

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
1 CONGRESS STREET
SUITE 1100
BOSTON, MASSACHUSETTS 02203

FACT SHEET

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

NPDES PERMIT NO.: **MA0100633**

PUBLIC NOTICE DATE:

NAME AND ADDRESS OF APPLICANT:

Lowell Regional Water and Wastewater Utilities (LRWU)
ATTN: Mark Young, Executive Director
First Street Boulevard (Route 110)
Lowell, Massachusetts 01850

The Massachusetts Municipalities of Chelmsford, Dracut, Tewksbury, and Tyngsboro are co-permittees for specific activities required in the permit. See Section VII of this fact sheet and Sections Part I. C. Unauthorized Discharges, Part I.D. Operation Maintenance of the Sewer System and Part I.E. Alternate Power Sources of the permit. The responsible Municipal Departments are:

Town of Chelmsford
Sewer Commission
50 Billerica Road
Chelmsford, MA 01824

Town of Dracut
Sewer Commission
1196 Lakeview Avenue
Dracut, MA 01826

Town of Tewksbury
Department of Public Works
999 Whipple Road
Tewksbury, MA 01876

and, Town of Tyngsborough
Town Hall
25 Bryants Lane
Tyngsborough, MA 01879

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Lowell Regional Water and Wastewater Utilities
First Street Boulevard (Route 110)
Lowell, Massachusetts 01850

RECEIVING WATERS: Merrimack River, Concord River, and Beaver Brook

CLASSIFICATION: All receiving waters are classified as Class B.

I. Proposed Action, Type of Facility, and Discharge Location

The above named applicant has requested that the U.S. Environmental Protection Agency reissue its NPDES permit to discharge into the designated receiving waters. The facility is an activated sludge secondary wastewater treatment facility engaged in the collection and treatment of domestic wastewater, industrial wastewater, septage and stormwater. The facility has one outfall, 035, that discharges to the Merrimack River, and nine Combined Sewer Overflows (CSO's) that discharge to the Merrimack River, the Concord River and, Beaver Brook during wet weather events. See Attachment A of this fact sheet for a list of CSO locations.

II. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters based on recent monitoring data is shown in Attachment B of the fact sheet. Figure 1 of the fact sheet shows the geographic location of the facility, and Figure 2 shows the flow process diagram of the facility.

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 Derivation

Facility

The wastewater treatment facility serves approximately 180,000 residences and businesses, in the City of Lowell, and the Towns of Chelmsford, Tyngsboro, Dracut, and Tewksbury and provides septage disposal for communities throughout the Merrimack Valley. Municipal contributions comprise approximately 80 percent of the influent flow and the remaining 20 percent is industrial flow.

Lowell's sewerage system is a combined and separate sewer system. The other communities discharging to the Lowell system are separate systems. The facility is designed to provide secondary treatment for long term average flows of 32 MGD, combined wastewater and storm water flows of up to 64 MGD and, provide primary treatment and disinfection for combined flows of up to 112 MGD during wet weather events.

The effluent discharged into the receiving water at the point of discharge is combined effluent during bypass conditions. Treated bypassed flow is combined with treated effluent from the facility at entry to the chlorine contact chamber.

General Requirements

Under Section 301(b)(1)(B) of the CWA, Publically Owned Treatment Works (POTW's) must have achieved effluent limitations based upon secondary treatment by July 1, 1977. The secondary treatment requirements are set forth at 40 CFR Part 133. Effluent limitations for monthly and weekly average Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS) are based on requirements under Section 301(b)(1)(B) of the Clean Water Act and 40 CFR 133.102. Fecal Coliform bacteria and pH are based on State Certification requirements for POTW's under Section 401(d) of the CWA, 40 CFR 124.53 and 124.55, and water quality considerations.

Under Section 301(b)(1)(C) of the Clean Water Act (CWA), discharges are subject to effluent limitations based on Water Quality Standards. The Massachusetts Surface Water Quality Standards include the requirements for the regulation and control of toxic constituents and also require that EPA criteria established pursuant to Section 304 (a) of the CWA shall be used unless site specific criteria are established. The State will limit or prohibit discharges of pollutants to surface water to assure that surface water quality standards of the receiving water are protected and maintained or attained.

According to 40 CFR 122.44(l), when a permit is reissued effluent limitations, standards or conditions must be at least as stringent as effluent limitations in the previous permit unless the circumstances on which the previous permit were based have materially and substantially changed since the time the permit was issued.

Waterbody Classification and Usage

The Merrimack River, the Concord River, and Beaver Brook at the points of discharge are classified as Class B waterbodies by the Massachusetts Department of Environmental Protection (MA DEP). Class B waters are designated as habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. These waters shall have consistently good aesthetic value.

Where designated, Class B waters shall be suitable as a source of public water supply with appropriate treatment. They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses.

Dilution

Based on the facility's average monthly flow limit of 32 MGD, and a 7Q10 of 910 cfs, the dilution factor is 19.20 to 1. The 7Q10 is based on USGS flow data through September 30, 2000. The gage station is less than a mile from the outfall.

Dilution Factor

7Q10 = 901 cfs

$$\text{Design flow dilution} = \frac{7Q10 \text{ cfs} + \text{plant design flow cfs}}{\text{plant design flow cfs}} = \frac{901 + 49.50}{49.50} \text{ cfs} = 19.20$$

Conventional Pollutants

BOD₅ and TSS

The BOD₅ and TSS, draft permit limits are based on secondary treatment requirements and the concentration limits in the draft are the same as those in the current permit. BOD₅ and TSS mass limits have been added to the draft permit. Expressing limitations in terms of concentration and mass encourages proper operation of a treatment facility. Concentration limits discourage the reduction in treatment efficiency during low discharge flow periods, and mass limits discourage higher loads being discharged into the receiving water during periods of high discharge flow. Regulations found at 40 CFR Section 122.45 do not preclude mass limits, where appropriate, from being included in a NPDES permit. See 40 CFR Section 122.45 (f)(1) and (2). This condition is

a state certification requirement.

The maximum daily limits for BOD and TSS were each exceeded one time during the reporting period of September 2001 through September 2003.

The numerical limitations for pH, fecal coliform, and dissolved oxygen are based on state certification requirements under Section 401(a)(1) of the CWA, as described in 40 C.R.F.124.53 and 124.55, and the Massachusetts Surface Water Quality Standards contain specific numerical limits for pH, and fecal coliform for Class B receiving waters.

pH

The draft permit includes pH limitations that are in the existing permit. A pH lower limit of 6.0 accounts for the pH of the influent water. Due to the dilution in the Merrimack River, EPA and MA DEP have made a determination that a lower pH limit will not result in instream water quality concerns.

The facility has been in compliance with the pH limit from September 2001 through September 2003.

Fecal Coliform Limitation

The numerical limitations for fecal coliform are based on state certification requirements under Section 401(a)(1) of the CWA, as described in 40 CFR 124.53 and 124.55. These limitations are also in accordance with the Massachusetts Surface Water Quality Standards 314 CMR 4.05 (4)(a)4.a.

The proposed limits in the draft permit are 200 colony forming units (cfu's)/100 ml average monthly, and 400 cfu's/100 ml maximum daily. The monitoring frequency for fecal coliform must be collected concurrently with sampling for Total Residual Chlorine.

The fecal coliform limits are based on Massachusetts Water Quality Standards, and shall remain the same as in the existing permit. However, the sampling frequency has been increased to 5 times per week because EPA and MADEP consider this sampling frequency more appropriate for this discharge, considering the large flow quantity, and its potential for causing in-stream violations should the permittee violate the effluent limit. There has been one maximum daily exceedncen for fecal coliform between September 2001 and September 2003.

Dissolved Oxygen

A seasonal dissolved oxygen limitation of not less than 5 mg/l has been added to the draft permit, based on State Water Quality Standards for Class B waters. This as a state certification requirement.

Non-Conventional Pollutants

Chlorine

Chlorine and chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The effluent limit for daily maximum Total Residual Chlorine (TRC) was developed using the chronic criterion defined in the National Recommended Water Quality

Criteria: 2002. The criterion was multiplied by the available receiving water dilution for the appropriate flow scenario to obtain the TRC limit found in the draft permit. The criterion states

that the average total residual chlorine in the receiving water should not exceed 11 ug/l for chronic toxicity protection or 19 ug/l for acute toxicity protection. Therefore, for maximum protection from the toxic effects of TRC, the dilution factor is multiplied by the chronic and acute criterion to obtain a monthly average and maximum daily TRC limit for the flow scenario.

Chlorine calculation:

Acute chlorine water quality criteria is 19 ug/l

Chronic chlorine water quality criteria is 11 ug/l

Design flow dilution is 19.20.

Average Monthly Total Residual Chlorine Limit = $19.20 \times 0.011 \text{ mg/l} = 0.211 \text{ mg/l}$

Maximum Daily Total Residual Chlorine Limit = $19.20 \times 0.019 \text{ mg/l} = 0.365 \text{ mg/l}$

The facility reported one exceedance for maximum daily total residual chlorine between the months of September 2001 through September 2003.

Metals

Certain metals in water can be toxic to aquatic life. There is a need to limit toxic metal concentrations in the effluent where aquatic life may be impacted. EPA is required to limit any pollutant or pollutant parameter that is or may be discharged at a level that caused, has reasonable potential to cause, or contributes to an excursion above any water quality criterion.

An evaluation of the reasonable potential of toxicity on the concentration of metals in the effluent shows there is not a reasonable potential of toxicity for copper, therefore a copper limit has not been included in the draft permit.

Calculation of reasonable potential for copper:

Effluent metal data from recent toxicity tests was reviewed for the copper calculation. An estimate hardness of 28 is used in the calculation. It is based on hardness data from other facilities that discharge to the Merrimack River in the same vicinity as the LRWU. The water used in Lowell's toxicity tests is from reconstituted lab water, rather than the Merrimack River therefore, hardness data in the receiving water was unavailable from the facility's toxicity tests reports. See National Recommended Water Quality Criteria 2002.

Allowable Receiving Water Concentration, C = Criteria (Total Recoverable) x Dilution Factor

Copper: Acute $C = 4.22 \text{ ug/l} \times 19.20 = 81.02 \text{ ug/l}$ which is greater than the range of effluent copper data (1 ug/l -25 ug/l) recorded in recent toxicity tests. There is a not reasonable potential that copper being discharged in the effluent will exceed the water quality

criteria.

Chronic $C = 3.15 \text{ ug/l} \times 19.20 = 60.48 \text{ ug/l}$ which is greater than the range of effluent copper data (11 ug/l - 25 ug/l) recorded in recent toxicity tests. There is not a reasonable potential that

copper being discharged in the effluent will exceed the water quality criteria.

Water Quality Criteria for hardness-dependent metals:

Acute criteria (dissolved) = $\exp\{m_a [\ln(h)] + b_a\}$ (CF)

m_a = pollutant specific coefficient

b_a = pollutant specific coefficient

h = hardness

\ln = natural logarithm

CF = pollutant-specific conversion factor used to convert total recoverable to dissolved metal

Chronic criteria (dissolved) = $\exp\{m_c [\ln(h)] + b_c\}$ (CF)

m_c = pollutant specific coefficient

b_c = pollutant specific coefficient

h = hardness

\ln = natural logarithm

CF = pollutant-specific conversion factor used to convert total recoverable to dissolved metal

Reasonable potential calculation of acute limit for copper:

$m_a = 0.9422$ $b_a = -1.7$ CF = 0.96

Acute criteria (dissolved) = $\exp\{0.9422 [\ln(28)] + -1.7\} (0.96) = 4.05 \text{ ug/l}$

Acute criteria (total) = $\exp\{0.9422 [\ln(28)] + -1.7\} = 4.22 \text{ ug/l}$

Dilution Factor = 19.20

Effluent limitation for dissolved copper = $4.05 \text{ ug/l} \times 19.20 = 77.76 \text{ ug/l}$

Effluent limitation for total recoverable copper = $77.76/0.96 = 81 \text{ ug/l}^*$

Reasonable potential calculation for chronic limit for copper:

$m_a = 0.8545$ $b_a = -1.7$ CF = 0.96

Chronic criteria (dissolved) = $\exp\{0.8545 [\ln(28)] + -1.7\} (0.96) = 3.02 \text{ ug/l}$

Chronic criteria (total) = $\exp\{0.8545 [\ln(28)] + -1.7\} = 3.15 \text{ ug/l}$

Dilution Factor = 19.20

Effluent limitation for dissolved copper = $3.02 \times 19.20 \text{ ug/l} = 57.98 \text{ ug/l}$

Effluent limitation for total recoverable copper = $57.98/0.96 = 60.40 \text{ ug/l}^*$

*The conversion factor is used to determine total recoverable metal. EPA Metal Translator Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion (EPA-823-B-96-007) is used as the basis for using the criteria conversion factor. National guidance requires that permit limits be based on total recoverable metals and not dissolved metals. Consequently, it is necessary to apply a translator in order to develop a total recoverable permit limit from a

dissolved criteria. The translator reflects how a discharge partitions between the particulate and dissolved phases after mixing with the receiving water. In the absence of site specific data on how a particular discharge partitions in the receiving water, a default assumption is equivalent to the criteria conversion factor used in accordance with the Translator Guidance.

Toxicity

Under Section 301(b)(1) of the CWA, discharges are subject to effluent limitations based on water quality standards. The State Surface Water Quality Standards, 314 CMR 4.05(5)e., includes the following narrative statements and requires that EPA criteria established pursuant to Section 304(a) 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. Where the State determines that a specific pollutant not otherwise listed in 3.14 CMR 4.00 could reasonably be expected to adversely effect existing or designated uses, the State shall use the recommended limit published by EPA pursuant to 33 U.S.C. 1251 §304(a) as the allowable receiving water concentrations for the affected waters unless a site-specific limit is established. Site specific limits, human health risk levels and permit limits will be established in accordance with 314 CMR 4.05(5)(e)(1)(2)(3)(4).

National studies conducted by the EPA have demonstrated that industrial and 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 and industrial contributions, the state 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 limitation (LC50) and acute biomonitoring requirements. (See “Policy for the Development of Water Quality Based Permit Limitations for Toxic Pollutants”, 50 Federal Register 30748, July 24, 1985, and EPA’s Technical Support Document for Water Quality Based Toxics Control”, September, 1985 and the Massachusetts “Implementation Policy for the Control of Toxic pollutants in Surface Waters”, February 23, 1990.)

Pursuant to EPA Region I policy, a discharge having a dilution ratio less than 20 to 1 requires chronic and modified acute toxicity testing 4 per year. An additional two acute toxicity tests are required when the treatment plant total daily flow exceeds 45 mgd. These two test may be conducted during any month of the year.

The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) bioavailability of pollutants after discharge is measured by toxicity testing including any synergistic effects of pollutants; and (3) pollutants for which there are inadequate analytical methods or criteria can be addressed. Therefore, toxicity testing is being used in conjunction with pollutant specific control procedures to control the discharge of toxic pollutants.

The results of the acute whole effluent toxicity tests have shown compliance with the limits in the existing permit for the period 2/2003 through 11/2003. See Attachment B of the fact sheet the results of recent Whole Effluent Toxicity Tests.

V. Pretreatment Process

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 December 9, 1998 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.

Since issuance of the previous permit, 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, if applicable, 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.

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 the 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 on March 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 City of Lowell, and the Municipalities of Chelmsford, Dracut, Tewksbury, and Tyngsboro each own and operate a portion of the sewer collection system that transports sewage to the wastewater treatment facility. The City of Lowell and the Municipalities are co-permittees for the operation and maintenance of each of their separate sewer systems and are each required to comply with Part I.C. Unauthorized Discharges, Part I.D. Operation and Maintenance of the Sewer System and, Part I.E. Alternate Power Source of the draft permit for the portions of the collection system it owns and operates.

VII. Inflow/Infiltration Requirements

The draft permit includes requirements for the permittee and co-permittees to control infiltration and inflow (I/I). Infiltration/inflow is extraneous water entering the wastewater collection system through a variety of sources. The permittee and co-permittees shall develop an I/I removal program commensurate with the severity of the I/I in the collection system. In sections of the collection system that have minimal 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's 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 co-permittees have a 'duty to mitigate' as stated in 40 CFR §122.41 (d). This requires the co-permittees to take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely effecting 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. Combined Sewer Overflows (CSOs)

Background

Combined Sewer Overflows (CSOs) are overflows from a combined sewer system that are discharged into a receiving water without going to the headworks of a publicly owned treatment works (POTWs). CSOs occur when the flow in the combined sewer system exceeds interceptor or regulator capacity. CSOs are distinguished from bypasses which are "intentional diversions of waste streams from any portion of a treatment facility" (40 CFR §122.41(m)).

Flows in combined sewers can be classified into two categories: wet weather flow and dry weather flow. Wet weather flow is a combination of domestic and industrial sewage, infiltration from groundwater, and storm water flow including snow melt. Dry weather flow is the flow in a combined sewer that results from domestic sewage, groundwater infiltration and industrial wastes with no contribution from storm water runoff or storm water induced infiltration.

Dry weather overflows from CSOs are illegal. The LRWU has no dry weather overflows. However, should a dry weather over occur it must be reported immediately to EPA and the MADEP and eliminated as expeditiously as possible. The objectives of the National CSO Control Policy are:

- 1) To ensure that if the CSO discharges occur, they are only as a result of wet weather,
- 2) To bring all wet weather CSO discharge points into compliance with the technology based requirements of the CWA and applicable federal and state water quality standards and,
- 3) To minimize water quality, aquatic biota, and human health impacts from wet weather flows.

Effluent Standards

CSOs are point sources subject to NPDES permit requirements for both water quality based, and technology based requirements but are not subject to secondary treatment regulations applicable to publicly owned treatment works.

Section 301(b)(1)(C) of the Clean Water Act (CWA) of 1977 mandates compliance with water quality standards by July 1, 1977. Technology based permit limits must be established for best conventional pollutant control technology (BCT) and best available technology economically achievable (BAT) based on best professional judgment (BPJ) in accordance with Section 301(b) and Section 402(a) of the Water Quality Act Amendments of 1987 (WQA).

Conditions for Discharge

The draft permit prohibits dry weather discharges from CSO outfalls. During wet weather, the discharges must not cause any exceedance of water quality standards. Dry weather discharges must be reported immediately to EPA and the MADEP. Wet weather discharges must be monitored and reported as specified in the permit.

Nine Minimum Controls (NMC)

The permittee must comply with BPJ derived BCT/BAT controls, which at a minimum include the following: (1) proper operation and maintenance of the sewer system and outfalls; (2) maximum use of the collection systems for storage; (3) review pretreatment programs to assure CSO impacts are minimized; (4) maximization of flow to the POTW for treatment; (5) prohibition of dry weather overflows; (6) control of solid and floatable materials in the discharge; (7) pollution prevention programs which focus on contaminant reduction activities; (8) public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and (9) monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

Nine Minimum Controls Documentation

The LRWU has completed a review of the Nine Minimum Control Measures performed in the City. The LRWU submitted a report to EPA in April 1998 regarding the review and recommendation to enhance current procedures, as needed. The LRWU's best management and operational practices meet the requirements of the NMC program.

CSO Long Term Control Planning

The LRWU submitted a revised Draft Long-Term Control Plan (LTCP) in February 2002. The LTCP stipulates that LRWU complete ongoing modifications to its combined sewer and treatment system to increase treatment capacity, wet weather flow storage and operational reliability. Based on this LTCP, the EPA issued a Compliance Order, dated June 16, 2003 requiring the permittee to proceed with implementation of the Phase I LTCP program, including structural modifications to four CSO diversion structures (for additional in-line interceptor storage) and for the design and construction of sewer separation in the Warren Street CSO Drainage Basin. The permittee is currently completing Phase I.

Reopener/Additional CSO Control Measures

The permit is conditioned to require an annual certification, no later than March 31st of each year, that states that all discharges from combined sewer outfalls were recorded, and other appropriate records and reports maintained for the previous calendar year. The LRWU provided monthly

reports that include a summary of untreated CSO discharges by storm events.

The permit may be modified or reissued upon the completion of a long-term CSO control plan. Such modification may include performance standards for the selected controls, a post construction water quality assessment program, monitoring for compliance with water quality standards, and a reopener clause to be used in the event that the selected CSO controls fail to meet water quality standards. Section 301(b)(1)(C) requires that a permit include limits that may be necessary to protect water quality standards.

IX Sludge

The permit prohibits any discharge of sludge. Section 405(d) of the Clean Water Act (CWA) requires that sludge conditions be included in all POTW permits. Technical sludge standards required by Section 405 of the CWA were finalized on November 25, 1992 and published on February 19, 1993. The regulations went into effect on March 21, 1993.

The LRWU generates approximately 5,313 dry metric tons of sludge per year. The sludge is currently land filled.

X. Essential Fish Habitat (EFH)

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 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" as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.", 16 U.S.C. § 1802(10). Adversely 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 or 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.

A review of the relevant essential fish habitat information provided by NMFS indicates that EFH has been designated for 21 species within the boundaries of Area 10, which encompasses the discharge site. Although EFH has been designated for this general location, EPA has concluded that this activity is not likely to adversely affect EFH or its associated species because, the effluent limitations are based on state water quality standards, and the authorized discharge will not increase with the renewal of this permit. If adverse impacts to EFH are detected as a result of this permit action, NMFS will be notified and an EFH consultation will be promptly initiated.

EPA has determined that a formal EFH consultation with NMFS is not required because the proposed discharge will not adversely impact EFH.

XI. State Certification Requirements

EPA may not issue a permit unless the Massachusetts Department of Environmental Protection

(MADEP) with jurisdiction over the receiving waters certify 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 MADEP has reviewed the permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State and expects that the permit will be certified.

XII. Public Comment Period, Public Hearing, and Procedures for Final Decision

All person, including applicants, who believe any condition of the 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, 1 Congress Street, Suite 1100 (CMA), Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing for a public hearing to consider the 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 after at least thirty days public notice whenever, the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the 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 hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the 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 request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of 40 C.F.R. §124.74, 48 Fed. Reg. 14279-14280 (April 1, 1983).

XIII. EPA Contact

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

Betsy Davis
US Environmental Protection Agency
1 Congress Street
Suite 1100 (CPE)
Boston, Massachusetts 02114-2023
Telephone: (617) 918-1576

DATE

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

Attachment B
Lowell Regional Water and Wastewater Utility

NPDES 0100633
 Discharge Monitoring Data Summary
 Lowell, Massachusetts

Range between September 2001 and September 2003

Flow, MGD	26.4 - 59.9
Average monthly BOD ₅ , mg/l	12.0 - 17.2
Average monthly TSS, mg/l	8.3 - 14.8
pH, S.U	6.0 - 7.4
Average monthly fecal coliform, cfu's	1.0 - 20.0
Total residual chlorine, mg/l	0.0 - 0.7

Whole Effluent Toxicity Test

Test Dates	Acute Toxicity	
	LC-50	A-NOEC
2/5/2003	>100.0%	100.0%
5/7/2003	>100.0%	100.0%
8/7/2003	>100.0%	100.0%
11/6/2003	>100.0%	100.0%

