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: **MA0100897**

PUBLIC NOTICE DATES: February 23, 2007 – March 24, 2007

NAME AND ADDRESS OF APPLICANT:

The City of Taunton
Department of Public Works
90 Ingell Street
Taunton, MA 02780-3507

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Taunton Wastewater Treatment Plant (WWTP)
825 West Water Street
Taunton, MA 02780

The municipalities of Raynham and Dighton are co-permittees for specific activities required by the permit, as set forth in Section VIII of this Fact Sheet and Sections E.1, F.1, and G.1. of the Draft Permit. The responsible municipal departments are:

Town of Raynham Sewer Dept 416 Titicut Road Raynham, MA 02767	Town of Dighton Sewer Dept P.O. Box 229 North Dighton, MA 02764

RECEIVING WATER: **Taunton River** (Taunton River Basin - MA62-02)

CLASSIFICATION: **Class SB – Shellfishing (R) and CSO**

Fact Sheet Attachments: A-DMR Data and Violations
B-Location Map
C-Treatment Plant Mass Balance

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 signed on and became effective on March 27, 2001. The permit expired on March 27, 2006. A re-application was received on September 27, 2005.

TYPE OF FACILITY AND DISCHARGE LOCATION

The Taunton Wastewater Treatment Plant (WWTP) is an advanced secondary treatment plant which is currently authorized to discharge a flow of 8.4 mgd. The treatment plant discharges to the Taunton River. There is one combined sewer overflow (CSO) that also discharges to the Taunton River.

The facility's wastewater discharge outfalls are listed below:

Outfall	Description of Discharge	Outfall Location/Receiving Water
001	Treatment Plant Effluent	Taunton River
004	Combined Sanitary and Storm water Combined Sewer Overflow (CSO)	Taunton River (upstream of treatment plant outfall)

The treatment plant and Taunton collection system are owned by the City of Taunton and are currently operated under contract by Veolia Water (formerly PSG/USFilter). Veolia submitted the application for renewal of the NPDES permit as required by 40 CFR §122.22(b). The City shall be the sole permittee for the treatment plant and CSO discharge, as of this permit reissuance, consistent with other contract operated POTWs. The Towns of Raynham and Dighton shall be co-permittees for their collection systems that discharge to the Taunton WWTP.

I. DESCRIPTION OF DISCHARGE

Quantitative descriptions of the discharge in terms of significant effluent parameters based on recent discharge monitoring reports (DMRs) for April 2004 though March 2006 may be found in Fact Sheet Attachment A.

III. LIMITATIONS AND CONDITIONS

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

IV. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

A. PROCESS DESCRIPTION

The Taunton Wastewater Treatment Facility is engaged in the collection and treatment of municipal wastewater including industrial wastewater from 9 non-categorical significant industrial users and 14 categorical industrial users (mostly metal finishers). The facility provides advanced treatment and one stage ammonia-nitrogen removal. The wastewater treatment processes are as follows:

At the headworks, influent passes through one of two mechanically cleaned bar screens or a bypass bar rack. After screening, the influent passes through a distribution structure and then to one of three primary settling tanks. Grit is removed by pumping primary sludge to a cyclone degritter. After settling, the flow continues on through one of two parallel treatment trains. Each treatment train consists of a bank of three aeration tanks and two secondary settling tanks. After settling, the flow is sent to the chlorine contact chamber where it is disinfected with the flow paced addition of liquid hypochlorite and dechlorinated with bisulfate. The effluent is discharged through a reaeration cascade. Sludge is dewatered by centrifuge and is sent for co-disposal at the Taunton Municipal Sanitary Landfill.

The sewage collection system is partially combined, with over 90 miles of sewer and 20 pump stations in the municipalities of Taunton, Raynham, Dighton and Norton. The table below shows the number of households served in each municipality.

Town	**Households served by WWTP**
Taunton	10,173
Raynham	2,800
Dighton	488
Norton	40

Some of the collection system is over 100 years old, and is subject to large amounts of inflow and infiltration. During springtime high ground water conditions, flows to the plant may reach 22.4 mgd, from a dry weather average flow of 6.5 mgd (2004 M&E Sewer System Evaluation Survey). At least 300 manhole covers in the system have holes drilled in them so that they act as catch basins during storm events, and an additional 33 manholes have combined drainage and sanitary pipelines in the same structure (August 28, 2006 letter from Veolia Water).

There is one remaining combined sewer overflow (CSO) on West Water Street, Outfall 004. The permittee has been subject to several enforcement actions for high flow related effluent violations, including EPA administrative orders No. 94-31 issued in 1994 and No. 96-04 issued

in 1996 and a MassDEP order issued in 2005. One of the results of the 1996 order was construction of a treatment plant rehabilitation and upgrade project, which was completed in 2004 and included the construction of increased pumping capacity, conversion of the activated sludge aeration facilities from pure oxygen to air, addition of two new aeration tanks, replacement of the influent screens, and rehabilitation of the primary clarifiers. The Final Acceptance Test Report, completed by the City's independent engineering group, Alternative Resources Inc., was submitted to the City in April 2004 concludes that the rehabilitation and upgrade project has increased the plant's daily average design flow from 8.4 MGD to 9 MGD.

The City has prepared a comprehensive wastewater management plan (CWMP) as required by the 2005 MassDEP order, which was submitted to MassDEP in July, 2006. The City filed an environmental notification form (ENF) for the project with the Secretary of the Massachusetts Office of Environmental Affairs (EOEA), which was published in the Environmental Monitor on October 25, 2006. The CWMP proposes the construction of new sewers serving areas currently served by on-site systems. The sewering project would require the expansion of the wastewater treatment plant to a design flow of 10.7 MGD to handle the wastewater from these areas, future infill development within existing areas and projected additional inter-municipal flows. The Secretary of EOEA issued a certificate on the ENF on December 8, 2006 requiring that a draft environmental impact report (DEIR) on the project be prepared.

B. 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 have achieved 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.

A permit may not be renewed, reissued, or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the anti-backsliding requirements of the CWA. EPA's anti-backsliding provisions restrict the relaxation of permit limits, standards, and conditions. Therefore effluent limits in the reissued permit must be at least as stringent as those of the previous permit. Effluent limits based on technology, water quality, and state certification requirements must meet anti-backsliding provisions found under Section 402 (o) and 303 (d) of the CWA, and in 40 CFR 122.44 (1).

In accordance with regulations found at 40 CFR Section 131.12, MassDEP has developed and adopted a statewide antidegradation policy to maintain and protect existing in-stream water quality. The Massachusetts Antidegradation Policy is found at Title 314 CMR 4.04. No lowering of water quality is allowed, except in accordance with the antidegradation policy. All existing uses of the Taunton River must be protected.

2. Water Quality Standards and Designated Uses

The Taunton WWTP discharges to segment MA62-02 of the Taunton River, extending from the Rte 24 Bridge to the Berkley Bridge in Dighton/Berkley. The Massachusetts Surface Water Quality Standards (314 CMR 4.06 – Table 18) classify this segment of the River as Class SB-Shellfishing (R) and CSO.

> Class SB - These 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). These waters shall have consistently good aesthetic value. (314 CMR 4.05(4)(b))
>
> Restricted shellfishing areas are designated as "(R)". These waters are subject to more stringent regulation in accordance with the rules and regulations of the Massachusetts Division of Marine Fisheries pursuant to M.G.L. c. 130, § 75. These include applicable criteria of the National Shellfishing Sanitation Program. (314 CMR 4.06(4))
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> CSO - (314 CMR 4.06(10)) These waters are identified as impacted by the discharge of combined sewer overflows in the classification tables in 314 CMR 4.06(3). Overflow events may be allowed by the permitting authority without a variance or partial use designation provided that:
>
> > a. an approved facilities plan under 310 CMR 41.25 provides justification for the overflows;
> > b. the Department finds through a use attainability analysis, and EPA concurs, that achieving a greater level of CSO control is not feasible for one of the reasons specified at 314 CMR 4.03(4);

> c. existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected; and d. public notice is provided through procedures for permit issuance and facility planning under M.G.L. c. 21, §§ 26 through 53 and regulations promulgated pursuant to M.G.L.c. 30A. In addition, the Department will publish a notice in the *Environmental Monitor*. Other combined sewer overflows may be eligible for a variance granted through permit issuance procedures. When a variance is not appropriate, partial use may be designated for the segment after public notice and opportunity for a public hearing in accordance with M.G.L. c. 30A.

The current permit incorrectly lists the Taunton River segment at the point of discharge as Class B (freshwater). The draft permit corrects this error. Effluent limitations for fecal coliform and total copper have been made more stringent based on the SB criteria.

The objective of the Federal Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. To meet this goal the CWA requires states to develop information on the quality of their water resources and report this information to the U.S. Environmental Protection Agency (EPA), the U.S. Congress, and the public.

To this end, EPA released guidance on November 19, 2001, for the preparation of an integrated "List of Waters" that could combine reporting elements of both § 305 (b) and 303(d) of the CWA. The integrated list format allows the states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories:

1) Unimpaired and not threatened for all designated uses; 2) Unimpaired waters for some uses and not assessed for others; 3) Insufficient information to make assessments for any uses; 4) Impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

The Massachusetts Year 2002 Integrated List of Waters, Part 2, states that the Taunton River Segment, MA62-02, Route 24 Bridge, Taunton to Berkley Bridge, Dighton/Berkley (Miles 21.2-13.0) is impaired due to pathogens and is listed as Category 5 Water ("waters requiring a TMDL"). The segments of the River downstream of this segment, to the mouth of the River at the Braga Bridge in Fall River, are impaired for pathogens and organic enrichment/low dissolved oxygen. Mount Hope Bay, which receives the discharge of the Taunton River, is listed as impaired for unknown toxicity, nutrients, organic enrichment/low dissolved oxygen, thermal modifications, and pathogens

Available Dilution

Water quality based limitations are established with the use of a calculated available dilution. Title 314 CMR 4.03(3)(a) requires that effluent dilution be calculated based on the receiving water 7Q10.

The 7Q10 is the lowest observed mean river flow for 7 consecutive days, recorded over a 10 year recurrence interval. Additionally, the plant design flow is used to calculate available effluent dilution.

The plant design flow used to calculate the dilution factor for the current permit was 8.4 mgd (13.0 cfs). The City has requested that a design flow of 9 MGD be used, consistent with the estimates made by its consultant. Because this design flow has not been approved by MassDEP and because such an increase would not be consistent with MassDEP's antidegradation regulations, we have used 8.4 MGD in our calculations. A further discussion of this decision follows in the Flow section.

The nearest USGS river gage station to the discharge is located near Bridgewater (Station No. 0110800). The 7Q10 flow at the Taunton Treatment Plant has been calculated using the 7Q10 flow at the Bridgewater gage and adjusting it based on drainage area.

The 7Q10 for the Taunton River at the Bridgewater gaging station is 22.9 cfs, using daily flow data from 1931 to 2002. The drainage area at the gage is 261 square miles. The drainage area at the Taunton WWTP is about (360) square miles, per the USGS Taunton River Gazetteer.

Using drainage area ratios the 7Q10 at the POTW is 22.9 x 360/261 = 31.6 cfs.

The dilution factor for the Taunton WWTP can then be calculated using the following equation.

$$\text{Dilution Factor} = \frac{\text{Daily average design effluent flow + river flow (7Q10)}}{\text{Daily average design effluent flow}}$$

$$\frac{13.0 \text{ cfs} + 31.6 \text{ cfs}}{13.0 \text{ cfs}} = 3.4$$

Flow - The flow limit in the current permit is 8.4 mgd. Flow is to be measured continuously. The permittee shall report the annual average monthly flow using the annual rolling average method (See Permit Footnote 2). The maximum, minimum and total flow for each operating date shall also be reported.

As described earlier, the permittee has requested that the flow limit be increased to 9 MGD based in the estimate of design flow made by its consultant. MassDEP has not approved the design flow increase to 9.0 mgd, which it must do before EPA will consider authorizing the increased flow. The State does not anticipate approving any increase in design flow until the permittee has completed the Environmental Impact Report for its Comprehensive Wastewater Management Plan (CWMP) and received an Executive Office of Environmental Affairs (EOEA) certificate.

Additionally, any increase in authorized flow and increase in pollutant discharge can only be authorized in compliance with water quality standards, including antidegradation. As has been shown previously, the Taunton River and Mount Hope Bay are not currently attaining water quality standards.

The reach of the Taunton River immediately below the Taunton wastewater discharge is impaired for pathogens, and the lower reaches of the Taunton River are impaired for toxicity, organic enrichment/low dissolved oxygen and nutrients. Mount Hope Bay is impaired for pathogens, toxicity, organic enrichment/low dissolved oxygen, nutrients, and thermal modifications.

The Taunton discharge is only one source of pollutants to a waterbody receiving numerous municipal discharges, industrial discharges, and nonpoint source discharges, which all contribute to the noted water quality violations. In the absence of a TMDL or other water quality information, we do not believe that an increase in any discharge to this watershed can be authorized, particularly for pollutants causing the noted water quality impairments.

The following is a list of municipal wastewater discharges to the Taunton River and its tributaries.

Discharger	River or Tributary	Flow in mgd*
SOMERSET W P C F	TAUNTON RIVER	4.2
TAUNTON W W T P	TAUNTON RIVER	8.4
OAK POINT HOMES	TAUNTON RIVER	0.185
EAST BRIDGEWATER SCHOOLS	TRIBUTARY BROOK TO TAUNTON	0.012
ROSE L. MACDONALD SCHOOL	WEST MEADOW BROOK	0.003
HOWARD SCHOOL	TOWN RIVER	0.005
MCI-BRIDGEWATER W P C F	SAW MILL BROOK TO TAUNTON	0.55
MIDDLEBOROUGH WPCF	NEMASKET RIVER	2.16
WHEATON COLLEGE	RUMFORD RIVER	0.12
BRIDGEWATER W W T F	TOWN RIVER	1.44
BROCKTON A W T F	SALISBURY PLAIN RIVER	18.0
MANSFIELD WPCF	THREE MILE RIVER	3.14
	Total	≈ 40. mgd

*mgd-million gallons per day – design flow

As noted earlier the 7Q10 flow of the Taunton River upstream Taunton is 31.6 CFS (20 mgd). Design flows for facilities upstream of Taunton total approximately 27 mgd (total design flows in Table minus Taunton and Somerset). While the actual wastewater discharge volume during critical low flow periods will be lower than the design discharge volume, it is clear that this is an effluent dominated watershed.

OUTFALL 001 - CONVENTIONAL POLLUTANTS

Biochemical Oxygen Demand ($CBOD_5$) and Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) - Publicly Owned Treatment Works (POTWs) are subject to the secondary treatment requirements set forth at 40 CFR Part 133. The permit alternates BOD_5 and $CBOD_5$ limits seasonally. 40 CFR §133.102(a)(4) allows the substitution of Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) in lieu of Biochemical Oxygen Demand (BOD_5). The current NPDES permit utilizes $CBOD_5$ seasonally as the measure of oxygen demand due to high nitrogenous oxygen demand in the effluent during the summer nitrifying season.

The $CBOD_5$ test reduces the interference from nitrogenous compounds that would otherwise make accurate assessment of the organic (carbonaceous) oxygen demand impossible.

During the period of April 1st through October 31st, the permit contains more stringent limitations for $CBOD_5$. The limits are an average monthly concentration of 15 mg/l, and a weekly average concentration of 15 mg/l, with accompanying mass limitations. These were established by the MassDEP as a wasteload allocation for BOD_5. The BOD_5 limitations were recalculated in the current permit to address the conversion from $CBOD_5$ to BOD_5. These limits are more stringent than those required in 40 CFR §133.102(a)(4).

From November 1 through March 31 the standard secondary treatment requirements for BOD_5 apply based on the requirements set forth at 40 C.F.R. § 133.102(a)(1), (2), (3), and 40 CFR § 122.45(f). The permit is limited BOD_5 instead of $CBOD_5$, as the facility will discontinue the nitrifying process during the colder season making the use the $CBOD_5$ tests unnecessary.

Total Suspended Solids (TSS) - The draft permit includes average monthly and average weekly TSS limitations which are based on secondary treatment requirements set forth at 40 C.F.R. §133.102(b)(1), (2), and (3), and 40 CFR § 122.45(f) for the period, November 1 through March 31. From April 1st through October 31st, the TSS limits are based on the wasteload allocation that has been carried forward from previous permits. The maximum daily concentration shall continue to be reported.

The mass limitations for BOD_5, $CBOD_5$, and TSS are based on the 8.4 mgd design flow. Average monthly and average weekly TSS mass limits (lbs per day) are required under 40 CFR §122.45(f).

$CBOD_5$, BOD_5, and TSS Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly BOD_5 and TSS are based on the following equation:

L = C x DF x 8.34 or L = C x DF x 3.79 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.

(Concentration limit) [45] X 8.34 (Constant) X 8.4 (design flow) = 3152 lb/day

(Concentration limit) [45] X 3.79 (Constant) X 8.4 (design flow) = 1433 kg/day

(Concentration limit) [30] X 8.34 (Constant) X 8.4 (design flow) = 2102 lb/day

(Concentration limit) [30] X 3.79 (Constant) X 8.4 (design flow) = 956 kg/day

(Concentration limit) [20] X 8.34 (Constant) X 8.4 (design flow) = 1401 lb/day

(Concentration limit) [20] X 3.79 (Constant) X 8.4 (design flow) = 637 kg/day

(Concentration limit) [15] X 8.34 (Constant) X 8.4 (design flow) = 1051 lb/day

(Concentration limit) [15] X 3.79 (Constant) X 8.4 (design flow) = 478 kg/day

Eighty-Five Percent (85%) BOD_5 and TSS Removal - the provisions of 40 CFR §133.102(a)(3), require that the 30 day average percent removal for BOD_5 and TSS be not less than 85%.

Eighty-Five Percent (85%) $CBOD_5$ Removal - the provisions of 40 CFR §133.102(a)(4)(iii), require that the 30 day average percent removal for $CBOD_5$ be not less than 85%.

pH - The draft permit includes pH limitations which are required by state water quality standards, and are protective of pH standards set forth at Title 314 CMR 4.05(4)(b)(3), for Class SB waters. The nitrification process lowers the pH in the effluent. The treatment plant adds lime to raise the pH during the nitrification season.

For short periods pH may be depressed below 6.5 SU. The MassDEP has stated that a permitted pH range of 6.0-8.5 SU will be protective of State water quality standards. The pH requirements are more stringent than those required under 40 C.F.R. §133.102(c). The monitoring frequency remains once (1) per day.

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)(4). The proposed limits in the draft permit are 88 colony forming units (CFU)/100 ml for the average monthly limit and 260 colony forming units (cfu)/100 ml for the maximum daily limit. Colony forming units (CFU) or most probable number (MPN) units are determined by the method of analysis used for bacteria analysis. Both methods and units are acceptable.

Enterococci - Monthly sampling and "reporting" for Enterococci is required by the MassDEP as a certification requirement under Section 401 of the CWA. EPA promulgated Enterococci criteria for recreational waters in Massachusetts on November 16, 2004. MassDEP will use the resulting data to compare fecal coliform and Ent**e**rococci bacteria as indicators for pathogens. The Enterococci sampling will be concurrent with one of the monthly fecal coliform sampling events.

OUTFALL 001 - NON-CONVENTIONAL POLLUTANTS

Dissolved Oxygen - The instantaneous minimum effluent dissolved oxygen limit of 6.0 mg/l or greater is carried forward from the current permit. The limit ensures that dissolved oxygen levels depleted during wastewater treatment process are restored prior to discharge to the Taunton River. The limit is established to protect the dissolved oxygen minimum Water Quality Criteria of 5.0 mg/l for waters designated by the State as Class SB.

Total Residual Chlorine - (TRC) Chlorine compounds resulting from the disinfection process can be extremely toxic to aquatic life. The instream chlorine criteria are defined in the EPA Quality Criteria for Water, as adopted by the MassDEP into the state water quality standards [Title 314 CMR 4.05(5)(e)], and as revised in the Federal Register: December 27, 2002 (Volume 67, Number 249). The criterion states that the average total residual chlorine in the receiving water should not exceed 7.5 ug/l (chronic) and 13 ug/l (acute). The following is a water quality based calculation of chlorine limits:

Total Residual Chlorine Limitations:

Acute Chlorine Salt Water Criteria = 13 ug/l

Chronic Chlorine Salt Water Criteria = 7.5 ug/l

(acute criteria * dilution factor) = Acute (Maximum Daily)
13 ug/l x 3.4 = 44.2 ug/l X 1000 = **0.044 mg/l Maximum Daily**.

(chronic criteria * dilution factor) = Chronic (Average Monthly)
7.5 ug/l x 3.4 = 25.5 ug/l X 1000 = **0.026 mg/l Average Monthly**

The minimum level (ML) of detection for TRC as established by the EPA Region I Quality Assurance Office in a memorandum dated March 27, 2002 is 0.02 mg/l. Chlorination is currently required year-round as determined by the MassDEP. There are plans to build a desalinization plant (Inima – NPDES Permit No. MA0040193) down stream of the Tanunton WWTP discharge, to produce drinking water in the near future. The year round disinfection requirement shall remain in the draft permit.

The permittee is required to have an alarm to system to warn of a chlorination system malfunction. This is a best management practice (BMP), and is being required under authority of 40 CFR §122.44(k)(4). The permit requires the submission of the results to EPA of any additional testing done than that required in the permit, if it is conducted in accordance with EPA approved methods, consistent with the provisions of 40 CFR §122.41(l)(4)(ii).

Nitrogen Monitoring : Total Kjeldahl Nitrogen, Total Nitrate, Total Nitrite, and Ammonia Nitrogen - Nutrient modeling conducted in Mount Hope Bay has demonstrated that excessive nitrogen loadings are causing significant water quality problems in the Bay, including low dissolved oxygen.

EPA agrees there is a need to determine the loadings of nitrogen from sources which are tributary to Mount Hope Bay, and to help determine what limits, if any should be imposed on those discharges.

Therefore, based on Section 308 of the Clean Water Act, EPA has maintained quarterly requirements for testing for total nitrogen as Kjeldahl nitrogen, nitrate, and nitrite in the draft permit.

Ammonia nitrogen shall be monitored as nutrient when it is not limited as a toxic polutant. Ammonia-nitrogen is seasonally limited as a toxic pollutant. Discharge monitoring data indicates that the plant removes ammonia to levels below those needed to control ammonia toxicity. The seasonal limits for ammonia shall be retained in the draft permit consistent with the anti-backsliding provisions of 40 CFR §122.44(l)(1). The ammonia limits help to foster operation of the treatment plant for optimum nitrogen removal.

The information submitted by the permittee will help to establish a database of nitrogen loadings, which can be used quantitatively to assess the impact of loading and transport to Mount Hope Bay. The permittee is encouraged to evaluate options for optimizing the removal of nitrogen from the wastewater treatment plant. Particular emphasis should be placed on the feasibility of biological nutrient removal retrofits, such as have been implemented successfully at many Connecticut wastewater treatment plants. This is in anticipation of possible future stringent nutrient limits based on continuing refinements in the water quality modeling of Mount Hope Bay.

Total Copper - EPA is required to limit any pollutant that is or may be discharged at a level that causes, or has reasonable potential to cause, or contribute to an excursion above any water quality criterion (40 CFR §122.44(d)). The current permit has water quality based total copper limits based on Fresh Water Quality Criteria. Because of the correction to Salt Water Criteria, the limits for total copper shall become more stringent. Recent effluent monitoring data was evaluated against the criteria and available dilution to determine if there is a reasonable potential for metals in the effluent to cause or contribute to a violation of water quality standards. There remains reasonable potential for the in-stream criteria to be exceeded.

The criteria found in EPA's *National Recommended Water Quality Criteria* was published in the Federal Register on December 10,1998 (63 FR 68354) and updated November 2002 (EPA-822-R-02-047). Pollutant specific conversion factors (CF) are used for converting a metal criterion expressed as a total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column. The equations and constants for determining the water quality criteria for each metal and the conversion factors and equation parameters are listed in the Federal Register notice and subsequent correction. 40 CFR §122.45(c) requires that permit limits be expressed as total recoverable metal.
National Recommended Water Quality Criteria (63 FR 68354, December 10, 1998) as updated November 2002 (EPA-822-R-02-047), based on Interim Final National Toxics Rule (60 FR 22233, May 4, 1995):

Dissolved Criteria CMC ug/l	Dissolved Criteria CCC ug/l	Translator	Total Criteria CMC ug/l	Total Criteria CCC ug/l
4.8	3.1	0.83	**5.8**	**3.7**

The calculations for the criteria and limits are as follows:

- Chronic saltwater criteria (CCC) for dissolved copper = 3.1 ug/l
- conversion factor for dissolved versus total recoverable copper = 0.83
- ug/l/0.83 equivalent value to total recoverable copper is = 3.7 ug/l
- Acute saltwater criteria (CMC) for dissolved copper = 4.8 ug/l
- conversion factor for dissolved versus total recoverable copper = 0.83
- 4.8 ug/l/0.83 equivalent value to total recoverable copper is = 5.8 ug/l

(Dilution)(Criteria) = Limit

3.4 X 3.7 = 12.6 ug/l ≈ 13 ug/l average monthly = 0.013 mg/l
3.4 X 5.8 = 19.7 ug/l ≈ 20 ug/l maximum daily = 0.020 mg/l

Average Monthly Mass Loading Limits = (constant)(chronic criteria mg/l)(design Q mgd)

(8.34)(0.013 mg/l)(8.4 mgd) = 0.92 lbs/Day
(3.79)(0.013 mg/l)(8.4 mgd) = 0.41 kgs/Day

The average monthly limit for total recoverable copper based on the chronic water quality criteria will be 13 ug/l and the maximum daily limit, based on the acute criteria, will be 20 ug/l. These limits are changed from the existing permit based upon the use of salt water criteria and revised dilution.

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. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. The Region's current policy is to include toxicity testing requirements in all permits, while Section 101(a) (3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts.

Based on the potential for toxicity resulting from domestic sewage, in accordance with EPA national and regional policy, and in accordance with MassDEP policy, the draft permit includes acute toxicity limitations and monitoring requirements. (See Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants, 50 Fed. Reg. 30,784 (July 24,

1985); EPA's Technical Support Document for Water Quality-Based Toxics Control", September, 1991; and MassDEP's Implementation Policy for the Control of Toxic Pollutants in Surface Waters (February 23, 1990).

Pursuant to EPA, Region I and MassDEP policy, discharges having a dilution factor less than 100:1 (3.5:1 for this discharge) require acute toxicity testing and an acute LC_{50} limit of ≥100%. The draft permit requires the permittee to conduct four chronic (modified acute) WET tests per year. The tests the use the species, Ceriodaphnia dubia, in accordance with existing permit conditions, and are to be conducted in accordance with the EPA Region I Toxicity protocol found in the draft permit Attachment A.

The chronic no observable effects concentration (C-NOEC) limit is calculated to be greater than or equal to the effluent concentration in the receiving water. The inverse of the receiving water concentration (chronic dilution factor) multiplied by one hundred is used to calculate the chronic C-NOEC as a percent limit. (1/3.4)(100) ≥29.4% ≈ 29% C-NOEC.

V. 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 July 31, 1982 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, July 1990, and again in October 2005. 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.

Within 150 days of receipt of this letter, the permittee must submit to EPA all required modifications of the Streamlining Rule in order to be consistent with the provisions of the October 14, 2005 promulgation of the Streamlining Rule.

In addition to the requirements described above, the draft permit requires the permittee to submit to EPA in writing, within 180 days of the permit's effective date, a description of proposed changes to permittee's pretreatment program deemed necessary to assure conformity with current federal pretreatment regulations. These requirements are included in the draft permit to ensure that the pretreatment program is consistent and up-to-date with all pretreatment requirements in effect. Lastly, the permittee must continue to submit, annually by October 1, a pretreatment report detailing the activities of the program for the twelve month period ending 60 days prior to the due date.

VI. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

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' are 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 the reasonable likelihood of adversely affecting human health or the environment. EPA and MassDEP maintain that these programs are an integral component of ensuring permit compliance under both these provisions.

The draft permit includes requirements for the permittee to control infiltration and inflow (I/I). 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.

The permittee estimates the rate of I/I in the collection system to be one million gallons per day (2005 permit application). The permittee has recorded daily maximum flow rates of more than 15 mgd.

The permittee shall develop an I/I removal program for its separate sewers 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.

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 MassDEP maintain that an I/I removal program is an integral component to insuring permit compliance under both of these provisions.

The MassDEP 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).

Because Raynham and Dighton each own and operate collection systems that discharge to the Taunton treatment works, these municipalities have been included as co-permittees for the specific permit requirements discussed in the paragraph above. The town of Norton is not a co-permittee due to the low number of homes tied in to the Taunton collection system.

VII. SLUDGE INFORMATION AND REQUIREMENTS

The Taunton WWTP produces approximately 1655.29 dry metric tons of sludge each year. Section 405(d) of the Clean Water Act requires that sludge conditions be included in all POTW permits. Primary and secondary thickened sludge from the Taunton WWTF is currently trucked off-site to the Taunton Municipal Sanitary Landfill. If the ultimate sludge disposal method changes, the permittee must notify EPA and MassDEP and the requirements pertaining to sludge monitoring and other conditions would change accordingly (See enclosed Sludge Guidance Document).

VIII. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall(s) listed in Part I A.1. and I.D.1. of this permit. Discharges of wastewater from any other point sources are not authorized by the permit and shall be reported in accordance with Section D.1.e. (1) of the General Requirements of the permit (Twenty-four hour reporting).

IX. MONITORING AND REPORTING

The permittee is obliged to monitor and report sampling results to EPA and the MassDEP 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, 122.44, and 122.48.

X. 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 MassDEP Commissioner.

XI. GENERAL CONDITIONS

The 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.

XII. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving waters certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the Massachusetts Department of Environmental Protection 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.

XIII. COMMENT PERIOD, HEARING REQUESTS, AND PROCEDURES FOR FINAL DECISIONS

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 Doug Corb, U.S. EPA, Office of Ecosystem Protection, Municipal Permits Branch, 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023. 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.

A public hearing may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA 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 any public hearings, if such hearings are held, the EPA 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.

Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

XIV. 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:

Doug Corb
Office of Ecosystem Protection
U.S. Environmental Protection Agency
One Congress Street, Suite-1100 (CMP)
Boston, MA 02114-2023
Telephone: (617) 918-1565
corb.doug@epa.gov

Date: February 20, 2007

Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency