The Agency's unwarranted expansion of its authority fails to consider the numerous and varied legal relationships and state municipal powers governing intercommunity collection systems, and is not in accordance with law. EPA's attempt to regulate entities discharging wastewater to the District's treatment facility usurps and undermines state and municipal authority. As the District has previously informed EPA (e.g., during the 1999 Permit renewal process), the District does not have the authority to legally bind co-permittees in the manner proposed by EPA.

None of the affected municipalities participated in or signed the Permit application, nor did they intend to be permit applicants. In addition, EPA did not make any provision in the Draft Permit for the targeted co-permittees to become signatories (thereby binding them to the terms of the permit). Before EPA can add any co-permittees to the permit, it will need to resolve these legal issues with the State and the respective municipalities involved.

The Draft Permit imposes legal and administrative burdens on the District for management of member sewers through the co-permittee process that are not allowed in the District's enabling legislation and that the District has no authority to accept.

The District does not own or operate the wastewater collection systems which discharge to its facility. The operation and maintenance of such systems is adequately regulated by the Commonwealth pursuant to 314 CMR 12.00. We understand that under NPDES permit issued to the Massachusetts Water Resources Authority ("MWRA") (permit no. MA0103284), co-permittee status is driven by ownership of infrastructure (e.g., pipes, treatment facility). We further understand that MWRA member communities are not

included as co-permittees [with very few exceptions] and that, for portions of the regional sewer system operated by member communities, reporting of sanitary sewer overflows are governed by the reporting and basic operation and maintenance requirements contained in the DEP regulations at 314 CMR 12.00. That practice should be followed here.

The Draft Permit's language purporting to limit which entities may discharge to the District conflicts with and undermines the District's authority under its enabling statute [Chapter 752 of the Acts of 1968, as amended] which authorizes the District to determine which entities may become members of the District and/or discharge to the District's regional treatment facilities. Since it is questionable whether such federal action is a valid exercise of Congress' constitutionally delegated powers, under the Tenth Amendment of the U.S. Constitution, the State enabling statute should be given precedence.

As explained below, the Draft Permit purports to regulate satellite wastewater collection systems as co-permittees under a proposed (not final) Sanitary Sewer Overflow (SSO) Rule regardless of whether or not these systems result in overflows that reach waters of the United States. This raises serious questions about whether the Agency has subject matter jurisdiction under the Clean Water Act [over discharges that do not reach, nor are they likely to reach, waters of the United States]. The Second Circuit recently ruled, in the *Waterkeeper Alliance* case (also known as the CAFO decision) that unless there is an actual discharge of a pollutant to navigable waters, there is no point source discharge, no statutory violation of the CWA, no requirement to comply with EPA regulations for point source discharges, and no duty to seek or obtain an NPDES permit in the first instance. *See Waterkeeper Alliance et al. v. EPA*, 399 F.3d 486 (2nd Cir. 2005). The Court stressed that: "The CWA gives the EPA jurisdiction to regulate and control only actual discharges - not potential discharges, and certainly not point sources themselves." (Emphasis in original).

The primary function of collection systems is to convey wastewater to the District's regional plant for treatment, but not to provide treatment. Under the current regulatory definition of POTW, neither CSOs nor SSOs may be deemed part of the POTW because they do not convey wastewater to the POTW, but instead result in a discharge prior to the POTW. The D.C. Circuit ruled in the *Montgomery Environmental Coalition v. Costle* case, 649 F.2d. 568 (D.C. ' Cir. 1980), that CSOs are not part of the “treatment works” under the 1979 or the 1980 definition, and consequently they are not subject to the “secondary treatment” standards applicable to POTWs. Since this decision, neither EPA nor the courts have formally determined that SSOs must be treated differently from CSOs.

The proposed addition of the satellite collection systems as co-permittees violates and/or circumvents the rulemaking procedural requirements. Any attempt to implement a proposed rule or materially change or rewrite a regulation through policy deprives the District and the impacted ratepayers of their fundamental rights to public notice, review and comment on such important matters.

While a proposed SSO regulation was signed by EPA Administrator Browner in 2001, the Administration withdrew the proposal before it was published, and the actual regulatory proposal still appears to be far in the future. Had the proposed SSO Rule been promulgated, it would have applied NPDES permit conditions to satellite systems in one of two ways: the NPDES permitting authority would have been given the discretion to give a collection system permit to either the satellite collection system owner/operator or the regional publicly owned treatment works (POTW) that accepts its flow.

The Association of Metropolitan Sewerage Agencies ("AMSA") has submitted substantial comments on the proposed SSO Ru1e opposing the discretion the Ru1e would have given to NPDES permitting authorities to decide which entity receives a collection system permit, stating that "the only appropriate permittee is the satellite collection system owner/operator entity." See AMSA letter to EPA Administrator Christine Todd Whitman, dated June 8, 2001. As EPA is aware, the draft rule's CMOM (capacity, management, operation and maintenance), reporting, public notification and recordkeeping provisions wou1d be burdensome to all potential permittees regardless of the size.

The Draft Permit states, on page 1 of 19, that "[o]nly municipalities specifically listed as co-permittees are authorized to discharge wastewater into the UBWPAD facility." The Draft Permit's proposed list does not include all dischargers to the District. For example; Sutton, Oxford, Paxton, and Shrewsbury discharge to the District's facility through their respective collection systems. The Draft Permit and its Fact Sheet are unclear as to whether its co-permittee language precludes the District from continuing to accept sludge and septage per its authority under the state enabling act. The Draft Permit language should not alter or diminish in any way the District's current authority under its enabling statute including, without limitation, its authority to accept wastewater, sludge or septage from member municipalities or otherwise.

Response #F45: In its comment above, UBWPAD objects to imposition of any requirements through the permit on the operation and maintenance of the "satellite" municipal collection systems that discharge waste to UBWPAD. UBWPAD does not challenge EPA's general authority to regulate appropriate operation and maintenance of collection systems. Rather, UBWPAD comments that EPA cannot impose such requirements on the satellite systems through this permit as they are separate legal entities from the owner/operator of the treatment facilities and outfalls.

Section 212(2)(A) of the CWA defines "treatment works" to include "any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature… including … intercepting sewers, outfall sewers, sewage collection systems…." EPA regulations define the term "publicly owned treatment works" similarly at 40 CFR 122.2 and 403.1. As UBWPAD 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 UBWPAD 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.

The requirements in the permit imposed on satellite systems are set forth in the Draft Permit in Part I.D. ("Unauthorized Discharges") and Part I.E. ("Operation and Maintenance of the Sewer System"). Those provisions are as follows:

Part D provides that the permit only authorizes discharges through two specific outfalls. Part D also states that discharges through sanitary sewer overflows are not authorized and requires that UBWPAD and co-permittees report to EPA and Mass DEP any such overflows.

Part E of the Draft sets forth requirements related to operation and maintenance of the sewer system. Part E provides that operation and maintenance shall be in compliance with the General Requirements of Part II. The General Requirements of Part II, in turn, are standard conditions included in all NPDES permits. They track certain required conditions set forth in EPA's regulations such as duty to comply [40 CFR 122.41(a)], permit actions (40 CFR 122.41(f)] and duty to provide information [40 CFR 122.41(h)]; and a reopener clause [40 CFR 122.44(c) and 122.44(d)(vi)(C)(4)]. The standard conditions also include a recitation of EPA regulations related to confidentiality of information, and provisions regarding the impact of the permit on other local, State or Federal requirements. Part E also sets forth particular requirements regarding operation and maintenance of satellite collection systems in the respective municipal POTWs, including:

- provision of adequate staff to carry out the operation, maintenance, repair and testing functions required to ensure compliance with the terms and conditions of the permit;
- maintenance of an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failure of the sewer system infrastructure, including an inspection; and
- development and implementation of a plan to control infiltration and inflow (I/I) to the separate sewer system, including annual reporting of activities taken to minimize I/I; and
- provision of an alternate power source to operate the treatment works.

Proper operation and maintenance at 40 CFR 122.41(e). This standard permit condition requires proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions; and

Duty to mitigate at 40 CFR 122.41(d). This standard condition requires the permittee to take all reasonable steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment.

EPA's regulations include a duty to provide information at 40 CFR 122.41(h). This standard condition requires the permittee to provide any information which EPA may

request to determine, among other things, compliance with the permit. In addition, the regulation requires the permittee to provide copies of records required to be kept by the permit.

Based on these provisions in the statute and regulation, EPA clearly has authority to require appropriate operation and maintenance of collection systems necessary to achieve compliance with an NPDES permit. Since 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-permitees. The requirements set forth in Parts D and E give more specific direction to the satellite systems as to what is expected related to operation and maintenance, duty to mitigate and reporting.

Under *Montgomery Environmental Coalition v. Costle*, 649 F.2d. 568 (D.C. Cir. 1980), combined flows that exceed the design capacity of a combined system and are intentionally diverted away from a treatment works are not subject to secondary treatment requirements but rather are subject to the technology requirements applicable to non-POTWs. *Montgomery* does not address which NPDES permit conditions may be applicable to collection systems attached to treatment plants, nor does it address the circumstance of unpermitted discharges such as SSOs. This case simply is not relevant to the co-permittee issue raised by the comment.

The *Waterkeeper Alliance* case, 399 F3.3d 486, also does not restrict EPA's ability to impose conditions on the operation and maintenance of the collection systems owned and operated by the satellite systems. *Waterkeeper Alliance* involved review of challenges to regulations setting forth NPDES and effluent limitation guidelines and standards for Concentrated Animal Feeding Operations (CAFOs). The Second Circuit vacated that portion of the regulation that required CAFOs to apply for NPDES permits or otherwise demonstrate that they have no potential to discharge. The Court reasoned that effluent limitations can only be applied to point sources that actually discharge, not that simply have the potential to discharge. *Id*. at 505. In this matter, wastewater from the treatment works (including the collection system) is discharged through the outfalls at UBWPAD's treatment plant. Therefore, the treatment works (including the collection system) is subject to permitting. EPA has determined that operators of the collection system portion of the POTW must comply with the operation and maintenance requirements in the draft permit to ensure that compliance with the permit and the goals of the Clean Water Act are achieved.

EPA does not agree that the co-permittees each need to sign the permit application. The permit application requirements are designed to facilitate the permitting process and to aid the permitting authority by ensuring submittal of relevant information. In this case, UBWPAD submitted the permit application, including requisite information about satellite systems. As detailed above, EPA is authorized to regulate the entire POTW (including the treatment plant and collection systems). That UBWPAD 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. Nor does it require that EPA issue separate permits to UBWPAD and

the satellite systems. Further, EPA provided a copy of the Fact Sheet and Draft Permit to each of the satellite systems included as "co-permittees" in the Final Permit. Each was invited to attend the public hearing and to submit oral and/or written comments on the Draft Permit.

UBWPAD also comments that it does not have authority to legally bind the satellite systems and that the requirements will impose additional "legal and administrative burdens" on UBWPAD. Through this permit, EPA has made each municipality responsible for implementation of the requirements of Parts D and E applicable to the portion of the collection system and/or treatment plant that it owns or operates. For instance, each municipality would be responsible to report to EPA any SSO that occurred from its collection system. Each municipality would be separately responsible for developing and implementing a plan to control I/I and reporting on the progress of its respective plan. EPA recognizes that this approach is a change from the expired permit, which required UBWPAD to serve in the role of facilitating a work group of its member communities to develop and implement strategies to eliminate excessive I/I. The expired permit also included a provision indicating that EPA and MassDEP might seek to add the member communities as co-permittees directly regulated under the permit if adequate progress was not made. That time has come: I/I flows to the UBWPAD continue to be very high – at 15 million gallons per day (*see* NPDES permit application at page 7) -- and more aggressive action is necessary to abate excessive I/I. The shift in approach to having EPA directly oversee the satellites as co-permittees should reduce any "legal and administrative burdens" on UBWPAD. While EPA believes that the language in the Draft Permit makes clear that each co-permittee is responsible for implementation of the operation and maintenance and reporting requirements of Parts D and E related to its respective system, the Final Permit includes an additional sentence to that effect.

The language of one requirement in Part E related to I/I control does require UBWPAD to take measures to control discharges from the satellite communities. That provision states: "The permittee shall require, through appropriate agreement, that all member communities control discharges to the permittee's POTW sufficiently to ensure that high flows do not cause or contribute to a violation of the permittee's effluent limitation or cause overflows from the permittee's collection system." UBWPAD's enabling legislation appears sufficiently broad to meet this provision. In particular, the legislation indicates that the purpose of establishing UBWPAD is to treat sewage from the local communities, not I/I such as groundwater or rainwater. *See* Chapter 752 of Act of 1968 at Sections 6 and 16. The legislation also gives the District authority to prevent the discharge into the sewers of substances which may damage or impair the sewerage collection and sewerage treatment system or interfere with its maintenance or operation. *Id*. at Section 7. In any event, the intent of the permit provision cited above is to ensure that high flows do not cause or contribute to violations of effluent limitations or cause unauthorized bypasses at the treatment plant. To address UBWPAD's concern, EPA has modified the language in the Final Permit to indicate that both the permittee and co-permittees are responsible to ensure that high flows do not cause such violations**.**

UBWPAD also notes that the Draft Permit does not include all satellite dischargers. UBWPAD specifically notes that EPA failed to include Sutton, Oxford, Paxton and Shrewsbury. EPA derived the initial list of discharges from information provided by UBWPAD in its re-application; specifically, in Response to Question A4 on Form 2A, UBPWAD indicated that the UBWPAD facility serves the following municipalities: Auburn, Cherry Valley Sewer District, Holden, Millbury, and Rutland. EPA notes that UBWPAD's Facilities Plan, however, does indicate that the municipal systems of Sutton, Oxford, Paxton and Shrewsbury also contribute wastewater to UBWPAD. As the contributions from these municipal systems are relatively smaller than the other satellite systems, EPA will not include these four municipalities as "co-permittees" in this permit. EPA may, however, include them as "co-permittees" in the future. In addition, in the Final Permit, EPA has amended the language on Page 1 of the permit to make clear that these communities are not prohibited from discharging to UBWPAD.

UBWPAD comments that the co-permittee language in the Draft Permit is unclear as to whether it precludes the District from continuing to accept sludge and septage per its authority under the state enabling act. The language in the Draft Permit referenced by UBWPAD only addresses discharges of wastewater. *See* Draft Permit at 1 (indicating that only co-permittees "are authorized to discharge wastewater into the UBWPAD facility"). To address UBWPAD's concern, EPA has clarified this intent in the final permit.

Comment #F46: Compliance Schedule. The Draft Permit Fact Sheet contains EPA's admission that the District will not be able to comply immediately with the proposed nutrient limits and states that EPA will work with the District to develop a schedule for the planning, design and construction of facilities necessary to meet these limits and that takes into account currently ongoing facility upgrades. EPA should include that schedule in the District's final permit. The Massachusetts permitting regulations control the issuance of permits in that state and these regulations allow compliance schedules and do not specify any term limits for such schedules.

In addition, the Fact Sheet states that the Draft Permit would supersede the permit issued on September 30, 1999. As the Agency knows, the District appealed certain conditions of the 1999 permit. After extensive negotiations with EPA, and in consideration of various accommodations by the parties (including the District's withdrawal of its appeal), a settlement agreement was executed and the permit was modified on December 19,2001 (the "2001 Permit"). The settlement agreement, and the administrative consent order issued there under in 2002 (the "Consent Order"), gave the District an 8-year compliance schedule, until August, 2009, to complete treatment plant upgrades and meet many of the 2001 Permit limits, including a phosphorus limit of 0.75 mg/l. Public notice of this compliance schedule and the interim permit limits effective during the permit was provided in the 2001 Permit's fact sheet or statement of basis.

Significant upgrades are currently underway at the District at costs of over $180 million, which will further limit the discharge of pollutants to the Blackstone River including nitrogen and phosphorus. In 2009, the new facilities will achieve a better than required

reduction in phosphorus for half of the year under the existing permit and provide nitrogen removal approaching the 40-50% nitrogen summer nitrogen reduction sought by the Rhode Island Governor's Special Committee without a new standard. In light of this significant progress, an appropriate adaptive management plan would consist of allowing the significant upgrades in Worcester to occur, address all local sources to the impaired waters in Rhode Island, and monitor the results of these actions prior to requiring additional severely restrictive and costly upgrades in Massachusetts.

The Draft Permit's provisions, particularly the new nutrient limits, conflict with the existing, enforceable compliance schedule established under the settlement agreement and Consent Order signed by the EPA. The settlement agreement and Consent Order were more than merely agreements between the NPDES permitting authorities and the District; they are administrative determinations entitled to substantial deference. One such determination was that a phosphorus limit of 0.75 mg/l would lead to attainment of the Massachusetts water quality standards, yet no new information has been provided to conclude otherwise. Like any written instrument affecting the rights and obligations of a party, a settlement agreement and consent order must be given effect according to its terms. The District has, in good faith, complied with the terms of these agreements including the compliance schedule. It expects that the Agency will, likewise, abide by its commitments under these agreements.

If additional measures are required in the permit beyond those specified in the amended 2001 Permit and settlement agreement, or if a more stringent water quality-based effluent limitation is included in the permit, the District is entitled to a compliance schedule under Massachusetts law. State regulations provide for compliance schedules as follows:
A permit may, when appropriate, specify a schedule leading to compliance with the Massachusetts and Federal Clean Water Acts and regulations. The purpose of a schedule of compliance generally is to afford a permittee adequate time to comply with one or more permit requirements or limitations that are based on new, newly interpreted or revised water quality standards that became effective after both issuance of the initial permit for a discharge and July 1, 1977. The Department may include a schedule of compliance in a permit at the time of the permit reissuance or modification where the permittee either cannot comply with such permit requirements or limitations, or where there is insufficient information available to determine whether the permittee can comply with such permit requirements and limitations. A schedule of compliance shall require compliance at the earliest practicable time, as determined by the Department. A schedule of compliance shall include dates for specified tasks or activities leading to compliance and may include interim effluent limitations, as the Department deems appropriate. 314 CMR 4.03(1)(b).

Although the District does not agree that a more stringent limit is authorized or appropriate, EPA acknowledged in the Draft Permit fact sheet that the District likely will not be able to comply with such a limit. Accordingly, a compliance schedule should be included in the permit for any more stringent water quality-based effluent limit. The state compliance schedule provision is consistent with federal regulations, which allow

compliance schedules that require compliance "as soon as possible." 40 CFR §122.47(a)(1).

The District requests that long-term compliance schedules, if necessary, be included in the permit itself, rather than in an administrative order or other agreement. There is no time limit on such compliance schedules under federal or state law. In other situations, EPA has authorized compliance schedules that extend beyond the term of the permit, and that extend for more than five years. For example, federal regulations concerning Great Lakes dischargers provide that compliance schedules may extend beyond the term of the permit. 40 CFR Part 132, Appendix F, Procedure 9. In addition, California provides long-term compliance schedules that can extend for several permit terms, consistent with the requirements of any TMDL. See, e.g., Basin Plan Amendment (Los Angeles Regional Water Quality Control Board, May 14, 2003). EPA approved those provisions on February 10, 2004. See Water Quality Standards: Examples of Alternatives to Changing Long-term Designated Uses to Achieve Water Quality Goals (EPA, March 2005) at p. 6. Therefore, a long-term compliance schedule---so long as it requires compliance "at the earliest practicable time" or "as soon as possible"-- may be included within the permit itself, consistent with both federal and state regulations.

Response #F46: EPA has determined not to include a compliance schedule in the Permit. Compliance schedules to meet water quality based effluent limits may be included in permits only when the state's water quality standards clearly authorize such schedules and where the limits are established to meet a water quality standard that is newly adopted, revised or interpreted after July 1, 1977. As noted in the Fact Sheet supporting the Draft Permit, EPA recognizes that UBWPAD will not be able to comply immediately with the water quality based effluent limits proposed for total nitrogen and phosphorus.

In this case, the limits on total nitrogen are based solely on ensuring compliance with the Rhode Island Water Quality Standards. Rhode Island's standards, in turn, do not include provisions allowing for schedules in permits. While Massachusetts standards do allow schedules in permits, the decision of whether to include a compliance schedule is discretionary and may only be granted "when appropriate." *See* 314 CMR 4.03(1). Thus, even if only Massachusetts standards were applicable, they do not mandate that a schedule be included in the permit itself. In 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 schedules in the permit itself, EPA intends to issue a reasonable compliance schedule to meet both the phosphorus and nitrogen limits in a separate administrative order rather than in the permit itself. *See also* Response #E2.

The Settlement Agreement and Compliance Order issued in 2002 do not in any way restrict EPA's ability to issue a permit with more stringent limits or to issue a schedule to meet the new permit limits in a new administrative order. Recognizing that UBWPAD would not be able to immediately meet the limits in the expired permit, the 2002

Administrative Order included a schedule for treatment upgrades to meet those limits. The 2002 Administrative Order was issued pursuant to EPA's enforcement authorities and, as such, represents the Agency's enforcement response to UBWPAD's violations and anticipated ongoing violations of the permit limits in the expired permit. Nothing in the 2002 Order or Settlement Agreement alters the requirement of the CWA that EPA re-issue the permit and, where necessary, change effluent limits to ensure attainment of water quality standards. It is EPA's intent to issue a new administrative order with a reasonable schedule to meet the effluent limits in the new permit. In addition, we will likely incorporate remaining milestones under the old order into the new schedule.

Comment #F47: Nutrients. As a matter of law, policy and fairness, the Draft Permit's proposed nutrient limit changes should be stricken from the Permit and deferred or postponed until Total Maximum Daily Loads ("TMDLs") are developed. Such postponement is consistent with the DEP's May 9, 2007 comments regarding TMDLs for nutrients. The Draft Permit Fact Sheet fails to address the DEP's concerns about the uncertainties and inadequacies of the scientific knowledge used to develop the total nitrogen limits and about establishing effluent limits for nitrogen and phosphorus without the benefit of scientific guidance provided by TMDLs and the water quality goals they establish. DEP's comments, which were previously documented in the administrative record of the RIDEM permits and certain Massachusetts NPDES permits (e.g., Attleboro and North Attleboro), continue to go unanswered. Given the DEP's well-documented concerns and the fact that the District's capital improvements and upgrades slated for completion in 2009 will significantly reduce nutrient levels, it is proper to defer these newly proposed limits pending revision of the relevant water quality standards and TMDL development.

In addition, any proposed seasonal limits for nutrients should be based on temperature and flow in the River, and such limits should not start until the month of June. Some Rhode Island-issued permits recognize this relationship and, accordingly, have used June as the starting month for its seasonal nutrient limits. The Draft Permit acknowledges that nutrient limits are dependent on the temperature by selecting various months that are assumed to be representative of the spectrum of receiving water temperatures that are experienced in the Blackstone River.

Response #F47: NPDES permits must include effluent limits sufficient to meet water quality standards of all affected states; this requirement is not dependent on the existence of a TMDL. *See* 40 CFR §§122.4(d) and 122.44(d). *See also* Response #A3. The commenter does not indicate which specific comments raised by MassDEP have been unaddressed. Response to specific comments raised by MassDEP in this permit issuance are addressed above. *See* Responses #E1 - #E3.

Regarding the basis for the seasonal periods, *see* Response #F20. In addition, please note that these seasonal time frames correspond to those in RIDEM's permit to Woonsocket.

Comment #F47(a): Total Nitrogen (TN). For several reasons (explained below), the Draft Permit's total nitrogen limits should be stricken and the determination of such limits should be deferred to the future completion of a TMDL. The DEP has declined to impose

the total nitrogen limit contained in the Draft Permit, nor does it support this limit. The interstate nature of this predicament raises several legal and policy issues, which are discussed more fully below.

This problem is exacerbated by the absence of TMDL calculations as well as other reliable data supporting the nitrogen limit proposed by Rhode Island and/or EPA here. The Draft Permit's total nitrogen limit rests upon an approach that the Clean Water Act attempted to avoid, that Massachusetts regulators contest, and that science cannot justify. This raises additional factual, legal and policy issues under the Act.

The problem of nitrogen should be addressed at a watershed level by completion of a TMDL. The identification of all sources and their relative importance has not been well established in the RIDEM documents, which are the basis for the proposed permit limits. Major omissions include nitrogen loads from local contributing non-point sources such as groundwater (i.e. septic system) and CSOs, atmospheric deposition, effect of sediments on nitrogen flux, and effects of tidal ranges and currents within the Bay and River systems on dispersion, dilution, and effective retention time. Without a complete, consistent, and logically progressed evaluation of the sources and their contributions, financially expensive solutions are being proposed for implementation in both Rhode Island and Massachusetts without confidence that the projected benefits will be obtained once construction is completed and the solutions are implemented. See DEP letter to RIDEM, dated February 11, 2004, commenting on RIDEM Permits and Documents in Support of Permit Limits (Appendix, Tab B-2); see, also, MA DEP Review Comments (February 8, 2005) RIDEM Discharge Permits and Modification to Permits (Attached to Technical Comments).

Response #F47(a): EPA is responsible for development and issuance of NPDES permits in Massachusetts as the Commonwealth has not received authorization from EPA to administer the federal NPDES program. Although EPA administers the NPDES program, Massachusetts maintains independent water pollution control permitting authority under state law. *See* Mass. Gen. Laws Ann. Ch. 21, §43. EPA and the Commonwealth have often issued their respective permits in the same document. In this matter, the final permit is issued only by EPA pursuant to its authority under the CWA. Regardless of whether EPA and MA DEP issue their respective permits in the same or in different documents, the nitrogen limit in this permit is based upon an application of the requirements of the federal CWA and is necessary to meet Rhode Island's water quality standards, but not Massachusetts water quality standards.

Excessive nutrients, generally nitrogen in marine water and phosphorus in fresh water, can contribute to eutrophication. At the point of discharge from the facility, the receiving water is a fresh water river – the Blackstone River. The Blackstone River is an interstate water which has its headwaters in Worcester, Massachusetts and flows through several communities in Massachusetts before entering Rhode Island. The Blackstone then flows to the headwaters of the Seekonk River, which is a marine water.

Section 401(a)(2) of the CWA and 40 CFR § 122.44(d)(4) require EPA to condition NPDES permits in a manner that will ensure compliance with the applicable water quality standards of a "downstream affected state," in this case Rhode Island. The statute directs EPA to consider the views of the downstream state concerning whether a discharge would result in violations of the state's water quality standards. If EPA agrees that a discharge would cause or contribute to such violations, EPA must condition the permit to ensure compliance with the water quality standards.

A TMDL is not required for EPA to establish water quality-based limits. *See* Responses #A3 and #E3.

With regard to the comment that EPA must evaluate other sources of nutrients before proceeding with nutrient limits in this permit, *see* Response #F40.

Comment #F47(a)(1): The TN limit is fatally flawed because it is based on criteria that are not scientifically defensible. In EPA's recommended water quality criteria for nutrients [published in January 2001 (66 FR 1671)], EPA states "wherever possible, develop nutrient criteria that fully reflect localized conditions and protect specific designated uses." The criteria used to develop the TN limit failed to determine causal relationships between the nutrients and attainment of the designated uses; they are not effects-based criteria. The causal relationships between the nutrients and response variables (e.g., Chlorophyll a, Dissolved Oxygen, pH) were not adequately determined. Experts recommend 3-5 years of growing season data to account for annual variability and such nutrient data should not be developed using data reflective of unusual hydrologic and physical conditions of the water body. This was not done. See Guidance on Developing Nutrient Criteria for Protecting Designated Uses of Water Bodies, Benjamin R. Parkhurst, Ph.D., et al., prepared for Federal Water Quality Coalition, Fredric Andes, Barnes & Thornburg LLP (Appendix, Tab B-3).

Response: #47(a)(1): It is unclear if the commenter is challenging Rhode Island's narrative water quality criteria for nutrients or the approach used by EPA to develop the specific nitrogen effluent limit in this permit. Water quality criteria are one of three parts of state water quality standards. (The other two components include one or more "designated uses" and an antidegradation provision.) Rhode Island, like most states, has not yet developed statewide numeric total nitrogen criteria or numeric response variable criteria, nor has Rhode Island developed site specific numeric criteria for total nitrogen or response variables for Narragansett Bay. Until then, EPA must base effluent limits on its interpretation of the narrative criteria in the currently approved water quality standards. Water quality-based effluent limits imposed through NPDES permits must ensure that all components of water quality standards are achieved, including narrative criteria. *See* 33 U.S.C. §1311(b)(1)(C); 40 CFR 122.44(d)(1)(requiring limits on pollutants that have "a reasonable potential to cause or contribute to an excursion above any State water quality standard, **including State narrative criteria for water quality.**") (emphasis added).

The commenter refers to a study prepared on behalf of the Federal Water Quality Coalition (which is described on its website as "a group of industrial facilities,

municipalities, agricultural parties and trade associations whose goal to ensure that water quality programs under the Clean Water Act are focused, flexible and founded on sound science"). Counsel for the permittee in this matter also represents the Coalition and serves as its Coordinator. The study reviews and recommends approaches that can be taken by state and tribal authorities in the development of numeric water quality criteria for nutrients, and may be of interest to Rhode Island as it pursues development of such criteria. In the meantime, EPA's charge is to establish effluent limits that ensure that all components of Rhode Island's existing water quality standards are met – including designated uses, criteria and antidegradation.

When calculating a numeric permit limit to achieve a narrative criterion, EPA's regulations at 40 C.F.R. §§ 122.44(d)(1)(vi)(A), (B) authorize the agency to base its permitting decision on a wide range of relevant material, including EPA technical guidance, state laws and policies applicable to the narrative water quality criterion, and site-specific studies. In establishing the nitrogen limit in this permit, EPA considered the more than 15 years of water quality data, studies and reports evaluating nitrogen levels and response variables in Narragansett Bay. EPA also considered the results of a physical model operated by the Marine Ecosystems Research Laboratory (MERL) at the University of Rhode Island. This enrichment gradient experiment included a study of the impact of different loadings of nutrients on DO and chlorophyll a. (See *Evaluation of Nitrogen Targets and WWTF Load Reductions for the Providence and Seekonk Rivers*, RI DEM, December 2004). Both the MERL tank experiments and the data from the Providence/Seekonk River system indicate a clear correlation between nitrogen loadings, chlorophyll a levels, and dissolved oxygen impairment. Low dissolved oxygen levels, as well as supersaturated dissolved oxygen levels, are an indicator of cultural eutrophication. The MERL tank experiments showed a clear correlation between nitrogen loading rates and dissolved oxygen variability. In addition, sampling in the Providence/Seekonk River system documents both extremely low and extremely high dissolved oxygen levels.

A stronger indicator of cultural eutrophication is phytoplankton chlorophyll a levels. The RIDEM data from 1995-96 indicates that average photoplankton chlorophyll a levels in the Seekonk River ranged from 14 ug/l to 28 ug/l with the highest levels in the upper reaches of the river and the lowest levels in the lower reaches of the river. The chlorophyll a levels in the Seekonk River correlate with total nitrogen levels as well as dissolved inorganic nitrogen levels. Again, this response is consistent with the MERL tank experiments that showed a correlation between nitrogen loading rates and chlorophyll a levels. Peak chlorophyll a levels in the Providence/Seekonk River system exceeded 200 ug/l. Coastal areas without high nutrient loads could be expected to have chlorophyll a levels in the 1 to 3 ug/l range (Nutrient Criteria Technical Guidance Manual – Estuarine and Coastal Marine Waters, USEPA, October 2001).

EPA recognizes that the MERL tank experiments cannot completely simulate the response of chlorophyll a and dissolved oxygen to nitrogen loadings in a complex, natural setting such as the Upper Narragansett Bay. In this regard, use of a physical model introduces some uncertainty in determining the precise level of nitrogen controls which

may ultimately be needed in the River. Both the MERL Tank experiments and the data from the River system, however, indicate a clear correlation between nitrogen loadings, chlorophyll a levels and dissolved oxygen impairment. Accordingly, the MERL tank experiments are an appropriate tool for evaluating the relationship between nitrogen loadings and cultural eutrophication indicators. While the uncertainties in the model and the receiving water response to reduced nutrient loading may ultimately mean that additional nitrogen reductions are needed beyond those required by this final permit, it is EPA's judgment that based on the available evidence, water quality standards cannot be met with a less stringent nitrogen limit than 5.0 mg/l. *See* Response #F18A for additional detail on establishment of the nitrogen limit.

Comment #F47(a)(2): Current multiple plant upgrades already under construction by the District and other WWTFs are expected to significantly reduce the TN loading to the Upper Bay. Requiring additional treatment to meet a 5 mg/l TN limit will result in extremely high construction and operating costs to acquire additional, non-renewable resources such as chemicals and electricity without any reasonable confidence that it will attain the designated uses. In addition, the use of substantial amounts of non-renewable resources is not consistent with the EPA's sustainable development policies. See discussion of Sustainability, below.

Response #F47(a)(2): *See* Responses #F6, #F7, and #F8, and Response #F53 below.

Comment #F47(a)(3)(i)-(iii): TMDL considerations.
(i) The results of the 1981-84 MERL laboratory tank studies are not an acceptable substitute for a TMDL to establish TN effluent limits. RIDEM should complete the federally-required TMDL before EPA imposes the proposed TN permit modification.[19]
(ii) Without a TMDL, the current approach lacks (a) clear, scientific justification, (b) a definite schedule or endpoint, and (c) a clear assessment to determine the need for future tighter restrictions.[20]
(iii) TN loading to Narragansett Bay is a regional, interstate issue that needs a comprehensive plan [as was implemented in Long Island Sound], which plan cannot be developed without a working TMDL.

Response #F47(a)(3)(i)-(iii): When reiussing an NPDES permit, EPA is not allowed under the CWA to delay imposition of water quality based-limits pending completion of a TMDL. *See* Responses #E3 and #F12. Further, as discussed above, nutrient TMDLs are very complex and can take many years to develop with no guarantee that the effort will be successful. *See* Responses #E3 and #F12. We also note that the Long Island Sound TMDL is undergoing a major revision to address certain deficiencies. *See* Framework for Reassessing a Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen Deficiencies in the Long Island Sound TMDL

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[19] See February 7. 2005 letter from Narragansett Bay Commission (NBC) to RIDEM commenting on proposed N limits (Attached to Technical Comments).
[20] See Footnote [immediately preceding].

(June 1, 2007). With 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. *See* Response #E3. In its decision to move forward now with a nitrogen limit, EPA also considered 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.

In the absence of a validated dynamic model or TMDL, EPA has relied on the best information reasonably available to it, which is also precisely the type of information contemplated by 40 CFR §122.44(d)(vi). The agency considered more than 15 years of water quality data, studies and reports evaluating nitrogen levels and response variables in Narragansett Bay. These materials included EPA's *Nutrient Criteria Technical Guidance Manual: Estuarine and Coastal Marine Waters* (EPA, October 2001) and a variety of site-specific reports undertaken by Rhode Island to address nitrogen loading and control the effects of cultural eutrophication in the receiving waters. *See, e.g., Evaluation of Nitrogen Targets and WWTF Load Reductions for the Providence and Seekonk Rivers* (December 2004); *Plan for Managing Nutrient Loadings to Rhode Island Waters* (RI-DEM, February 1, 2005); *Nutrient and Bacteria Pollution Panel – Initial Report* (Governor's Narragansett Bay and Watershed Planning Commission, March 3, 2004); and *Massachusetts Estuaries Project – Site-Specific Nitrogen Thresholds for Southeastern Massachusetts Embayments: Critical Indicators*, July 21, 2003 as revised). In addition, EPA relied on the results of the MERL model, which was designed to predict the relationship between nitrogen loading and several trophic response variables in the Narragansett Bay system. In establishing the nitrogen limit in this permit, and evaluating the MERL model, EPA also considered actual measurements of nitrogen loadings from point source discharges, including a 1995-96 study by RIDEM Water Resources. *See* Response #F18A relative to EPA's establishment of the nitrogen limit and use of the MERL model.

That 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. This view of physical models is consistent with EPA guidance, which states:

> 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.

Nutrient Criteria, Technical Guidance Manual; Estuarine and Coastal Marine Waters,

EPA-822-B-01-003 (October 2001) at 9-2. Further, the MERL model was peer-reviewed and published in a scientific journal, thereby withstanding the scrutiny of representatives of the scientific community. EPA itself cited the MERL experiment with approval in national nutrient technical guidance. *Id*. at 2-11 and 2-16 ("Three case studies provide some of the strongest evidence available that water quality managers should focus on N for criteria development and environmental control (see NRC 2000 for details). One study involves work in large mesocosms by the University of Rhode Island (Marine Ecosystem Research Laboratory–MERL) on the shore of Narragansett Bay. Experiments showed that P addition was not stimulatory, but N or N+P caused large increases in the rate of net primary production and phytoplankton standing crops (Oviatt et al. 1995).").

The commenter's proposed course — to await completion of a dynamic model or a TMDL while pollutant loadings continue unabated — is unreasonable and contrary to policy objectives of the CWA to make reasonable further progress toward eliminating pollution to the Nation's waters.

Comment #F47(a)(3)(iv): The District shares the concern of the Narragansett Bay Commission (NBC) about the unanticipated effects that could result from a dramatic TN reduction from WWTFs on the Upper Bay.[21]

Response #F47(a)(3)(iv): During permitting proceedings administered by RIDEM, NBC offered a comment expressing concern that dramatic nitrogen reductions in the Bay could have detrimental impacts on secondary productivity such as fisheries and shell fishing. We concur with RIDEM's response which, among other things, noted that in light of the highly degraded condition of the Providence and Seekonk Rivers (including DO levels that have dropped to levels that are lethal to aquatic life), the aquatic life benefits of the nutrient reduction are expected to far exceed potential negative impacts to secondary productivity. Certainly, there will be improved secondary productivity in those areas that regularly experience lethal levels of oxygen depletion. A study of the Boston Harbor before and after moving the outfall from the Deer Island wastewater treatment facility, for instance, looked at the catch per unit effort for winter flounder (a relative measure of their abundance). Catch per unit effort increased after the outfall was moved. Nester et al. (2007), *2006 Annual Fish and Shellfish Report*, Boston, MWRA. Report ENQUAD 2007-06. 200p.

Comment #F47(a)(3)(v): Total N loading to Narragansett Bay has been essentially level in the past 3 decades, based on evaluations by Dr. Scott Nixon of URI/GSO. [22] Such findings underscore the need for a TMDL to determine the appropriate relationship and

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[21] See Footnote [immediately preceding].

[22] See Nixon, S. et al. February 2005. Anthropogenic Nutrient Inputs to Narragansett Bay: A Twenty-Five Year Perspective, A Report to The Narragansett Bay Commission and Rhode Island Sea Grant.

relative importance of nutrient loading and climatic conditions to producing hypoxic conditions.

Response #F47(a)(3)(v): Questions have been raised relative to the limitations of the data used to draw this conclusion (*see, e.g.,* RIDEM Response to Comments at page 17). Moreover, studies and reports have documented that water quality has been severely degraded for at least 15 years. Regardless of whether loadings have been consistent over time, the nitrogen loadings are excessive and must be reduced.

Comment #F47 (a)(3)(vi): Research efforts are needed to clarify the role of nutrients in seasonal hypoxic events along with a TMDL that can replicate the physical and chemical conditions observed in Narragansett Bay. There is a growing tendency [among estuarine and coastal scientists] to view eutrophication in a more complex manner. The interaction of nutrient limitation to light limitation [sic], as well as to the influence of residence time on community structure and ecological interactions [sic] are still poorly understood, and an improved understanding of the factors that determine the sensitivity of estuaries to nutrients may eventually lead to better management of coastal nutrient pollution.[23]

Response #F47(a)(3)(vi): Additional research is not needed to substantiate the total nitrogen limit in the final permit. As detailed repeatedly throughout this Response to Comments, the CWA does not allow EPA to postpone development of water quality-based effluent limits pending completion of a TMDL. *See* Responses #E3 and #F12. Further, as previously explained, EPA has determined that a seasonal reduction of nitrogen to no more than 5.0 mg/l at the UBPWAD facility is required in order to achieve water quality standards. *See* Responses #F17, #F18A, #F22, #F44, #F47(a)(1), #F47(a)(3)(i)-(iii).

We agree that physical conditions such as stratification, temperature, tidal stage, wind induced mixing and re-aeration do have an effect on dissolved oxygen levels. Indeed, as part of RIDEM's modeling efforts, water quality data (11 sampling events during 1995 and 1996) were collected under a variety of conditions in order to reflect the dynamic physical conditions of the system. Additional evaluations of site specific factors might be informative in determining whether further reductions of nitrogen are necessary in future permit issuances. Monitoring conducted after completion of the upgrades required by this permit and RIDEM's permits will incorporate consideration of appropriate site specific factors relative to the response of nitrogen loadings to Narragansett Bay.

Comment #F47(b): Interstate/Transboundary pollution considerations.

Comment #F47(b)(i): The Draft Permit seeks to apply a Rhode Island legislative mandate [RI Gen. Laws §46-12-2(f); requiring that nitrogen discharges be reduced by 50% by December 31, 2008] to Massachusetts dischargers. That mandate does not

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[23] Howarth, R.W. and Marino, R. 2006. Nitrogen as the limiting nutrient for eutrophication in coastal marine ecosystems: Evolving views over the decades. Limnol. Oceanogr., 51:364-376.

constitute a state water quality standard that has been promulgated and then approved by EPA. As such, it is not part of Rhode Island's water quality standards under Federal law, and there is no legal basis, under the "Alaska Rule" (40 CFR 131.21) to apply it in NPDES permits.

Response #F47(b)(i): EPA did not apply RI Gen. Laws §46-12-2(f) in establishing the effluent limit for nitrogen. *See* Response #F44.

Comment #F47(b)(ii): In order to subject a point source to permit requirements based on another state's water quality standards, EPA must demonstrate that the point source's discharge is causing or contributing to a violation of those out-of-state standards.[24] As discussed elsewhere in these comments, EPA has not made any showing that the proposed limits in the Draft Permit are needed to prevent violations of Rhode Island water quality standards. The burden is on EPA to show how the proposed limits will lead to attainment of the Rhode Island standards, and EPA has not done this. Therefore, there is no legal basis for those limits.

Response #F47(b)(ii): The discussion of the nitrogen limit in the Fact Sheet (pages 8-14) details the basis for EPA's finding that discharges of nitrogen from UBWPAD's facility are causing or have the reasonable potential to cause violations of Rhode Island's Water Quality Standards. Related and more specific comments and objections from UBWPAD are addressed elsewhere. *See, e.g.,* Response #F6 and #47(a)(1).

There is no need to reach UBWPAD's comment that, absent having determined "reasonable potential," consideration of Rhode Island's water quality standards violates Section 510 of the CWA and the Tenth Amendment of the Constitution. As is detailed above, EPA has satisfied this regulatory threshold. In any event, UBWPAD does not explain how the permit limits in any way restrict Massachusetts' sovereignty or rights over waters in the Commonwealth in contravention of Section 510 of the CWA. In establishing the permit limits in this matter, EPA adhered to the requirements of the CWA and its implementing regulations. These requirements mandate that EPA set effluent limits that ensure compliance with the applicable water quality requirements of all affected states, including downstream affected states. 33 U.S.C. §1341(a)(2); 40 CFR §122.44(d)(4).

Further, to the extent that UBWPAD is challenging the constitutionality of the CWA and/or its implementing regulations, such a challenge is not appropriately raised in these administrative permitting proceedings. *See, e.g., In re: City of Marlborough,*

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[24] Related legal concerns of the District include whether the imposition of Rhode Island requirements on Massachusetts point source discharges, without the CWA-required demonstration that the point source's discharge is causing or contributing to a (1) violation of those out-of-state standards/requirements: violates Section 510 of the Clean Water Act, 33 U.S.C. § 1370, which prohibits construing any provision of the statute as impairing "any right or jurisdiction of the States with respect to waters (including boundary waters) of such states"; and/or (2) violates the Tenth Amendment of the United States Constitution or invades Massachusetts' sovereignty and, thus, is unconstitutional.

Massachusetts, NPDES Appeal No. 04-1 at n. 19 (EAB March 11, 2005); *In re: City of Port St. Joe and Florida Coast Paper Co.*, 7 EAD 275 at n.58 (July 30, 1997). In any event, UBWPAD does not substantiate any such claim. The Tenth Amendment does not itself limit the power of the federal government, but simply confirms that such power is limited to that provided in the Constitution. *New York v. United States*, 505 U.S. 144, 156-57 (1992). The Clean Water Act is a valid exercise of the Commerce Clause power delegated to the United States by the Constitution. *United States v. Riverside Bayview Homes, Inc., et al.*, 474 U.S. 121, 133 (1985).

Comment #F47(b)(iii): Dischargers in Rhode Island, which are much closer to the Bay than is the District's facility, have received TN limits as high as 8 or 10 mg/l and, in some cases, no limit at all. If attenuation is considered (as it must be), an equivalent limit for the District, based on alleged impacts to the Bay, would be much higher than those limits. Yet, without justification, EPA has applied a limit of 5mg/l to the District. In light of RIDEM's actions concerning its own dischargers, EPA's interpretation of the Rhode Island narrative water quality standards is erroneous.

Requiring that Massachusetts plants meet more stringent limits than Rhode Island plants, without a technical justification based on protection of water quality, violates the Commerce Clause of the Constitution to the extent that Rhode Island is attempting to employ the Clean Water Act to secure an unfair economic advantage or benefits for Rhode Island [e.g., by unfairly shifting a disproportionate share of the responsibility and expense of reducing/treating the TN load that may not be necessary or economically feasible].

Response #F47(b)(iii): The predominant sources of the nitrogen loading in the Providence and Seekonk Rivers are municipal wastewater treatment facilities in Rhode Island and Massachusetts. *See* Response #F6. In administration of the NPDES program, Rhode Island (who administers the NPDES program in that state) and EPA (who administers the program in Massachusetts) have prioritized the most significant point sources of nitrogen to the system. In developing nitrogen limits for these facilities, both Rhode Island and EPA have considered the relative nitrogen loading and location of the discharge of each facility.

The 2004 RIDEM study includes evaluation of various combinations of nitrogen reduction from the significant point sources of nitrogen to the system. These include seven Rhode Island and three Massachusetts wastewater treatment facilities. The Rhode Island facilities include: Woonsocket, NBC Fields Point, NBC Bucklin Point, East Providence, Cranston, Warwick and West Warwick. The Massachusetts facilities include UBWPAD, Attleboro and North Attleborough. (See *Evaluation of Nitrogen Targets and WWTF Load Reductions of the Providence and Seekonk Rivers*, DEM, December 2004). RI DEM has established final nitrogen limits of 5.0 mg/l for Rhode Island facilities with relatively larger design flows that also discharge into areas of the river system experiencing the most significant impairment – NBC Fields Point (65 MGD) and NBC Bucklin Point (31 MGD). RIDEM also issued a nitrogen limit of 5.0 mg/l to Woonsocket; although Woonsocket has a permitted design flow of 16 MGD, it