RESPONSE TO COMMENTS

NPDES PERMIT No. MA0100510
Hoosac Water Pollution Control Facility

On July 27, 2006, the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) released for public notice and comment a draft National Pollutant Discharge Elimination System (NPDES) permit developed pursuant to an application from the Hoosac Water Quality District for the reissuance of a permit to discharge wastewater to the designated receiving water, the Hoosic River. The public comment period for this draft permit expired on August 25, 2006. Comments were received from Mr. Bradley O. Furlon, Superintendent, of the Hoosac WPCF in a letter dated August 22, 2006, and Ms. Cindy Delpapa, Stream Ecologist, of the MA Riverways Program in a letter dated August 23, 2006.

After a review of the comments received, EPA has made a final decision to issue the permit authorizing this discharge. The following are the comments and EPA's response to those comments, including changes that have been made to the final permit from the draft as a result of the comments. The comment letters are part of the administrative record and are paraphrased herein. A copy of the final permit may be obtained by writing or by calling Mark Malone, EPA NPDES Permits Program (CMP), 1 Congress Street, Suite 1100, Boston, MA 02114-2023; telephone: (617) 918-1619.

Comments received from Mr. Bradley O. Furlon, Superintendent, Hoosac WPCF:

Comment 1

Part I A. 1. and 2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS. The District's new, third clarifier is intended to be operated during periods of anticipated or actual high flows only. During much of the year, two clarifiers will be sufficient to maintain permit compliance. Therefore, the District requests the introductory paragraph on page 2 be revised to "During the period beginning on the date that the new, third clarifier and associated return and waste activated sludge pumps, piping, and controls are fully operational and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 001. Such discharges shall be limited and monitored as specified below. The permittee shall be limited and monitored as specified below. The permittee shall notify EPA in writing that the new clarifier and accessories are fully operational 30 days prior to its initial operation." Similar language should be provided in the introductory paragraph on page 4.

Response 1

The commenter appears to be requesting that the effluent limitations continue to apply after completion of the plant upgrade, apparently during periods when the third clarifier is not on line. Regulations at 40 CFR §122.45(b)(1) stipulate that "In the case of POTW's,

permit effluent limitations , standards, or prohibitions shall be calculated based on design flow," The draft permit includes two sets of limits, one for the existing design flow and the other for the increased design flow following completion of the upgraded facilities, consistent with the flow noted in the District's application. Based on the cited regulation, EPA is not inclined to continue the limits based on the lower design flow once the upgrade is completed. In addition to this reason, there would also be many practical problems associated with the commenter's suggested approach, including: 1) how to determine, for any particular time period, which limits applied, such as when the third clarifier was operating for half a month, and 2) how to determine compliance with the flow limit(s) since they are based on a calculation of the annual average flow.

Therefore, upon completion of the new facilities the limits based upon the current design flow will expire and the new permit limits will take effect. The permittee is not, however, required to operate the third clarifier at all times once it is operational, if such operation is consistent with the proper operation and maintenance requirements of Part II of the permit (see Section B.1).

The language describing the new facilities has been expanded to include the associated return and waste activated sludge pumps, piping, and controls on pages 2 and 4 as suggested by the commenter.

Comment 2

The draft permit contains a proposed weekly concentration limit of 45 mg/l for BOD_5 and TSS for the existing facility. Please explain why this limit was added when it was not included in the previous permit.

Response 2

The current permit should have included average weekly concentration limits for BOD and TSS as required by the secondary treatment requirements of 40 CFR §133.102. The draft permit corrected those omissions and average weekly concentration limits for BOD and TSS are included in the final permit.

Comment 3

The draft permit contains a proposed weekly concentration limit of 37 mg/l for BOD_5 and TSS for the expanded facility. Please explain why this limit was added when it was not included in the previous permit.

Response 3

As noted above in Response 2, the secondary treatment requirements of 40 CFR §133.102 stipulate an average weekly concentration limit of 45 mg/l for BOD_5 and TSS. As explained in the Fact Sheet, these concentration limits were made more stringent in

the limitations at the increased design flow in order to maintain the same mass limits and ensure that there is no degradation of the receiving water.

Comment 4

The District takes exception to the proposed seasonal phosphorus limit of 0.6 mg/l and requests that it be increased to 0.83 mg/l to maintain the same mass discharge as in the current permit. The District's proposed limit is inconsistent with the phosphorus limit in the 2005 renewal of the Town of Adams permit. The Town of Adams, which discharges upstream, has a lower dilution factor but a higher phosphorus limit of 1.0 mg/l. The Fact Sheet for that draft permit cites the concern for water quality in Vermont and that until new data regarding nutrient levels in the Hoosic River is available, the phosphorus limits would remain the same. The District knows of no new data that has become available. The MassDEP released the Proposed Massachusetts Year 2004 Integrated List of Waters prior to the issuance of the Adams permit and the 2006 List presents the same information regarding the partial impairment of the Hoosic River downstream of the Adams and District treatment facilities. Unless it can be demonstrated that new information is available and it is made part of the public record for the District's permit renewal, the District's permit should not be handled any differently than the permit for the Town of Adams.

In addition, it has been known that untreated and partially treated wastewater from dischargers in Pownal, Vermont have significant impact on the Hoosic River water quality in Vermont and New York. The startup of the Pownal treatment facility is imminent and will result in the elimination of a significant number of areas with severe wastewater problems. In addition, the performance of the Hoosac WPCF has improved dramatically under the current permit. Therefore, the District requests that reducing the mass loading to the Hoosic River be deferred until an up-to-date, scientifically defensible evaluation of the positive impacts of the improved District facility performance and new Pownal wastewater treatment facility have been completed. Requiring a reduced loading at this time is speculative and without site specific, technical merit.

Response 4

First, regarding the comment that EPA may not establish a phosphorus limit inconsistent with the limitations in the Adams permit without new information, there clearly is no basis for saying that the EPA may not put the correct permit limits into a new NPDES permit because it has put different permit limits into other NPDES permits. The EPA revisits all aspects of NPDES permits at each permit reissuance, consistent with the goal of the Clean Water Act to restore and maintain the chemical, physical and biological integrity of the nation's waters. While section 402(k) of the Clean Water Act, 33 U.S.C. § 1342(k), provides some protection for permittees against having to comply with changes in requirements during a permit's term, the clear intent of the statute is that there can and indeed often must be such changes in requirements when new permits are issued. Were we to issue the Adams today, we would use the same tools we used to develop your limit and might require a more stringent limit in their permit. Conversely, when the

Adams permit is reissued, their limit may be more stringent than yours if, for instance, the state completes a TMDL or establishes numeric criteria for phosphorus.

EPA regulations do not require that a TMDL or other wasteload allocation be completed before a water quality-based limit may be included in a permit. Rather, the NPDES permit must be "consistent with the assumptions and requirements of any available wasteload allocation." EPA is required to include appropriate water quality-based limits in an NPDES permit when there is a reasonable potential for the discharge to exceed water quality standards. Exceedances of water quality standards are well documented given the listing of the Hoosic River downstream of the Hoosac POTW on the State's 303(d) list, and the reasonable potential of the discharge to cause or contribute to those violations is equally clear.

Limits based on narrative criteria must be developed in accordance with procedures found at 40 CFR part 122.44 (d)(1) (vi) (A-C), which describes three methods for establishing such effluent limits. These are A) derive a criteria using proposed state criterion, an explicit State policy or regulation interpreting its narrative water quality criterion supplemented with other relevant information, B) use EPA's water quality criteria supplemented where necessary by other relevant information, or C) control the pollutant through use of an indicator.

EPA elected to use method B), using the Gold Book[1] criteria to interpret the State's narrative criteria. EPA's1986 Quality Criteria of Water ("the Gold Book") recommends that to control cultural eutrophication instream phosphorus concentrations should not exceed 0.05 mg/l in any stream entering a lake or reservoir, 0.1 mg/l for any stream not directly discharging directly to lakes or impoundments, and 0.025 mg/l within a lake or reservoir.

Comment 5

Similar arguments can be made regarding the 1.0 mg/l winter phosphorus limit in the District's draft permit and only a phosphorus monitoring requirement for the Town of Adams. Without any new information regarding the bioaccumulation of phosphorus in the Hoosic River we would expect the requirements to be consistent between the two facilities.

Response 5

As noted above, the receiving water segment is on the proposed 2004 and 2006 lists for nutrients. The winter period limit is necessary so that higher levels of phosphorus discharged during that period do no result in the accumulation of phosphorus in the sediment. That phosphorus can be utilized by plants later in the year when temperatures increase.

[1] US EPA, 1986, Quality Criteria for Water, EPA-440-5-86-001.

Comment 6

In the event that the phosphorus limit remains at 0.6 mg/l in the final permit, we request that consideration be given to a moving average as a basis for meeting permit compliance. EPA has taken this approach in a discharge permit issued to Winchendon, Massachusetts. The District is concerned about its ability to consistently and reliably achieve this limit. Our concern is supported by EPA's own Phosphorus Removal Design Manual (EPA/625/1-87/001) which indicates the lower limit of phosphorus removal with metal salts to be 0.5 mg/l.

Response 6

In almost all permits, phosphorus limits have been established as monthly averages to ensure that there are few days of high discharge concentrations, which might trigger plant growth. On rare occasions, EPA and the MassDEP have provided longer averaging periods, typically for more stringent limits at or below 0.1 mg/l. It is more difficult to consistently meet a limit at that low level and a longer averaging period addresses that issue. Daily discharges are not of particular concern because of the low 0.1 mg/l permit limit.

Regarding the ability of technology to reliably achieve this limit, there are treatment technologies available that can reliably meet limits much lower than the 0.6 mg/l. Therefore, the phosphorus limit remains as a monthly average of 0.6 mg/l. As explained in the Fact Sheet, this limit will meet the instream concentration of 0.1 mg/l.

Comment 7

The District requests a change in the Measurement Frequency for Total Residual Chlorine (April 1 –October 31) to once per day, the same as in the current permit. The District's continuous chlorine residual analyzer is installed upstream of the sodium bisulfate addition for dechlorination and not for the purpose of demonstrating permit compliance for total chlorine residual in the effluent. In addition, the District is unaware of any continuous chlorine residual analyzer that could reliably operate at levels as low as 0.11 mg/l.

Response 7

The measurement frequency for the total residual chlorine limit is once per day. The draft permit did add an average monthly and maximum daily reporting requirement with continuous measurement. Considering the highly variable flow to the facility, this monitoring requirement has been added to verify consistent compliance with the TRC limits and will require the installation of an analyzer at an appropriate location to perform this function. There are analyzers which have a minimum detection limit of 0.005 mg/l. Also, compliance with this reporting requirement has not been an issue with other permittees who have similarly stringent TRC limits. Consequently, this requirement remains in the final permit

Comments received from Cindy Delpapa, Stream Ecologist, MA Riverways Programs

Comment 8

The most significant aspect of the draft permit relates to the upgrade and expansion of the Hoosac WPCF. While the Fact Sheet notes compliance problems due to extremely high influent flows, it did not provide much detail on the levels of Infiltration/Inflow (I/I) or the effectiveness of recent I/I reduction programs. Data suggests the existing flow limitation is adequate to handle the actual wastewater component of the influent. An increase in the permitted flow should only be allowed after the I/I is brought to a reasonable percentage of flow and there is a demonstrated need for the additional capacity. Such an increase in the discharge into an impaired river segment with documented water quality issues is not warranted at this time.

Response 8

As pointed out in the Fact Sheet, Federal approval is not generally necessary for a permittee to construct increased treatment capacity, and federal regulations found at 40 CFR § 122.45 (b) (1) require that POTW permit effluent limitations be calculated based upon design flow. However, increases in the discharge can only be authorized in an NPDES permit in accordance with water quality standards, including antidegradation requirements, to ensure that the increased discharge does not cause or contribute to a violation of water quality standards nor degrade existing water quality. The Fact Sheet explained how the permit limits meet water quality standards and antidegradation requirements, including efforts to reduce I/I into the collection system.

Comment 9

Should the increased flow be permitted, it is recommended that a daily maximum flow limit be added. A daily maximum flow will encourage needed I/I removal and be protective of the receiving water.

Response 9

The draft permit requires the reporting of the daily maximum flow. The inclusion of the member communities as co-permittees and the Infiltration/Inflow requirements in Part 1. D. OPERATION AND MAINTENANCE OF SEWER SYSTEM of the permit should be adequate to encourage I/I removal.

Comment 10
It is also recommended that sampling frequency for BOD, TSS and nutrients be increased whenever the facility is experiencing elevated flows due to groundwater, snowmelt, or wet weather I/I. Otherwise, sampling 3x per week might miss high flow events.

Response 10

Footnote 2 on Page 6 of the permit requires that a routine sampling program shall be developed in which the samples are taken at the same location, same time, and same days of every month. This requirement along with the required sampling frequency should be adequate to ensure that over time representative samples of high flow events will be taken.

Comment 11

Given the known water quality impairment of the receiving water, the upgrade of the facility should have the best achievable technology limit of 0.2 mg/l until the completion of a TMDL and anticipated the need to improve phosphorus removal to try and meet the ecoregional recommended instream concentrations..

Response 11

The 0.6 mg/l phosphorus limit is a water quality limit based upon the Gold Book water quality criteria. EPA has used the Gold Book criteria, rather than the Ecoregion criteria because the Gold Book criteria were developed from an effects-based approach as opposed to the more stringent Ecoregion criteria, which were developed on the basis of reference conditions**.** Initially, EPA has opted for the effects-based approach because it is often more directly associated with an impairment to a designated use (i.e. fishing, swimming). The effects-based approach provides a threshold value above which adverse effects (i.e., water quality impairments) are likely to occur. It applies empirical observations of a causal variable (i.e., phosphorus) and a response variable (i.e., chlorophyll *a*) associated with designated use impairments. Reference-based values are statistically derived from a comparison within a population of rivers in the same eco-region class. They are a quantitative set of river characteristics (physical, chemical and biological) that represent minimally impacted conditions. EPA believes that the effects-based approach was preferable to the reference based approach, as it has access to instream water quality sampling data available for the receiving waters as well as information regarding the nature of the designated use impairments on the Hoosic River to interpret the State narrative criteria.

EPA did not use the state's "highest and best practical treatment " requirements to establish effluent limits because we believe, based on existing information, that the Gold Book-based limits are sufficiently stringent to ensure that the facility will not discharge phosphorus in "concentrations which encourage eutrophication or growth of weeds or algae" [see 314 CMR 4/04(5)]. If the state should complete, and EPA approve a TMDL with more stringent limits, or should the state develop numeric water quality criteria which require a more stringent phosphorus limit, this limit will be included future permit actions.

Comment 12

The draft permit only requires the WET testing of one species, daphnia. The data shows the facility had NOEL survival rates of 50% in May and August of 2003 using Pimphales promelas. Two consecutive failures is a concern. It seems prudent to continue testing both species until it can be demonstrated that the impending changes at the facility do not have another problem with toxicity.

Response 12

The current permit required the testing of only one species, the daphnia, and that is the actual species tested in the two referenced WET tests. The database incorrectly identified the test species as the fathead minnow because of an error in the DMR forms. EPA later modified the DMR forms to indicate the correct test species. Therefore, the WET requirements will remain the same in the final permit.

Administrative additions to the final permit:

1. The permit requires the permittee to report to MassDEP when annual flows exceed 80% of the design flow [Part I.A.2.g, page 6]

2. The permit includes information and a web site for reporting SSO events to MassDEP [Part I.E., page 10]