NPDES 08-13

CONSERVATION LAW FOUNDATION

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ENVIR. APPEALS BOARD

VIA FEDEX

September 22, 2008

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board
Colorado Building
1341 G Street, NW, Suite 600
Washington, DC 20005

Re: Conservation Law Foundation Petition for Review
Upper Blackstone Water Pollution Abatement District
Millbury, Massachusetts
National Pollutant Discharge Elimination System
NPDES Permit No. MA 0102369

Dear Sir or Madam:

Enclosed please find the original and five copies of Conservation Law Foundation, Inc.'s Petition for Review of conditions included in the Final Permit for the Upper Blackstone Water Pollution Abatement District wastewater treatment facility located in Millbury, Massachusetts.

Sincerely,

Christopher M. Kilian, Esq.

cc: USEPA Region 1
Nathan A. Stokes, Esq.

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ENVIR. APPEALS BOARD

BEFORE THE
ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:	)	
	)	
Upper Blackstone	)	
Water Pollution Abatement District	)	NPDES Appeal No. 08-_____
NPDES Permit No. MA0102369	)	
	)	
	)	

PETITION FOR REVIEW

Pursuant to 40 C.F.R. §124.19, the Conservation Law Foundation, Inc. ("CLF") hereby submits this Petition for Review of conditions included in National Pollutant Discharge Elimination System ("NPDES") permit No. MA0102369 (the "Permit") issued on the August 22, 2008 by United States Environmental Protection Agency Region 1 ("EPA Region1," "Region 1," or "the Region") pursuant to the Federal Clean Water Act, 33 U.S.C. §1251 *et seq.* (the "CWA") to the Upper Blackstone Water Pollution Abatement District (the "UBWPAD") to discharge from its facility at 50 Route 20, Milbury, Massachusetts (the "Facility").

JURISDICTIONAL BASIS FOR PETITION

Any person who filed comments on a draft NPDES permit may petition the Board for review of its terms and conditions. 40 C.F.R. §124.19(a). By letter dated May 23, 2007 attached hereto as Exhibit A, CLF filed comments on the draft Permit raising,

among others, the issues presented in this Petition. Accordingly, the Board has jurisdiction over this matter.

PERMIT CONDITIONS CHALLENGED

CLF requests review of any and all conditions that address the discharge of nitrogen and phosphorus from the Facility including, Part I.A.1 Ammonium Nitrogen, Part I.A.1 Total Nitrogen, Part I.A.1. Total Phosphorus, Part I.A.1 Total Nitrogen, and Part I.A.1. Footnote 9 Cold weather denitrification.

FACTUAL BACKGROUND

The Facility

The Upper Blackstone Water Pollution Abatement District owns and operates a wastewater treatment facility engaged in the collection and treatment of domestic, commercial and industrial wastewater, and serves Worcester and portions of Auburn, West Boylston, Holden, Rutland, Oxford and Millbury. There are currently more than 200 industrial users contributing wastewater to this facility. (Fact Sheet at Pg. 1). The facility has a design flow of 56 million gallons per day (MGPD), and discharges into the headwaters of the Blackstone River, and then to Upper Narragansett Bay through the headwaters of the Seekonk and Providence Rivers. The discharged effluent dominates the river flow in low flow conditions, where the natural summer low flow is only 4.4 MGPD. (Fact Sheet at Pg. 2). The composition of the effluent discharged from the treatment facility therefore has extreme influence over the water quality of the Blackstone River and receiving waters.

The Receiving Waters

The Blackstone River has its headwaters in Worcester, Massachusetts, and flows south into Rhode Island, discharging into the Seekonk and Pawtucket Rivers. The Seekonk River flows to the Providence River, which reaches Narragansett Bay. (Fact Sheet at Pg. 5). The Blackstone River is a major source of freshwater for Narragansett Bay, which has been described as Rhode Island's most important aquatic resource. (Fact Sheet at Pg. 5). The Blackstone River is a "stream entering a lake or reservoir," and enters "a series of impoundments" before entering the tidally-influenced Seekonk River.

Rhode Island and Massachusetts have different classification systems for determining the designated uses of surface waters. Although Massachusetts has assigned the Blackstone River as "Class B", the Rhode Island system is more complex, and assigns several different classifications for the various rivers leading into Narragansett Bay. (Fact Sheet at Pg. 6). Rhode Island has designated the Blackstone River as "Class B1", which is very similar to a Class B river in Massachusetts. The Blackstone River is therefore designated for fish and wildlife habitat, primary (can differ in Class B1 rivers) and secondary recreational activities, and shall be suitable for industrial, aquaculture, agriculture, hydropower, and navigation uses. (Fact Sheet at Pg. 6).

Both Rhode Island and Massachusetts have listed the Blackstone River as impaired under CWA Section 303(d), and require one or more Total Maximum Daily Loads (TMDLs) to be prepared to reduce pollutant loading into the river to attain water quality standards that are not being met. (Fact Sheet at Pg. 6). The Seekonk and Providence Rivers are also listed as impaired under CWA Section 303(d). (Fact Sheet at Pg. 6, 7). Both states have cited high levels of nutrients, and low dissolved oxygen levels as some of the reasons for impairment. (Fact Sheet at Pgs. 6, 7).

Nutrient Loading

The primary pollutants that lead to impairment of the above waters are the nutrients nitrogen and phosphorus. These nutrients are necessary for the growth of plants and animals, and support healthy fresh and saltwater systems. In excess, these nutrients cause severe distress to an aquatic ecosystem, causing fish disease, brown tide, algae blooms and low dissolved oxygen levels. (RIDEM "Plan for Managing Nutrient Loadings to Rhode Island Waters" at Pg. 1). Excessive phosphorus in freshwater, and nitrogen in saltwater, stimulate algae growth which prevents sunlight from penetrating through the water column. Underwater plant life suffers from the lack of sunlight. As the algae decays, it takes up oxygen in the water and fish, shellfish, and other benthic organisms cannot survive. This may also lead to decreased aesthetic value as foul smells from decay are released into the surrounding area. (Id. at Pg. 1).

Nitrogen

The most predominant source of nitrogen loading in the Providence and Seekonk Rivers is municipal wastewater treatment facilities in Rhode Island and Massachusetts. (Fact Sheet at Pg. 13). The UBWPAD is the most dominant source of nitrogen discharge in the Blackstone River, even after attenuation. (Response to Comment # F18E at Pg. 54) The facility therefore greatly contributes to nitrogen loadings in the Seekonk and Providence Rivers. (Fact Sheet at Pg. 13). For example, the Seekonk River receives an estimated 87% of the UBWPAD nitrogen load, after a mere 13% attenuation. (Fact Sheet at Pg. 14). As a result, the Seekonk is severely polluted and its designated uses are impaired. (Fact Sheet at Pg. 14).

The reduced attenuation of nitrogen as it is discharged from UBWPAD and into the Upper Narragansett Bay leads to degradation of the Bay's aquatic life. (RIDEM "Plan for Managing Nutrient Loadings to Rhode Island Waters" at Pg. 3). The amount of nitrogen in effluent can be controlled to 3 mg/L through available technology. (Id. at pg. 3). However, even if the UBWPAD were to reduce its nitrogen discharges to the limit of technology, this would not ensure that the Seekonk and Providence Rivers would comply with existing water quality standards in Rhode Island. (Id.). Therefore, an effluent limit less stringent than what is technologically possible will lead to further degradation of "Rhode Island's most important aquatic resource." (Fact Sheet at Pg. 5).

Phosphorus

The UBWPAD is also the dominant source of phosphorus in the Blackstone River, which leads to substantial phosphorus driven eutrophication. (Response to Comments at Pg. 31). Discharge Monitoring Reports from January 2004 through December 2006 show a range of 0.9 mg/l to 2.4 mg/l of total phosphorus. (Response to Comments at Pg. 109). There is no significant dilution in the receiving stream under 7Q10 conditions. (*See* Fact Sheet, Att. B). However, as phosphorus discharges are reduced according to 0.1 mg/l, EPA's analysis shows that a reduction in nitrogen attenuation will occur. This is due to a reduction in phosphorus driven algal growth, which is the primary cause of nitrogen uptake. (Response to Comments at Pg. 45). Therefore, as more stringent phosphorus limits are implemented for the UBWPAD, a further increase in delivery of nitrogen to Narragansett Bay can be expected. (Id.). This factor is also evidence of the need for the strictest possible total nitrogen effluent standards to be implemented.

Stricter phosphorus standards are also critical to the protection of this aquatic resource. In the 1986 Quality Criteria for Water ("Gold Book"), the EPA recommends a series of concentrations for in-stream phosphorus depending on the type of water body. The recommendation for any stream entering a lake or reservoir is 50 ug/l (0.05 mg/l), and 100 ug/l for any stream *not* discharging directly to lakes or impoundments. (Fact Sheet at Pg. 9). The EPA has also recognized that the UBWPAD discharges into the Blackstone River five miles before it enters the "first of a series of many impoundments before reaching the Seekonk River." (Fact Sheet at Pg. 9). Therefore, the UBWPAD should be subject to the effluent criterion of 50 ug/l.

In December of 2000, the EPA established "Eco-regional Nutrient Criteria" in "an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country." (Fact Sheet at Pg. 9, EPA-822-B-00-022). The recommended phosphorus criterion for the eco-region containing the UBWPAD is 24 ug/l (0.024mg/l).

As evidenced by EPA analysis, and other studies, the effluent limits for nitrogen and phosphorus have great affect on the health of an already severely damaged watershed. More stringent standards are required, and have been recommended by EPA in previous water quality documents, to ensure the health of Narragansett Bay does not continue on its inexorable decline.

ARGUMENT

EPA Region 1 has issued a Permit for the UBWPAD Facility that fails to meet the requirements of the Clean Water Act. Specifically, 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 violations in the Blackstone River or the downstream salt water influenced systems.

EPA Region 1's failure to implement the requirements of the Clean Water Act stands in stark contrast to the dire conditions of the receiving waters. The Blackstone River and the downstream receiving waters are suffering significant degradation due to excessive nutrient loading and, as a result, are listed on section 303(d) lists in Massachusetts and Rhode Island. The UBWPAD Facility is by far the largest contributor of phosphorus to the Blackstone River and is one of the largest contributors of nitrogen pollution to downstream waters including Narragansett Bay.

Region 1 is under a legal duty to require that this Facility meets the pollution control requirements of the Clean Water Act. The Clean Water Act places an obligation on EPA Region 1 to only grant authorization to discharge into waters of the United States for the Facility's discharge if any permit issued includes conditions that either will assure that 1) water quality standards are met in the receiving waters or 2) the Facility's contribution to water quality violations is eliminated. The Permit issued by Region 1 does not comply with these Clean Water Act requirements. The Board should find that the conditions challenged by CLF are contrary to law and otherwise in error and should issue an order requiring that adequate conditions must be included in the Permit to ensure attainment of water quality standards or eliminate the Facility's contributions to violations.

I. THE PERMIT DOES NOT COMPLY WITH THE CLEAN WATER ACT BECAUSE IT DOES NOT INCLUDE CONDITIONS THAT WILL ASSURE ATTAINMENT OF WATER QUALITY STANDARDS OR ELIMINATE THE FACILITY'S CONTRIBUTIONS TO WATER QUALITY VIOLATION

The Clean Water Act requires that "there shall be achieved . . . not later than July 1, 1977, any more stringent limitations, including those necessary to meet water quality standards . . . or required to implement any applicable water quality standard established pursuant to this chapter." 33 U.S.C. § 1311(b)(1)(C). Discharges, such as the discharge from the UBWPAD Facility, can only be lawfully permitted if this statutory mandate is met.

To implement this statutory mandate, CWA regulations state: "No permit may be issued: (d) When the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected states." 40 CFR §122.4(d); *see also,* 40 C.F.R. §122.4(a)(No NPDES permit may be issued if its conditions do not provide for compliance with the applicable requirements of the CWA and the regulations thereunder). The CWA regulations further state that if a permit is to be issued for a discharge that causes or contributes to water quality violations, conditions must be included in the permit to achieve water quality standards and/or eliminate contributions to violations of water quality standards. 40 C.F.R. §122.44(d)(1). The Environmental Appeals Board has enforced these CWA mandates and has held that the mere possibility of compliance is not sufficient assurance under the law. City of Marlborough, Massachusetts Easterly Wastewater Treatment Facility, 12 E.A.D. 235, 250 (2005). In this instance, according to the Region's own analysis, the nitrogen and phosphorus conditions in the Permit are not sufficient to ensure that water quality standards will be attained.

a. The Permit's Limits on Total Nitrogen Do Not Meet This Standard.

The Permit for the Facility does not include conditions limiting the discharge of nitrogen to assure attainment of water quality standards or eliminate the Facility's contribution to water quality violations. Rather, the record indicates that additional conditions must be imposed to require implementation of limit of technology pollution controls, to include appropriate pollution offsets, and to extend nitrogen limits throughout the year.

In 2004 Rhode Island Department of Environmental Management ("RIDEM") completed an "Evaluation of Nitrogen Targets and WWTF Load Reductions for the Providence and Seekonk Rivers" (the "RIDEM Study"). EPA Region 1 adopted the RIDEM Study as a "key report" in the Permit Fact Sheet (pg. 12, 3rd paragraph). In fact EPA Region 1 extensively relied upon the study throughout the review of the Permit and in the Response to Comments (e.g. Response to Comment #'s E3, F6, F17, F18A, F18B, F18E). Perhaps most importantly, with regard to nitrogen loading in the Seekonk River, Providence River and Upper Narragansett Bay, the RIDEM Study states:

> DEM has evaluated impacts and set nitrogen load reduction targets using studies conducted at the University of Rhode Island's Marine Ecosystems Research Laboratory (MERL). This analysis indicated that even if the WWTF 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 quality standards** (minimum of 5.0 mg/l .except as naturally occurs.) and may not meet the latest Environmental Protection Agency (EPA) guidelines that DEM has proposed to adopt (see Appendix A).

RIDEM Study at 3. Despite the clear finding of this key study, that water quality standards will not be met even with imposition of a limit-of-technology limit of 3 mg/l, EPA Region 1 has inexplicably issued the Permit with an insufficient nitrogen limit of 5 mg/l and has failed to include additional conditions such as enforceable offsets that would eliminate the Facility's contribution to violations of water quality standards.

1. **The Conditions in the Permit Must include Implementation of the Limit of Technology Pollution Control as an Effluent Limitation.**

The Permit's warm weather limit on total nitrogen (TN) must be set no higher than 3 mg/l, - the Limit of Technology for total nitrogen as defined by the RIDEM. [1] Even with imposition of the limit of technology at the plant, the Facility will continue to contribute to violations of water quality standards. RIDEM Study at 3. Because the CWA requires imposition of conditions and limitations necessary to assure attainment of water quality standards or eliminate the Facility's contribution to water quality violations, EPA has no choice but to require limit-of-technology controls as well as inclusion of additional enforceable controls.

EPA Region 1 has not provided any lawful justification for failing to impose TN effluent limitation at the limit of technology consistent with the RIDEM Study. EPA Region 1 has expressly recognized that:

> Together with nitrogen reductions proposed at other Massachusetts and Rhode Island facilities, a limit of 5.0 mg/l at UBWPAD would result in the Seekonk River receiving nitrogen loads of **ten times higher** than Bay wide loads on a per unit area basis (assuming POTWs were discharging at design flows); assuming the facilities were discharging at current flows, the loading to the Seekonk River would be **seven times the Bay wide load**. *See Evaluation of Nitrogen Targets and WWTF Load Reductions for the Providence and Seekonk Rivers,* DEM (December 2004).

(Emphasis added). Given the severity of the pollution issues in these receiving waters and the dramatic increases in pollution loads resulting from the inadequate limit in the Permit, there is simply no justification for EPA Region 1's failure to require that UBWPAD implement the limit of technology nitrogen controls at the Facility.

[1] As noted in the Region's Response to Comments #F6 (page 31), a 3.0 mg/l limit has recently been imposed on the wastewater treatment plant in Woonsocket, RI.

In its Response 3A10 to CLF's comments, in an attempt to justify the insufficient total nitrogen limit included in the Permit, EPA Region 1 characterizes the RIDEM Study as only "suggesting" that a nitrogen limit based on the limit of technology may be necessary. This selective *post hoc* characterization ignores the RIDEM Study's finding that even a limit of 3 mg/l, let alone the Permit's 67% higher 5 mg/l limit, would not comply with water quality standards.

Rather than pointing to affirmative evidence that the Permit's 5 mg/l warm weather limit will "ensure" compliance with water quality standards or eliminate the Facility's contribution to violations, the Region merely notes that there are uncertainties associated with the methodology used in reaching the RIDEM Study's conclusions. The Region bases its decision not to impose the more stringent limit entirely on these "uncertainties".[2] While there may indeed be some "uncertainties" regarding the Study's methodology, the Region does not cite any conflicting science supporting the proposition that the eutrophication related impairments in the Blackstone River or Narraganset Bay could be adequately addressed by the Permit's 5 mg/l TN limit. The Region is only able to note that, "the uncertainties in extrapolating the physical model may ultimately mean that additional nitrogen reductions are needed, but there is no realistic likelihood that water quality standards could be met with a less stringent nitrogen limit than 5.0 mg/l." Response to Comments # F6; Fact Sheet at 14.

EPA Region 1's attempt to resort to alleged uncertainties in the RIDEM Study as a basis for including insufficient nitrogen limits in the Permit is undermined by EPA's own analysis. In fact, in the Response to Comments Region 1 supports the RIDEM Study

[2] On page 49 of the Response to Comments, the Region says "Despite 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".

by explaining that uncertainties associated with the analysis were taken into account in the methodology. Response to Comments #F18A. The Region itself noted in its Response to Comments #F18B that:

> It is not necessary that there be a complete understanding of all factors that influence one response variable (dissolved oxygen) before cultural eutrophication can be addressed. This is especially true where water quality impairment – cultural eutrophication – is severe and where the cause of such impairment – excessive nitrogen loading – is known, as evidenced by numerous studies [citing the RIDEM Study].

Region 1 attempts to justify the inadequate nitrogen limit in the Permit be alleging that because the RIDEM Study "cannot completely simulate" the response to nitrogen loadings in a complex, natural setting such as the Upper Narragansett Bay, the Study "may" overestimate that response. However, as the Region acknowledges in its Response to Comments #F6, the same uncertainties could just as well cause the RIDEM Study to underestimate the response in the receiving waters. Therefore the alleged uncertainties cited by the Region to not impose a more stringent limit apply with equal force to support the more stringent limit required by the RIDEM Study.

Region 1 is obligated by the CWA regulations to develop effluent limitations that eliminate the reasonable likelihood that the discharge from the facility will cause a violation of water quality standards or will contribute to the violations in the receiving waters. 40 CFR § 122.44(d)(1)(i). The Region's assurance that water quality standards could not be met with a less stringent limit than 5 mg/l does not constitute the assurance required by the CWA and its regulations that the Permit's limit *will meet* such standards. In fact, the "key study" adopted by Region 1 as a basis for permitting the Facility, even though involving some "uncertainties", finds that a 3.0 mg/l limit would not meet standards.

The record in this regard is directly analogous to the record in the Board's decision in City of Marlborough, Massachusetts Easterly Wastewater Treatment Facility, *supra*. In that case, phosphorus from both the Marlborough WWTF's effluent and the flux of phosphorus into the water column from the bottom sediments were contributing to the receiving waters' failure to meet water quality standards. The Region imposed a 0.1 mg/l growing season phosphorus limit, noting that the WWTF's "potential" to meet water quality standards with the 0.1 mg/l limit would be "enhanced" if steps to reduce the flux from the bottom sediments were taken. The Board responded as follows:

> Based on the record before us, it is unclear whether the Permit complies with the regulatory prohibition on issuing a permit 'when imposition of conditions cannot *ensure* compliance with applicable water quality requirements.' 40 C.F.R. §122.4(d) (emphasis in original). . . . . [T]he record does not indicate whether the Permit's 0.1 mg/l phosphorus limitation, by itself, will meet the state's water quality standards. With regard to the likelihood that imposition of the 0.1 phosphorus limitation will be sufficient to meet water quality standards, the Region states that such a result may be possible, but a mere possibility of compliance does not 'ensure' compliance.

Id. at 50. The Board remanded the permit to the Region with instructions to either demonstrate that the permit as written will "ensure" compliance with the applicable water quality standards or modify it appropriately.

The circumstances in this matter are directly analogous to the facts in the Marlborough case. Just as in the Marlborough case, the Region has not provided affirmative statements that ensure that water quality standards will be met. In fact, the strongest evidence in the record is the "key study" conducted by RIDEM that indicates that water quality standards will not be met even with imposition of a nitrogen limit of 3 mg/l equal to the limit-of-technology. The inadequate 5 mg/l total nitrogen limit included in the Region 1 Permit should be should be reversed. The Board should impose a 3 mg/l

limit at the Facility along with other enforceable conditions necessary to comply with the CWA.

2. The Permit must include Additional Conditions to Eliminate the Facility's Contribution to Water Quality Violations or To Assure Attainment of Water Quality Standards.

The record is clear that the conditions in the Permit will not eliminate the Facility's contribution to water quality standards resulting from nitrogen pollution. The strongest statement that Region 1 has made is that "[t]here is no realistic likelihood, however, that water quality standards could be met with a less stringent nitrogen limit than the one proposed." Response to Comments # F6; Fact Sheet at 14. On the other hand, the "key" RIDEM Study makes it absolutely clear that even with implementation of a nitrogen limit of 3 mg/l, water quality standards will not be met in the Seekonk River, Providence River and Upper Narragansett Bay. Thus, even at a limit of 3 mg/l, let alone a limit of 5 mg/l, the UBWPAD Facility will continue to cause and contribute to violations of water quality standards in these waters.

In order to issue a permit, EPA must determine either that conditions in the permit will result in attainment of water quality standards or that the conditions in the permit will eliminate any contribution from the discharge to the violations. Where limit of technology controls are implemented at a facility and there is still a contribution to violations associated with the pollutant of concern, the permit must include other enforceable controls to assure that the remaining contributions from the facility are eliminated. Marlborough at 50.

In this case, Region 1 must calculate the remaining nitrogen load from the Facility at a limit of 3 mg/l. Once this calculation is settled, the Region must include enforceable

conditions and limitations that eliminate this remaining nitrogen load. Without such conditions, Region 1 cannot ensure that water quality standards will be met and the Facility cannot be lawfully permitted to dispose of its wastes by discharging into the receiving waters. EPA has simply failed to include such enforceable conditions in the Permit. As a result, the Permit does not comply with the requirements of the CWA.

3. The Total Nitrogen limit should be applied year-round.

The Record includes expert analysis indicating that the limited flushing capacity of the receiving waters (including upper Narragansett Bay), combined with the persistence of phosphorus and nitrogen in the system, warrant requiring year-round application of nutrient controls. While, EPA included year-round phosphorus limitations, EPA Region 1 failed to require that the nitrogen limits in the Permit must be applied year-round. In the Response to Comments, the Region recognizes that:

> [I]n light of the uncertainties with the fate and transport of winter contributions of nitrogen through the system and the potential that these contributions will add to the pool of nitrogen available during critical periods, the permit requires that UBWPAD optimize the treatment facilities in the winter period in order to minimize the potential for higher winter loadings to prevent attainment of water quality standards.

Response to Comments at 7 – 8 (emphasis added). Region 1 has expressly recognized that winter contributions will add to the pool of nitrogen causing violations of water quality standards. Therefore, EPA is under an obligation to require conditions that will eliminate this contribution. 40 CFR § 122.44(d)(1)(i).

The winter nitrogen removal optimization condition in the Permit is vague, open-ended, and does not provide any quantifiable reduction in nitrogen loading from the

Facility. The Permit must be modified to include an appropriate winter nitrogen limitation to eliminate the Facility's contribution to water quality standards violations.

b. The Permit's Limits on Phosphorus Do Not Meet The Permitting Standard.

EPA Region 1 has recognized that the Facility is the largest source of phosphorus pollution discharging to the Blackstone River. The record is clear that the Blackstone River is severely impaired as a result of excessive phosphorus loading. Despite these recognitions, Region 1 has failed to include limit-of-technology pollution controls and has not required additional conditions to assure attainment of water quality standards. The Board should require phosphorus conditions to comply with the CWA.

1. The Permit Conditions Must Require Implementation of Limit of Technology Pollution Phosphorus Control as an Effluent Limitation.

The Permit's phosphorus limit must be set no higher than the limit of technology as defined by Region 1.[3] Even with imposition of the limit of technology at the plant, the Facility will continue to contribute to violations of water quality standards. As a result, EPA has no choice but to require limit-of-technology controls at the plant as well as additional enforceable controls to eliminate the Facility's contribution to violations.

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[3] CLF's comments referred to a limit of 0.1 mg/1 as the limit of technology. EPA Region 1 has appropriately pointed out the 0.1 mg/l is not the limit of technology, but rather:

> The final permit includes a phosphorus limit of 0.1 mg/l. We concur it cannot be higher and ensure attainment of water quality standards. The phosphorus limit in the permit is based on an analysis of the limit necessary to achieve water quality standards. It is not a technology-based limit **nor does it reflect the limits of available technology. Available technology is capable of achieving phosphorus limits lower than 0.1 mg/l.**

(Emphasis added).

Given the severity of eutrophication-based water quality violations in the Blackstone River, and the Facility's overwhelming impact on the receiving waters, EPA Region 1 has set forth the applicable in-stream criteria as follows:

> In the absence of a numeric criterion for phosphorus, EPA looks to nationally recommended criteria and other technical guidance documents. *See* 40 CFR 122.44(d)(1)(vi)(B). EPA has produced several guidance documents which contain recommended total phosphorus criteria for receiving waters. The *1986 Quality Criteria for Water* ("Gold Book") recommends in-stream phosphorus concentrations of no greater than 50 ug/l in any stream entering a lake or reservoir, 100 ug/l for any stream not discharging directly to lakes or impoundments, and 25 ug/l within a lake or reservoir. The Blackstone River below the UBWPAD discharge is free flowing for approximately 5 miles before it enters the first of a series of many impoundments before reaching the Seekonk River.
>
> More recently, EPA has released "Ecoregional Nutrient Criteria," established as part of an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country. *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams,* December 2000 (EPA- 822-B-00-022). The published criteria represent conditions in waters in that ecoregion that are minimally impacted by human activities, and thus representative of water without cultural eutrophication. The UBWPAD is within Ecoregion XIV, Eastern Coastal Plains. The recommended total phosphorus criterion for this ecoregion is 24 ug/l.

Fact Sheet at 9.

The Blackstone River is a "stream entering a lake or reservoir" – in fact, by EPA's own admission, it enters "a series of many impoundments" before entering the tidally-influenced Seekonk River. Response to Comments at 8. EPA has further recognized that "For phosphorus, we agree that there is a significant potential for particulate phosphorus loadings to settle and accumulate in downstream impoundments during non-growing seasons and to contribute to impairments in the Blackstone River during the summer growing period." Id. As a result of this factual reality, the maximum applicable "Gold Book" criterion applied to the discharge should be 50 ug/l – not the 100

ug/l standard for free-flowing streams used by Region 1 in the Permit. In fact, the more directly applicable criterion in this case is the ecoregional criterion of 24 ug/l expressly developed by EPA for use within Ecoregion XIV, Eastern Coastal Plains.

Despite this directly on-point criteria guidance, Region 1 has chosen to arbitrarily redefine its own guidance documents in this matter. Specifically, EPA Region 1 has ignored the facts that the Blackstone River is located in the Easten Coastal Plains ecoregion and is repeatedly impounded, and instead considers the river to be a "stream not discharging directly to lakes or impoundments." Based on this flawed rationale, Region 1 adopted 100 ug/l as the applicable criterion. Region 1 states:

> . . . the Region has determined that a monthly average total phosphorus limit no higher than 0.1 mg/l (100 ug/l) is necessary in order to achieve the applicable water quality standards. In light of the lack of any significant dilution, a limit of 0.1 mg/l is necessary to ensure that the resulting instream concentration is maintained at 100 ug/l or less. This limit will be in effect seasonally, from April 1 to October 31.

Fact Sheet at 10. There 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. Moreover, EPA Region 1 provides no justification for ignoring the ecoregional criteria specifically applicable to the Facility. The 100 ug/l phosphorus limit applied in the Permit is arbitrary and will not result in attainment of water quality standards, nor will it eliminate the Facility's contribution to water quality violations. Given 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 UBWPAD implement limit-of-technology controls at the Facility.

Just as with regard to nitrogen, the record here addressing phosphorus is directly analogous to the Board's decision in City of Marlborough, Massachusetts Easterly Wastewater Treatment Facility, *supra*. In that case, phosphorus from both the Marlborough WWTF's effluent and the flux of phosphorus into the water column from the bottom sediments were contributing to the receiving waters' failure to meet water quality standards. The Region imposed a 0.1 mg/l growing season phosphorus limit, noting that the WWTF's "potential" to meet water quality standards with the 0.1 mg/l limit would be "enhanced" if steps to reduce the flux from the bottom sediments were taken. The Board held that the Permit's 0.1 mg/l phosphorus limitation did not "by itself, . . . meet the state's water quality standards" and that "a mere possibility of compliance does not 'ensure' compliance." Id. at 50. The Board remanded the permit to the Region with instructions to either demonstrate that the permit as written will "ensure" compliance with the applicable water quality standards or modify it appropriately.

The phosphorus conditions included in the Permit do not ensure that water quality standards will be met. EPA Region 1 ignores the ecological setting of the Facility and the receiving waters by concluding that the Blackstone River is free-flowing despite its "many impoundments" and that the river is not located in the eastern coastal plains ecoregion. The 100 ug/l limit adopted by Region1 is arbitrary and must be reversed by the Board.

2. The Permit must include Additional Conditions to Eliminate the Facility's Contribution to Water Quality Violations or To Assure Attainment of Water Quality Standards.

The record is clear that the conditions in the Permit will not eliminate the Facility's contribution to water quality standards resulting from phosphorus pollution.

Region 1 has only stated that the limit "cannot be higher and ensure attainment of water quality standards." Response to Comments at 6. On the other hand, the arbitrary standard adopted as a basis for the Region 1 Permit is more than 4 times higher than the applicable ecoregional standard and double the applicable "Gold Book" criterion. The Permit allows the Facility to continue to discharge phosphorus as levels that are dramatically higher than the applicable standards.

In order to issue a permit, EPA must determine either that conditions in the permit will result in attainment of water quality standards or that the conditions in the permit will eliminate any contribution from the discharge to the violations. Where limit of technology controls are implemented at a facility and there is still a contribution to violations associated with the pollutant of concern, the permit must include other enforceable controls to assure that the remaining contributions from the facility are eliminated.

The Permit does not eliminate the Facility's contribution to water quality violations and will not result in attainment of water quality standards. In fact, the Permit allows continued discharges of phosphorus at levels dramatically higher than applicable criteria. Even with imposition of limit-of-technology controls, the Facility will continue to discharge phosphorus in a manner that will contribute to water quality violations. The Permit does not define additional conditions that will ensure that water quality standards will be met or that would eliminate the Facility's contribution to violations. The Board should require development of additional conditions to meet the requirements of the CWA.

3. The 0.1 Mg/l Phosphorus limit should be applied year-round.

The Record includes expert analysis indicating that the limited flushing capacity of the receiving waters (including upper Narragansett Bay), combined with the persistence of phosphorus and nitrogen in the system, warrant requiring year-round application of nutrient controls. Stevenson Report. Yet, the Permit allows continued discharge of phosphorus at a level of 1.0 mg/l throughout the winter months. In the Response to Comments, the Region recognizes that "For phosphorus, we agree that there is a significant potential for particulate phosphorus loadings to settle and accumulate in downstream impoundments during non-growing seasons and to contribute to impairments in the Blackstone River during the summer growing period." Response to Comments at 8. Region 1 has expressly recognized that winter contributions will add to the pool of phosphorus causing violations of water quality standards.

EPA is under an obligation to require conditions that will eliminate this contribution. 40 CFR § 122.44(d)(1)(i). Region 1's decision to allow the plant discharge at the dramatically elevated level of 1.0 mg/l throughout the winter period will continue to overload the river system with phosphorus that will fuel eutrophication during other times of the year. The Permit must be modified to include an appropriate winter phosphorus limitations to eliminate the Facility's contribution to water quality standards violations.

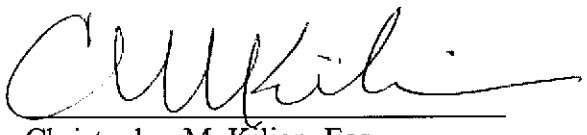
CONCLUSION AND RELIEF REQUESTED

CLF respectfully submits that, for the reasons set forth herein, the Permit's effluent limits on total nitrogen and total phosphorus are clearly erroneous and are clearly not sufficiently stringent to ensure compliance with the applicable water quality standards

or to eliminate the facility's contribution to water quality violations. CLF requests that the Board issue an order striking the conditions challenged by CLF and remanding this matter to the Region with a requirement that the Permit be modified to include more stringent conditions consistent with CLF's arguments herein.

Respectfully submitted.

CONSERVATION LAW FOUNDATION, INC.

By: 

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Dated: September 22 , 2008

Cetificate of Service

I, Christopher M. Kilian, hereby certify that I have served a copy of the foregoing Petition for Review on the following by mailing same, postage prepaid, this 22nd day of September 2008 to:

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