

Response to Comments on Draft National Pollutant Discharge Elimination System (NPDES) Permit No. MA0033987 – MBTA Quincy Pump Station

Introduction:

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit (MA0033987). The responses to comments explain and support the EPA determinations that form the basis of the Final Permit. The Massachusetts Bay Transportation Authority (MBTA) Quincy Pump Station draft permit public comment period began February 9, 2007 and ended March 10, 2007. Comments were received from the permittee on the draft permit.

The Final Permit is almost identical to the Draft Permit that was available for public comment. Although EPA's knowledge of the facility has benefited from the various comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit. EPA did, however, make certain changes and clarifications in response to comments. The changes are listed below.

Changes to Permit:

1. The permit has been changed in response to Comment 1 at Footnote 11 as follows:

Compliance with this effluent limitation is required six months following the effective date of the permit. In place of an effluent limitation during the six months following the effective date of the permit, the permittee shall monitor and report the minimum daily number of pumping events. If MBTA can document that this condition is unattainable due to changes in hydrological conditions resulting in a decrease in ground water flow to the pump station, MBTA may request a reduction of the minimum number of daily pumping events required from the facility. The permittee must receive written approval from EPA prior to reduction of the minimum number of daily pumping events required.
2. Since the Fact Sheet is a final document, it will not be changed in response to Comment 3, however, MBTA shall now implement and maintain an *annual* scheduled cleaning cycle at the wet-well site as a requirement of the final permit, in place of the *quarterly* scheduled cleaning cycle required in the draft permit.
3. The permit has been changed in response to Comment 4 at Part I.A.2 which now states:

The automatically activated pumps in the wet well shall be set to pump a minimum of 14 times each 24-hour day. Within 18 months of the effective date of the permit, the permittee shall evaluate the feasibility of increasing the discharge pumping frequency from the wet well during dry weather, to the extent practicable, in order to reduce the flow spikes from

the dry weather discharge. The investigation shall include draining the wet well, assessing the controllers of all pumps, and assessing the possibility of initializing a cascading pump system. The permittee shall include in the report an evaluation of the effectiveness of any changes made to the pumping frequency to reducing the discharge flow spikes, including an analysis of the results from the USGS real-time water data gage in Town Brook. The permittee shall consult with Massachusetts Division of Marine Fisheries (DMF) during this evaluation. Within 18 months of the effective date of the permit, the permittee shall submit a report on this evaluation to EPA, MassDEP, and DMF reporting the results of the study and any changes made to the pumping system. Based on the results of the report, EPA may modify the permit to further reduce the minimum number of pumping events allowed per 24-hour period.

Comments from MBTA:

Comment 1: Number of Pumping Events

Both the draft Fact Sheet (page 8 of 16) and the draft Permit (page 2 of 9) indicate a new requirement for the MBTA to ensure that the pump station has at least 14 pumping events per day. This requirement is intended to ensure that the receiving water, Town Brook, is not hydraulically overloaded with respect to smelt spawning areas. Our concern is that the pumping system was modified recently in October 2006, and there has not been a full year of operating time to properly evaluate the actual number of pumping events that will occur during dry weather conditions. During the summer, lower groundwater flows into the pump chamber could result in fewer than 14 pump cycles per day. As presently written into the draft Permit, this naturally occurring scenario would constitute a violation of the draft Permit.

Note that Footnote 11 of Part I of the draft Permit discusses that the MBTA can request a reduction in the minimum number of daily pumping events, but that the MBTA “must receive written approval from EPA prior to reduction of the minimum number of daily pumping events required.” We put forward the following alternative language for Footnote 11 of Part I:

“11. The MBTA will monitor and report the number of daily pumping events, with the intention of maintaining the stipulated minimum number of daily pumping events at 14 or greater. If, due to naturally occurring low flow rates into the pumping chamber, the number of pumping events is less than 14, then the MBTA will inform the EPA and request written approval from EPA for a modification to the minimum number of daily pumping events required.”

This language should ensure that the MBTA does not violate a condition of the draft Permit over which it has no control. Language in the draft Fact Sheet related to the number of pumping events should be revised accordingly.

Response to Comment 1: The suggested language of MBTA is almost identical to that of the draft permit. Footnote 11 of the draft permit states, in reference to the daily requirement of 14 minimum pumping events:

If MBTA can document that this condition is unattainable due to changes in hydrological conditions resulting in a decrease in ground water flow to the pump station, MBTA may request a reduction of the minimum number of daily pumping events required from the facility. The permittee must receive written approval from EPA prior to reduction of the minimum number of daily pumping events required.

The suggested language of MBTA, above, likewise requires written approval from EPA for a change in the number of minimum daily pumping events required by the permit. The difference is that MBTA suggests language that would make the permit limit of a minimum of 14 pumping events unenforceable. MBTA's suggestion of additional language stating that they shall "monitor and report the number of daily pumping events with the *intention* of maintaining the stipulated minimum number of daily pumping events at 14 or greater [emphasis added]" is essentially the same as eliminating the effluent limitation of 14 minimum pumping events per day and replacing it with a monitor only requirement.

EPA does not believe that this is appropriate language to replace Footnote 11, as it completely changes the effluent limitation requirement of a minimum number of pumping events. Rather, EPA has decided to postpone compliance with the 14 minimum daily pumping events effluent limitation until at least a full year of pumping events has been observed under the new modified pumping frequency established in October 2006. Therefore, compliance with the 14 minimum daily pumping events shall be required six months from the effective date of this permit. This six month delay will ensure observations at the system for at least one year from the October 2006 modification date. In place of the permit limitation during these six months, MBTA shall be required to monitor and report the daily minimum number of pumping events. EPA believes the postponement of the compliance date will allow observation for at least one year from the October 2006 modification of the number of pumping events at this new pumping frequency. This will allow MBTA the chance to, as stated in Footnote 11, "document that this condition [14 minimum daily pumping events] is unattainable due to changes in hydrological conditions resulting in a decrease in ground water flow to the pump station," and "request a reduction of the minimum number of daily pumping events required from the facility. The permittee must receive written approval from EPA prior to reduction of the minimum number of daily pumping events required."

The permit has been changed at Footnote 11 as follows:

Compliance with this effluent limitation is required six months following the effective date of the permit. In place of an effluent limitation during the six months following the effective date of the permit, the permittee shall monitor and report the minimum daily number of pumping events. If MBTA can document that this condition is unattainable due to changes in hydrological conditions resulting in a decrease in ground water flow to the pump station, MBTA may request a reduction of the minimum number of daily pumping events required from the facility. The

permittee must receive written approval from EPA prior to reduction of the minimum number of daily pumping events required.

Comment 2: pH

Similar to the comment above, the source waters that constitute the effluent from the facility are naturally occurring groundwater and storm water inflows to the pump chamber. Without treating the effluent, the MBTA has no control over the pH of the source water/effluent. While Footnote 5 of Part I of the draft Permit acknowledges that “natural causes” could result in the effluent exceeding the permitted pH range, it goes on to state that “The pH of the effluent shall not be more than 0.5 units outside of the naturally occurring range.” This requirement is ambiguous with respect to which water source is to be compared with; the naturally occurring range of the effluent, or the naturally occurring range of the receiving water. It is quite possible that the pH of the effluent will be greater than 0.5 units outside of the naturally occurring range of the receiving water, which would result in a Permit violation if this requirement pertains to the receiving water. We request that this requirement be removed from the draft permit.

Note that to make the case that “natural causes” could result in the pH of the effluent exceeding the permitted pH range, the MBTA will need to determine the feasibility of sampling the receiving water and testing the sample for pH at a location upstream of the effluent discharge location into Town Brook.

Response to Comment 2: Footnote 5 of the draft permit is a requirement that ensures the discharge meets water quality standards. The requirement that the pH of the effluent shall not be less than 6.5 or greater than 8.3 standard units and shall not be more than 0.5 units outside of the naturally occurring range is being retained in the permit. This requirement tracks key provisions of the Massachusetts Water Quality Standards. See 314 CMR 4.05 (b)3. The permit states:

The pH of the effluent shall not be less than 6.5 or greater than 8.3 standard units, unless these values are exceeded as a result of natural causes (which may be determined by comparison to the upstream pH). The pH of the effluent shall not be more than 0.5 units outside of the background range of the upstream pH.

The permit requires that the pH of the effluent match that of the receiving water classification, unless exceeded as a result of natural causes. MBTA is correct to assume that in order to provide proof that violations of the pH range are a result of natural causes, MBTA may need to sample the upstream pH as well as the receiving water pH. The suggestion to monitor the upstream pH for comparison is included in Footnote 5 of the draft permit.

EPA would like to clarify that the requirement that “the pH of the effluent shall not be more than 0.5 units outside of the *naturally occurring range* [emphasis added],” implies that the pH of the effluent shall not be more than 0.5 units outside of the *background range of the receiving water*. This value, however, will most likely be comparable to that

of the upstream pH, unless due to natural causes (which in the case of pH violations, may be investigated as discussed above).

The reason for the pH requirement in the permit is to allow a discharge of effluent outside of the pH range associated with the receiving water classification, but within 0.5 Standard Units, in the event the receiving water has exceeded the range as a result of natural causes. Footnote 5 of the draft permit has therefore been retained in the final permit. This permit requirement does not intend to cause non-compliance related to background conditions that result in low pH, rather, this permit requirement intends that the pH of the effluent be within the range of the pH of the receiving water.

Comment 3: Best Management Practices Plan

Note that the draft Permit requires the MBTA to prepare a “Best Management Practices Plan” (BMPP) within 90 days of the effective date of the Permit. This BMPP will be similar to a Storm Water Pollution Prevention Plan. However, the draft Fact Sheet (page 12 of 16) states that the BMPP requires the MBTA to implement and maintain a quarterly scheduled cleaning at the wet well site. The MBTA believes the quarterly cleaning schedule requirement to be excessive. The MBTA proposes an annual cleaning of the wet-well site.

Response to Comment 3: EPA agrees that implementing and maintaining an *annual* scheduled cleaning cycle at the wet-well site which includes but is not limited to removing solids contamination from the surface of the commingled storm water and ground water and maintaining the floors of the pump station free of oils which could contaminate the discharge shall be sufficient, in place of a quarterly cycle. Since the Fact Sheet is a final document, it will not be changed, but this response will serve to document the change. MBTA shall implement and maintain an annual scheduled cleaning cycle at the wet-well site.

Comment 4: Draft Permit Part I.A. Footnote 2 (page 6 of 9)

This Footnote states “Within one year of the effective date of the permit, the permittee shall evaluate the feasibility of increasing the discharge pumping frequency from the wet well during dry weather, to the extent practicable, in order to reduce the flow spikes from the dry weather discharge.” The MBTA notes that the pumping system, as currently configured, will not cause any flow spikes during wet weather conditions; rather, it will pump at the same rate as during wet weather conditions (while the pump is operating), but will cycle less frequently during dry weather conditions.

The MBTA knows that the modifications made to the pumping system in October 2006 resulted in more frequent cycling/shorter pumping cycle times. The MBTA requests that the evaluation of the feasibility of increasing the discharge pump frequency from the wet well system be extended to 18 months, so that we can obtain data from the upcoming spawning and dry season to evaluate the changes made to the system last October, prior to determining the feasibility of additional changes.

The last sentence of the Footnote states, "...EPA may modify the permit to further reduce the maximum number of pumping events allowed per 24-hour period." The MBTA notes that the draft Permit does not indicate a maximum number of pumping events allowed per 24-hour period, only a minimum number. Since the MBTA has no control over the amount of water entering the pump station, we suggest the language be revised to read as follows:

"The automatically activated pumps in the wet well shall be set to pump a minimum of 14 times each 24-hour day. Within 18 months of the effective date of the permit, the permittee shall evaluate the feasibility of increasing the discharge pumping frequency from the wet well during dry weather to the extent practicable, in order to moderate the flow spikes from the dry weather discharge. The investigation shall include draining the wet well, assessing the controllers of all pumps, and assessing the possibility of initializing a cascading pump system. The permittee shall include in the report an evaluation of the effectiveness of any changes made to the pumping frequency to reducing the discharge flow spikes, including an analysis of the results from the USGS real-time water data gage in Town Brook. The permittee shall consult with the Massachusetts Division of Marine Fisheries (DMF) during this evaluation. Within 18 months of the effective date of the permit, the permittee shall submit a report on this evaluation to EPA, Mass DEP and DMF reporting the results of the study and any changes made to the pumping system. Based on the results of the report, EPA will consult with Mass DEP, DMF, and the MBTA as to additional modifications to pumping events as allowed by this permit."

Response to Comment 4: Part I.A.2 of the permit has been changed to allow MBTA 18 months to perform the evaluation of the feasibility of increasing the discharge pump frequency from the wet well system, so that MBTA can obtain data from the upcoming spawning and dry season to evaluate the changes made to the system last October, prior to determining the feasibility of additional changes. This is an extension from the 12 months originally allowed in the draft permit.

Although MBTA suggested that the last sentence of Part I.A.2, "Based on the results of the report, EPA may modify the permit to further reduce the maximum number of pumping events allowed per 24-hour period" be replaced with "Based on the results of the report, EPA will consult with MassDEP, DMF, and the MBTA as to additional modifications to pumping events as allowed by this permit," EPA has not made this change, instead, the inadvertent use of the word "maximum" has been replaced with "minimum" in the last sentence of Part I.A.2 of the permit to resolve this oversight.

Therefore, Part I.A.2 of the permit now states:

The automatically activated pumps in the wet well shall be set to pump a minimum of 14 times each 24-hour day. Within 18 months of the effective date of the permit, the permittee shall evaluate the feasibility of increasing the discharge pumping frequency from the wet well during dry weather, to the extent practicable, in order to reduce the flow spikes from the dry weather discharge.

The investigation shall include draining the wet well, assessing the controllers of all pumps, and assessing the possibility of initializing a cascading pump system. The permittee shall include in the report an evaluation of the effectiveness of any changes made to the pumping frequency to reducing the discharge flow spikes, including an analysis of the results from the USGS real-time water data gage in Town Brook. The permittee shall consult with Massachusetts Division of Marine Fisheries (DMF) during this evaluation. Within 18 months of the effective date of the permit, the permittee shall submit a report on this evaluation to EPA, MassDEP, and DMF reporting the results of the study and any changes made to the pumping system. Based on the results of the report, EPA may modify the permit to further reduce the minimum number of pumping events allowed per 24-hour period.