

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND
ONE CONGRESS STREET
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.: MA0100455

NAME AND ADDRESS OF APPLICANT:

Board of Selectmen
Town of South Hadley
116 Main Street
South Hadley, MA 01075

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

South Hadley Wastewater Treatment Plant
and Combined Sewer Overflows (CSOs)
2 James Street
Chicopee, MA 01020

RECEIVING WATER: Connecticut River, BATTERY Brook, and Stoney Brook MA34)

CLASSIFICATION: B (warm water fishery)

DATE OF PUBLIC NOTICE:

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

The above named applicant has requested that the U.S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection reissue its NPDES permit to discharge into the designated receiving water, the Connecticut River (Figure 1). The facility is engaged in the collection and treatment of municipal and industrial wastewater. The existing permit expired on October 10, 2000 and was administratively continued. This permit, after it becomes effective, will expire in 2005, consistent with the Massachusetts Watershed Initiative cycle.

The South Hadley Wastewater Treatment Plant is a 4.2 MGD secondary wastewater treatment plant (Figure 2) serving approximately 16,000 people in South Hadley and an additional 550 people neighboring Granby and 560 people in Chicopee, where the plant is located. In addition, there are three industrial dischargers. All of the flow passes through the Main Street Pumping Station which is equipped with bar racks and two comminutors. The WWTP consists of an aerated grit chamber, three primary clarifiers, four mechanical aeration tanks operating in conventional activated sludge mode with a long sludge retention time (SRT), two secondary clarifiers, and disinfection by chlorine gas. Solids from the primary clarifiers and activated sludge treatment process are thickened with gravity thickeners and dewatered with a belt press and transported off-site for incineration.

This discharge is via outfall 001 to the Connecticut River. In addition, there are four combined sewer overflows (CSOs) to BATTERY Brook and Stony Brook.

II. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters based on recent monitoring data is shown in **Fact Sheet Table 1**.

The plant successfully adjusted its process control in July 2000 by changing from two to four aeration tanks and increasing the residence time of the activated sludge. The facility has met the permitted parameters except for one exceedance each of maximum daily BOD and TSS in the last three years.

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

The Clean Water Act (CWA or the Act) prohibits the discharge of pollutants to waters of the United States without an NPDES permit unless such a discharge is otherwise authorized by the Act. An NPDES permit is used to implement technology based and water quality based effluent limitations as well as other requirements including monitoring and reporting. This draft NPDES permit was developed in accordance with statutory and regulatory authorities established pursuant to the Act. The regulations governing the NPDES program are found in 40 CFR Parts 122, 124, and 125.

Waterbody Classification and Usage

The Connecticut River is classified as a Class B waterbody by the Massachusetts Surface Water Quality Standards [314 CMR 4.05(3)(b)]. Class B waters are designated as habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. Where designated, they 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. These waters shall have consistently good aesthetic value.

Municipal Wastewater Treatment Facility [also referred to as “Publicly Owned Treatment Works” (POTW Discharges)] Effluent Limits Regulatory Basis

EPA is required to consider technology and water quality requirements when developing permit effluent limits. Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 402 and 301(b) of the Clean Water Act (CWA) (see 40 CFR 125 Subpart A). EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve federal or state water quality standards.

Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limits based on water quality standards. The Massachusetts Surface Water Quality Standards (314 CMR 4.00) include 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 a site-specific criteria is established. The state will limit or prohibit discharge of pollutants to surface waters to assure that water quality of the receiving waters are protected and maintained, or attained.

The permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) that is or may be discharged at a level that caused, or has reasonable potential to cause, or contributes to an excursion above any water quality criterion [40CFR §122.44(d)(1)]. An excursion occurs if the projected or actual instream concentrations exceed the applicable criterion. In determining reasonable potential, EPA considers existing controls on point and non-point sources of pollution, variability of the pollutant in the effluent, sensitivity of the species to toxicity and where appropriate, the dilution of the effluent in the receiving water.

River Flow and Dilution Calculation

The 7Q10, or the 7-day mean stream low flow with 10-year recurrence interval, used to calculate the effluent limits in the draft permit is 1770 cfs (1144 MGD), as listed in Appendix C of the Connecticut River Basin 1998 Water Quality Assessment Report.¹ The updated USGS data for gage 01172003 below the Holyoke Dam at Holyoke² was not used to calculate the dilution factor because the 7Q10 estimates were based on only 11 data points during the period from 1985 to 1996. The dilution ratio for the South Hadley Wastewater Treatment Plant on the Connecticut River is 273:1. See **Fact Sheet Table 2** for the dilution calculations.

Conventional Pollutants and Non-Conventional Pollutants

The design flow of the plant is 4.2 MGD. The flow limit will be reported as an annual average flow, using monthly average flows from the previous eleven months. During the period from January 1998 to December 2000, the monthly average plant flow was 2.9 MGD. The facilities planning threshold in Part I.A.1.f is based on monthly average plant flows.

The flow is measured at the Parshall flume before the chlorine contact chamber. All water quality samples, except fecal coliform and total residual chlorine, are taken before chlorination in the channel before the Parshall flume. The fecal coliform and TRC samples are taken after the discharge passes over the weir in the channelway at the exit of the chlorine contact chamber.

The draft permit includes proposed average monthly percent removal BOD and TSS limitations which are based on the secondary treatment requirements in 40 CFR 133.102(a); 40 CFR 133.102(b); and 40 CFR 122.45 (f). The draft permit includes average monthly and average weekly mass limitations and maximum daily reporting requirements based on current state water quality certification requirements. The frequency of monitoring for BOD and TSS remains at 2/Week.

The pH limits 6.0 to 8.3 S.U. have been retained from the previous permit. The limits reflect the requirements found in 40 CFR 133.102(c) and will result in instream attainment of the state water quality standards of 6.5 to 8.3 S.U. for Class B waters [314 CMR 4.05(3)(b)].

The fecal coliform limits are based on state water quality standards for Class B waters [314 CMR 4.05(b)]. These limits are seasonal, and the season has been extended from April 1 to October 31. The draft permit includes a requirement that the fecal coliform samples should be taken at the same time as the daily total chlorine residual sample is collected.

Settleable solids monitoring requirements have been removed from the draft permit, as these are no longer state certification requirements.

Copper

EPA is required to limit any pollutant that is or may be discharged at a level that caused, or has reasonable potential to cause, or contributes to an excursion above any water quality criterion. Copper may be toxic to aquatic life at low concentrations, so possible effluent limitations were compared to past monitoring data to determine if there is a reasonable potential for to cause or contribute to violate water quality (**Fact Sheet Table 2**). The water quality criteria for many metals are hardness dependent, and the calculations are based on an instream hardness of 40 mg/l. The maximum daily limit for copper based on the acute water quality criteria would be 1.6 mg/l and the average monthly limit, based on the chronic criteria, would be 1.2 mg/l.

The South Hadley Water District has been raising the pH of the water supply for corrosion control. During the last three years, the WWTP effluent concentration ranged from 0.017 to

0.042 mg/l in toxicity test monitoring, well below toxic levels, so effluent limitations are not required.

Whole Effluent Toxicity Testing

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)], include the following narrative statements and require 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. Where the State determines that a specific pollutant not otherwise listed in 314 CMR 4.00 could reasonably be expected to adversely affect 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 domestic sources contribute toxic constituents to POTWs above those which may be contributed from industrial users. These pollutants include metals, chlorinated solvents, aromatic hydrocarbons and other constituents.

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 analysis; (2) bioavailability of pollutants after discharge is measured by toxicity testing including any synergistic effect of pollutants; and (3) pollutants for which there are inadequate analytical methods or criteria can be addressed. Therefore, toxicity testing is being used in connection with pollutant-specific control procedures to control the discharge of toxic pollutants.

In order to evaluate the toxicity of the WPCF discharge, acute toxicity tests are required using the daphnid, Ceriodaphnia dubia on a semi-annual basis. The months that toxicity tests are to be conducted has been changed to June and September to be consistent with other facilities in the Connecticut River watershed and the Massachusetts Watershed Initiative. See Permit Attachment A, Toxicity Test Procedure and Protocol, for a description of the testing requirements.

Chlorine

Disinfection is by gaseous chlorine. As part of the chlorine inventory management plan, the WWTP was upgraded in May 2001 with a stand-by hypochlorite feed system. Two 55-gallon drums of 12-15% sodium hypochlorite will be kept on site at all times as backup to the chlorine

gas system. Both of these systems are flow-paced at the Parshall flume with signals provided to the chlorinator.

Chlorine and chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The effluent limit for daily maximum and monthly average Total Residual Chlorine (TRC) are based on the acute and chronic values defined in *EPA Quality Criteria for Water 1986 (EPA 440/5-86-001)* and *National Recommended Water Quality Criteria*, published in the Federal Register on December 10, 1998 (63 FR 68354), as adapted into the Massachusetts Surface Water Quality Standards (314 CMR 4.00). The criteria states that the average total residual chlorine in the receiving water should not exceed 11 ug/l for chronic effects, and the maximum daily (TRC) concentration in the receiving water should not exceed 19 ug/l to protect aquatic life from acute toxicity.

Total residual chlorine effluent limits are based on the TRC criteria, the dilution factor based on 7Q10, and the WWTP design flow. See **Fact Sheet Table 2** for the total residual chlorine calculation. However, the limits have been set lower to be consistent with the *Massachusetts Implementation for the Control of Toxic Pollutants in Surface Waters*.³ This policy states that receiving waters shall be protected from unnecessary discharges of excess chlorine. In segments with dilution factors greater than 100, the maximum effluent concentration of chlorine shall not exceed 1.0 mg/l TRC.

Phosphorus

State water quality standards require any existing point source discharge containing nutrients in concentrations which encourage eutrophication or growth of weeds or algae shall be provided with the highest and best practical treatment to remove such nutrients. Phosphorus interferes with water uses and reduces instream dissolved oxygen. The permit now includes a quarterly reporting requirement for the phosphorus concentration in the discharge. If a Total Maximum Daily Load (TMDL) or other data show that the WWTP is contributing to eutrophication of the river, EPA and DEP may exercise the reopener clause in Part II.A.4 of this permit and revise the limit.

If the permittee undertakes wastewater facilities planning during the life of the permit, it should consider the development of a long- range phosphorus control and reduction strategy through comprehensive wastewater facility planning leading to a reduction in effluent phosphorus loadings.

Nitrogen

It has been determined that excessive nitrogen loadings are causing significant water quality problems in Long Island Sound, including dissolved oxygen. The State of Connecticut has begun to impose nitrogen limitations on Connecticut discharges to Long Island Sound and its tributaries. EPA believes there is a need to determine the loadings of nitrogen from sources in Massachusetts which are tributary to Long Island Sound, and to help determine what limits, if any should be imposed on discharges in Massachusetts. Therefore, based on Section 308 of the Clean Water Act, EPA has included a quarterly requirement for total nitrogen as Kjeldahl nitrogen, nitrate and nitrite in the draft permit. 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 Long Island Sound. The monitoring data will provide a more sound decision making basis in any future decisions relating to nitrogen loadings to the Sound. This monitoring requirement may be removed by the agencies after sufficient data collection.

Monitoring

The effluent monitoring requirements have been specified in accordance with 40 CFR 122.41(j), 122.44(i), and 122.48 to yield data representative of the discharge.

Anti-backsliding

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. The anti-backsliding provisions found in 40 CFR 122.44(l) prohibit the relaxation of permit limits, standards, and conditions. Therefore, the technology-based effluent limits in a reissued permit must be at least as stringent as those in the previous permit. Relaxation is only allowed when cause for permit modification is met (see 40 CFR 122.62). Effluent limits based on BPJ, water quality, and state certification requirements must also meet the anti-backsliding provisions found under Section 402(o) and 303(d)(4) of the CWA, as described in 40 CFR 122.44(l).

Effluent limits based on water quality and state certification requirements must also meet the anti-backsliding provisions found under Section 402(o) and 303(d)(4) of the CWA, as described in 40 CFR 122.44(l). Anti-backsliding does not apply to the discontinuance of settleable solids monitoring as there are no limits for this parameter in the current permit.

V. 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’ 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 effecting human health or the environment. EPA and MADEP maintain that these programs are an integral component of ensuring permit compliance under both of these provisions.

Chlorination System Report

EPA and MADEP are establishing a requirement for all POTW’s using chlorine for disinfection that within 12 months of the effective date of the permit, the POTW will submit a report documenting the effectiveness of the chlorination system. The report will specifically address how flow variability and chlorine demand variability affect compliance with the TRC and fecal coliform limits at all times. This is based on the concern that relatively infrequent grab samples are not sufficient to demonstrate compliance with TRC and fecal coliform limits at all times. Rather than significantly increase effluent monitoring for these pollutants, the permittee will evaluate all aspects of its chlorination system to determine if improvements are necessary to ensure compliance at all times.

Infiltration/Inflow Requirements

The draft permit includes requirements for the permittee 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 Town is working on removing I/I from the Judd Brook Interceptor and the Granby Road sewer. Flow monitoring conducted in March 2001 showed that 50 % of the capacity of the interceptor was used up by infiltration.

MADEP has stated that the 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).

VI. Pretreatment Requirements

The facility accepts industrial wastewater from three significant industrial users (SIUs) and one categorical industrial user (CIU). Rexam Image Products is a manufacturer of coated paper film products, and generates 2,800 gpd of process wastewater. General Cable Industries manufactures bare copper and tin coated wire and cable and discharges 400 gallons/week. Precision Lithographic Corporation discharges 88,000 gpd from the manufacture of aluminum lithographic printing plates. Holyoke Sanitary Landfill contributes 8,000 gpd from the landfill leachate collection system. Mount Holyoke College's groundwater remediation facility generates 160 gpd.

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 16, 1985 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 an 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.

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, **if applicable**, 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.

VII. Combined Sewer Overflows

General

Combined Sewer Overflows (CSOs) are overflows from a combined sewer system that are discharges into a receiving water without going to the head-works of publicly owned treatment works (POTW). 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 flows from CSOs are illegal. They must be reported immediately to EPA and eliminated as soon 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 mandated compliance with Federal and State Water quality Standards by July 1, 1977. Technology based permits must be established for Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) and Best Available Technology Economically Achievable (BAT) based on Best Professional Judgement (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 CSOs.

During wet weather, the discharges must not cause violations of Federal and State Water Quality Standards. Dry weather discharges must be reported immediately to EPA and the State. Wet weather discharges must be monitored and reported as specified in the permit.

Nine Minimum Controls

Consistent with EPA National guidance, the permittee must comply with the following technology based controls as minimum BCT/BAT controls using BPJ: (1) proper operation and maintenance of the sewer system and outfalls; (2) maximum use of the collections systems for storage; (3) review of 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.

The draft permit requires the permittee to continue to implement its NMC program, and also contains minimum implementation levels for the NMCs.

Re-opener/Additional CSO Control Measures: This permit may be modified or reissued upon the completion of the long-term CSO control plan (LTCP). Such modification may include performance standards for selected controls, a post construction water quality assessment program, monitoring for compliance with water quality standards, and a re-opener clause to be used in the event that 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 Federal and State water quality standards.

Current CSO Status

The Town of South Hadley's NMC and LTCP consists of sewer separation in the South Hadley Falls area (includes both the "Falls" and "East Side" sewer separation) and inflow reduction in the remaining areas of town, as stipulated in EPA Administrative Order #97-13. The Falls area separation projects were completed and six CSOs were eliminated by early 2001, but the I/I work in other areas remains to be completed.

In August 2001, DEP issued Administrative Consent Order ACOP-WE-01-1002 which included requirements performing TV inspection of the sewer main in the Village Commons area and the Judd Brook interceptor. The Town will include the results these inspections and recommended

repairs to sewer main and manholes in the Facilities Plan which must be completed by December 30, 2001.

The revised facility plan will address the remaining CSOs. CSO #12 (Gaylord Street) was closed in 1999. Flow monitoring in March 2001 showed that 50 % of the flow capacity of the Interceptor was used up during nighttime by infiltration (1.7 MGD of 3.5 MGD capacity). The Town has requested to re-activate CSO #12, and allow CSO #4 (Main Street) to remain active until excessive I/I is removed from the interceptor. Recent block testing shows that CSO #14 (Mt. Holyoke College) can possibly be closed now because catch basins have been removed. CSO #10 (Stoney Brook Pump Station) could be eliminated when the capacity of the pump station is increased as part of the Facilities Plan recommendation.

VIII. Sludge Information and Requirements

The South Hadley WWTP generates 653 dry metric tons of sludge each year. The sludge is thickened in gravity thickeners and dewatered in a belt press to an average of 20 to 25 % twice a week using polymer as a coagulant and sodium chlorite (NaClO₂) and potassium permanganate (KMnO₄) for odor control. The plant also has a standby vacuum filter. The sludge cake is trucked to NETCO in Waterbury, CT for incineration. Since changing the plant to a long sludge retention time (SRT), the WAS has been reduced from 275 to 245 wet tons each month.

Section 405(d) of the CWA requires that EPA develop technical regulations regarding the use and disposal of sewage sludge. These regulations are found at 40 CFR Part 503 and apply to any facility engaged in the treatment of domestic sewage. The CWA further requires that these conditions be implemented through permits. The sludge conditions in the draft permit are intended to implement these regulations.

The draft permit has been conditioned to ensure that sewage sludge use and disposal practices meet the CWA Section 405(d) Technical Standards. In addition, EPA New England has included with the draft permit a 72-page *Sludge Compliance Guidance* document for use by the permittee in determining their appropriate sludge conditions for their chosen method of sludge disposal.

The permittee is also required to submit to EPA an annual report containing the information specified in the *Sludge Compliance Guidance* document for the permittee's chosen method of sludge disposal.

IX. Anti-degradation Review

The Massachusetts Anti-degradation Policy is found at 314 CMR 4.04. All existing uses of the Connecticut River, Buttery Brook, and Stony Brook must be protected. This draft permit is being reissued with allowable discharge limits as or more stringent than the current permit with the exception of the limitation for settleable solids. There is no change in the outfall location. The Commonwealth of Massachusetts has indicated that there will be no lowering of water

quality and no loss of existing water uses and that no additional anti-degradation review is warranted.

X. State Certification Requirements

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

XI. NMF 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 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" 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). The U.S. Department of Commerce on March 3, 1999 approved EFH designations for New England.

EPA will contact NMFS to determine if a formal EFH consultation may be required to determine if the proposed discharge impacts EFH.

X. Public Comment Period 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 **Doug Corb, U.S. EPA, 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023** and **Kathleen Keohane, Department of Environmental Protection, Division of Watershed Management, 627 Main Street, 2nd Floor, Worcester, MA 01608**. 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.

II. EPA and MA DEP Contacts

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:

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and

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/Signed/

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

Tables 1 and 2 attached

Table 1
Effluent Data 1998 - 2000
MA0100455
South Hadley Wastewater Treatment Plant

<u>Parameter</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Flow (MGD)	2.9 (1.7 - 4.4)	---
BOD ₅ (mg/l)	10.9 (5.0 - 19.4)	21.5 (8.0 - 66.3)
TSS (mg/l)	10.4 (4.5 - 23)	20.4 (6.9 - 82)
BOD % Removal	91.3	---
TSS % Removal	95.2	---
pH (std units)	6.0 - 7.7	---
Fecal Coliform (cfu/100 ml)	7.2 (3 - 52)	16 (3 - 128)
Total Residual Chlorine - average weekly (mg/l)	0.56 (0.5 - 0.6)	0.78 (0.5 - 0.8)
Copper (mg/l)	0.32 (0.17 - 0.042)	---
LC ₅₀ (%) <u>Ceriodaphnia</u>	>100	---

NOTE: Data from NPDES application data, toxicity test reports, and Discharge Monitoring Reports (DMRs) which facility submits monthly; except where noted, values are averages of either the daily maximum or monthly average data submitted from January 1998 to December 2000; the frequency of monitoring varies, as some parameters are measured once per day (e.g. pH, TRC) and BOD₅ and TSS are measured 2 times per week and reported as the average of those measurements and the highest daily maximum value during the month; values in parentheses represent the range of data reported.

Table 2
NPDES Permit No. 0100455
South Hadley Wastewater Treatment Plant

Dilution^{1,2}

Receiving Water: Connecticut River

WWTP Flow = 4.2 mgd = 6.5 cfs

7Q10 at WWTP = 1144 MGD = 1770 cfs

Dilution Factor = (7Q10) + (WWTP design flow) / (WWTP design flow) = 6.5 cfs + 1770 cfs / 6.5 cfs = 273

BOD₅ & TSS Mass Loading

Average monthly limits = (concentration)(design flow)(8.34) = lbs/day
BOD₅ & TSS = (30 mg/l) (4.2 MGD) (8.34) = 1051 lbs/day

Average weekly limits = (concentration)(design flow)(8.34) = lbs/day
BOD₅ & TSS = (45 mg/l) (4.2 MGD) (8.34) = 1576 lbs/day

Total Residual Chlorine (TRC)

National Recommended Water Quality Criteria, 63 FR 68354, December 10, 1998:

Chronic criteria (CCC) = 11 ug/l

Acute criteria (CMC) = 19 ug/l

Average monthly limit = (11 ug/l)(273) = 3003 ug/l = 3.0 mg/l

Maximum daily limit = (19 ug/l) (273) = 5187 ug/l = 5.2 mg/l

However, the limits are set at 1.0 mg/l average monthly and 1.0 maximum daily, consistent with toxics policy.³

Copper (no reasonable potential)

National Recommended Water Quality Criteria (63 FR 68354, December 10, 1998), based on Interim Final National Toxics Rule (60 FR 22233, May 4, 1995):

Chronic criteria (CCC) based on total recoverable metals at 40 mg/l hardness:

exp [0.8545 (ln 40) - 1.702] = 4.3 ug/l

Average monthly limit = (4.3 ug/l) (273) = 1174 ug/l = 1.2 mg/l

Acute criteria (CMC) based on total recoverable metals at 40 mg/l hardness:

exp [0.9422 (ln 40) - 1.700] = 5.9 ug/l

Maximum daily limit = (5.98 ug/l) (273) = 1610 ug/l = 1.6 mg/l

∴ Based on this proposed limit, no copper limit is required.

Notes:

¹ Massachusetts Department of Environmental Protection, Division of Watershed Management. (Draft) Chicopee River Basin - 1998 Water Quality Assessment Report. Report Number 36-AC-2. DEP/DWM, Worcester, MA.

² USGS Low-Flow Frequency Statistics for Gaging Stations for Water Years 1937-1996, August 1998 disk

³ Massachusetts Department of Environmental Protection. 1990. Implementation Policy for the Control of Toxic Pollutants in Surface Waters.