

RESPONSE TO PUBLIC COMMENTS ON  
DRAFT PERMIT NO. MA0100382 FOR  
THE CITY OF FALL RIVER, MA

11/15/00

On September 8, 2000, the U.S. Environmental Protection Agency (“EPA”) and the Massachusetts Department of Environmental Protection (“MADEP”) released for public notice and comment a draft National Pollutant Discharge Elimination System (“NPDES”) permit for the City of Fall River, MA, NPDES No. MA0100382. The public comment period for this draft permit expired on October 7, 2000. This is a response to the comments received.

COMMENT 1:

The City of Fall River has requested a modification to the proposed copper limits under Part I.A.1.a. in order to reflect the dissolved metal conversion factor of 0.83 for saltwater. This factor was listed in Appendix A of the Federal Register issuance dated December 10, 1998, “Part IV, Environmental Protection Agency, National Recommended Water Quality Criteria; Notice; Republication.” Utilizing this conversion factor into the calculation would change the average monthly limit for copper to 22 ug/l and the maximum daily limit for copper to 33 ug/l.

RESPONSE 1:

We agree with the comment. The total recoverable limits in the permit were based on the water quality criteria for dissolved copper. We have changed the monthly average total recoverable copper limit to 22 ug/l and maximum daily total recoverable copper limit to 33 ug/l. The calculations are as follows:

dissolved chronic water quality criteria = 3.1 ug/l, total recoverable criteria =  $3.1/0.83 = 3.73$  ug/l  
dissolved acute water quality criteria = 4.8 ug/l, total recoverable criteria =  $4.8/0.83 = 5.78$  ug/l  
dilution factor = 5.67

total recoverable monthly average copper limit =  $3.73 \times 5.67 = 22$  ug/l  
total recoverable maximum daily copper limit =  $5.78 \times 5.67 = 33$  ug/l

We have also changed the monthly average total recoverable lead limit to 48.3 ug/l. The calculations are as follows:

dissolved chronic water quality criteria = 8.1 ug/l, total recoverable criteria =  $8.1/0.951 = 8.51$  ug/l  
dilution factor = 5.67

total recoverable monthly average lead limit =  $8.51 \times 5.67 = 48.3$  ug/l

COMMENT 2:

The City of Fall River has requested a modification to Part I.A.1.i., nitrogen testing and reporting requirements, in order to develop an approach which would provide a monitoring program that generates reliable, scientific data for the assessment of appropriate nitrogen concentration limits. It is further requested that this section be modified to reflect CSO time requirements and potential resultant nitrogen dilution factors after the construction period of the CSO Abatement Project.

The current proposal requires that a significant study be conducted within 270 days of the effective date of the permit, presenting wastewater treatment facility design upgrades and a cost analysis to remove nitrogen to an unknown/unspecified concentration.

Further, it proposes to implement an unknown nitrogen concentration limit upon Industrial Pretreatment Users to reduce wastewater treatment facility influent total nitrogen concentrations to unknown and/or unspecified limits.

RESPONSE 2:

As was mentioned within the fact sheet, extensive water quality monitoring in Mount Hope Bay has shown a system that is highly eutrophic, with dissolved oxygen concentrations in the bottom waters frequently dropping below 2 mg/l for extended periods over a large area of the bay (New England Power Company data, 1998). Satellite imagery of Mount Hope Bay suggests uniformly high concentrations of chlorophyll-a throughout the Bay. The low dissolved oxygen and high chlorophyll-a concentrations are indicative of a eutrophication problem. Dissolved oxygen levels this low are violations of state water quality standards, but more importantly represent a serious threat to the health of the benthic community. Data collected in Long Island Sound shows that persistent low dissolved oxygen concentrations results in a stressed (opportunistic species dominated) benthic community (Long Island Sound Study CCMP, 1994). In marine systems, nitrogen is usually the limiting nutrient for primary production. Studies done on nitrogen loading to Mount Hope Bay suggest that point source loading accounts from slightly greater than half the nitrogen loading to almost 3/4 of the nitrogen load (Isaac, 1997). Fall River accounts for over half of the point source load, and between 1/4 and 1/3 of the total nitrogen load to Mount Hope Bay (Isaac, 1997). Mount Hope Bay is on the Massachusetts 303(d) list of waters not attaining state water quality standards, for among other reasons, nutrients and organic enrichment/low D.O.

EPA and MADEP believe it is important that the City begin considering alternatives for achieving nitrogen removal, given the available water quality data. We believe that it is very likely that future permits will contain nitrogen limitations. We considered including limitations for nitrogen in this permit based on the Massachusetts Water Quality Standards 314 CMR 4.04(5), which requires that “any existing point source discharge containing nutrients in concentrations which encourage eutrophication or growth of weeds or algae shall be provided with the highest and best practical treatment to remove such nutrients”, but decided that more progress towards completing a total maximum daily load analysis (TMDL) must be made before limitations are established.

We believe that the schedule in the permit is reasonable and have not changed the submittal date for the report required in Part I A.1.i. EPA and MADEP do not expect the City to conduct the planning of plant upgrades to a high degree of detail, nor does the permit require subsequent design and construction of capital improvements. The permit schedule asks the City to focus this evaluation on biological nutrient removal retrofits such as have been implemented successfully at many Connecticut wastewater treatment plants. Since a large part of the required planning is to be based on existing information from other facilities, the study should be able to be completed within the allotted time and should not have a significant cost.

The permit requires the City to investigate options for operational modifications that could be implemented to enhance the removal of nitrogen, and to implement those operational modifications upon approval of EPA and MADEP. The permit specifically states that the operational modifications are to be evaluated based on conditions following the implementation of the City's CSO abatement plan. This condition was included to make it clear that CSO abatement should take precedence over nitrogen removal in determining plant operational procedures.

Finally, we agree that the draft permit established pretreatment requirements which would have been difficult for the City to impose on its industrial dischargers in the absence of a nitrogen limit in the permit. Therefore, we have changed the requirement in part I.A.1.i (3) to require City to identify the sources of nitrogen discharged to its wastewater treatment facility, identify opportunities to reduce and/or equalize nitrogen discharges, and to submit a report of these activities. The final permit does not require the City to establish local limits, or to implement the reductions identified in the report, but EPA and MADEP believe the City should attempt to achieve reductions in influent loading where feasible, since reductions in these loads may allow the City to more cost-effectively achieve future nitrogen limits. Requirements to implement reductions in nitrogen through the City's pretreatment program will be incorporated through permit modification procedures or through permit reissuance.

COMMENT 3:

The City of Fall River has requested that Part I.H.2., Inflow/Infiltration Reduction, be modified or removed because the proposed requirement cannot be achieved due to the concurrent CSO Abatement Project. All reporting and data requirements as outlined would be skewed due to the U.S. District Court ordered requirements of substantially increasing flow to the wastewater treatment facility.

As you are aware, the City of Fall River is under a U.S. District Court Order to construct a long-term CSO Abatement Construction Project. The City of Fall River is completing \$20,000,000 upgrade and expansion to its wastewater treatment facility to accommodate increased combined flows of up to 106 million gallons of flow per day. Next month the City shall be accepting CSO Abatement Tunnel Construction Bids of which the advertised engineer's estimate is \$76,000,000. Construction Management and Engineering fees are projected to be \$8,000,000, representing a total cost of approximately \$104,000,000. This tunnel construction phase is required by U.S. District Court Order to commence by April 15, 2000 and completed by December 31, 2004. CSO Abatement Project Phase IIB through IIIB are required to be completed by December 31, 2009 and shall represent significant additional CSO project costs.

The City of Fall River is in compliance and proceeding with the existing U.S. District Court Order even though it has created an overwhelming financial hardship. As you are aware, the City of Fall River is substantially ahead of all other comparable cities and towns with its construction of and commitment to the CSO Abatement Project.

RESPONSE 3:

The final permit has remained unchanged with respect to this issue. The permit contains requirements regarding the elimination of excessive infiltration and inflow to the Fall River sewer system, because excessive I/I contributes to sanitary sewer overflows (SSOs) and to Combined sewer overflows (CSOs). Obviously, inflow is expected in a combined sewer system and the same guidelines cannot be used for determining excessive I/I in combined and separated portions of the collection system. The requirements in Part I.H.2. are appropriate however, since the reduction of I/I can lead to the abatement of SSOs in separated portions of the collection system and in minimizing CSOs in combined portions of the collection system. This requirement is also important because the City of Fall River has sought and obtained a waiver from the percent removal requirement ordinarily a part of the secondary treatment requirement and such waivers are allowed for permittees only if they eliminate excessive I/I (See also: 40 CFR §133.103(d)). I/I control measures are also necessary in order to assure that the City of Fall River continues to meet the annual average flow limit set forth in the Permit.

We acknowledge that wet weather flows to the WWTP will increase as a result of implementing the CSO abatement plan, due to increased amounts of combined sewage being directed to the wastewater treatment plant as the plan is implemented. This will certainly make it more difficult to determine trends in I/I, based on flows to the WWTP. The City should attempt to do this to the extent feasible, perhaps by focusing on dry weather and high groundwater periods when runoff should not be entering the collection system.