AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

City of Haverhill
Wastewater Division
40 South Porter Street
Bradford, Massachusetts 01835

is authorized to discharge from the facility located at

Haverhill Wastewater Treatment Facility
40 South Porter Street
Bradford, Massachusetts 01835
and twenty combined sewer overflows (CSOs) listed in Attachment F

to receiving waters named **:** **Merrimack River and Little River**
(Merrimack River Basin - MA84A-05 and MA84A-09)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

The Town of Groveland is a co-permittee for Part 1.E. Unauthorized Discharges, Part 1.F. Operation and Maintenance of the Sewer System, and Alternative Power Source, which include conditions regarding the operation and maintenance of the collection system owned and operated by the Town. The responsible Town authority is:

Groveland Water Department
183 Main Street
Groveland, MA 01834

This permit shall become effective February 1, 2008.

This permit and the authorization to discharge expire at midnight on January 31, 2013.

This permit supersedes the permit issued on June 26, 2003.

This permit consists of 18 Pages in Part I including effluent limitations, monitoring requirements, etc., Attachments A-Sampling Locations, B-Freshwater Acute Toxicity Test Procedure and Protocol, C-Industrial Pretreatment Annual Report, D-Reassessment of TBLLs, E-Nine Minimum Controls Guidance, F-Combined Sewer Overflow List, Sludge Guidance Document, and Part II including General Conditions and Definitions.

Signed this 5th day of December, 2007

/S/ SIGNATURE ON FILE

Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Director, Division of Watershed Management
Bureau of Resource Protection
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

1.A. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number **046,** treated industrial and sanitary wastewater and storm water to the Merrimack River. Such discharges shall be limited and monitored as specified below.

EFFLUENT CHARACTERISTIC	**EFFLUENT LIMITS**			**MONITORING REQUIREMENTS**	
PARAMETER	**AVERAGE MONTHLY**	**AVERAGE WEEKLY**	**MAXIMUM DAILY**	**MEASUREMENT FREQUENCY**	**SAMPLE [3]* TYPE**
FLOW	18.1 MGD[2]	********	Report MGD	CONTINUOUS	RECORDER
BOD_5 [4]	30 mg/l 4529 lb/Day	45 mg/l Report lb/Day	Report mg/l[1] Report lb/Day	5/WEEK	24-HOUR COMPOSITE[5]
TSS [4]	30 mg/l 4529 lb/Day	45 mg/l Report lb/Day	Report mg/l[1] Report lb/Day	5/WEEK	24-HOUR COMPOSITE[5]
pH RANGE[1]	6.5 to 8.5 SU	See Part I.A.1.c		1/DAY	GRAB
TOTAL CHLORINE RESIDUAL (TRC)	0.40 mg/l	********	0.70 mg/l	1/DAY	GRAB
CONTINUOUS CHLORINE ANALYZER	********	********	Report mg/l	CONTINUOUS	RECORDER (SCADA)
FECAL COLIFORM [1, 6]	88 CFU /100 ml	********	260 CFU /100 ml	5/WEEK	GRAB
ENTEROCOCCI BACTERIA[1, 6]	35CFU /100 ml	********	276 CFU /100 ml	1/MONTH	GRAB
WHOLE EFFLUENT TOXICITY SEE FOOTNOTES - 7, 8, and, 9	$LC_{50} \geq 100\%$			4/YEAR	24-HOUR COMPOSITE[5]

***SEE PERMIT ATTACHMENT A FOR SAMPLE LOCATIONS AND ADDITIONAL INSTRUCTIONS**

PART I Continued

1.A. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number **046,** treated industrial and sanitary wastewater and storm water to the Merrimack River. Such discharges shall be limited and monitored as specified below.

EFFLUENT CHARACTERISTIC	**EFFLUENT LIMITS**			**MONITORING REQUIREMENTS**	
PARAMETER	**AVERAGE MONTHLY**	**AVERAGE WEEKLY**	**MAXIMUM DAILY**	**MEASUREMENT FREQUENCY**	**SAMPLE [3]* TYPE**
Total Ammonia Nitrogen, as N	REPORT mg/l	**********	REPORT mg/l	1/MONTH	24-HOUR COMPOSITE[5]
Total Kjeldahl Nitrogen	REPORT mg/l	**********	REPORT mg/l	1/MONTH	24-HOUR COMPOSITE[5]
Total Nitrate	REPORT mg/l	**********	REPORT mg/l	1/MONTH	24-HOUR COMPOSITE[5]
Total Nitrite	REPORT mg/l	**********	REPORT mg/l	1/MONTH	24-HOUR COMPOSITE[5]

***SEE PERMIT ATTACHMENT A FOR SAMPLE LOCATIONS AND ADDITIONAL INSTRUCTIONS**

Footnotes:

1. Required for State Certification.

2. For flow, report maximum and minimum daily rates and total flow for each operating date. The flow limit is an annual average. The annual average flow shall be reported each month as a rolling average and shall be calculated using the monthly average flow from the reporting month and the monthly average flows from the preceding 11 months.

3. **All required effluent samples shall be collected at the point specified in Permit Attachment A.** Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP. All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. All samples shall be 24 hour composites unless specified as a grab sample in 40 CFR §136. The permittee `shall submit the results to EPA of any additional testing done to that required herein if it is conducted in accordance with EPA approved methods, consistent with the provisions of 40 CFR §122.41(l)(4)(ii).

4. Sampling required for influent and effluent.

5. 24-hour composite samples will consist of at least twenty-four (24) grab samples taken during one consecutive 24 hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.

6. The permittee shall achieve the enterococci limits in accordance with the compliance schedule found in Part G of the permit. Enterococci samples shall be taken concurrently with the required fecal coliform samples. The monthly average limit for fecal coliform is expressed as a geometric mean. The units may be expressed as MPN for samples tested using the Most Probable Number method, or CFU when using the Membrane Filtration method.

7. The permittee shall conduct 48 hour static, non-renewal acute toxicity tests four times per year. The permittee shall test the Pimephales promelas (Fathead Minnow) only. Toxicity test samples shall be collected during the second week of the months of January, April, July, and October. The test results shall be submitted by the last day of the month following the completion of the test. The results are due, February 28th, May 31st, August 31st, and November 30th, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment B** of this permit.

Test Dates	**Submit Results By:**	**Test Species**	**Acute Limit LC_{50}**
Second week of: January April July October	February 28th May 3rd August 31st November 30th	Pimephales promelas (Fathead Minnow) See Attachment B	≥ 100%

After submitting **one year** and a **minimum** of four consecutive sets of WET test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.

8. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment B, Section IV., DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in Attachment B, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in Attachment B. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment B.

9. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.

Part I.A.1. (Continued)

b. The discharge shall not cause a violation of the water quality standards of the receiving waters.

c. The pH of the effluent shall not be less than 6.5 nor greater than 8.5 at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.

d. The discharge shall not cause objectionable discoloration of the receiving waters.

e. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.

f. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand during dry weather. Dry weather is defined as any calendar day on which there is less than 0.1 inch of rainfall and no snow melt. The percent removal shall be calculated as a monthly average using the influent and effluent BOD_5 and TSS values collected during dry weather days.

g. If the average annual flow in any calendar year exceeds 80% of the facility's design flow, the permittee shall submit a report to MassDEP by March 31 of the following calendar year describing plans for further flow increases and discuss how the permittee will remain in compliance with the effluent limitations in the permit.

h. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.

B.1. All POTWs must provide adequate notice to the Director of the following:

a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

c. For purposes of this paragraph, adequate notice shall include information on:

(1) the quantity and quality of effluent introduced into the POTW; and

(2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

B.2. Limitations for Industrial Users:

Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
The permittee shall develop and enforce specific effluent limits (local limits) for Industrial

User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within **120 days of the effective date of this permit**, the permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to revise local limits.

As part of this evaluation, the permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns.

In preparing this evaluation, the permittee shall complete the attached form (Attachment D) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report.

Should the evaluation reveal the need to revise local limits, the permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA Local Limits Development Guidance (July 2004).

B.3. INDUSTRIAL PRETREATMENT PROGRAM

a. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR 403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):

    1. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.

    2. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.

3. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.

4. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.

b. The permittee shall provide EPA (and States) with an annual report describing the permittee's pretreatment program activities for the twelve month period ending 60 days prior to the due date in accordance with 403.12(i). The annual report shall be consistent with the format described in Attachment C of this permit and shall be submitted no later than March 1 of each year.

c. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR 403.18(c).

d. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR 405 et. seq.

e. The permittee must modify its pretreatment program to confirm to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The permittee must provide EPA, in writing, within 120 days of the permits effective date, proposed changes, if applicable, to the permittee's pretreatment program, deemed necessary to assure conformity with current federal regulations. The permittee will inplement these proposed changes pending EPA Region 1's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described above.

f. On October 14, 2005, EPA published in the Federal Register final changes to the General Pretreatment Regulations. The final "Pretreatment Streamlining Rule" is designed to reduce the burden to industrial users and provide regulatory flexibility in technical and administrative requirements of its industrial users and POTWs. **Within 120 days of the effective date of this permit, the permittee must submit to EPA all required modifications of the Streamlining Rule in order to be consistent with the provisions for the newly promulgated Rule.** To the extent that the POTW legal authority is not consistent with the required changes, they must be revised and submitted to EPA for review.

C. TOXICS CONTROL

1. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.

2. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

3. EPA or MassDEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

D. COMBINED SEWER OVERFLOWS (CSOs)

1. EFFLUENT LIMITATIONS

a. During wet weather, the permittee is authorized to discharge storm water/wastewater from combined sewer outfalls listed in Attachment F, subject to the following effluent limitations.

i. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment (BPJ) determination that BPT, BCT, and BAT for combined sewer overflow (CSO) control include the implementation of Nine Minimum Controls (NMC) specified below and detailed further in Part I.D.2. “Nine Minimum Controls, Minimum Implementation Levels” of this permit:

1. Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows.

2. Maximum use of the collection system for storage.

3. Review and modification of the pretreatment program to assure CSO impacts are minimized.

4. Maximization of flow to the POTW for treatment.
5. Prohibition of dry weather overflows from CSOs.

6. Control of solid and floatable materials in CSO.

7. Pollution prevention programs that focus on contaminant reduction activities.

8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.

9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

Implementation of these controls is required by the effective date of the permit. Documentation of the implementation of these controls has been submitted and is currently under review by EPA and the State. EPA and the State consider that approvable documentation must include the minimum requirements set forth in Part I.D.2 of this Permit and additional activities the permittee can reasonably undertake. See Attachment E.

ii. The discharges shall not cause **or contribute to** violations of Federal or State Water Quality Standards.

2. Nine Minimum Controls, Minimum Implementation Levels

a. The Permittee must implement the nine minimum controls in accordance with the documentation provided to EPA and MassDEP or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the following controls plus other controls the Permittee can reasonably implement as set forth in the documentation.

b. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected, at a minimum of once per month, to insure that they are in good working condition and adjusted to minimize combined sewer discharges and tidal surcharging (NMC # 1, 2, and 4). The following inspection results shall be recorded: the date and time of the inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The permittee shall maintain all records of inspections for at least three years.

The State and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the permittee.

c. Discharges to the combined collection system of septage, holding tank wastes or other material which may cause a visible oil sheen or containing floatable

material are prohibited during wet weather when CSO discharges may be active (NMC# 3, 6, and 7).

d. Dry weather overflows (DWOs) are prohibited (NMC# 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and the State within 24 hours and provide a written report within 5 days in accordance with the reporting requirements for bypass (Paragraph D.1.e(1) of Part II of this permit).

e. The permittee shall quantify and record all discharges from combined sewer outfalls (NMC# 9). Quantification may be through direct measurement or estimation. When estimating, the permittee shall make reasonable efforts, i.e. gaging, measurements, to verify the validity of the estimation technique. The following information must be recorded for each combined sewer outfall for each discharge event:

- Estimated duration (hours) of discharge;
- Estimated volume (gallons) of discharge; and
- National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24-hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

The permittee shall maintain all records of discharges for at least six years after the effective date of this permit.

The permittee shall implement the CSO monitoring plan which describes the methods the permittee will use to quantify CSO activations and volumes. Activation frequencies and discharge volumes required to be submitted in the annual report (see Section I.D.3) shall thereafter be reported in accordance with methods identified in the monitoring plan.

f. The permittee shall install and maintain identification signs for all combined sewer outfall structures (NMC# 8). The signs must be located at or near the combined sewer outfall structures and easily readable by the public. These signs shall be a minimum of 12 x 18 inches in size, with white lettering against a green background, and shall contain the following information:

CITY OF HAVERHILL
WET WEATHER
SEWAGE DISCHARGE
OUTFALL (discharge serial number)

3. Annual Report

By April 30 of 2008 and by April 30 each year thereafter, the permittee shall submit a report which includes the following information;

a. Activation frequency and discharge volume for each CSO during the previous calendar year. The report shall include this information for each of the CSO discharge outfalls listed on Attachment F.

b. Precipitation during the previous year for each day, including total rainfall (expressed in inches), peak intensity (highest 15 minute sample multiplied by four to convert to inches per hour), and average intensity (the total rainfall for the storm event divided by the duration of the storm, expressed in inches per hour).

c. A certification which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained.

d. A summary of modifications to the approved NMC program which have been evaluated, and a description of those which will be implemented during the upcoming year.

In the first annual report submitted in accordance with this permit, the permittee shall update the public notification plan describing the measures actively being taken to meet NMC #8 (see NMC #8 in Part I.D.1.a.i.8) and an evaluation of further measures to enhance the public notification program, including the following:

i. Outfall signs visible from both water and land.

ii. Signs/Notices at areas where people may be using CSO-impacted waters for recreation such as swimming, boating, fishing, and places where public may gain access to the water (e.g. boat put-in areas). The notice would include information on the health risks posed by CSOs and links for additional information on CSOs and water quality.

iii. Review of the sewer system model to determine the threshold rain events which normally will cause overflows.

iv. Quarterly postings on the permittee's website and links to other relevant web-sites which would give the locations of the CSOs, and associated health risks and estimates of CSO activations and volumes. **The permittee shall update the CSO website within two (2) months of the effective date of the permit.**

v. Annual press release and notification to interested individuals and groups on the progress of the CSO abatement work, also noting contacts for additional information on CSOs and water quality.

vi. Notice to local health agents and other downstream public officials, including drinking water treatment plants (where appropriate), shellfish wardens, harbor masters, and the Massachusetts Division of Marine Fisheries Shellfish Management Program via FAX (617-727-3337) or via telephone (978-282-0308 extension 160) within 24 hours of activation of CSOs. The permittee shall also notify the Massachusetts Division of Marine Fisheries by the same method if the treatment plant discharges effluent without disinfection. When City of Haverhill staff is unavailable to confirm an actual discharge from a CSO during a significant precipitation event, the permittee shall report the probable occurrence of a CSO discharge in the same manner. Subsequently, the occurrence of the CSO discharge event shall be confirmed or dispelled as staff becomes available. The planned notice distribution contact list shall be provided to EPA and MassDEP.

The public notification plan shall include a schedule for implementation of enhanced public notice measures.

E. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge from POTW outfall 046 and from CSO outfalls listed in Attachment F in accordance with terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) or other diversional structures are not authorized by this permit and shall be reported in accordance with Section D.1.e (1) of the General Requirements of this permit (Twenty-four hour reporting).

Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at http://www.mass.gov/dep/water/approvals/surffms.htm#sso].

F. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff: The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Alternate Power Source: In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

3. Infiltration/Inflow Control Plan:

The permittee shall implement a plan to control infiltration and inflow (I/I) to the separate sewer system. The plan shall be kept onsite and shall be made available upon request by EPA or MassDEP. The plan shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to infiltration/inflow.

The plan shall include:

- An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.

- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.

- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.

- An educational public outreach program for all aspects of I/I control, particularly private inflow.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be **submitted to EPA and the MassDEP annually, by April 30th of each year**. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.

- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.

- A map with areas identified for I/I-related investigation/action in the coming year.

- A calculation of the annual average I/I, the maximum month I/I for the reporting year.

- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

G. SCHEDULE OF COMPLIANCE

1. No later than one year from the effective date of the permit, the permittee shall achieve compliance with the monthly average and daily maximum limits for enterococci. During the interim the permittee shall report the monthly average and daily maximum values.

H. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.

2. The permittee shall comply with the more stringent of either the state or federal (40 CFR Part 503), requirements.

3. The requirements and technical standards of 40 CFR Part 503 apply to facilities which perform one or more of the following use or disposal practices.

   a. Land application - the use of sewage sludge to condition or fertilize the soil

   b. Surface disposal - the placement of sewage sludge in a sludge-only landfill

   c. Sewage sludge incineration in a sludge-only incinerator

4. The 40 CFR Part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons, reed beds), or are otherwise excluded under 40 CFR 503.6.

5. The permittee shall use and comply with the attached compliance guidance document to determine appropriate conditions. Appropriate conditions contain the following elements.

   - General requirements
   - Pollutant limitations
   - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
   - Management practices
   - Record keeping
   - Monitoring
   - Reporting

   Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year:

less than 290	1/ year
290 to less than1500	1 /quarter
1500 to less than 15000	6 /year
15000 +	1 /month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.

8. **The permittee shall submit an annual report containing the information specified in the sludge guidance on or before February 19.** Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report by February 19 containing the following information:

   - Name and address of contractor responsible for sludge disposal
   - Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

I. MONITORING AND REPORTING

Reporting

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the month following the effective date of the permit.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection
Northeast Regional Office
Bureau of Resource Protection
205B Lowell Street
Wilmington, MA 01887

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

Industrial Pretreatment Program reports required by section I.B.2 & 3 of this permit must be submitted to the Director at:

Environmental Protection Agency
Att: Justin Pimpare
One Congress Street
Suite 1100 - CMU
Boston, MA 02114

Industrial Pretreatment Program reports required by section I.B.2 & 3 of this permit must be submitted to the State at:

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention- Industrial Wastewater Section
1 Winter Street
Boston, MA 02108

J. STATE PERMIT CONDITIONS

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under Federal and State law, respectively. As such, all the terms and conditions of this Permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap. 21, §43.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.

Permit Attachment A
WTF Outfall 046 Sampling Locations

Parameter	Sample Type	Sample Location
Flow (Influent)	Meter	Parshall Flume
BOD (Influent)	24 Hour Composite	End of force main - Inlet rise
TSS (Influent)	24 Hour Composite	End of force main - Inlet rise
BOD (Effluent)	24 Hour Composite	Outfall Pipe 046 below outfall junction chamber
TSS (Effluent)	24 Hour Composite	Outfall Pipe 046 below outfall junction chamber
pH (Effluent)	Grab	Effluent sample pump, drawing from sample point below outfall junction chamber[1]
TRC (Effluent)[1]	Grab	Below outfall junction chamber[2]
Fecal Coliform (Effluent)[1]	Grab	Below outfall junction chamber
Enterococci Bacteria (Effluent)[1]	Grab	Below outfall junction chamber
Whole Effluent Toxicity (Effluent)	24 Hour Composite	Outfall Pipe 046 below the junction chamber

1) Samples for total residual chlorine, fecal coliform, and enterococci bacteria shall be collected at the same time.

2) Effluent grab samples shall be taken below the junction chamber. **The sample may be held in a dark environment for a period not to exceed 45 minutes in order to simulate the effluent's path through an underground pipe, prior to discharge in the Merrimack River when the treatment plant flows are at or below 18.1 MGD. When plant flows exceed 18.1 MGD, the TRC holding time is reduced to 15 minutes. Report the plant flow when the effluent sample is taken.**

The permittee shall also report the TRC data collected by the continuous TRC analyzer. The permittee will verify the calibration of the continuous effluent total chlorine residual analyzer each day by comparing the results to at least one grab sample. Copies of the continuous recording graphs from the SCADA system (1/week) will be submitted with the monthly DMRs with a record of the date and time each grab sample was collected, as well as a comparison of the grab sample results to the results from the continuous analyzer.

ATTACHMENT C
NPDES PERMIT REQUIREMENT
FOR
INDUSTRIAL PRETREATMENT ANNUAL REPORT

The information described below shall be included in the pretreatment program annual reports:

1. An updated list of all industrial users by category, as set forth in 40 C.F.R. 403.8(f)(2)(i), indicating compliance or noncompliance with the following:
- baseline monitoring reporting requirements for newly promulgated industries
- compliance status reporting requirements for newly promulgated industries
- periodic (semi-annual) monitoring reporting requirements,
- categorical standards, and
- local limits;

2. A summary of compliance and enforcement activities during the preceding year, including the number of:
- significant industrial users inspected by POTW (include inspection dates for each industrial user),
- significant industrial users sampled by POTW (include sampling dates for each industrial user),
- compliance schedules issued (include list of subject users),
- written notices of violations issued (include list of subject users),
- administrative orders issued (include list of subject users),
- criminal or civil suits filed (include list of subject users) and,
- penalties obtained (include list of subject users and penalty amounts);

3. A list of significantly violating industries required to be published in a local newspaper in accordance with 40 C.F.R. 403.8(f)(2)(vii);

4. A narrative description of program effectiveness including present and proposed changes to the program, such as funding, staffing, ordinances, regulations, rules and/or statutory authority;

5. A summary of all pollutant analytical results for influent, effluent, sludge and any toxicity or bioassay data from the wastewater treatment facility. The summary shall include a comparison of influent sampling results versus threshold inhibitory concentrations for Haverhill's Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraph below or any similar sampling program described in this Permit.

   At a minimum, annual sampling and analysis of the influent and effluent of the Haverhill Wastewater Treatment Plant shall be conducted for the following pollutants:

a.) Total Cadmium	f.) Total Nickel
b.) Total Chromium	g.) Total Silver
c.) Total Copper	h.) Total Zinc
d.) Total Lead	i.) Total Cyanide
e.) Total Mercury	.) Total Arsenic

   The sampling program shall consist of one 24-hour flow-proportioned composite and at least one grab sample that is representative of the flows received by the POTW. The composite shall consist of hourly flow-proportioned grab samples taken over a 24-hour period if the sample is collected manually or shall consist of a minimum of 48 samples collected at 30 minute intervals if an automated sampler is used. Cyanide shall be taken as a grab sample during the same period as the composite sample. Sampling and preservation shall be consistent with 40 CFR Part 136.

6. A detailed description of all interference and pass-through that occurred during the past year;

7. A thorough description of all investigations into interference and pass-through during the past year;

8. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies;

9. A description of actions being taken to reduce the incidence of significant violations by significant industrial users; and,

10. The date of the latest adoption of local limits and an indication as to whether or not the Town is under a State or Federal compliance schedule hat includes steps to be taken to revise local limits.

PERMIT ATTACHMENT D
REASSESSMENT OF TECHNICALLY BASED LOCAL LIMITS
(TBLLs)

POTW Name & Address:

_____

NPDES PERMIT # :

_____

Date EPA approved current TBLLs :

_____

Date EPA approved current Sewer Use Ordinance :

_____

ITEM I.

In Column (1) list the conditions that existed when your current TBLLs were calculated. In Column (2), list current conditions or expected conditions at your POTW.

	Column (1) EXISTING TBLLs	Column (2) PRESENT CONDITIONS
POTW Flow (MGD)		
Dilution Ratio or 7Q10 (from NPDES Permit)		
SIU Flow (MGD)		
Safety Factor		N/A
Biosolids Disposal Method(s)		

ITEM II.

EXISTING TBLLs			
POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)	POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)

ITEM III.

Note how your existing TBLLs, listed in Item II., are allocated to your Significant Industrial Users (SIUs), i.e. uniform concentration, contributory flow, mass proportioning, other. Please specify by circling.

ITEM IV.

Has your POTW experienced any upsets, inhibition, interference or pass-through from industrial sources since your existing TBLLs were calculated?

If yes, explain.

_____
_____
_____

Has your POTW violated any of its NPDES permit limits and/or toxicity test requirements?

If yes, explain.

_____

_____

ITEM V.

Using current POTW influent sampling data fill in Column (1). In Column (2), list your Maximum Allowable Industrial Headwork Loading (MAIHL) values used to derive your TBLLs listed in Item II. In addition, please note the Environmental Criteria for which each MAIHL value was established, i.e. water quality, sludge, NPDES etc.				
Pollutant	Column (1) Influent Data Analyses Maximum (lb/day)	 Average (lb/day)	Column (2) MAHL Values (lb/day)	 Criteria
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Other (List)				

ITEM VI.

Using current POTW effluent sampling data, fill in Column (1). In Column (2A) list what the Water Quality Standards (Gold Book Criteria) were at the time your existing TBLLs were developed. List in Column (2B) current Gold Book values multiplied by the dilution ratio used in your new/reissued NPDES permit.

Pollutant	Column (1) Effluent Data Analyses		Columns (2A) (2B) Water Quality Criteria (Gold Book)	
	Maximum (ug/l)	Average (ug/l)	From TBLLs (ug/l)	Today (ug/l)
Arsenic				
*Cadmium				
*Chromium				
*Copper				
Cyanide				
*Lead				
Mercury				
*Nickel				
Silver				
*Zinc				
Other (List)				

*Hardness Dependent (mg/l - CaCO3)

ITEM VII.

In Column (1), identify all pollutants limited in your new/reissued NPDES permit. In Column (2), identify all pollutants that were limited in your old/expired NPDES permit.			
Column (1) NEW PERMIT Pollutants	Limitations (ug/l)	Column (2) OLD PERMIT Pollutants	Limitations (ug/l)

ITEM VIII.

Using current POTW biosolids data, fill in Column (1). In Column (2A), list the biosolids criteria that was used at the time your existing TBLLs were calculated. If your POTW is planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

Column (1) Pollutant Biosolids Data Analyses	Average (mg/kg)	Columns (2A) Biosolids Criteria From TBLLs (mg/kg)	(2B) New (mg/kg)
Arsenic			
Cadmium			
Chromium			
Copper			
Cyanide			
Lead			
Mercury			
Nickel			
Silver			
Zinc			
Molybdenum			
Selenium			
Other (List)			

Attachment E
NINE MINIMUM CONTROLS
DOCUMENTATION AND IMPLEMENTATION GUIDANCE

The following guidance is for communities preparing documentation to demonstrate adequate implementation of the nine minimum technology based control measures for combined sewer overflows. For further information see *Combined Sewer Overflows: Guidance for Nine Minimum Controls (EPA MAY 1995)(EPA 832-B-95-003)*.

EPA has made a Best Professional Judgement (BPJ) determination that adequate implementation of technology based requirements, Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) to control and abate conventional pollutants, and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants, must include implementation of the nine minimum controls.

Documentation Requirements

Documentation should provide sufficient information to demonstrate:

- that alternatives were considered for each of the nine minimum control measures.
- the reasoning for the alternatives that were selected.
- that the selected alternatives have been implemented.
- that the permittee has developed a schedule for actions that have been selected but not yet fully implemented.

Nine Minimum Controls (NMC)

The following is a summary of specific information which must be included in the documentation of each of the NMCs.

1. Proper operation and regular maintenance programs for the sewer system and combined sewer overflow points.

a. An organizational chart showing the staff responsible for operation and maintenance (O&M) of the combined sewer system. Document that organization and staffing levels are adequate.

b. The funding allocated for O&M of the combined sewer system. Document that funding is adequate.

c. A list of facilities and structures that are critical to the performance of the combined sewer system, including all regulators, tide gates, pumping stations, and sections of sewer lines which are prone to sedimentation or obstruction. Include an inspection plan which identifies the locations, frequency, procedures, documentation, and reporting of periodic and emergency inspections and maintenance. Document that these facilities are adequately operated and maintained.

d. A summary of safety training and equipment provided to inspection and maintenance personnel. For instance, workers entering sewers must be trained and equipped for confined space entry. Document that training listed is adequate.

e. A summary of technical training and maintenance equipment provided to inspection and maintenance personnel. Document that training and equipment are adequate to maintain the facilities identified in item 1.c. above.

2. Maximum Use of the Collection System for Storage

a. Collection system inspection: This should focus on the identification of maintenance or design deficiencies that restrict the use of otherwise available system capacity. This evaluation should document that inadequate regulators, piping bottlenecks, and pumping deficiencies have been identified and corrected, or scheduled for correction. Where increased inspection and/or maintenance is proposed, this shall be reflected in the inspection plan required in item 1.c.

b. Tide gate maintenance and repair: Tide gates prevent significant volumes of water from entering the conveyance system, thereby freeing up system storage capacity during wet weather periods. Where appropriate, document that tide gate maintenance and repair procedures are adequate.

c. Adjustment of regulator settings: Adjustment of regulating devices can increase in-system storage of CSO flows and maximize transport to the POTW. Care should be taken to ensure that the regulator adjustment will not result in unacceptable surcharging of the system. Document that regulators have been adjusted to optimum settings. The method by which the community determined the optimum regulator setting (e.g. modeling, trial and error) shall be included in the documentation.

d. Removal of obstructions to flow: Document that accumulations of debris which may cause flow restrictions are identified, and debris is removed routinely. Documentation shall include a summary of the locations where sediment is removed, the number of times each year the sediment is removed and the total quantity of material removed each year.

3. Review and Modification of the Industrial Pretreatment Program to assure CSO impacts are minimized.

a. Review legal authority: Review the community's legal authority (i.e. pretreatment program, sewer use ordinance) to regulate non domestic discharges to its collection system. Identify those activities for which the community has or can obtain legal authority to address CSO induced water quality violations. For example, does the community have legal authority to require non domestic dischargers to store wastewater discharges during precipitation events or can the community require non domestic dischargers to implement runoff controls?

b. Inventory non domestic dischargers: Identify those non domestic discharges that may, through quantity of flow or pollutant concentration or loadings, contribute to CSO induced water quality violations,

c. Assess the significance of identified dischargers to CSO control issues: Assess whether the identified non domestic sources cause or contribute to CSO induced water quality standards by using monitoring, dilution calculations or other reasonable methods.

d. Evaluate and propose feasible modifications: Identify, evaluate, and propose site-specific modifications to the pretreatment program which would address the non domestic dischargers identified as significant. Modifications which shall be considered include;
Volume-related controls: Document that detaining wastewater flows (sanitary, industrial, and/or storm water) within the industrial facility until they can be safely discharged to the POTW for treatment was considered and implemented where reasonable.

Pollutant Load-related controls: Document that reduction of concentrations of pollutants that enter the collection system during storm periods was considered and implemented where reasonable. Methods to be considered for reducing pollutant concentrations from storm water runoff controls include structural and non-structural controls such as covering material storage areas, reducing impervious area, detention structures, and good housekeeping.

4. Maximization of flow to the POTW for treatment

It is recognized that most of the actions recommended for maximization of the collection system for storage will also serve to maximize flow to the POTW. In addition to optimizing those controls to maximize flow to the POTW, the following specific controls should be evaluated and implemented where possible;

a. Use of off-line or unused POTW capacity for storage of wet weather flows.

b. Use of excess primary treatment for treatment of wet weather flows. If the use of excess primary capacity will result in violations of the community's NPDES permit limits, the community shall get approval of the proposed bypass from the permitting authority prior to implementation.

5. Prohibition of CSO discharges during dry weather

a. Document that the community's monitoring and inspections are adequate to detect and correct dry weather overflows(DWOs)in a timely manner.

b. Document that DWOs due to inadequate sewer system capacity have been eliminated. If elimination is scheduled but not yet completed, the documentation shall include the schedule.

c. Document that DWOs due to clogging of pipes and regulators or due to other maintenance problems have been eliminated to the maximum extent practicable. Increased inspection and maintenance of problem areas must be considered as well as modification or replacement of existing structures.

6. Control of Solid and Floatable Material in CSO Discharges

Document that low cost control measures have been implemented which reduce solids and floatables discharged from CSOs to the maximum extent practicable. Alternatives which shall be considered include;

a. baffles in regulators or overflow structures.

b. trash racks in CSO discharge structures.

c. static screens in CSO discharge structures.

d. catch basin modifications.

e. end of pipe nets.

f. outfall booms (on surface of receiving water)

7. Pollution prevention programs that focus on contaminant reduction activities.

a. Prevention: through public education or increased awareness. For example, a water conservation outreach effort could result in less dry weather sanitary flow to the POTW and an increase in the volume of wet weather flows that can be treated at the POTW.

b. Control of disposal: through the use of garbage receptacles, more efficient garbage collection, or again, through public education.

c. Anti-litter campaigns: Campaigns through public outreach and public service announcements can be employed to educate the public about the effects of littering, overfertilizing, pouring used motor oil down catch basins, etc.

d. Illegal dumping: Programs such as law enforcement and public education can be used as controls for illegal dumping of litter, tires, and other materials into water bodies or onto the ground. Free disposal of these products at centrally located municipal dump sites can also reduce the occurrence of illegal dumping.

e. Street cleaning

f. Hazardous waste collection days: Communities are encouraged to schedule one or two days a year where household hazardous wastes can be brought to a common collection area for collection and environmentally safe disposal.

8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.

The objective of this control element is to ensure that the public receives adequate notification of CSO impacts on pertinent water use areas. Of particular concern are beach and recreational areas that are affected by pollutant discharges in CSOs.

Where applicable, the permittee shall provide users of these types of areas with a reasonable opportunity to inform themselves of the existence of potential health risks associated with the use of the water body (bodies). The minimum control level, found in Section C.2.f. of the permit is posting of CSO discharge points.

9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

As stated in the permit,in Section C.2.f. the minmum requirement is quantification and recording at the outfall. If possible, the permittee shall initiate monitoring, measuring and/or inspection activities above and beyond the minimum control levels specified in the permit. The purpose of these additional monitoring and/or inspection events is to better characterize quality of the CSOs and their impacts on all receiving waters. Examples of such events include CSO monitoring or receiving water monitoring for pollutants of particular concern.

NPDES Permit No. MA0101621 - Attachment F

City of Haverhill Combined Sewer Overflows

(Grouped By Subsystem, from Upstream to Downstream)

CSO Locations	Outfall	Number of Discharges 2005	Receiving Water
Upper Siphon System			
BEACH STREET	**025**	**0**	**Merrimack River**
UPPER SIPHON- VARNUM ST.	**024**	**30**	**Merrimack River**
266 RIVER STREET	**023**	**0**	**Merrimack River**
RAILROAD BRIDGE	**022**	**0**	**Merrimack River**
Middle Siphon System			
WINTER AND HALE The Winter and Hale and Winter Street regulators share a 54-inch outfall into the Little River near Lafayette Square.	**021H**	**18**	**Little River**
HIGH STREET DIVERSION The High Street regulator shares the same outfall as the Broadway regulator	**038**	**0**	**Little River**
LOCKE STREET SOUTH	**021E**	**20**	**Little River**
LOCKE STREET NORTH Center Barrel regulator shares this outfall.	**021D**	**17**	**Little River**
MIDDLE SIPHON – ESSEX ST.	**021A**	**39**	**Merrimack River**
Lower Siphon System			
MAIN ST NORTH	**019**	**0**	**Merrimack River**
FIRE STATION	**016**	**0**	**Merrimack River**
LOWER SIPHON- BUTTONWOOD AVE	**013**	**25**	**Merrimack River**
BOARDMAN ST	**010**	**0**	**Merrimack River**
BATES BRIDGE	**001**	**0**	**Merrimack River**
Bradford System			
FRONT STREET	**031**	**11**	**Merrimack River**
BRADFORD AVE	**032**	**28**	**Merrimack River**
SOUTH PROSPECT STREET	**033**	**10**	**Merrimack River**
MIDDLESEX STREET	**034**	**12**	**Merrimack River**
SOUTH MAIN ST	**035**	**20**	**Merrimack River**
FERRY STREET	**036**	**30**	**Merrimack River**