RESPONSE TO PUBLIC COMMENTS

From December 5, 2005 to January 3, 2006, the United States Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) solicited Public Comments on a draft NPDES permit developed pursuant to an application from the Town of Ayer, Massachusetts for the Ayer Wastewater Treatment Facility in Ayer, MA. After a review of the comments received, EPA has made the final decision to issue the permit authorizing the discharge. The following response to public comments describes the changes and briefly describes and responds to the comments on the draft permit. A copy of the final permit may be obtained by writing or calling Michele Cobban Barden, United States Environmental Protection Agency, 1 Congress Street, Suite 1100 (CPE), Boston, Massachusetts, 02114-2023; Telephone (617) 918-1539.

A) Comments submitted by Michael J. Madigan P.E., Superintendent, Department of Public Works, Town of Ayer, MA; dated December 21, 2005.

Comment #1: Based upon the revised summer phosphorus discharge limit of 0.2 mg/l and the increased frequency of monitoring samples required, the following comments are being offered relative to the Town's ability to meet the lower phosphorus limits.

The Town requests that they be allowed to discharge under the current phosphorus limitations for a period of two years. During that time, the Town will investigate what changes and funding are needed at the facility to meet lower limits.

Currently, the facility is designed to remove phosphorus to 1.0 mg/l as was required in the previous permit. The Town will require time to investigate what process modifications and/or operating procedures are necessary to comply with the new limit. Once a plan is developed, full scale testing must be conducted over a representative time period to assess the effectiveness of treatment during the summer and winter permit seasons.

Additionally, as the sampling and testing requirements for phosphorus have increased from once per month to upwards of eight samples per month during the summer, the Town will require additional funding to cover the increased cost of analyses. The Sewer Department's budget is presently set until July of 2006, at which time, additional funding for the increased sampling may be available for the 2006/2007 fiscal year.

The Town requests that the EPA incorporate the following schedule into the conditions of the new permit:

- The Town will begin in January 2006 with evaluation of process and operational modifications required to remove phosphorus to the new 0.2 mg/l limit.
- Additional funding will be incorporated in the 2006/2007 Sewer Department budget.
- The recommended modifications will be implemented by December 2006
- In January 2007 the Town will begin operations and monitoring of the new facility to determine if the modifications can consistently meet the new permit limits for phosphorus.

- Compliance monitoring and process optimization will be conducted from January 2007 through December 2007.
- The new permit limits for phosphorus as presented in the NPDES permit will go into effect January 1, 2008.

Response: Based on the permittee's comments and the fact that the 0.2 mg/l total phosphorus limit, which is in effect April 1 through October 31, is a new limit, EPA has developed an compliance schedule according to 40 CFR 122.47 for achieve the total phosphorus limit of 0.2 mg/l.

Pending completion of the schedule of compliance, the permittee must achieve a total phosphorus limit of 1.0 mg/l year round and optimize operation of the facility for the removal of phosphorus. The monitoring frequency for total phosphorus shall be once (1) per month during April, May and June of 2006. The sampling frequency, thereafter, shall be according to the requirements of Part I.A.1. The monitoring requirements for orthophosphorus become effective on the effective date of the permit but we note that sampling is not required until November 1.

By September 1, 2006, the permittee shall submit to EPA and MassDEP a status report relative to the evaluation of process and operational modifications necessary to achieve the seasonal total phosphorus limit of 0.2 mg/l including a date for the implementation of the recommended modifications.

By June 1, 2007, the permittee shall submit to EPA and MassDEP an additional status report discussing the status of the implementation of the recommended modification.

On April 1, 2008, the new seasonal permit limit of 0.2 mg/l total phosphorus (April 1 – October 31) becomes effective.

B) Comments submitted by Elizabeth Ainsley Campbell, Executive Director, and Martha S. Morgan, Water Resources Advisor, Nashua River Watershed Association, dated January 2, 2006.

<u>Comment #1:</u> We support the 0.2 mg/l total phosphorus limit for the plant at this time, and agree with the frequency of monitoring for TP as well as the orthophosphorus monitoring.

Response: EPA acknowledges the comment and notes that the final permit includes an eighteen (18) month compliance schedule for achieving this limit (Please see response to Comment A.1).

<u>Comment #2:</u> The NRWA would like to see monthly flow average for each month as a report only requirement.

Response: Consistent with other recently issued permits in Region1, EPA has included a "report" requirement for average monthly and maximum daily flow.

Comment #3: We encourage the 6.0 mg/l minimum limit for dissolved oxygen, to minimize impact to this impaired segment of the Nashua River.

Response: EPA acknowledges the comment.

Comment #4: The use of chlorine in the plant has been curtailed considerably. In the event, UV disinfection is bypassed and chlorine is used, the NRWA would like to see more frequent testing (within two hours of the addition) while the chlorine is added, and again within two hours if the results indicate an exceedance, until chlorine levels are within acceptable levels.

Response: The upgraded facility was designed to use ultraviolet disinfection (See application Form 2A, A.11.c). To provide redundancy, the facility retained the ability to use chlorine in the case of a problem with the ultraviolet disinfection. It is EPA's understanding that the facility no longer uses chlorine as a typical element of the treatment process.

EPA does not believe more frequent testing to be necessary. The effluent limitations and monitoring requirements for TRC in the permit are protective of the receiving water. The limits are water quality based which were calculated using a dilution factor based on the 7Q10 flow of the river and the design flow of the WWTF. It should also be noted that the Part II General Conditions which are part of every NPDES permit requires that "samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity." The permittee is responsible to assure that the samples for TRC (if used) are representative. EPA also notes that the frequency of sampling is consistent with that at other POTWs with continuous chlorine disinfection and that chlorine use at this facility would be infrequent and short-term.

Comment #5: The fact sheet states that copper will be set at an acute limit of 64 ug/l and a chronic limit of 47 ug/l. However, the draft permit lists the levels at 88.1 ug/l and 65.1 ug/l. Also, it is unclear where the hardness value was derived for the copper calculations, as the numbers in the fact sheet do not agree with the application effluent data for hardness.

Response: The appropriate effluent limits for copper are an acute limit of 64 ug/l and a chronic limit of 47 ug/l as described in the fact sheet. The limits were calculated using the dilution factor of 13 and receiving water hardness of 33 mg/l, which is the critical low flow hardness (See application Form 2A, A.10.e). This value is supported by the receiving water hardness values included with Whole Effluent Toxicity testing chemistry. The limits in the draft permit are typographical errors which were based on an incorrect dilution factor. The calculations for copper which were included in the fact sheet are found below:

Water Quality Criteria for hardness-dependent metals:

Acute criteria (dissolved) = $\exp\{ m_a [\ln(\text{hardness})] + b_a \}$ (CF)
m_a = pollutant specific coefficient
b_a = pollutant specific coefficient
h = hardness

ln = natural logarithm
CF = pollutant specific conversion factor used to convert total recoverable to dissolved metal
Calculation of acute limit for copper:

m_a = 0.9422 b_a = -1.700 CF = 0.960 h = 33

Acute criteria (dissolved) = exp {0.9422 [ln (33)] + -1.700} * (0.960) = 4.73 ug/l
Dilution factor = 13
Effluent limitation for dissolved copper = 13 * 4.73 ug/l = 61.49 ug/l
Effluent limitation for total recoverable copper = 61.49/0.96 = 64 ug/l*

The maximum daily water quality based limitation for total recoverable copper is 64 ug/l

Chronic criteria (dissolved) = exp{ m_c [ln(hardness)] + b_c } (CF)
m_c = pollutant specific coefficient
b_c = pollutant specific coefficient
h = hardness
ln = natural logarithm
CF = pollutant specific conversion factor used to convert total recoverable to dissolved metal

Calculation of chronic limit for copper:

m_c = 0.8545 b_c = -1.702 CF = 0.960 h =33

Chronic criteria (dissolved) = exp {0.8545 [ln (33)] + -1.702} * (0.960) = 3.47 ug/l
Dilution factor = 13
Effluent limitation for dissolved copper = 13 * 3.47ug/l = 45.11 ug/l
Effluent limitation for total recoverable copper = 45.11/0.96 = 47 ug/l*

The monthly average water quality based limitation for total recoverable copper is 47 ug/l.

<u>Comment #6:</u> The Chronic No Observed Effect Concentrati0on (C-NOEC) in the permit is set at 5.5%. However, the Fact Sheet states "the C-NOEC is established at the receiving water concentration 1/Dilution Factor =1/13), which is 7.7%. The NRWA supports using the 7.7% value in the permit.

Response: The correct WET limit is that in the fact sheet of 7.7%. The limit of 5.5% included in the permit was a typographical error based on an incorrect dilution factor.

<u>Comment #7:</u> We would like to see the collection of flow-weighted 24 hour composite samples.

Response: It is EPA's intention that the parameters which are to be sampled as composite samples be flow proportional. The Part II – General Conditions, which are attached to all NPDES permits in Region 1, define composite sample as "a sample consisting of a minimum of

eight grab samples collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample continuously collected proportionally to flow over that same time period."