

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
ONE CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023**

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

NPDES PERMIT NO: MA0101427

PUBLIC NOTICE DATE:

NAME AND ADDRESS OF APPLICANT:

**City of Newburyport
157 Water Street
Newburyport, MA 01950**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Newburyport Wastewater Treatment Plant
157 Water Street
Newburyport, MA 01950**

RECEIVING WATERS: Merrimack River (MA-84A-06)

CLASSIFICATION: SB-Warm Water, CSO

I. PROPOSED ACTION

The above named applicant has applied to the U.S. Environmental Protection Agency for the re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge into the designated receiving water. The current permit was issued on September 17, 1998 and became effective 30 days from the date of signature. It expired on October 17, 2002. A timely re-application was received on February 13, 2002 and the permit was administratively continued as provided for in 40 CFR 122.6. This draft permit, after it becomes effective, will expire three years from the effective date of issuance to be synchronized with the Merrimack River Watershed permitting cycle.

II. TYPE OF FACILITY AND DISCHARGE LOCATION

The facility is a 3.4 million gallon per day wastewater treatment plant which was originally built in 1964 and upgraded to a secondary treatment facility in the 1980s. The facility discharges from a multiport diffuser approximately 1120 feet offshore on the bottom of the Merrimack River (See Figure 1). This facility serves a population of more than 17,000. The system is a separate sewer system with no combined sewers. Wastewater is composed of domestic sewage and twelve (12) industrial dischargers (5 categorical).

The facility's discharge outfall is listed below:

<u>Outfall</u>	<u>Description of Discharge</u>	<u>Outfall Location</u>
001	Treated Effluent	Merrimack River

III. DESCRIPTION OF DISCHARGE

A quantitative description of the discharge in terms of significant effluent parameters based on recent discharge monitoring reports (DMRs), March 2000 through August 2002, and the February 2002 application, is shown on Tables 1 and 2 of this fact sheet.

IV. LIMITATIONS AND CONDITIONS

The effluent limitations and monitoring requirements may be found in the draft NPDES permit.

V. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

A. PROCESS DESCRIPTION

The Newburyport Wastewater Treatment Plant is engaged in the collection and treatment of municipal wastewater. The system provides secondary treatment. The wastewater treatment is as follows (See Figure 2):

1. Headworks
2. Primary Clarifiers
3. Aeration Tanks
4. Secondary Clarifiers
5. Chlorine Contact Tank /Dechlorination
6. Outfall/Diffuser

At the headworks, influent passes through a mechanical bar screen and comminutor. It is then pumped to the primary clarifiers for settling and then flows to the aeration tanks and then to the secondary clarifiers. Treated wastewater from the secondary clarifiers then flows to the chlorine contact chamber. Chlorination is flow paced with a feedback loop from the continuous analyzer. The effluent is then dechlorinated with sulfur dioxide. Sludge is dewatered on site and transported to AgreSource, Inc. composting facility in Ipswich, MA.

Significant capital improvements have been undertaken over the past years and a five-year Capital Projects Plan is in place. Recent activities include continued improvements to the WWTF and the collection system. Inflow and infiltration (I/I) removal and sewer replacement activities have been prioritized by a city wide I/I study and SSES. Improvements are being made based on net flow reductions. Facility improvements include upgrading the aeration tanks. Other recent or planned improvements include:

- Completed
- Retrofit four lift stations
- Sludge Conditioning System Upgrade
- Upgrade Plant Water System
- Retrofit Belt Filter Presses
- Clean Water and Merrimack Street Interceptors

City-wide I/I and SSES study
Replace Grit Pump and Chamber
Replace Automated Samplers

Underway

Mapping of the City's wastewater system
O&M at selected sewers/wet wells including cleaning to improve capacity
Sewer replacement, based on SSES priorities.

Future

Replace Storey Avenue Interceptor (Design complete)
Replace Traffic Circle Lift Station with Interceptor (Design complete)
Retro-fit aeration tanks (Design complete)

B. FLOW/CAPACITY ISSUES

There has been significant public concern regarding the capacity of the wastewater treatment plant to treat additional wastewater flows from a proposed sewer extension to Plum Island. The proposed sewer extension would add an annual average flow of approximately 0.3 mgd and a peak flow of approximately 1.2 mgd to the treatment plant flow. Discharge monitoring reports show that over the last year, the monthly average flows to the treatment plant ranged from 1.9 mgd to 2.4 mgd, far below the permit limit of 3.4 mgd.

Since the permittee has not requested an increase in the permit's flow limit, nor requested that EPA relax any permit condition, the decision of whether to allow a sewer extension to Plum Island is not an NPDES permit issue. The sewer extension project was reviewed and approved by Massachusetts Environmental Policy Act (MEPA) program, and a certificate was issued by the Massachusetts Secretary of Environmental Affairs. The MADEP has worked with the proponent throughout the process to assure that the WWTF is technically capable of achieving the effluent limits in the NPDES permit. MADEP has issued the permits necessary for this project to proceed including a sewer extension permit.

It should be noted, however, that the City of Newburyport is responsible for assuring that any flow increase will not lead to violations of NPDES permit limits. Furthermore, the draft permit includes a condition, that when the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the designed flow (>2.72 mgd), the permittee is required to submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

Infiltration/Inflow

The City of Newburyport has made efforts to address extraneous flows such as inflow and infiltration (I/I) into the municipal wastewater system. In 1999, the entire city was smoke tested. Following smoke testing, suspected problem areas were TV'd. The city's consultant has developed a sewer and manhole rehabilitation program and estimated removal rates range from 259,475 to 518,950 gpd. Two additional sections of city have been added as part of the rehabilitation project but infiltration removal estimates were not made.

As of February 2003, nearly 70% of the planned I/I work was completed. The city has recently increased the scope of the project by 10%. It is anticipated that the entire project will be completed

by Summer 2003. Actual reductions have yet to be quantified, however, the average flow measured in 2001 was 2.97 mgd (2.35 mgd influent meter) and 2002 was 2.15 mgd (influent meter).

The City has a 3:1 I/I reduction program, which requires any proponent that proposes to add additional flow to the system must remove 3 gallons of I/I for every 1-gallon of proposed wastewater flow. If a proponent chooses, they may opt for an alternative program in which they pay a one time fee of \$3.00/gpd of additional wastewater flow in place of performing the work necessary to comply with the I/I reduction program.

Additionally, the City has included in its operating budget, funds to perform approximately 10,000 linear feet of TV inspection per year, and sewer manhole frame and cover replacement work.

Flow Exceedance

Back in March and April 2001, the facility exceeded its permitted monthly average flow of 3.4 mgd, with flows of 4.2 mgd and 4.0 mgd, respectively. It should be noted, however, that the total precipitation for March 2001 was 7.46 inches, 3.77 inches above normal as measured by the National Weather Service at Boston. Extreme events such as March 2001 cannot be fully addressed in the design process. It is the city's belief that the connection of Plum Island flows to the Newburyport WWTF will not require an increase in the NPDES permitted flow limit and due to the significant I/I work planned, flows may be lower than present. I/I is expected to be virtually zero in the Plum Island system as it is a vacuum sewer system.

Flow Measurement

The treatment plant has both an influent and effluent flow meter. Historically, the flow reported on discharge monitoring reports has been from the effluent meter. The plant operators had noticed significant differences between the measured and recorded flow rates for the two meters. It was common for the recorded flow rates to vary by 500,000 gpd. Under Year Three of Newburyport's Capital Plan, the city addressed the flow meter issue. The flow meters were inspected by two separate consultants. Both consultants concurred that the probable source of the over-registration of flow was less than ideal installation conditions. Both the meters have insufficient lengths of straight pipe prior to and immediate following the meter.

In order to evaluate the problem, several studies were undertaken. In the Spring of 2001, a Doppler ultrasonic meter was installed at the facility. The meter was initially installed near the existing effluent meter for 12 days and then near the existing influent meter for 15 days. WWTF operators made recordings of the measured flow rate at the influent and effluent flow indicators/recorders in the WWTF Control Room as well as the flow measurements made by the Doppler ultrasonic flow meter. The data showed that the Doppler meter better correlated with the influent meter (Table 3).

The influent and effluent meters were recalibrated on May 30, 2001. The influent meter transmitter was calibrated and readings at the WWTF control room indicator/recorder were confirmed to be less than 1% error. A significant zero error was found to exist in the effluent meter transmitter. This was corrected, and readings at the WWTF control room indicator/recorder were confirmed to be accurate to less than 1% error.

To further confirm the accuracy of the influent meter, a volumetric test was conducted using an empty aeration basin (Table 4). The average flow rate recorded by the existing influent meter was 2.73 mgd and the actual measured average flow rate was 2.47 mgd. Therefore, it was concluded that the

existing influent meter is recording 1.1 times the actual flow through the meter. Newburyport's consultant recommended the use of the influent meter for regulatory reporting.

MADEP has reviewed and accepted the reports and documents submitted by the City of Newburyport and their consultants. Presently, the facility continues to use the influent meter for reporting flow for regulatory purposes as approved by MADEP. Newburyport has budgeted for the annual calibration of both meters. As a condition of the draft permit, the facility will be required to submit an annual report documenting the calibration of the influent and effluent meters. When the facility replaces the meters, this permit requirement will be reconsidered.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Overview of Federal and State Regulations

Under Section 301(b)(1) of the Clean Water Act ("CWA"), publicly owned treatment works ("POTWs") must achieve effluent limitations based upon Secondary Treatment by July 1, 1977. The secondary treatment requirements are set forth at 40 C.F.R. Part 133.102. In addition, Section 301(b)(1)(c) of the CWA requires that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water.

Pursuant to 40 C.F.R. § 122.44 (d), permittees must achieve water quality standards established under Section 303 of the Clean Water Act (CWA), including state narrative criteria for water quality. Additionally, under 40 C.F.R. § 122.44 (d)(1)(i), "Limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." When determining whether a discharge causes, or has the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numeric criterion, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, and where appropriate, consider the dilution of the effluent in the receiving water.

2. Water Quality Standards; Designated Use; Outfall 001

The Merrimack River in the vicinity of the discharge is classified as a Class SB water in the Massachusetts Surface Water Quality Standards (314 CMR 4.00). Class SB waters are designated as a habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. In approved areas, they shall be suitable for shellfish harvesting with depuration (Restricted Shellfish Areas). The waters shall have consistently good aesthetic value.

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those waterbodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such require the development of total maximum daily loads (TMDL). The 1998 Massachusetts Section 303(d) List of Waters states that Merrimack River Segment MA 84A-6 is not attaining water quality standards for pathogens.

Shellfishing Designation

In the summer of 1997, a dye study was conducted at the mouth of the Merrimack River by the US Department of Health and Human Services at the request of the Massachusetts Division of Marine Fisheries. The purpose of the study was to trace the path of effluent as it traveled from the Newburyport WWTF outfall toward the mouth of the Merrimack River. The results indicate that a portion of the growing waters could be considered conditionally restricted for depuration. Of primary concern was the relatively short travel time of effluent from the WWTF to the growing waters, as little as 1 hour and 45 minutes. Therefore, notification time of a facility malfunction was considered to be very important.

Since the 1997 Study, MA DMF has continued sampling in the area. Currently, the Massachusetts Division of Marine Fisheries is completing a report which is expected to recommend the opening of shellfish beds in the Merrimack River Estuary for restricted conditional shellfishing.

Available Dilution

Water quality based limitations are established with the use of a calculated available dilution. The Newburyport WWTF discharge is from a multi-port diffuser located on the bottom of the Merrimack River estuary. Dilution calculations are complicated by the dynamic tidal environment.

The 1997 hydrographic study approximated a dilution factor of 30. This is slightly less than the dilution value of 39:1 estimated in 1993 by EPA. EPA also applied the CORMIX modeling system to further confirm a dilution factor, however, model results were inconclusive because of the limited engineering details available for the diffuser. The draft permit uses the conservative value of 30:1 since it is supported by field data.

Flow - The flow limit is based on the design flow of the treatment plant, which is 3.4 mgd. The flow limit is now expressed as an annual average, rather than a monthly average as in the current permit. This change is being made to all POTW permits in MA at the request of MADEP. The purpose of this change was to allow some variation in POTW flows in response to wet weather, and in recognition that the flow rate used as the monthly average is in most cases presented in the treatment plant planning documents as an annual average. As part of this change in how flow limits are written, DEP and EPA agreed that mass limitations for BOD and TSS should be included as permit conditions to ensure that existing controls on mass discharges of BOD and TSS were maintained, in order to prevent degradation of the receiving water.

To provide some background, every treatment plant has any number of design flows. The design engineer could provide a design flow for any time period, including yearly, monthly, daily, and hourly. A design flow is simply the flow rate which the designer establishes can be adequately treated over a given time period. Typically, a treatment facility can provide adequate treatment for higher flow rates for short periods than it can for long periods, meaning that design flow increases as the time period decreases. The annual average design flow is almost always provided in the planning documents for POTWs. Other design flow rates are not as consistently calculated or provided in planning documents. The Newburyport facilities plan, updated February 1974, estimates the annual average flow of 3.4 mgd and a peak flow of 9.45 mgd.

Therefore, the previous use of an annual average flow as a monthly average limit provided some conservatism to the permit by not allowing the facility to operate at its maximum monthly hydraulic

capacity. We believe that this was the intention of EPA and MADEP in limiting the flow in this manner. We have now decided to relax the flow limit somewhat, but have sought to balance this action by imposing mass limitations on the discharge of BOD and TSS to ensure that the easing of the flow restriction does not result in a significant increase of pollutants during months when the monthly average discharge flow exceeds the limit established in the current permit. We have also strengthened the I/I requirements of the permit to ensure that the permittee maintains efforts to minimize extraneous flows to the collection system.

OUTFALL 001 - CONVENTIONAL POLLUTANTS

Biochemical Oxygen Demand (BOD₅) - The draft permit carries forward the average monthly and average weekly limits in the previous permit. The limits are based on the requirements set forth at 40 CFR 133.102 (b)(1), (2) and 40 CFR 122.45 (f). The secondary treatment limitations are monthly average BOD₅ concentrations of 30 mg/l, weekly average concentrations of 45 mg/l. The permittee shall continue to report the maximum BOD value monthly. The mass limitations for BOD are based on a 3.4 MGD design flow. The monitoring frequency is three times per week.

Total Suspended Solids (TSS) - The draft permit carries forward the average monthly and average weekly limits in the previous permit. The limits are based on the requirements set forth at 40 CFR 133.102 (b)(1), (2) and 40 CFR 122.45 (f). The secondary treatment limitations are monthly average TSS concentrations of 30 mg/l, weekly average concentrations of 45 mg/l. The permittee shall continue to report the maximum TSS value monthly. The mass limitations for TSS are based on a 3.4 MGD design flow. The monitoring frequency is three times per week.

BOD₅ and TSS Mass Loading Calculations:

Calculations of maximum allowable loads for maximum daily, average weekly, and average monthly BOD₅ and TSS are based on the following equation:

$$L = C \times DF \times 8.34 \text{ or } L = C \times DF \times 3.79 \text{ where:}$$

L = Maximum allowable load in lbs/day.

C = Maximum allowable effluent concentration for reporting period in mg/l.

Reporting periods are average monthly and weekly and daily maximum.

DF = Design flow of facility in MGD.

8.34 = Factor to convert effluent concentration in mg/l and design flow in MGD to lbs/day.

3.79 = Factor to convert effluent concentration in mg/l and design flow in MGD to kgs/day.

$$\text{(Concentration limit) [45] X 8.34 (Constant) X 3.4 (design flow) = 1276 lb/day}$$

$$\text{(Concentration limit) [45] X 3.79 (Constant) X 3.4 (design flow) = 580 kg/day}$$

$$\text{(Concentration limit) [30] X 8.34 (Constant) X 3.4 (design flow) = 851 lb/day}$$

$$\text{(Concentration limit) [30] X 3.79 (Constant) X 3.4 (design flow) = 387 kg/day}$$

Eighty-Five Percent (85%) BOD₅ and TSS Removal Requirement - the provisions of 40 CFR §133.102(3) requires that the 30 day average percent removal for BOD and TSS be not less than 85%. These limits are maintained in the draft permit.

pH - The draft permit includes pH limitations which are required by state water quality standards, and are at least as stringent as pH limitations set forth at 40 C.F.R. §133.102(c). Class SB waters shall be in a range of 6.5 through 8.5 standard units and not more than 0.2 standard units outside of the normally occurring range (314 CMR 4.0 (4)(a)3). There shall be no change from background conditions that would impair any use assigned to this class. The monitoring frequency is daily.

Fecal Coliform Bacteria - The draft permit includes fecal coliform bacteria limitations which are in accordance with the Massachusetts Surface Water Quality Standards 314 CMR 4.05 (4)(b).

Currently, the Merrimack River in the vicinity of the discharge is closed to shellfishing. Therefore, the limits on fecal coliform are maintained as 200/100 ml average monthly and 400/100 ml maximum daily. The monitoring frequency for fecal coliform continues to be daily and samples must be collected concurrent with samples for Total Residual Chlorine.

If the waters in the vicinity of the discharge are approved for conditionally restricted shellfishing, fecal coliform bacteria shall not exceed a median or geometric mean MPN of 88 per 100 ml nor shall 10% of the samples exceed a MPN of 260 per 100 ml. EPA will modify the permit when this occurs.

Dissolved Oxygen - The dissolved oxygen levels reported by the city in the 2002 application are significantly lower than the minimal requirement in the Massachusetts State Surface Water Quality Standards 314 CMR 4.05. DO levels shall not be less than 5.0 mg/l unless background conditions are lower. The monitoring frequency for dissolved oxygen is daily.

OUTFALL 001 - NON-CONVENTIONAL POLLUTANTS

Total Residual Chlorine (TRC) - The draft permit includes proposed total residual chlorine limitations which are calculated based on national recommended water quality criteria. Chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The water quality standards established for chlorine are 13 ug/l daily maximum and 7.5 ug/l monthly average in a saltwater receiving water. Given the dilution factor of 30, the total residual chlorine limits have been calculated as 0.39 mg/l maximum daily and 0.23 mg/l average monthly. In order to ensure that this facility consistently maintains appropriate disinfection and dechlorination, and due to the proximity of shellfish beds and the potential impact of toxicity on these resources, the monitoring frequency has been increased to continuous. The permittee shall monitor total residual chlorine concentration prior to dechlorination to assure adequate bacterial control and then sample following dechlorination to assure discharge concentration do not exceed permit limits and cause toxic conditions.

Total Residual Chlorine Limitations:

(acute criteria * dilution factor) = Acute (Maximum Daily)
(13 ug/l x 30)= 390 ug/l = 0.39 mg/l

(chronic criteria * dilution factor) = Chronic (Monthly Average)
(7.5 ug/l x 30) = 225 ug/l = 0.23 mg/l

Copper - Certain metals like copper can be toxic to aquatic life. The maximum daily discharge of copper reported by this facility in the 2002 application was 0.037 mg/l. This value is less than the acute limit, therefore there is no reasonable potential.

Chronic (chronic criteria * dilution factor)/conversion factor = Chronic (Monthly Average)

$$(3.1 \text{ ug/l} * 30) / 0.83 = 112 \text{ ug/l} = 0.112 \text{ mg/l}$$

Acute (acute criteria * dilution factor)/conversion factor = Acute (Maximum Daily)
 $4.8 \text{ ug/l} * 30) / 0.83 = 173.5 \text{ ug/l} = 0.174 \text{ mg/l}$

Zinc - Zinc can be toxic to aquatic life. The maximum daily discharge of zinc reported by this facility in the 2002 application was 0.09. This value is less than the acute limit therefore there is no reasonable potential.

Chronic (chronic criteria * dilution factor)/conversion factor = Chronic (Monthly Average)
 $(81 \text{ ug/l} * 30) / 0.946 = 2568.7 \text{ ug/l} = 2.569 \text{ mg/l}$

Acute (acute criteria * dilution factor)/conversion factor = Acute (Maximum Daily)
 $(90 \text{ ug/l} * 30) / 0.946 = 2854.1 \text{ ug/l} = 2.854 \text{ mg/l}$

OUTFALL 001 - WHOLE EFFLUENT TOXICITY (WET)

Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Massachusetts Surface Water Quality Standards include the following narrative statement and requires that EPA criteria established pursuant to Section 304(a)(1) of the CWA be used as guidance for interpretation of the following narrative criteria: All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

National studies conducted by the EPA have demonstrated that domestic sources contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Based on the potential for toxicity from domestic, the state narrative water quality criterion, the level of dilution at the discharge location, and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d), the draft permit includes a whole effluent acute toxicity (LC50) limitation. (See also "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 49 Fed. Reg. 9016 March 9, 1984, and EPA's "Technical Support Document for Water Quality-Based Toxics Control", September, 1991.)

The Massachusetts Department of Environmental Protection's Division of Watershed Management has a current toxics policy which requires toxicity testing for all major dischargers such as the City of Newburyport WWTF. In addition, EPA recognizes that toxicity testing is required to assure that the synergistic effect of the pollutants in the discharge does not cause toxicity, even though the pollutants may be at low concentrations in the effluent. Thus, the draft permit includes a whole effluent toxicity limitation requirement for the 001 outfall, to assure that the facility does not discharge combinations of toxic compounds into Massachusetts Bay/Atlantic Ocean in amounts which would affect aquatic or human life.

The draft permit carries forward a requirement for quarterly Acute toxicity tests using the species Mysid Shrimp and Inland Silverside. The tests must be performed in accordance with the test procedures and protocols specified in **Permit Attachment A**. The tests will be conducted four times a year.

The LC₅₀ of ≥100% is established by EPA/MADEP policy for facilities with less than 100:1 dilution.

As a condition of this permit, the testing requirements may be reduced if certain conditions are met. The permit provision anticipates that the permittee may wish to request a reduction in the WET

testing. After four consecutive WET tests, demonstrating compliance with the permit limits for whole effluent toxicity, the permittee may submit a written request to the EPA seeking a review of toxicity test results. The EPA will review the test results and pertinent information to make a determination. The permittee is required to continue testing at the frequency and species specified in the permit until the permit is either formally modified or until the permittee receives a certified letter from the EPA indicating a change in the permit conditions.

VI. INDUSTRIAL PRETREATMENT PROGRAM

The permittee is required to administer a pretreatment program based on the authority granted under 40 CFR §122.44(j), 40 CFR Part 403 and section 307 of the Act. The Permittee's pretreatment program received EPA approval on September 28, 1984 and, as a result, appropriate pretreatment program requirements were incorporated into the previous permit which were consistent with that approval and federal pretreatment regulations in effect when the permit was issued.

The Federal Pretreatment Regulations in 40 CFR Part 403 were amended in October 1988, and again in July 1990. Those amendments established new requirements for implementation of pretreatment programs. Upon reissuance of this NPDES permit, the permittee is obligated to modify its pretreatment program to be consistent with current Federal Regulations. Those activities that the permittee must address include, but are not limited to, the following: (1) develop and enforce EPA approved specific effluent limits (technically-based local limits); (2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with Federal Regulations; (3) develop an enforcement response plan; (4) implement a slug control evaluation program; (5) track significant noncompliance for industrial users; and (6) establish a definition of and track significant industrial users.

These requirements are necessary to ensure continued compliance with the POTW's NPDES permit and its sludge use or disposal practices.

Lastly, the permittee must continue to submit, annually by March 1, a pretreatment report detailing the activities of the program for the twelve month period ending 60 days prior to the due date.

VII. INFLOW/INFILTRATION REQUIREMENTS

As described in Section V.B. Infiltration/Inflow, the city of Newburyport has an ongoing I/I program, the draft permit includes requirements for the permittee to continue to control infiltration and inflow (I/I). Infiltration/inflow is extraneous water entering the wastewater collection system through a variety of sources. The permittee shall develop an I/I removal program commensurate with the severity of the I/I in the collection system. Where portions of the collection system have little I/I, the control program will logically be scaled down.

Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems.

Significant I/I in a collection system may displace sanitary flow reducing the capacity and the efficiency of the treatment works and may cause bypasses to secondary treatment. It greatly increases the potential for sanitary sewer overflows (SSO) in separate systems, and combined sewer overflows in combined systems.

The permit standard conditions for 'Proper Operation and Maintenance' are found at 40 CFR §122.41(e). These require proper operation and maintenance of permitted wastewater systems and related facilities to achieve permit conditions. Similarly, the permittee has a 'duty to mitigate' as stated in 40 CFR §122.41 (d). This requires the permittee to take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment. EPA and MADEP maintain that an I/I removal program is an integral component to insuring permit compliance under both of these provisions.

The MADEP has stated that inclusion of the I/I conditions in the draft permit shall be a standard State Certification requirement under Section 401 of the Clean Water Act and 40 CFR §124.55(b).

VIII. SLUDGE INFORMATION AND REQUIREMENTS

Section 405(d) of the Clean Water Act requires that sludge conditions be included in all POTW permits. The Newburyport Wastewater Treatment Facility presses its sludge, which is transported to the AgreSource Inc. Composting Facility in Ipswich, MA. The annual quantity of dry sludge is approximately 698 tons. Sludge requirements for the facility are outlined in the permit and defined in the sludge attachment. If the ultimate sludge disposal method changes, the permit requirements pertaining to sludge monitoring and other conditions would change accordingly.

IX. ANTI-BACKSLIDING

Anti-backsliding as defined at 40 CFR §122.44(1)(1) requires reissued permits to contain limitations as stringent or more stringent than those of the previous permit unless the circumstances allow application of one of the defined exceptions to this regulation. Anti-backsliding does not apply when changes to limits are based on new information not available at the time of the previous permit reissuance (40 CFR §122.44 (1)(2)(i)(B)(1)) or when limits are changed as a result of material and substantial additions or alterations to the permitted facility which occurred after permit issuance which justify the application of less stringent limitations, as defined 40 CFR § 122.44 (1)(2)(i)(A).

X. ANTI-DEGRADATION

The Massachusetts Anti-degradation Policy is found at Title 314 CMR 4.04. All existing uses of Merrimack River must be protected. This draft permit is being reissued with allowable discharge limits as or more stringent than the current permit with the same parameter coverage except for the removal of the settleable solids limitation which is no longer required for state certification. There is no change in outfall location. The public is invited to participate in the anti-degradation finding through the permit public notice procedure.

XI. UNAUTHORIZED DISCHARGES

The permittee is not authorized to discharge wastewater from any pump station emergency overflow. Overflows must be reported in accordance with reporting requirements found in Section D.1.e. of Part II of the permit (24-hour reporting). If a discharge does occur, the permittee must notify the EPA, the MA DEP, and others, as appropriate (i.e. local Public Health Department), both orally and in writing as specified in the draft permit.

XII. ESSENTIAL FISH HABITAT

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 *et seq.*(1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or

undertakes, “may adversely impact any essential fish habitat,” 16 U.S.C. § 1855(b). The Amendments broadly define “essential fish habitat” (EFH) as: “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity,” 16 U.S.C. § 1802(10). “Adverse impact” means any impact which reduces the quality and/or quantity of EFH, 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

EFH Species

The following is a list of the EFH species and applicable lifestage(s) for the area that includes Atlantic Ocean waters around Newburyport, MA.

Summary of Essential Fish Habitat (EFH) Designations

Name of Estuary/ Bay/ River: Merrimack River, Massachusetts

10' x 10' latitude and longitude squares included in this bay or estuary or river (southeast corner boundaries):
4250/7040; 4250/7050; 4240/7040; 4240/7050; 4240/7100; 4240/7110

Species	Eggs	Larvae	Juveniles	Adults	Spawning Adults
Atlantic salmon (<i>Salmo salar</i>)			F,M	F,M	
pollock (<i>Pollachius virens</i>)	M	M	M		
whiting (<i>Merluccius bilinearis</i>)	M				
white hake (<i>Urophycis tenuis</i>)	M				
winter flounder (<i>Pleuronectes americanus</i>)	M	M	M	M	M
yellowtail flounder (<i>Pleuronectes ferruginea</i>)	S	S			
Atlantic halibut (<i>Hippoglossus hippoglossus</i>)	S	S	S	S	S
Atlantic sea herring (<i>Clupea harengus</i>)		M	M		
Atlantic mackerel (<i>Scomber scombrus</i>)	M	M			

Massachusetts Bay in the vicinity of the Newburyport Wastewater Treatment Facility discharge is designated essential fish habitat (EFH) for 9 species of finfish. Based on the amount and frequency of the discharge, as well as effluent limitations and other permit requirements identified in this Fact Sheet that are designed to be protective of all aquatic species, including those with designated EFH, EPA has determined that a formal EFH consultation with NMFS is not required because the proposed discharge will not adversely impact EFH.

XIII. COASTAL ZONE MANAGEMENT (CZM) CONSISTENCY REVIEW

40CFR §122.49 (d) states: *The Coastal Zone Management Act, 16 U.S.C. 1451 et seq. section 307(c) of the Act and implementing regulations (15 CFR part 930) prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies*

that the proposed activity complies with the State Coastal Zone Management program, and the State or its designated agency concurs with the certification (or the Secretary of Commerce overrides the State's nonconcurrence).

The discharge is within the defined CZM boundaries. The permittee has submitted a letter dated February 27, 2002 to the Massachusetts Coastal Zone Management Program stating their intention to abide by the CZM water quality and habitat policies. The CZM shall review the draft permit and it will only be issued after CZM certification.

XIV. MONITORING AND REPORTING

The permittee is obliged to monitor and report sampling results to EPA and the MADEP within the time specified in the permit. The effluent monitoring requirements have been established to yield data representative of the discharge by the authority under Section 308(a) of the CWA in accordance with 40 CFR 122.441(j), 122.44, and 122.48.

The remaining general conditions of the permit are based primarily on the NPDES regulations 40 CFR 122 through 125 and consist primarily of management requirements common to all permits.

XV. STATE PERMIT CONDITIONS

The NPDES Permit is issued jointly by the U. S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under federal and state law, respectively. As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the MA DEP Commissioner.

XVI. GENERAL CONDITIONS

The general conditions of the permit are based on 40 CFR Parts 122, Subparts A and D and 40 CFR 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

XVII. STATE CERTIFICATION REQUIREMENTS

The staff of the Massachusetts Department of Environmental Protection ("MADEP") has reviewed the draft permit. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the draft permit will be certified.

XVIII. PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of Ecosystem Protection, MA Unit, One Congress Street, Suite-1100, Boston, Massachusetts 02114. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. Public hearings may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates a significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period and after a public hearing, if such a hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

XIX. EPA CONTACT

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Michele Cobban Barden
Office of Ecosystem Protection
U.S. Environmental Protection Agency
One Congress Street, Suite-1100 (CPE)
Boston, MA 02114-2023
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July 19, 2004
Date

Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency