RESPONSE TO PUBLIC COMMENTS

Battle Road Farm Condominium Trust
Battle Road Farm Wastewater Treatment Facility
Lincoln, MA

On May 2, 2003, the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MA DEP) released for public notice and comment a draft National Pollutant Discharge Elimination System (NPDES) permit developed pursuant to an application from the Battle Road Farm Condominium Trust for the reissuance of the permit to discharge treated sanitary wastewater to a wetlands within the headwaters of the Shawsheen River. The public comment period for this draft permit expired on June 2, 2003.

After a review of the comments received, EPA has made a final decision to issue the permit authorizing this discharge. The following response to comments describes the changes, if any, that have been made to the permit from the draft 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 Suprokash Sarker, EPA Massachusetts NPDES Permits Program (CPE), 1 Congress Street, Suite 1100, Boston, MA 02114-2023; telephone: (617) 918-1693.

Comments were received from the following:

> **Commonwealth of Massachusetts, Riverways Program - Cindy Delpapa, dated May 22, 2003.**

***Comment* #1:**
The Fact Sheet was not specific on the origin of the receiving wetland, whether it was created specifically to treat the effluent from this facility or it was a pre-existing wetland resource area.

Response:
The receiving stream and wetlands are natural and pre-existed to this NPDES permit.

Comment #2:
If one were to compare the permit levels in this draft with a comparable facility, the Turner Hill facility in Ipswich, the requirements in some areas are different. The Turner Hill facility has a smaller effluent volume but it also discharges to a wetland resource area. The metals monitoring required in the Turner Hill permit is more frequent than that of the Battle Road Farm permit. Given the problem with aluminum at the facility, a more frequent monitoring schedule mirroring that required of Turner Hill would help with the efforts to reduce the loadings of this and other metals found in the effluent in concentrations above those limited in the draft permit.

Response:
The Turner Hill facility referred to is a very different wastewater treatment system than the Battle Road Farm facility, with limited treatment capability. The Battle Road Farm facility is of recent construction and provides advanced treatment. The recent NPDES permit renewal for the Turner Hill discharge includes the condition that the discharge be discontinued within two years,

to be replaced by a new contemporary advanced wastewater treatment facility for a new development. Although the sensitivity of the receiving wetlands is similar for both the Battle Road Farm and Turner Hill discharges, both with very little dilution available, the situations of these dischargers at this time are quite different and therefore their NPDES permit limitations are not directly comparable.

The Battle Road Farm draft permit's inclusion of effluent limitations for metals is a new requirement. A quarterly monitoring and sampling requirement for metals is normally sufficient when these limits are initially required with a NPDES permit. Results will be compared to the results of whole effluent toxicity testing to determine possible impacts to aquatic life. Monitoring frequency can be increased if testing indicates excessive metals in the effluent.

Comment #3:
The frequency of monitoring both TSS and BOD is less frequent in the Battle Road Farm Permit than the Turner Hill permit yet the Battle Road Farm has had problems meeting its TSS limits. In June of 2002, the monthly average was 11.2mg/l or about 125% greater than the monthly average permit limit of 5 mg/l. The daily maximum was 56% greater than allowed in the permit. The numbers for the following month were only marginally improved. While these numbers are still below most conventional POTWs, this facility does not have receiving water dilution, the elevated levels seem to occur in the warmer months, and the facility uses ultra violet disinfection, a method whose effectiveness is correlated to the clarity of the treated wastewater. An increase in monitoring, even if it is only a seasonal requirement, could help determine if there is a problem with the treatment method, exacerbated by warm weather, and how the problem could be corrected. The weekly monitoring requirement found in the Turner Hill permit would also coincide with this permit's bacterial monitoring requirement. This simultaneous monitoring would also help determine if the elevate TSS affects the UV disinfection process.

Response:
You are correct, there have been some occurrences of the facility exceeding the TSS permit limits. However a review of the effluent sampling data from July 2001 through December 2002 (after the effluent review period presented in the draft permit fact sheet) indicates an average of the TSS average monthly concentrations reported of approximately 6.3 mg/l. This average is not significantly higher than the permit limit of 5 mg/l. Note that the discussed TSS monthly average for June 2002 of 11.2 mg/l is actually the maximum daily concentration for that month. The maximum daily permit limit is 10 mg/l. The existing permit's BOD and TSS limits of 5 mg/l average monthly and 10 mg/l maximum daily are significantly more restrictive than the accepted secondary treatment standards (30 mg//l monthly average and 45 mg/l average weekly). The lowest limits for BOD and TSS in Massachusetts for a NPDES permit are 5.0 mg/l, thus this permit contains limits representing the most stringent in the state. In addition, the impact from these concentrations on the water quality are minimal. Annual wetlands impact assessment reports completed by the permittee have not indicated any signs of impact by the discharge. Other than the permit limit exceedances for TSS shown in the June and July of 2002 monthly reports (DMRs), no correlation was found for higher TSS concentrations occurring during summer periods. Note that August and September 2002 TSS levels were below permit limits.

A review of sampling data from January 2000 through December 2002 found no correlation between the small variability in the TSS concentrations in the Battle Road Farm's effluent and the results of fecal coliform sampling. The June 2002 fecal coliform sample result appears to be an isolated permit exceedance for this parameter.

An increase in the frequency of TSS and BOD sampling as specified in the draft permit is not considered necessary at this time.

Comment # 4:
The web based EPA PCS report has the results of only one whole effluent toxicity (WET) sampling, May of 2000, though the PCS report covers 1998 to 2002. Were WET tests performed in 2001 and 2002?

Response:
The latest WET testing was conducted June 19, 2002. Results were a LC_{50} (acute) of greater than 100% for both species.

Comment # 5:
The permit has limits for both nitrogen and phosphorus. How were these limits arrived at? The advanced treatment undertaken at the facility has a denitrification component yet the total nitrogen limit is not especially conservative. In the Turner Hill permit, the seasonal limit for phosphorus is 0.2 mg/l a full order of magnitude lower than the Battle Road Farm limit.

Response:
EPA concurs with the comment that the fact sheet does not adequately describe the basis for the limits for nitrogen and phosphorus. The limits were determined as follows.

Total Nitrogen:
The effluent limits included in the draft permit of 5 mg/l average monthly and 10 mg/l maximum daily for total nitrogen are technology based limits. The intent of technology-based effluent limits in NPDES permits is to require a level of treatment of pollutants for point source discharges based on available treatment technologies.

Total Phosphorus:
State water quality standards require any existing point source discharge containing nutrients in concentrations which encourage eutrophication or growth of weeds or algae will ultimately require limits based on a Total Maximum Daily Load (TMDL) study, or if a TMDL is not available, the highest and best practical treatment (HBPT) to remove such nutrients, in accordance with 314 CMR 4.04(5). A TMDL study determines the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and the allocations of that amount to the pollutant's sources, such as the Battle Road Farm discharge.

Studies of the receiving water, the unnamed wetland, have not shown any impact or enhanced plant or algal growth due to the discharge. The limit for phosphorus will continue at the level in the previous permit as that level appears to not cause water quality or enhanced plant or algal growth.

Comment #6:
Also the Turner Hill permit has loading limits, an addition that should be considered for the Battle Road Farm permit given there have been some problems meeting nutrient limits.

Response:
The EPA agrees, mass limits are useful and have been added to the permit.

Administrative changes to final permit:
1. toxicity testing months were changes to July and October to be consistent with other Shawsheen River watershed permittees.

2. for total nitrogen and total phosphorus, pounds per day (lbs/day) limits were added in addition to the milligram per liter (mg/l) limits to be consistent with the BOD and TSS limits.

3. the units for flow (page 2) were incorrectly listed as GPD; they are properly listed in the final permit as million gallons per day (MGD).