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),

Greater Lawrence Sanitary District (the Permittee)

is authorized to discharge from the facility located at

240 Charles Street
North Andover, Massachusetts 01845
and five combined sewer overflows (CSO)

to receiving waters named

Merrimack River and Spicket River

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

The Massachusetts municipalities of Lawrence, Andover, North Andover, and Methuen, and Salem, New Hampshire, (the Co-permittees) are co-permittees for specific activities required in Part I.D., Unauthorized Discharges, Part I.E., Operation and Maintenance of the Sewer System, and Part I.F., Alternate Power Source. The Massachusetts municipalities of Lawrence and Methuen are co-permittees for specific activities in Part I.G., Combined Sewer Overflows. The responsible Municipal Departments are:

City of Lawrence
Department of Public Works
200 Common Street
Lawrence, MA 01840

Town of Andover
Department of Public Works
397 Lowell Street
Andover, MA 01810

Town of North Andover
Department of Public Works
384 Osgood Street
North Andover, MA 01845

Town of Methuen
41 Pleasant Street, Rm 205
Methuen, MA 01844

and

Town of Salem New Hampshire *
Public Works Department
21 Cross Street
Salem, New Hampshire 03079

This permit shall become effective sixty days from the date of signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on February 26, 1998, and modified on March 17, 1998.

This permit consists of 17 pages in Part I including effluent limitations, monitoring requirements, Attachment A through E, and 35 pages in Part II including General Conditions and Definitions.

Signed this 11 day of August, 2006

Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

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

* This permit is issued jointly by EPA and MADEP to GLSD and the Co-permittees in Massachusetts. The permit is issued to Town of Salem, New Hampshire solely by EPA.
A.1. During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 001, treated effluent to the Merrimack River. Such discharges shall be limited and monitored as specified below.

<table>
<thead>
<tr>
<th>EFFLUENT CHARACTERISTIC</th>
<th>EFFLUENT LIMITS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAMETER</td>
<td>AVERAGE MONTHLY</td>
<td>AVERAGE WEEKLY</td>
</tr>
<tr>
<td>FLOW²</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td>BOD₃</td>
<td>13,010 lbs/day</td>
<td>Report</td>
</tr>
<tr>
<td>TSS</td>
<td>13,010 lbs/day</td>
<td>Report</td>
</tr>
<tr>
<td>pH RANGE¹</td>
<td>6.5 - 8.3 SU</td>
<td>SEE PERMIT PAGE 6 OF 17, PARAGRAPH I.A.1.b.</td>
</tr>
<tr>
<td>TOTAL CHLORINE RESIDUAL⁶,⁷</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td>TOTAL CHLORINE RESIDUAL⁶,⁷</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td>FECAL COLIFORM¹⁰</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td>DISSOLVED OXYGEN (April 1- October 31)</td>
<td>NOT LESS THAN 5.0 mg/l</td>
<td>1/DAY</td>
</tr>
</tbody>
</table>
CONTINUED FROM PREVIOUS PAGE

A.1. During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 001, treated effluent to the Merrimack River. Such discharges shall be limited and monitored as specified below.

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>AVERAGE MONTHLY</th>
<th>AVERAGE WEEKLY</th>
<th>AVERAGE MONTHLY</th>
<th>AVERAGE WEEKLY</th>
<th>MAXIMUM DAILY</th>
<th>MEASUREMENT FREQUENCY</th>
<th>SAMPLE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMMONIA NITROGEN</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>REPORT</td>
<td>1/QUARTER</td>
<td>24-HOUR COMPOSITE^4,5</td>
</tr>
<tr>
<td>TOTAL KJELDAHL NITROGEN</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>REPORT</td>
<td>1/QUARTER</td>
<td>24-HOUR COMPOSITE^4,5</td>
</tr>
<tr>
<td>NITRITE &amp; NITRATE NITROGEN</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>REPORT</td>
<td>1/QUARTER</td>
<td>24-HOUR COMPOSITE^4,5</td>
</tr>
<tr>
<td>TOTAL PHOSPHORUS</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>REPORT</td>
<td>1/MONTH</td>
<td>24-HOUR COMPOSITE^4,5</td>
</tr>
<tr>
<td>WHOLE EFFLUENT TOXICITY</td>
<td>Acute LC₅₀ ≥ 100%</td>
<td>Chronic C-NOEC ≥ Report</td>
<td></td>
<td></td>
<td></td>
<td>4/YEAR</td>
<td>24-HOUR COMPOSITE^4</td>
</tr>
</tbody>
</table>

All sampling shall be representative of the effluent that is discharged through outfall 001 to the Merrimack River. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA.
Footnotes:

1. Required for State Certification.

2. For flow, report maximum and minimum daily rates and total flow for each operating date. Total flow is an annual average limit, which shall be reported as a rolling average. The first value will be calculated using the monthly average flow for the first full month ending after the effective date of the permit and the eleven previous monthly average flows. Each subsequent month's DMR will report the annual average flow that is calculated from that month and the previous 11 months.

3. Effluent parameters that require 24-hour composite samples shall be taken prior to the effluent discharging at the chlorine contact chamber. One year from the effective date of the permit, effluent parameters that require 24-hour composite samples shall be taken at the outfall structure. Effluent parameters that require grab samples shall be taken at the outfall structure.

Any change in sampling location must be reviewed and approved in writing by EPA and MADEP. 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. Samples shall be 24-hour composites unless specified as a grab sample in 40 CFR §136.

4. Sampling required for influent and effluent.

5. A 24-hour composite sample will consist of at least twenty four (24) flow proportional grab samples, which are flow proportional, and taken during one working day. Working day is defined as a twenty-four hour period such as midnight on Monday through midnight on Tuesday the following day.

6. Fecal coliform and total residual chlorine monitoring will be conducted year round. Fecal coliform is a State certification requirement. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 colony forming units (cfu's) per 100 ml, nor shall they exceed 400 cfu's per 100 ml as a daily maximum. Fecal coliform samples shall be taken 5 times per week and conducted concurrently with the TRC sampling described below.

The chlorination system shall include an alarm for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem and, the estimated amount of time that the reduced levels of chlorination occurred.

The permittee has thirty days from the effective date of the permit to have any new equipment fully operational to meet the TRC requirements.

7. The permittee shall collect one TRC grab sample per day for compliance purposes. Any additional grab sample monitoring results shall be included in the compliance report. The results of the grab samples and a comparison to the continuous analyzer reading, including the time of the grab samples, shall be included with the DMRs.
The permittee shall also report the average monthly and maximum daily discharge of TRC using data collected by the continuous TRC analyzer. The permittee shall collect and analyze a minimum of one grab sample per day for calibration purposes. The same daily grab sample can be used for both compliance and calibration. Four continuous recording graphs (1/week) showing weekly data or an equivalent alternative record that provides the same data, shall be submitted with the monthly DMRs.

The permittee shall substitute three TRC grab sample per day, for any day that they are unable to comply with the continuous recording requirement.

The permittee has thirty days from the effective date of the permit to have any new equipment fully operational to meet the TRC requirements.

8. The permittee shall report two of the quarterly samples during high flow events when secondary treatment is bypassed. A high flow event is defined as flow that exceeds 30 MGD.

9. The permittee shall conduct chronic (and modified acute) toxicity tests four times per year. The chronic test may be used to calculate the acute LC_{50} at the 48 hour exposure interval. The permittee shall test the daphnid, Ceriodaphnia dubia, only. Toxicity test samples shall be collected during the second week in 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 28, May 31, August 31, and November 30, respectively. The tests must be performed in accordance with test procedures and protocols specified in Attachment A of this permit.

<table>
<thead>
<tr>
<th>Test Dates Second Week in</th>
<th>Submit Results By:</th>
<th>Test Species</th>
<th>Acute Limit LC_{50}</th>
<th>Chronic Limit C-NOEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>February 28th</td>
<td>Ceriodaphnia dubia (daphnid)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>May 31st</td>
<td>≥ 100%</td>
<td>Report</td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>August 31st</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>November 30th</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. 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.

11. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect.
12. 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 A 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 A, 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 an 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 A. 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 A.

Part I.A.1. (Continued)

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

   b. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 at any time.

   c. The discharge shall not cause objectionable discoloration, odor or turbidity of the receiving waters.

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

   e. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control. A reasonable margin of safety shall be maintained in chlorine use to ensure continuous effective disinfection.

   f. The results of sampling for any parameter above its required frequency must also be reported.

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

   a. Any new introduction of pollutants into the 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 the 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.

3. Prohibitions Concerning Interference and Pass Through:

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.

4. Toxics Control

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

b. 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.

5. Numerical Effluent Limitations for Toxicants

EPA or MA DEP 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.

B. LIMITATIONS FOR INDUSTRIAL USERS:

1. 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.

2. 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 and 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 on whether or not its currently approved local limits need to be revised. 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 and submit the attached form (Attachment B) to the pretreatment coordinator along with a 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 limit revisions in accordance with EPA Guidance Manual for the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (December, 1987).

C. INDUSTRIAL PRETREATMENT PROGRAM

1. 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):

   a. 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.

   b. 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.

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

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

2. The permittee shall provide the EPA and MA DEP 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 September 1 of each year.

3. 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).
3. Infiltration/Inflow Control Plan:

Develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer systems. The plan shall be submitted to EPA, MA DEP and, GLSD within six months of the effective date of this permit (see page 1 of this permit for the effective date) and shall describe the co-permittees' program for preventing I/I related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and bypasses due to excessive I/I. In addition, the plan shall also prioritize the I/I removal program in areas tributary to combined sewer areas so that the frequency, duration and volume of discharges from combined sewer overflows is minimized or reduced during the effective period of this permit.

The plan shall include:

- An ongoing program to identify and remove sources of I/I. 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 I/I 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 MA DEP annually, by the anniversary date of the effective date of this permit. 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 I/I 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 monthly I/I for the reporting year.
- A report of any I/I related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Section 1.D., Unauthorized Discharges, section of this permit.
A report documenting all new extensions/connections, including the location of the extensions/connections and the quantity of wastewater flow added to the system. The location of work completed on I/I removal, the nature of the work and, an estimate of the amount of I/I removed from the system shall also be documented. The report shall include a summary of the net effect of new extensions/connections and I/I removed on the frequency, duration and volume of discharges from combined sewer overflows.

F.

ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the permittee and co-permittees shall continue to provide an alternative power source which to sufficiently operate the Publicly Owned Treatment Works as defined at 40 CFR §403.3.

G.

COMBINED SEWER OVERFLOWS (CSOs)

1. Effluent Limitations

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

a. 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.G.2. “Nine Minimum Controls, Minimum Implementation Levels” of this permit:

(1) Proper operation and regular maintenance programs for the sewer system and 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.G.2 of this Permit and additional activities the permittee can reasonably undertake.

b. 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 MADEP 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.

The Cities of Lawrence and Methuen must implement NMCs #1, 2 and, 7. NMCs # 1, 2 and, 7 pertain to operation and maintenance of their separate collection systems and runoff to their collection systems.

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 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
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.

Annually no later than March 31st, the permittee shall submit a certification to the State and EPA which states that all discharges from combined sewer overflow outfalls were recorded and records maintained for the previous calendar year.

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 be easily readable by the public. These signs shall be in English. In areas where the primary language is not English, additional signs shall be located at or near the CSO structures in languages that notify the Community of the CSO. 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:

GREATER LAWRENCE SANITARY DISTRICT
WET WEATHER
SEWAGE DISCHARGE
OUTFALL (discharge serial number)

3. Annual CSO Report from Permittee

By April 30, 2006 and April 30th each year thereafter that the permit is in effect, 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 authorized CSO discharges listed on Attachment E.
b. Precipitation during the previous year for each day, including total rainfall, peak intensity, and average intensity.

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 submit a public notification plan to describe the measures actively being taken to meet NMC #8 (see NMC #8 in Part I.G.a.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 or fishing. The notice would include information on the health risks posed by CSOs and links for additional information on CSOs and water quality.

iii. Evaluate the infield instruments, including the interceptor levels and river level to determine threshold events which will cause overflows.

iv. Quarterly postings on the permittee's website which would give the locations of the CSOs, and associated health risks and estimates of CSO activations and volumes.

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, and harbor masters, and the Massachusetts Department of Environmental Protection within 24 hours of activation of CSOs. The public notification plan shall include a schedule for implementation of enhanced public notice measures.

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. See Sludge Guidance.

5. The permittee shall use and comply with the attached sludge 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 than 1500: 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 guidance by 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.
I. MONITORING AND REPORTING

1. Reporting

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

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
1 Winter Street
Boston, MA 02108

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 Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

Signed and dated Industrial Pretreatment reports and Industrial User reports revising local limits required by this permit shall also be submitted to the State at:

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

1. Reporting

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

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
1 Winter Street
Boston, MA 02108

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Bureau of Waste Prevention - Industrial Waste 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 (MA DEP) for the Greater Lawrence Sanitary District, and the co-permittees in Massachusetts, 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 MA DEP 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.
I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable chronic (and modified acute) toxicity tests on three samples collected during the test period. The following tests shall be performed in accordance with the appropriate test protocols described below:

- Daphnid (Ceriodaphnia dubia) Survival and Reproduction Test.

Chronic and acute toxicity data shall be reported as outlined in Section VIII. The chronic fathead minnow and daphnid tests can be used to calculate an LC50 at the end of 48 hours of exposure when both an acute (LC50) and a chronic (C-NOEC) test is specified in the permit.

II. METHODS

Methods to follow are those recommended by EPA in:


Any exceptions are stated herein.

III. SAMPLE COLLECTION

For each sampling event, three discharge samples shall be collected. Fresh samples are necessary for Days 1, 3, and 5 (see Section V. for holding times). The initial sample is used to start the test on Day 1, and for test solution renewal on Day 2. The second sample is collected for use at the start of Day 3, and for renewal on Day 4. The third sample is used for renewal on Days 5, 6, and 7 (or until termination for the Ceriodaphnia dubia test). The initial (Day 1) sample will be analyzed chemically (see Section VI). Day 3 and 5 samples will be held until test completion. If either the Day 3 or 5 renewal sample is of sufficient potency to cause lethality to 50 percent or more test organisms in any of the dilutions for either species, then a chemical analysis shall be performed on the appropriate sample(s) as well.

Aliquots shall be split from the samples, containerized and preserved (as per 40 CFR Part 136) for chemical and physical analyses. The remaining samples shall be measured for total residual chlorine and dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

(December 1995)
Standard Methods for the Examination of Water and Wastewater also describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine. A thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) should also be run.

All samples held overnight shall be refrigerated at 4°C.

IV. DILUTION WATER

Grab samples of dilution water used for chronic toxicity testing shall be collected from the receiving water at a point upstream of the discharge free from toxicity or other sources of contamination. Avoid collecting near areas of obvious road or agricultural runoff, storm sewers or other point source discharges. An additional control (0% effluent) of a standard laboratory water of known quality shall also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids similar to that of the receiving water may be substituted AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S). Written requests for use of an alternate dilution water should be mailed with supporting documentation to the following address:

Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency-New England
JFK Federal Building (CAA)
Boston, MA 02203

It may prove beneficial to have the dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol. See Section 7 of EPA/600/4-89/001 for further information.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA New England requires that fathead minnow tests be performed using four (not three) replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from only three replicates. Also, if a reference toxicant test was being performed concurrently with an effluent or receiving water test and fails, both tests must be repeated.

The following tables summarize the accepted daphnid and fathead minnow toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND RECOMMENDED EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA, SURVIVAL AND REPRODUCTION TEST

(December 1995)
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Test type:</td>
<td>Static, renewal</td>
<td></td>
</tr>
<tr>
<td>2. Temperature (°C):</td>
<td>25 ± 1°C</td>
<td></td>
</tr>
<tr>
<td>3. Light quality:</td>
<td>Ambient</td>
<td></td>
</tr>
<tr>
<td></td>
<td>laboratory illumination</td>
<td></td>
</tr>
<tr>
<td>4. Photoperiod:</td>
<td>16 hr. light, 8 hr. dark</td>
<td></td>
</tr>
<tr>
<td>5. Test chamber size:</td>
<td>30 mL</td>
<td></td>
</tr>
<tr>
<td>6. Test solution volume:</td>
<td>15 mL</td>
<td></td>
</tr>
<tr>
<td>7. Renewal of test solutions:</td>
<td>Daily using most recently collected sample</td>
<td></td>
</tr>
<tr>
<td>8. Age of test organisms:</td>
<td>Less than 24 hr.; and all released within an 8 hr. period of each other.</td>
<td></td>
</tr>
<tr>
<td>9. Number of neonates per test chamber:</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>10. Number of replicate test chambers per treatment:</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>11. Number of neonates per test concentration:</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>12. Feeding regime:</td>
<td>Feed 0.1 ml each of YCT and concentrated algal suspension per exposure chamber daily.</td>
<td></td>
</tr>
<tr>
<td>13. Aeration:</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>14. Dilution water:</td>
<td>Receiving water, other surface water, synthetic soft water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q® or equivalent deionized water and reagent grade chemicals according to EPA chronic toxicity test manual) or deionized water combined with mineral water to appropriate hardness.</td>
<td></td>
</tr>
<tr>
<td>15. Effluent concentrations:</td>
<td>5 effluent concentrations and a control. An additional dilution at the permitted (December 1995)</td>
<td></td>
</tr>
</tbody>
</table>
effluent concentration (% effluent) is required if it is not included in the dilution series.

\[ \geq 0.5 \]

Until 60% of control females have three broods (generally 7 days and a maximum of 8 days).

Survival and reproduction

80% or greater survival and an average of 15 or more young/surviving female in the control solutions. At least 60% of surviving females in controls must produce three broods.

For on-site tests, samples are collected daily and used within 24 hr. of the time they are removed from the sampling device. For off-site tests a minimum of three samples are collected (i.e. days 1, 3, 5) and used for renewal (see Sec. III). Off-site tests samples must be first used within 36 hours of collection.

Minimum 1 liter/day

Footnotes:

1. Adapted from EPA/600/4-91/002.
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.
3. When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

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EPA NEW ENGLAND RECOMMENDED EFFLUENT TEST CONDITIONS FOR THE FATHEAD MINNOW (PIMEPHALES PROMELAS) LARVAL SURVIVAL AND GROWTH TEST

1. Test type: Static, renewal
2. Temperature (°C): 25 ± 1°C
3. Light quality: Ambient laboratory illumination
4. Photoperiod: 16 hr. light, 8 hr. dark

(December 1995)
5. Test chamber size: 500 mL minimum
6. Test solution volume: Minimum 250 mL/replicate
7. Renewal of test concentrations: Daily using most recently collected sample.
8. Age of test organisms: Newly hatched larvae less than 24 hr. old
9. No. larvae/test chamber and control: 15 (minimum of 10)
10. No. of replicate chambers/concentration: 4
11. No. of larvae/concentration: 60 (minimum of 40)
12. Feeding regime: Feed 0.1 g newly hatched, distilled water-rinsed Artemia nauplii at least 3 times daily at 4 hr. intervals or, as a minimum, 0.15 g twice daily, 6 hrs. between feedings (at the beginning of the work day prior to renewal, and at the end of the work day following renewal). Sufficient larvae are added to provide an excess. Larvae fish are not fed during the final 12 hr. of the test.
14. Aeration: None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L. Rate should be less than 100 bubbles/min.
15. Dilution water: Receiving water, other surface water, synthetic soft water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q® or equivalent deionized and reagent grade chemicals according to EPA chronic toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
16. Effluent concentrations: 5 and a control. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.
17. Dilution factor: ≥ 0.5
18. Test duration: 7 days

(December 1995)
19. End points: Survival and growth (weight)

20. Test acceptability: 80% or greater survival in controls: average dry weight per control larva equals or exceeds 0.25 mg.

21. Sampling requirements: For on-site tests samples are collected and used within 24 hours of the time they are removed from the sampling device. For off-site tests a minimum of three samples are collected (i.e. days 1, 3, 5) and used for renewal (see Sec.IV). Off-site tests samples must be first used within 36 hours of collection.

22. Sample volume required: Minimum 2.5 liters/day

Footnotes:

1. Adapted from EPA/600/4-91/002.
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.
3. When receiving water is used for dilution, an additional control made up of standard laboratory or culture water (0% effluent) is required.

VI. CHEMICAL ANALYSIS

As part of each daily renewal procedure, pH, specific conductance, dissolved oxygen, and temperature must be measured at the beginning and end of each 24-hour period in each dilution and the controls. It is also recommended that total alkalinity and total hardness be measured in the control and highest effluent concentration on the Day 1, 3, and 5 samples. The following chemical analyses shall be performed for each sampling event.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Effluent Diluent Level (mg/l)</th>
<th>Minimum Quantification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness*1</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Alkalinity</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>pH</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Specific Conductance</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Total Solids and Suspended Solids</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

(December 1995) 6
<table>
<thead>
<tr>
<th>Parameter</th>
<th>x</th>
<th>x</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia</td>
<td></td>
<td></td>
<td>0.1</td>
</tr>
<tr>
<td>Total Organic Carbon</td>
<td></td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>Total Residual Chlorine (TRC)(^\text{2})</td>
<td></td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td></td>
<td></td>
<td>1.0</td>
</tr>
</tbody>
</table>

### Total Metals

<table>
<thead>
<tr>
<th>Element</th>
<th>x</th>
<th>x</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cd</td>
<td></td>
<td></td>
<td>0.001</td>
</tr>
<tr>
<td>Cr</td>
<td></td>
<td></td>
<td>0.005</td>
</tr>
<tr>
<td>Pb</td>
<td></td>
<td>x</td>
<td>0.005</td>
</tr>
<tr>
<td>Cu</td>
<td></td>
<td>x</td>
<td>0.0025</td>
</tr>
<tr>
<td>Zn</td>
<td></td>
<td>x</td>
<td>0.0025</td>
</tr>
<tr>
<td>Ni</td>
<td></td>
<td>x</td>
<td>0.004</td>
</tr>
<tr>
<td>Al</td>
<td></td>
<td>x</td>
<td>0.02</td>
</tr>
<tr>
<td>Mg, Ca</td>
<td></td>
<td>x</td>
<td>0.05</td>
</tr>
</tbody>
</table>

**Superscripts:**


\(^2\) Total Residual Chlorine

Either of the following methods from the 18th Edition of the APHA *Standard Methods for the Examination of Water and Wastewater* must be used for these analyses:

- Method 4500-CL E Low Level Amperometric Titration (the preferred method);

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)
Methods of Estimation:
  • Probit Method
  • Spearman-Karber
  • Trimmed Spearman-Karber
  • Graphical

Reference the flow chart on page 84 or page 172 of EPA 600/4-91/002 for the appropriate method to use on a given data set.

Chronic No Observed Effects Concentration (C-NOEC)
Methods of Estimation:
  • Dunnett's Procedure
  • Bonferroni's T-Test
  • Steel's Many-One Rank Test
  • Wilcoxin Rank Sum Test

Reference the flow charts on pages 50, 83, 96, 172, and 176 of EPA 600/4-91/002 for the appropriate method to use on a given data set.

In the case of two tested concentrations causing adverse effects but an intermediate concentration not causing a statistically significant effect, report the C-NOEC as the lowest concentration where there is no observable effect. The definition of NOEC in the EPA Technical Support Document only applies to linear dose-response data.

VIII. TOXICITY TEST REPORTING

A report of results will include the following:

• Description of sample collection procedures, site description;
• Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody; and
• General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicant test data should be included.
• All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
• Raw data and bench sheets.
• Provide a description of dechlorination procedures (as applicable).
• Any other observations or test conditions affecting test outcome.

(December 1995)
EPA - New England

Reassessment of Technically Based Industrial Discharge Limits

Under 40 CFR §122.21(j)(4), all Publicly Owned Treatment Works (POTWs) with approved Industrial Pretreatment Programs (IPPs) shall provide the following information to the Director: a written evaluation of the need to revise local industrial discharge limits under 40 CFR §403.5(c)(1).

Below is a form designed by the U.S. Environmental Protection Agency (EPA - New England) to assist POTWs with approved IPPs in evaluating whether their existing Technically Based Local Limits (TBLLs) need to be recalculated. The form allows the permittee and EPA to evaluate and compare pertinent information used in previous TBLLs calculations against present conditions at the POTW.

Please read direction below before filling out form.

ITEM I.

* In Column (1), list what your POTW's influent flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present influent flow rate. Your current flow rate should be calculated using the POTW's average daily flow rate from the previous 12 months.

* In Column (1) list what your POTW's SIU flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present SIU flow rate.

* In Column (1), list what dilution ratio and/or 7Q10 value was used in your old/expired NPDES permit. In Column (2), list what dilution ratio and/or 7Q10 value is presently being used in your new/reissued NPDES permit.

The 7Q10 value is the lowest seven day average flow rate, in the river, over a ten year period. The 7Q10 value and/or dilution ratio used by EPA in your new NPDES permit can be found in your NPDES permit "Fact Sheet."

* In Column (1), list the safety factor, if any, that was used when your existing TBLLs were calculated.

* In Column (1), note how your bio-solids were managed when your existing TBLLs were calculated. In Column (2), note how your POTW is presently disposing of its biosolids and how your POTW will be disposing of its biosolids in the future.
ITEM II.
* List what your existing TBLLs are - as they appear in your current Sewer Use Ordinance (SUO).

ITEM III.
* Identify how your existing TBLLs are allocated out to your industrial community. Some pollutants may be allocated differently than others, if so please explain.

ITEM IV.
* Since your existing TBLLs were calculated, identify the following in detail:
  (1) if your POTW has experienced any upsets, inhibition, interference or pass-through as a result of an industrial discharge.
  (2) if your POTW is presently violating any of its current NPDES permit limitations - include toxicity.

ITEM V.
* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in pounds per day) received in the POTW's influent. Current sampling data is defined as data obtained over the last 24 month period.

All influent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

* Based on your existing TBLLs, as presented in Item II., list in Column (2), for each pollutant the Maximum Allowable Headwork Loading (MAHL) values derived from an applicable environmental criteria or standard, e.g. water quality, sludge, NPDES, inhibition, etc. For more information, please see EPA's Local Limit Guidance Document (July 2004).

ITEM VI.
* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in micrograms per liter) present your POTW's effluent. Current sampling data is defined as data obtained during the last 24 month period.
All effluent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

* List in Column (2A) what the Water Quality Standards (WQS) were (in micrograms per liter) when your TBLLs were calculated, please note what hardness value was used at that time. Hardness should be expressed in milligram per liter of Calcium Carbonate.

List in Column (2B) the current WQSs or "Chronic Gold Book" values for each pollutant multiplied by the dilution ratio used in your new/reissued NPDES permit. For example, with a dilution ratio of 25:1 at a hardness of 25 mg/l - Calcium Carbonate (copper's chronic WQS equals 6.54 ug/l) the chronic NPDES permit limit for copper would equal 156.25 ug/l.

**ITEM VII.**

* In Column (1), list all pollutants (in micrograms per liter) limited in your new/reissued NPDES permit. In Column (2), list all pollutants limited in your old/expired NPDES permit.

**ITEM VIII.**

* Using current sampling data, list in Column (1) the average and maximum amount of pollutants in your POTW's biosolids. Current data is defined as data obtained during the last 24 month period. Results are to be expressed as total dry weight.

All biosolids data collected and analyzed must be in accordance with 40 CFR §136.

In Column (2A), list current State and/or Federal sludge standards that your facility's biosolids must comply with. Also note how your POTW currently manages the disposal of its biosolids. If your POTW is planning on managing its biosolids differently, list in Column (2B) what your new biosolids criteria will be and method of disposal.

In general, please be sure the units reported are correct and all pertinent information is included in your evaluation. If you have any questions, please contact your pretreatment representative at EPA - New England.
# 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.

<table>
<thead>
<tr>
<th>Column (1)</th>
<th>Column (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING TBLLs</strong></td>
<td><strong>PRESENT CONDITIONS</strong></td>
</tr>
<tr>
<td>POTW Flow (MGD)</td>
<td></td>
</tr>
<tr>
<td>Dilution Ratio or 7Q10 (from NPDES Permit)</td>
<td></td>
</tr>
<tr>
<td>SIU Flow (MGD)</td>
<td></td>
</tr>
<tr>
<td>Safety Factor</td>
<td>N/A</td>
</tr>
<tr>
<td>Biosolids Disposal Method(s)</td>
<td></td>
</tr>
</tbody>
</table>
ITEM II.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Numerical Limit (mg/l) or (lb/day)</th>
<th>Pollutant</th>
<th>Numerical Limit (mg/l) or (lb/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

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 Headwork Loading (MAHL) values used to derive your TBLLs listed in Item II. In addition, please note the Environmental Criteria for which each MAHL value was established, i.e. water quality, sludge, NPDES etc.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Column (1)</th>
<th>Column (2)</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Influent Data Analyses</td>
<td>MAHL Values</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td>(lb/day)</td>
<td>(lb/day)</td>
<td>(lb/day)</td>
<td></td>
</tr>
<tr>
<td>Arsenic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chromium</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Copper</td>
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<tr>
<td>Cyanide</td>
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<tr>
<td>Lead</td>
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<tr>
<td>Mercury</td>
<td></td>
<td></td>
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<td>Nickel</td>
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<td></td>
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<tr>
<td>Silver</td>
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<td></td>
<td></td>
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<tr>
<td>Zinc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (List)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Column (1)</th>
<th>Columns (2A)</th>
<th>Water Quality Criteria (Gold Book)</th>
<th>Today</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Effluent Data Analyses</td>
<td>Maximum (ug/l)</td>
<td>Average (ug/l)</td>
<td>(ug/l)</td>
</tr>
<tr>
<td>Arsenic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Cadmium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Chromium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Copper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyanide</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Lead</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercury</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Nickel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Zinc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (List)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*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.

<table>
<thead>
<tr>
<th>Column (1)</th>
<th>Column (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW PERMIT Pollutants Limitations (ug/l)</td>
<td>OLD PERMIT Pollutants (ug/l) Limitations</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 planning on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Column (1) Data Analyses</th>
<th>Biosolids</th>
<th>Columns (2A) Biosolids Criteria From TBLLs</th>
<th>New (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chromium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyanide</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercury</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nickel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molybdenum</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selenium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (List)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 GLSD’s Wastewater Treatment Plant 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 GLSD’s 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  
   e.) Total Mercury  
   i.) Total Cyanide  
   j.) 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 that includes steps to be taken to revise local limits.
<table>
<thead>
<tr>
<th>Serial Discharge Number</th>
<th>Location</th>
<th>Type of Discharge</th>
<th>Composition of Discharge</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>G.L.S.D. (main outfall)</td>
<td>continuous</td>
<td>sanitary and industrial wastewater</td>
<td>Merrimack River</td>
</tr>
<tr>
<td>002</td>
<td>South Bank main overflow (CSO)</td>
<td>intermittent</td>
<td>combined wastewater</td>
<td>Merrimack River</td>
</tr>
<tr>
<td>003</td>
<td>South Bank (CSO) secondary overflow</td>
<td>intermittent</td>
<td>combined wastewater</td>
<td>Merrimack River</td>
</tr>
<tr>
<td>004</td>
<td>North Bank main overflow (CSO) @ mouth of Spicket River</td>
<td>intermittent</td>
<td>combined wastewater</td>
<td>Merrimack River</td>
</tr>
<tr>
<td>005</td>
<td>North Bank (CSO) secondary overflow</td>
<td>intermittent</td>
<td>combined wastewater</td>
<td>Merrimack River</td>
</tr>
<tr>
<td>006</td>
<td>Spicket River (CSO) secondary overflow</td>
<td>intermittent</td>
<td>combined wastewater</td>
<td>Spickett River</td>
</tr>
</tbody>
</table>
ATTACHMENT E
NINE MINIMUM TECHNOLOGY BASED 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.

EPA has made a Best Professional Judgement (BPJ) determination that adequate implementation of these nine minimum control measures satisfies 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.

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 Technology Based Limitations (MTBL)

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

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 stormwater 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.e. of the permit is posting of CSO discharge points.

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

If possible, the permittee shall initiate monitoring 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.
SECTION A. GENERAL REQUIREMENTS

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2. Permit Actions
3. Duty to Provide Information
4. Reopener Clause
5. Oil and Hazardous Substance Liability
6. Property Rights
7. Confidentiality of Information
8. Duty to Restyle
9. Right of Appeal
10. State Laws
11. Other Laws

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1. Proper Operation and Maintenance
2. Need to Halt or Reduce Not a Defense
3. Duty to Mitigate
4. Nudge
5. Upset

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2. Inspection and Entry

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   a. Including Storm Water Requirements
2. Definitions for NPDES Permit Sludge Use
3. Disposal Requirements
4. Abbreviations

(3/1/93)

SECTION A. GENERAL REQUIREMENTS

1. Duty to Comply

The permittees must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and rescission, or modification or for denial of a permit renewal application.

a. The permittees shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards or sewage sludge use or disposal established under Section 405 (d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

b. The CWA provides that any person who violates Sections 307, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Sections 402 (a)(3) or 402 (b)(4) of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who knowingly violates such requirements is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who negligently violates such requirements is subject to a fine of not less than $5,000 nor more than $25,000 per day of violation, or by imprisonment for not more than 5 years, or both. Note: See 40 C.F.R. §122.41(a)(2) for additional enforcement criteria.

c. Any person may be assessed an administrative penalty by the Administrator for violating Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations...
Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or for determination of compliance or anticipated noncompliance does not stay any permit condition.

Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any applicable standards, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Permit modification or revocation will be conducted according to 40 CFR §§122.62, 122.63, 122.64 and 124.5.

911 and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 708 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

Confidentiality of Information

a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the permittee. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions, or, in the case of other submissions, by appending the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or permittee;

(2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302 (a) (2).

c. Information required by NPDES application forms provided by the Regional Administrator under §122.21 may be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. The permittee must submit a new application at least 90 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant [9/1/93] [9/1/93]
PART II

6. Right of Appeal

Within thirty (30) days of receipt of notice of a final permit decision, any interested person, including the permittee, may submit a request to the Regional Administrator for an Evidentiary Hearing under Subpart E, or a Non-Adjudicatory Hearing under Subpart F, of 40 CFR Part 124, to reconsider or contest that decision. The request for a hearing must be made in accordance with the requirements of 40 CFR §124.74.

10. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulations or standards of any activity covered by these regulations, whether or not under an approved State program.

OTHER LAWS

1. The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligations to comply with any other applicable Federal, State, and local laws and regulations.

SECTION III. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Good to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in any enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or emission in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Bypass

a. Definitions

(1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not exceed the limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Paragraphs 3.4.c and 4.8 of this section.

c. Notice

(1) Anticipated bypass

If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

(2) Unanticipated bypass

The permittee shall submit notice of an unanticipated bypass as required in Paragraph 3.4.c (24-hour notice)

d. Prohibition of bypass

(1) Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:
PART II

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(c) (i) The permittee submitted notices as required under Paragraph 4.o of this section.

(ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in Paragraph 4.d of this section.

Upset

Definition. "Upset" means an exceptional incident in which there is unintentional and temporary non-compliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

Effect of an Upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph 4.c of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

Conditions necessary for a demonstration of Upset.

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;

(2) The permitted facility was at the time being properly operated;

(3) The permittee submitted notice of the upset as required in Paragraphs 4.1.a and 4.1.e (24-hour notice); and

(4) The permittee complied with any remedial measures required under B.3. above.

d. Burden of proof.

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

SECTION C. MONITORING AND RECORDS

1. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample measurement, report or application except for the information concerning stormwater discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurement.

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as if you were reading it naturally.
d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Regional Administrator for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 200, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Administrator.

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Regional Administrator in the permit.

e. Twenty-four hour reporting.

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including accurate dates and times; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See §122.41(g).

(b) Any upset which exceeds any effluent limitation in the permit.

(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See §122.44(g)).

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e if the oral report has been received within 24 hours.

f. Compliance Schedule: Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. Other noncompliance.

The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d, D.1.e and D.1.f of this section, at the time monitoring reports are submitted. The report shall contain the information listed in Paragraph D.1.e of this section.

h. Other information.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

2. Signature Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See §122.22)

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
Availability of Reports.

Except for data determined to be confidential under Paragraph A.8 above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

SECTION E. OTHER CONDITIONS.

1. DEFINITIONS FOR INDIVIDUAL NPDES PERMITS INCLUDING STORM WATER REQUIREMENTS

For purposes of this permit, the following definitions shall apply:

Administerator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all State, interstate, and Federal standards and limitations to which a "discharge", a "sewage sludge use or disposal practice", or a related activity is subject to, including "effluent limitations", water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices", pre-treatment standards, and "standards for sewage sludge use and disposal" under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of CWA.

Application means the EPA standard forms for applying for a permit, including any additions, revisions or modifications to the forms; or forms approved by EPA for use in "approved States," including any approved modifications or revisions.

Average - The arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and fecal coliforms and Escherichia coli, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

Best Management Practices (BMPs) means schedules of activities, prohibitions or practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Professional Judgment (BPI) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT) or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Class I Sludge Management Facility means any POTW identified under 40 CFR §403.9(a) as being required to have an approved pretreatment program (including such POTWs located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10(e)) and any other treatment works treating domestic sewage classified as a "Class I Sludge Management Facility" by the Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sludge use or disposal practices to adversely affect public health and the environment.

Coal mine runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample - A sample consisting of a minimum of eight grab samples collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample continuously collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

(a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.
(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to the construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion containment limitation guideline at 40 CFR Part 433.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final stabilization means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for improved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Continuous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility except for infrequent shutdowns for maintenance, process changes, or similar activities.


Daily Discharge means the "discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard national form, including any subsequent additions, revisions, or modifications, for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or;

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See "Point Source" definition).

This definition includes additions of pollutants into waters of the United States from surface runoff which is collected or channelled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any "indirect discharger."

Discharge Monitoring Report ("DMR") means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.
Effluent limitations guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations."

EPA means the United States "Environmental Protection Agency."

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample - An individual sample collected in a period of less than 15 minutes.

Hazardous substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Conference means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Adit means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Large and Medium Municipal Separate Storm Sewer System means all municipal separate storm sewers that are either: (1) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census (these counties are listed in Appendices F and 40 CFR Part 122); or (11) located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (111) owned or operated by a municipality other than those described in Paragraph (1) or (110) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation is defined for the Steam Electric Power Plants only when applied to Total Residual Chlorinating (TRC) or Total Residual Oxidant (TRO) is defined as "Maximum Concentration or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fractions thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean "a value that shall not be exceeded during the two-hour chlorination cycle." This interpretation differs from the specified NPDES Permit requirements, 40 CFR §122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of CWA. The term includes an "approved program."

New discharger means any building, structure, facility, or installation.
Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State."

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point source means any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff. (See §122.2)

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.), heat, wrecked or abandoned equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes as approved by authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Privately owned treatment works means any device or system used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a "POTW".

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly Owned Treatment Works (POTW) means any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "state" or "municipality."

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary Industry Category means any industry category which is not a "primary industry category."

Section 313 water priority category means a chemical or chemical categories which are:

1. listed at 40 CFR §372.45 pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);
2. present at or above threshold levels at a facility subject to EPCRA Section 311 reporting requirements; and
3. satisfies at least one of the following criteria:
   (i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances);
   (ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or

(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

Sewage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or holding tank when the system is cleaned or maintained.

Sewage sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to: solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumps, type III Marine Sanitation Device pumps (23 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge use or disposal practices means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of CERCLA; any chemical the Toxic Release Inventory required to report pursuant to EPCRA Section 311; fertilizers, pesticides, and waste products such as ashes, sludge and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (see 40 CFR §116.10 and 40 CFR §117.21) or Section 102 of CERCLA (see 40 CFR §302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.
Storm Water discharge associated with industrial activity means the discharge from any conveyance with is used for collecting and conveying storm water and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 for specifics of this definition).

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants means any pollutant listed as toxic under Section 307(a)(1) or, in the case of "sludge use or disposal practices", any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and wastewater from human or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(d) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage", where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

Waste pile means any noncontainerized accumulation of solid, nonflowing waste that is used for treatment or storage.

Waters of the United States means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tides;

(b) All interstate waters, including interstate "wetlands";

(c) All other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, "wetlands," sloughs, prairie potholes, wet meadows, playas lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

1. Which are or could be used by interstate or foreign travelers for recreational or other purposes;

2. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce;

3. Which are used or could be used for industrial purposes by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under this definition;

5. Tributaries of waters identified in Paragraphs (a) through (d) of this definition;

6. The territorial sea; and

7. "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR §122.11(a) which also meet the criteria of this definition) are not waters of the United States.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

DEFINITIONS FOR NPDES PERMIT SLUDGE USE AND DISPOSAL REQUIREMENTS.

Active sewage sludge unit is a sewage sludge unit that has not closed.
Aerobic digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agroecologic rate is the whole sludge application rate dry weight basis) designated:

1. To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, or vegetation grown on the land; and

2. To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 50 percent of the dry weight of sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e., a flood with a magnitude equalled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given way in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to exceed in ground water by that causes the existing concentration of nitrate in ground water to increase when the existing concentration of nitrate in the ground water equals the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §403.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR §222.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of an inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.
Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic sewage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic sewage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight Basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e., essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which objects on one side are displaced with respect to strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene Time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all measurements, taken during an hour. At least two measurements must be taken during the hour.

Infiltration is the movement of water into the soil or other permeable material from the ground surface. It occurs by percolation, capillary action, or gravitational attraction.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and a real estate site located in a populated area (e.g., a construction site located in a city).

Land with a low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a real estate site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1 x 10^-7 centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure. Weekly average (Infiltration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the week.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or
an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201(e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use, or disposal of sewage sludge.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Persons is an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

PH means the logarithm of the reciprocal of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or

physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit area of land (e.g., kilogram per hectare); or the volume of a material that can be applied to a unit area of land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground-water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground-water hydrology and related fields, as in the judgment of EPA, has demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground-water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of the site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Sedimentary impact zone is an area that has a 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not
include any generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is stored or treated. Land does not include waters of the United States, as defined in 40 CFR §222.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100(/).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territories of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian Tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Storage or storage of sewage sludge is the placement on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

PART II

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstabilized solids are organic materials in sewage sludge that have not been treated in an aerobic or anaerobic treatment process.

Vapor attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transported infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

THE COMMONLY USED ABBREVIATIONS ARE LISTED BELOW.

BOD Five-day biochemical oxygen demand unless otherwise specified
CBOD Carbonaceous BOD
**COD**
Chemical oxygen demand

**CFS**
Cubic feet per second

**Chlorine**
Total residual chlorine

**Cl₂**
Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

**TRC**
Total residual chlorine in marine waters where halogen compounds are present FAC Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)

**TRO**
Total residual chlorine in marine waters where halogen compounds are present FAC Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)

**Coliform**
Coliform, Fecal
Total fecal coliform bacteria

**Coliform, Total**
Total coliform bacteria

**Cont. (Continuous)**
Continuous recording of the parameter being monitored, i.e., flow, temperature, pH, etc.

**cu. N/day or M³/day**
Cubic Meters per Day

**DO**
Dissolved Oxygen

**kg/day**
Kilograms per Day

**lbs/day**
Pounds per Day

**mg/l**
Milligram(s) per Liter

**ml/l**
Milliliter(s) per Liter

**MGD**
Million Gallons per Day

**Nitrogen**

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<td>Ammonia nitrogen as nitrogen</td>
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<tr>
<td>NO₃-N</td>
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<tr>
<td>NO₂-N</td>
<td>Nitrite nitrogen as nitrogen</td>
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<tr>
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<tr>
<td>TKN</td>
<td>Total Kjeldahl nitrogen as nitrogen</td>
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**Oil & Grease**
Freon extractable material

**PCB**
Polychlorinated biphenyl

**pH**
A measure of the hydrogen ion concentration. A measure of alkalinity of a liquid or solid material.

**Surfactant**
Surface-active agent

**Temp. °C**
Temperature in degrees Celsius

**Temp. °F**
Temperature in degrees Fahrenheit

**TOC**
Total organic carbon

**Total P**
Total phosphorus

**TSS or NFR**
Total suspended solids or total nonfilterable residue

**Turb. or Turbidity**
Turbidity measured by the nephelometric method (NTU)

**ug/l**
Micrograms per liter
"Whole Effluent Toxicity" is the total effect of an effluent measured directly with a toxicity test.

**C-NOEC**

"Chronic (Long-term Exposure Test)-No Observed Effect Concentration". The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation.

**A-NOEC**

"Acute (Short-term Exposure Test)-No Observed Effect Concentration". See C-NOEC definition.

**LC-50**

LC-50 is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC-50 = 100% is defined as a sample of undiluted effluent.

**ZID**

Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.
DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES.

NPDES PERMIT NO.: MA0100447

PUBLIC NOTICE DATE:

NAME AND ADDRESS OF APPLICANT:

Greater Lawrence Sanitary District
24 Charles Street
North Andover, Massachusetts 01845

The Massachusetts Municipalities of Lawrence, Andover, North Andover, and Methuen, and Salem New Hampshire, are co-permittees for specific activities required the permit. See Sections VI and VII of this fact sheet and Sections I.D., I.E., I.F. and, I.G. of the draft permit. The responsible Municipal Departments are:

- City of Lawrence
  - Department of Public Works
  - 200 Common Street
  - Lawrence, MA 01840

- Town of Andover
  - Department of Public Works
  - 397 Lowell Street
  - Andover, MA 01810

- Town of North Andover
  - Department of Public Works
  - 384 Osgood Street
  - North Andover, MA 01845

- Town of Methuen
  - 41 Pleasant Street, Rm 205
  - Methuen, MA 01844

- Town of Salem New Hampshire
  - Public Works Department
  - 21 Cross Street
  - Salem, New Hampshire 03079

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Greater Lawrence Sanitary District
24 Charles Street
North Andover, Massachusetts 01845

and five combined sewer overflows (CSO)

RECEIVING WATERS:

Merrimack River and Spicket River
Merrimack Watershed (84)

CLASSIFICATION: Class B, Warm Water, Treated Water Supply
I. Proposed Action, Type of Facility, and Discharge Location
The Greater Lawrence Sanitary District (GLSD) has requested that the U.S. Environmental Protection Agency reissue its NPDES permit to discharge into the designated receiving waters, the Merrimack River and Spicket River. The facility is a 52 million gallon per day (MGD) activated sludge secondary wastewater treatment facility engaged in the collection and treatment of domestic and industrial wastewater, which discharges through Outfall 001 to the Merrimack River. Five combined sewer overflows (CSO's) discharge from GLSD's interceptor sewers to the Merrimack River and the Spicket River. See Attachment A, list of outfalls and CSO's, and Figure 1, a map showing the location of facility.

II. Description of Discharge
A quantitative description of the discharge in terms of significant effluent parameters based on recent monitoring data is shown in Attachment B of the fact sheet. Figure 2 shows the flow process diagram of the facility.

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

IV. Permit Basis and Explanation of Effluent Derivation
Facility
The Greater Lawrence Sanitary District (GLSD) operates a 52 MGD activated sludge wastewater treatment facility, located in North Andover, Massachusetts. The facility serves approximately 168,000 residences and businesses, and provides septage disposal for communities throughout the Merrimack Valley and southern New Hampshire. Municipal contributions comprise approximately 80 percent of the influent wastewater (non I/I) flow; the remaining 20 percent is industrial flow, from approximately 40 significant industrial users.

The GLSD is comprised of the communities of Lawrence, Methuen, Andover, and North Andover in Massachusetts, and Salem, New Hampshire. Flow from the member communities is discharged to the GLSD interceptor system, which flows by gravity to the Riverside Pumping Station, and is pumped to the GLSD wastewater treatment plant. The City of Lawrence and a section of Methuen have combined sewer systems, but the five combined sewer overflows (CSOs) are from the GLSD interceptors, and are owned and operated by GLSD. Flows from the communities are monitored in the collection system at fourteen metering stations.

The GLSD wastewater treatment plant consists of primary settling, activated sludge treatment, secondary settling, chlorination, and dechlorination. Sludge treatment includes thickening, digestion, dewatering and, drying.

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

According to 40 CFR 122.41(l), when a permit is reissued effluent limitations, standards or
conditions must be at least as stringent as effluent limitations in the previous permit unless the circumstances on which the previous permit were based have materially and substantially changed since the time the permit was issued.

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

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

**Dilution**
Based on the facility's design flow of 52 MGD, a dilution factor was determined to be 13.76. The dilution factor was calculated using an estimate of the 7Q10 low flow in the Merrimack River at the point of discharge of 1026.68 cfs. The 7Q10 low flow figure was based on an estimated drainage area near the facility's outfall and data from the USGS Lowell gage station.

7Q10 Calculation

\[
7Q_{10}@\text{GLSD} = \frac{7Q_{10}@\text{Lowell gage station} \times \text{Drainage Area at GLSD}}{\text{Drainage Area at Lowell gage station}}
\]

\[
7Q_{10}@\text{GLSD} = \frac{901 \text{ cfs} \times 4,839.83 \text{ sq mi}}{4246.50 \text{ sq mi}} = 1026.68 \text{ cfs}
\]

**Dilution Factor**

Design flow dilution = \(\frac{7Q_{10} \text{ cfs} + \text{plant design flow cfs}}{\text{plant design flow cfs}}\) = \(\frac{1026.68 \text{ cfs} + 80.44}{80.44}\) = 13.76

In accordance with Region I policy, four toxicity tests are required when the dilution ratio is between 10 and 20. GLSD is required to conduct four chronic toxicity tests per year.

**Conventional Pollutants**
Under Section 301(b)(1)(B) of the CWA, POTWs must achieve effluent limitations based upon secondary treatment by July 1, 1977. The secondary treatment requirements are set forth at 40 CFR Part 133. Effluent limitations for monthly and weekly average and maximum daily biochemical oxygen demand (BOD\(_5\)) and total suspended solids (TSS) are based on requirements under Section 301(b)(1)(B) of the CWA and 40 CFR 133.102.

BOD\(_5\) and TSS
The BOD\(_5\) and TSS, draft permit limits are based on secondary treatment requirements and the concentration limits are the same as those in the current permit. BOD\(_5\) and TSS mass limits have been added to the draft permit. Expressing limitations in terms of concentration and mass encourages proper operation of a treatment facility. Concentration limits discourage the reduction in treatment efficiency during low discharge flow periods, and mass limits discourage higher
loads being discharged into the receiving water during periods of high discharge flow. Regulations found at 40 CFR Section 122.45 (f)(1) and (2) do not preclude mass limits, where appropriate, from being included in a NPDES permit. This condition is a state certification requirement.

There were no violations reported for BOD$_5$ or TSS in the reporting period between September 2001 through September 2003. The facility reported 1 violations for the secondary treatment requirement of 85% BOD$_5$ removal and no violation for 85% TSS removal during the same reporting period.

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

**pH**
The upper and lower pH limit will remain the same as in the existing permit. There were no pH violations between September 2001 and September 2003.

**Dissolved Oxygen**
A seasonal dissolved oxygen limitation of not less than 5 mg/l has been added to the draft permit as a state certification requirement. The dilution factor is not used to calculate the dissolved oxygen limit in the draft permit because the potential for an instream excursion exists.

**Fecal Coliform Limitation**
The fecal coliform limits are based on Massachusetts Water Quality Standards, and shall remain the same as in the existing permit. However, the sampling frequency has been increased to 5 times per week because EPA and MA DEP believe that an increase in sampling is more appropriate given the large discharge flow quantity. There have been 4 fecal coliform exceedances during the reporting period of September 2001 through September 2003. In August 2002, the permittee reported exceeding the monthly, weekly and maximum daily limits for fecal coliform. The one other exceedance was the maximum daily limit in January 2002.

**Non-Conventional Pollutants**

**Total Residual Chlorine (TRC)** - The draft permit includes total residual chlorine limitations which are based on state water quality standards. Chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The water quality standards established for chlorine are 19 ug/l daily maximum and 11 ug/l monthly average in the receiving water. Given a dilution factor of 13.76:1, the total residual chlorine limitations have been set at 0.26 mg/l daily maximum and 0.15 mg/l monthly average. The TRC maximum daily limit has been exceeded once between September 2001 and September 2003.

**Total Residual Chlorine Limits Calculation:**

Acute chlorine water quality criteria is 19 ug/l.
Chronic chlorine water quality criteria is 11 ug/l.

Design flow dilution factor is 13.76.
Average Monthly Total Residual Chlorine Limit = 13.76 x 0.011 mg/l = 0.149 mg/l = 0.15 mg/l

Maximum Daily Total Residual Chlorine Limit = 13.76 x 0.019 mg/l = 0.258 mg/l = 0.26 mg/l

The permit also specifies that end-of-pipe chlorine samples may be taken from a point just prior to discharge.

To verify consistent compliance with the TRC limit, continuous monitoring for TRC is required in the draft permit. The permittee shall monitor total residual chlorine concentration after dechlorination to assure that discharge concentrations do not exceed permit limits and cause toxic conditions in the receiving water.

Phosphorus
Average monthly reporting requirements for phosphorus are in the draft permit. The section of the Merrimack River at the facility’s point of discharge is on the Massachusetts 303(d) list for nutrients. In 1990 instream phosphorus levels during low flow conditions upstream of the GLSD discharge were between 80 and 160 ug/l.

Phosphorus interferes with water uses and can reduce instream dissolved oxygen. MA Water Quality Standards found at 314CMR 4.04(5) requires that 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 that removes such nutrients.

MADEP has not adopted numerical water quality criteria for phosphorus. EPA has developed several guidance documents regarding appropriate water quality criteria for phosphorus, including EPA’s Quality Criteria for Water 1986 (the Gold Book), and the National Ambient Water Quality Criteria Recommendations published in December 2000. The Gold Book recommends that phosphorus should be less than 25 ug/l in a lake or reservoir and less than 100 ug/l in streams or other flowing waters not discharging directly to lakes or impoundments. The 2000 criteria indicate that receiving water total phosphorus concentrations for the subecoregions that includes Eastern Massachusetts should be less than 24 ug/l.

If, during the term of the permit, EPA or MADEP receives new information indicating the need for further reduction of the phosphorus limit, this permit may be reopened, and the limit modified using the appropriate modification procedures.

Metals
Certain metals in water can be toxic to aquatic life. There is a need to limit toxic metal concentrations in the effluent where aquatic life may be impacted. An evaluation of the reasonable potential of toxicity on the concentration of metals in the effluent shows there is not a reasonable potential of toxicity for copper.

EPA is required to limit any pollutant or pollutant parameter that is or may be discharged at a level that caused, has reasonable potential to cause, or contributes to an excursion above any water quality criterion.
Calculation of reasonable potential for copper:
A reasonable potential determination was made regarding the need for water quality based copper limits in the draft permit. This determination was made by first calculating the water quality effluent limits applicable to this discharge using the National Recommended Water Quality Criteria: 2002 and the dilution factor if 13.78, and then comparing these limits with effluent copper data from recent testing. If the recent data shows copper concentrations at or exceeding the applicable limit, then reasonable potential exists and the limit is included in the draft permit.

Water Quality Criteria for hardness-dependent metals:

Acute criteria (dissolved) = \exp\{m_a \ln(h) + b_a\} (CF)
\(m_a\) = pollutant specific coefficient
\(b_a\) = pollutant specific coefficient
\(h\) = hardness
\(\ln\) = natural logarithm
CF = pollutant-specific conversion factor used to convert total recoverable to dissolved metal

Chronic criteria (dissolved) = \exp\{m_c \ln(h) + b_c\} (CF)
\(m_c\) = pollutant specific coefficient
\(b_c\) = pollutant specific coefficient
\(h\) = hardness
\(\ln\) = natural logarithm
CF = pollutant-specific conversion factor used to convert total recoverable to dissolved metal

Calculation of acute limit for copper:
\(m_a = 0.9422\) \hspace{1em} \(b_a = -1.7\) \hspace{1em} CF = 0.96
Acute criteria (dissolved) = \exp\{0.9422 \ln(28) + -1.7\} (0.96) = 4.05 ug/l
Acute criteria (total) = \exp\{0.9422 \ln(28) + -1.7\} = 4.22 ug/l
Dilution Factor = 13.78
Effluent limitation for total recoverable copper = 4.22 ug/l x 13.78 = 58.1 ug/l*

Calculation for chronic limit for copper:
\(m_a = 0.8545\) \hspace{1em} \(b_a = -1.7\) \hspace{1em} CF = 0.96
Chronic criteria (dissolved) = \exp\{0.8545 \ln(28) + -1.7\} (0.96) = 3.02 ug/l
Chronic criteria (total) = \exp\{0.8545 \ln(28) + -1.7\} = 3.15 ug/l
Dilution Factor = 13.78
Effluent limitation for total recoverable copper = 3.14 x 13.78 ug/l = 43.3 ug/l*

*Effluent limitation if there is a reasonable potential to cause or contribute to an excursion above the allowable receiving water criteria.

**The conversion factor is used to determine total recoverable metal. EPA Metal Translator Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion (EPA-823-B-96-007) is used as the basis for using the criteria conversion factor. National guidance
requires that permit limits be based on total recoverable metals and not dissolved metals. Consequently, it is necessary to apply a translator in order to develop a total recoverable permit limit from a dissolved criteria. The translator reflects how a discharge partitions between the particulate and dissolved phases after mixing with the receiving water. In the absence of site specific data on how a particular discharge partitions in the receiving water, a default assumption is equivalent to the criteria conversion factor used in accordance with the Translator Guidance.

**Reasonable Potential Determination**

**Copper:**

*Acute Limit* = 4.22 ug/l x 13.76 = 58.13 ug/l which is greater than the range of effluent concentrations for copper recorded in recent toxicity tests (4.4 ug/l-24.3 ug/l). There is a not a reasonable potential that copper being discharged in the effluent will exceed the water quality criteria.

*Chronic Limit* = 3.15 ug/l x 13.76 = 43.34 ug/l which is greater than the range of effluent concentrations for copper recorded in recent toxicity test (4.4 ug/l-24.3 ug/l). There is not a reasonable potential that copper being discharged in the effluent will exceed the water quality criteria.

**Toxicity**

Under Section 301(b)(1) of the CWA, discharges are subject to effluent limitations based on water quality standards. The State Surface Water Quality Standards, 314 CMR 4.05(5)e., includes the following narrative statements and requires that EPA criteria established pursuant to Section 304(a) of the CWA be used as guidance for interpretation of the following narrative criteria:

All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife. Where the State determines that a specific pollutant not otherwise listed in 3.14 CMR 4.00 could reasonably be expected to adversely effect existing or designated uses, the State shall use the recommended limit published by EPA pursuant to 33 U.S.C. 1251 §304(a) as the allowable receiving water concentrations for the affected waters unless a site-specific limit is established. Site specific limits, human health risk levels and permit limits will be established in accordance with 314 CMR 4.05(5)(e)(1)(2)(3)(4).

National studies conducted by the EPA have demonstrated that industrial and domestic sources contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Based on the potential for toxicity from domestic and industrial contributions, the state water quality criterion, the level of dilution at the discharge location and in accordance with EPA national and regional policy and 40 C.F.R.122.44(d), the draft permit includes a whole effluent acute toxicity limitation (LC50) and acute biomonitoring requirements. (See “Policy for the Development of Water Quality Based Permit Limitations for Toxic Pollutants”, 50 Federal Register 30748, July 24, 1985, and EPA’s Technical Support Document for Water Quality Based Toxics Control”, September, 1985, and the MA Implementation Policy for the Control of Toxic Pollutants on Surface Waters*, February 23, 1990.)
The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) bioavailability of pollutants after discharge is measured by toxicity testing including any synergistic effects of pollutants; and (3) pollutants for which there are inadequate analytical methods or criteria can be addressed. Therefore, toxicity testing is being used in conjunction with pollutant specific control procedures to control the discharge of toxic pollutants.

Four toxicity tests shall be performed each year at the facility. Samples for the tests shall be collected during the second week in January, April, July and October of each year.

EPA and MADEP have schedule toxicity tests sampling dates for most of the facilities discharging into the Merrimack River Watershed during the second week of the months designated above. This approach provides the Agencies with more comprehensive toxicity data and a better understanding of impacts in the receiving water.

V. Pretreatment Process

The permittee is required to administer a pretreatment program based on the authority granted under 40 CFR §122.44(j), 40 CFR Part 403 and section 307 of the Act. The Permittee's pretreatment program received EPA approval on September 24, 1984 and, as a result, appropriate pretreatment program requirements were incorporated into the previous permit which were consistent with that approval and federal pretreatment regulations in effect when the permit was issued.

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

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

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

VI. Inflow/Infiltration Requirements

Infiltration is groundwater that enters the collection system.
though 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.

The draft permit includes requirements for the co-permittees to control infiltration and inflow (I/I) into the collection systems it owns and operates. The permittee is not required to develop a comprehensive I/I program since it only owns and operates three interceptor sewers, with a total length of approximately 9 miles.

The co-permittees shall each develop an I/I removal program commensurate with the severity of the I/I in the collection system.

In sections of the collection system that have minimal I/I, the control program will logically be scaled down. Since the volume of flow requiring treatment increases due to new sewer connections, and the flow from each new connection uses collection system capacity that would otherwise be available for storm water runoff from combined areas, thereby increasing CSO discharges.

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

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

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

VII. Combined Sewer Overflows (CSOs)

Background

Combined Sewer Overflows (CSOs) are overflows from a combined sewer system that are discharged into a receiving water without going to the headworks of a publicly owned treatment works (POTWs). CSOs occur when the flow in the combined sewer system exceeds interceptor or regulator capacity. CSOs are distinguished from bypasses which are "intentional diversions of waste streams from any portion of a treatment facility" (40 CFR §122.41(m)).
Flows in combined sewers can be classified into two categories: wet weather flow and dry weather flow. Wet weather flow is a combination of domestic and industrial sewage, infiltration from groundwater, and storm water flow including snow melt. Dry weather flow is the flow in a combined sewer that results from domestic sewage, groundwater infiltration and industrial wastes with no contribution from storm water runoff or storm water induced infiltration.

Dry weather overflows from CSOs are illegal. They must be reported immediately to EPA and the MADEP and eliminated as expeditiously as possible. The objectives of the National CSO Control Policy are:

1) to ensure that if the CSO discharges occur, they are only as a result of wet weather,

2) to bring all wet weather CSO discharge points into compliance with the technology based requirements of the CWA and applicable federal and state water quality standards and,

3) to minimize water quality, aquatic biota, and human health impacts from wet weather flows.

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

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

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

Nine Minimum Controls (NMC)
The permittee must comply with BPJ derived BCT/BAT controls, which at a minimum include the following: (1) proper operation and maintenance of the sewer system and outfalls; (2) maximum use of the collection systems for storage; (3) review pretreatment programs to assure CSO impacts are minimized; (4) maximization of flow to the POTW for treatment; (5) prohibition of dry weather overflows; (6) control of solid and floatable materials in the discharge; (7) pollution prevention programs which focus on contaminant reduction activities; (8) public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and (9) monitoring to effectively characterize CSO impacts and the efficacy of CSO controls. Because GLSD does not own or operate any combined sewers, the owners of the combined sewers in the collection system, The Cities of Lawrence and Methuen, have been made co-permittees. They are responsible for NMCs pertaining to operation and maintenance of their
collection systems, specifically NMCs #1 proper operation and maintenance of the sewer system and outfalls; #2. maximum use of the collection systems for storage; and #7 pollution prevention programs which focus on contaminant reduction activities.

Nine Minimum Controls Documentation
In December 1998, GLSD submitted a report to EPA describing implementation of their NMCs. The permittee is now in the process of undergoing long term CSO planning, and implementing Phase 1 of the LTCP as required by an Administrative Order issued by the EPA in June of 1999.

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

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

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

The GLSD generates approximately 6,000 dry metric tons of sludge per year. This is a reduction from the sludge data reported on the NPDES application. The reduction reflects the closure of GLSD's largest contributor of solids and BOD and the addition of anaerobic digestion to the facility's sludge processing train. The GLSD has revamped the entire sludge processing operation at the facility. The upgrades have eliminate odors emanating from the facility which were a primary complaint from the community. The first set of upgrades were completed in February 2002 and included two gravity belt thickeners, three anaerobic digesters, two centrifuges, and an odor control biofilter, all of which are now operating.

Construction of the biosolids drying facility, was completed at the end of 2002. The dewatered sludge is transferred to the biosolids drying facility for pellet production and storage. The drying process provides further treatment of the dewatered sludge cake. The drying facility uses a heater to promote evaporation and create a granular pellet product with a solid concentration of 95%. The final product is transported off-site and marketed as a component of fertilizer product or for land application by agricultural and/or horticultural uses.

VIII. Essential Fish Habitat (EFH)
Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and
Management Act (16 U.S.C. § 1801 et seq (1998)), EPA is required to consult with NMFS if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat.", 16 U.S.C. § 1855(b). The Amendments broadly define "essential fish habitat" as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.", 16 U.S.C. § 1802(10). Adversely impact means any impact which reduces the quality and/or quantity of EFH, 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences or actions. Id.


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

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

IX. State Certification Requirements
EPA may not issue a permit unless the Massachusetts Department of Environmental Protection with jurisdiction over the receiving waters certify that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the MADEP has reviewed the permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State and expects that the permit will be certified.

X. Public Comment Period, Public Hearing, and Procedures for Final Decision
All person, including applicants, who believe any condition of the permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, 1 Congress Street, Suite 1100 (CMA), Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing for a public hearing to consider the permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever, the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after a public hearing, if such hearing is
held, the Regional Administrator will issue a final permit decision and forward a copy of the decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the final permit decision, any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of 40 C.F.R. §124.74, 48 Fed. Reg. 14279-14280 (April 1, 1983).

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

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

Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency
Attachment B
Greater Lawrence Sanitary District
NPDES 0100447
Discharge Monitoring Data Summary
North Andover, Massachusetts

Range between September 2001 and September 2003

Flow, MGD 20.1 - 42.1
Average monthly BOD$_5$, mg/l 5.0 - 17.0
Average monthly TSS, mg/l 2.0 - 11.0
pH, S.U. 7.0 - 8.2
Average monthly fecal coliform, CFR's 0 - too many to count
Maximum daily total residual chlorine, mg/l 0 - 0.88
<table>
<thead>
<tr>
<th>Permit Page</th>
<th>Requirement and Dates</th>
<th>Submit to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Whole Effluent Toxicity Tests results are due February 28, May 31, August 31 and November 30 of each year</td>
<td>EPA/MA DEP</td>
</tr>
<tr>
<td>7.</td>
<td>Local limits needs report within 120 days of the effective date of the permit</td>
<td>EPA</td>
</tr>
<tr>
<td>8.</td>
<td>Annual Industrial Pretreatment Report</td>
<td>EPA/MA DEP</td>
</tr>
<tr>
<td>9.</td>
<td>The co-permitees shall develop and implement a plan to control I/I to the separate sewer system. The plan shall be available to EPA and submitted to MA DEP within six months of the effective date of the permit.</td>
<td>EPA/MA DEP</td>
</tr>
<tr>
<td>10.</td>
<td>A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MA DEP annually, by the anniversary date of the effective date of the permit.</td>
<td>EPA/MA DEP</td>
</tr>
<tr>
<td>12.</td>
<td>CSO Monitoring Plan within 3 months of the effective date of the permit</td>
<td>EPA/MA DEP</td>
</tr>
<tr>
<td>13.</td>
<td>CSO Annual Report, by April 30, 2005 and April 30 each year thereafter</td>
<td>EPA/MA DEP</td>
</tr>
<tr>
<td>14.</td>
<td>The permittee shall submit an annual report containing the information specified in the sludge section of the permit by February 19.</td>
<td>EPA/MA DEP</td>
</tr>
<tr>
<td>15</td>
<td>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.</td>
<td>EPA/MA DEP</td>
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</table>
OPERATIONS INFORMATION

The treatment facilities provide the District with the capability of processing up to 52 million gallons of wastewater per day. Major process components included in the treatment system are primary sedimentation, biological oxidation, secondary clarification and treated effluent chlorination. Waste sludge solids generated during treatment are reduced in water content prior to disposal using gravity thickeners. Centrifuge dewatering removes additional water from the sludge transforming it into a solid material that is then sent to the onsite drying facility and converted into dry pellets that can be utilized as a fertilizer and soil conditioner. The drying facility is operated by New England Fertilizer Company.

GLSD's plant is overseen through a central control room. Monitoring systems constantly check the operations of the plant, and keep watch over various functioning equipment. These systems provide real-time information on the status of many areas and operations in the wastewater treatment plant and main pumping station. The control room contains four separate computers to carry out the monitoring and control functions.

They are operate as follows:

- GLSD's computer operating system runs a SCADA System - Supervisory Control And Data Acquisition System.
- The computer has 512 megabytes of RAM with 4 gigabytes of hard drive.
- 8,100 points are monitored and controlled by SCADA.
- A high-speed fiber optics cable is used between the buildings.
- The system has a back-up, uninterruptible power source.
- Touch-screen monitors are used in the outer buildings.
RESPONSE TO PUBLIC COMMENT

From May 27, 2004 to June 28, 2004, the United States Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MA DEP) solicited Public Comments on a draft NPDES permit, developed pursuant to a reapplication from Greater Lawrence Sanitary District for reissuance of the District's NPDES permit to discharge wastewater to the Merrimack River. After a review of the comments received, EPA has made a final decision to issue the permit authorizing the discharge. The following response to comment describes the changes and briefly describes and responds to the comments on the draft permit. A copy of the final permit may be obtained by writing or calling Betsy Davis, United States Environmental Protection Agency, 1 Congress Street, Suite 1100 (CMA), Boston, Massachusetts 02114-2023; Telephone (617) 918-1576.

A) Comment submitted by the Greater Lawrence Sanitary District on June 24, 2004.

Comment #1: GLSD's street address is 240 (not 24) Charles Street.

Response: The change is reflected in the final permit.

Comment #2: Page 2: Addition of monthly and weekly mass effluent limitations:
The GLSD's draft Long-Term CSO Control Plan (draft LTCP) dated November 2002 contains a Phase 1 recommended plan for CSO control. One component of the Phase 1 recommended plan is "Design and construct Riverside Pump Station and WWTP (wastewater treatment plant) improvements that increase wet weather capacity from 110 million gallons per day to 135 million gallons per day." (Attachment A) As part of the wet weather upgrade, the GLSD will be installing a secondary bypass to provide primary treatment and disinfection of a portion of the peak flow. The draft LTCP also envisions a subsequent increase in the wet weather capacity of the pump station and treatment plant to 165 million gallons per day. The GLSD has received a USEPA Administrative Order directing the GLSD as follows: "By October 15, 2004, the Permittee shall submit completed plans and specifications for the Phase 1 plan. The completed design should provide for the possibility of future expansion of wet weather capacity to 165 MGD," (Attachment B)

The addition of monthly and weekly mass effluent limitations will eliminate any benefit of the planned increase in wet weather capacity to 135 MGD and possibly to 165 MGD. Specifically, the GLSD will be unable to meet the weekly mass loading limitation and may be unable to meet the monthly mass loading limitation at these higher wet weather flows.

Attached (Attachment C) find summaries of combined sewer overflow occurrences reported to USEPA and MADEP during the period, January 1, 1996 to June 15, 2004. Please note that there are several rainstorms that resulted in extended wet weather flows of up to four and one quarter days in duration (October 20-24, 1996). Under the GLSD's draft LTCP, the GLSD's WWTP would be operated at a flow rate of 135 MGD (Phase 1) and up to 165 MGD (future expansion) during these periods. Even after the CSO discharge abates, the
WWTP would continue to be operated at higher flow rates for the period of time necessary for all wet weather runoff to pass through the combined sewer system. Monthly and weekly mass loading limitations calculated using a 52-MGD WWTP flow rate would prevent compliance during periods when the WWTP is experiencing flows of up to 135/165 MGD.

The GLSD requests that USEPA not add monthly and weekly mass effluent limitations to the GLSD’s NPDES permit at this time. Rather, the addition of monthly and weekly mass effluent limitations should be delayed until mass effluent limitations can be developed which take into account the actual operational experience and capabilities of the upgrade WWTP during wet weather.

Response: As part of a policy change requested by MADEP, flow limits in MA NPDES permits are now expressed as an annual average, rather than a monthly average. The purpose of the change is to allow some variation in POTW flows in response to wet weather, and in recognition that the flow rate used as a monthly average is in most cases presented in the treatment plant planning documents as an annual monthly average.

Agreeing to relax the flow limit from a monthly average to an annual average caused concern that there would be a significant increase of pollutants discharged to the receiving water during months when the monthly average discharge flow exceeds the limit in the current permit. To prevent degradation of the receiving water, the Agencies agreed to add mass limits based on the current design flow of the facility for both BOD$_5$ and TSS as a permit condition to ensure that existing controls on mass discharges are maintained.

In recognition of the benefits associated with maximizing combined flow to the treatment facility, the weekly mass loading limits have been changed to report only. The monthly average mass loading limits have been retained. Violations of the monthly average mass loading limits that are related to maximizing combined flows to the treatment facility will be addressed through the CSO enforcement process and may include the imposition of interim limits, if appropriate.

Comment #3: Page 2, Table 1.A.1, “pH RANGE” – Paragraph I.A.1.b. is actually on Page 6 and not Page 5.

Response: This change has been made in the final permit.

Comment #4: Page 2, Total chlorine residual continuous monitoring and Page 4, Chlorine dosing system alarm:

The GLSD is currently procuring the equipment and constructing the facilities needed to meet these requirements. The GLSD believes that it will have completed the installation of these facilities prior to issuance of the final NPDES permit. However, the GLSD cannot be certain that start-up of these new facilities will be problem-free. Consequently, the GLSD requests that the it be given a short period of time (i.e. – 90 days) after issuance of the final permit to complete
the start-up of the new facilities.

Response: The permit becomes effective sixty days from the date of signature as stated on page 1 of the final permit. Language has been added to footnotes 6 and 7 of the final permit to have all new equipment needed to meet the TRC requirements fully operational thirty days from the effective date of the permit.

Comment #5: Page 2, Dissolved Oxygen Monitoring - Approved methodology:
Current approved methods per 40 CFR part 136 for dissolved oxygen are limited to the Winkler or Electrode methods. The electrode methods specified utilize galvanic or polarographic sensors to measure dissolved oxygen. The Hach Company has developed a new more reliable luminescent dissolved oxygen (LDO) sensor. (Attachment D) This sensor eliminates problems associated with the other electrode methods such as anode replacement and cost, consumption of electrolyte solutions and possible contamination, and sensor membranes that become coated with debris requiring cleaning, replacement and more frequent calibration. The Hach Company is in the process of seeking EPA approval for the new LDO sensor. The GLSD uses this new LDO technology in its aeration system and has found it to be very accurate and reliable. The District requests permission to use the LDO technology to measure dissolved oxygen in the final effluent.

Response: The luminescent dissolved oxygen (LDO) sensor has not yet been approved. The Hach company has submitted an application to EPA’s Office of Water in Washington DC and we believe this is the proper venue for seeking approval. It is EPA’s Region 1 understanding that EPA Headquarter’s has begun the review process.

The Hach company also submitted a copy of their application to our Regional office for a technical review to determine if the GLSD can use this method to report

The current Agency protocol for approving a new test method only grants EPA’s Regional Office authority for approval of methods used by a single laboratory. The request we received from the Hach Company did not identify the laboratory involved. It appears that the request is for a single region-wide approval.

An individual laboratory requesting a limited use method approval for NPDES compliance samples would be expected to generate its own method validation data and documentation for each matrix type involved.

Until the product is approved for use in an individual laboratory or, it is approved by EPA Headquarter’s for nation-wide use, the permittee is required to use analytical methods listed in 40 Code of Federal Regulation 136 for compliance purposes.

Comment #6: Page 3, Footnote below Table:
The requirement for same time and day subjects the GLSD to a high risk of permit violations. The GLSD currently has a routine sampling program in which it
endeavors to take samples at the same location and at the same time and day of every month. However, there are many reasons why the GLSD is often unable to adhere to its sampling program. Exceptions to the same time and same day portion of the program include the following:

Effluent composite sampler problems such as not obtaining a sample due to power outages or power "bumps" that disable the sampler, problems with the composite sampling flow signal, split pump tubing, debris around suction intake, sample accidentally spilled, etc. Partial or non-representative sample can also be obtained for these above reasons. Currently, when any of these events occur, the GLSD resets the sampler and samples an additional day in order to comply with the 5 day per week monitoring requirement for BOD and TSS. The days of sampling have varied for this reason.

Grab sample times and days have varied for reasons such as emergencies requiring staff's immediate attention, reduced staffing levels (e.g. due to sick leave and vacations), inclement weather such as severe lightning, hail or driving rains. Also, lab staff covers the weekend lab duties on a three-hour per weekend day basis. The staff collects grab samples earlier in the day on weekends than they do during the week.

Problems with lab equipment or materials such as incubators, bacti plates, QA/QC data out of acceptable ranges etc. have occasionally required a resample to take place on a different date or time.

Problems experienced with sample location happen infrequently and have generally been related to grab sampling at the outfall structure. This structure can sometimes be inaccessible due to snow/ice accumulation during or immediately after a storm or due to an abundance of bees (one of GLSD's lab technicians is allergic to bee stings). On these occasions, the sample is obtained as close to the planned location as possible while ensuring the safety of the sample collector.

Also the GLSD requests additional guidance regarding what is meant by same time. (E.g. Is a minor deviation such as 15 minutes early or late a deviation that needs to be reported? 30 minutes? 2 hours?)

All NPDES compliance sampling information including location, days and times is maintained in the laboratory log book. This book is available for inspection by state and federal inspectors. Documenting the various deviations, major and minor, through correspondence appended to the monthly DMR's will be burdensome. The GLSD requests that EPA reconsider if such precision in sampling time is necessary. If deemed necessary, the GLSD requests that the permit language be modified to explicitly allow flexibility to modify date and time of sampling due to circumstances such as those described above.

Response: This is standard language that the Agencies are including in all reissued permits. This requirement will help ensure that compliance sampling is representative of the discharge.
We expect, on occasion, situations will arise at the facility that will cause delays or a departure from the standard sampling procedures as you have described. We do not believe noting this information on the DMR's, to be overly burdensome, since it is tracked at GLSD and recorded in the laboratory book. Deviation considered as significant deviations are changes in the sampling day or sampling location. Minor changes in the sampling time are not significant.

Comment #7: Page 4, Footnote 3:
Currently, the GLSD performs its composite sampling at the exit of one of its chlorine contact tanks. The draft permit would require the GLSD to move its sampling point to the outfall structure after the chlorine contact tanks. The reason that the GLSD does not currently take its composite sample at the outfall structure is that there is an elevation difference of up to fifteen feet (depending on flow rate) between the top of the channel wall and the water surface elevation in the channel itself. Under low flow conditions, the sampler must draw a sample under a fairly high negative suction head. The GLSD has found that typical commercial composite samplers do not provide reliable sample collection under this condition. In addition, the long sample line is susceptible to freezing during cold weather conditions. The GLSD requests that the permit be changed to allow GLSD to keep the sampler in its current location for at least one year after effective date of the new permit. This will allow GLSD time to explore modifications to arrangements at the outfall structure that would address the existing concerns.

Response: Language has been added to footnote 3 of the final permit. It allows GLSD to keep the composite sampler in its current location for up to one year after the effective date of the reissued permit. During this time, we expect the permittee to implement an appropriate alternative for collecting composite samples at the outfall structure.

Comment #8: Page 5: Footnote 8, Test Dates:
The draft permit would require that toxicity test sampling be performed on samples taken in the second week of the month. The GLSD has found that toxicity tests often are not successful and a retest is required. Past reasons for this have included: 1) the GLSD's effluent sampler malfunctions or collects insufficient sample during any of the day 1, day 3 or day 5 sampling periods or (2) any portion of the toxicity test fails to meet test method criteria for a valid test. Under the old permit language, the GLSD had the ability to retest within the same month and not violate any requirement of its permit. The proposed language would eliminate this option. The GLSD requests that language be added to Footnote 8 that would allow the GLSD to resample and retest in the event that a valid test is not obtained for the samples taken in the second week of the month.

Response: Samples collected for toxicity tests in all permits issued to facilities discharging to the Merrimack River are limited to the second week in January, April, July and, October. The Agencies developed toxicity test sampling schedules for each watershed in Massachusetts to get a better understanding of overall toxicity
impacts to a receiving water when several point sources discharge to the same water body.

We understand there are various reasons that a permittee may have to repeat a toxicity test. This issue is addressed in Attachment G, The NPDES Whole Effluent Toxicity Testing Monitoring and Reporting Tips, Common Pitfalls and Guidance, in the “NPDES Permit Program Instructions for Discharge Monitoring Reports”, that is sent out each year with the discharge monitoring reports.

Comment #9: Page 6, Part 1.A.1.f:
The GLSD notes that average population growth in the District service area has averaged 0.8% per year during the period 1980 to 2000. Consequently, the proposed 80% criterion appears to require planning to begin approximately 25 years before the plant's design flow would most likely be exceeded.
Response: This language has been deleted from the final permit.

Comment #10: Page 6, Part 1.A.1.g:
The draft permit proposes to add a requirement to minimize use of chlorine while maintaining adequate bacterial control. As a matter of good operation and good policy, the GLSD routinely seeks to maintain an adequate level of chlorination while avoiding unnecessary over chlorination. In addition, the GLSD operates a dechlorination system to remove chlorine added prior to discharge of its effluent water.

The proposed requirement could be open to differing opinions regarding what is "minimal" use of chlorine. The GLSD believes that the assurance of adequate disinfection should not be jeopardized by an unqualified requirement for minimization of chlorine use. The GLSD requests that this provision be changed. For example, the provision could read as follows: "The permittee shall minimize the use of chlorine while maintaining adequate bacterial control including providing a reasonable margin of safety in chlorine use to ensure continuous effective disinfection."
Response: We agree with GLSD's proposed language and have included the language in Part 1.A.1.g. the final permit.

Comment #11: Page 9, Part 1.D:
The GLSD understands that, although the reference to Part II.B.4. has been removed from this section, the provisions of Part II.B.4. are still applicable to this NPDES permit.
Response: All of the General Requirements in Part II of the permit apply to the final permit.

Comment #12: Page 16, Part 1.I.2
CSO notification is already addressed in Section 1.G.3.vi. (page 14). Recitation of additional requirements for CSO notification in a separate location in the permit has the potential for establishing two alternative reporting requirements for the same event. The GLSD requests that the proposed Section 1.1.2 be deleted. If the USEPA declines to delete Section 1.1.2, the GLSD requests that all CSO
notification requirements be consolidated and appear in one location in the permit.

Response: This section has been deleted from the final permit. This language was added to notify water supply communities downstream of GLSD’s discharge if and when an emergency at the plant occurred that could potentially impact public drinking water supply. There are no drinking water intakes downstream of the treatment plant therefore, it does not pertain to GLSD.

Comment #13: The first sentence in this section includes the language, "...potential to violate...". This wording is open to differing opinion as to what conditions have a potential to violate and when this potential may exist. The GLSD requests that this language be deleted. If the USEPA declines to delete this language, the GLSD requests that the language be changed so that GLSD’s requirement is only for situations in which a violation of permit effluent limits appears likely or reasonably imminent.

Response: See response to the previous comment.

Comment #14: Clarify wording of the first sentence in this section to refer to "...permit effluent limits..."

Response: See response to comment #12.

Comment #15: The permit does not list any downstream drinking water suppliers. We assume that this is because there aren’t any at the present time. Is this correct?

Response: See Response to Comment #12.


Comment #16: We support increasing sampling frequency for fecal coliform and would even encourage a daily sample during warm weather months or a stipulation for two of the five required samples be taken during the weekend since the river is used extensively for recreation for boating and fishing as stated in the 305b assessment for this watershed. A five day a week sampling schedule may result in no or infrequent sampling of bacteria on weekends as it seems likely sampling would occur during the work week since this is a ‘laboratory dependent’ parameter. Understanding weekend effluent conditions, when recreational use might be at its peak, would be protective of public health.

Response: The increase in fecal coliform sampling in conjunction with the alarm requirement for the chlorination system is adequate to ensure compliance at all times.

Comment #17: The facility is required to meet 85% removal rates BOD and TSS during dry weather only. Understandably the facility will be receiving a large volume of
and influent–storm water mix resulting in a more dilute flow and more difficulty in achieving 85% efficiency. In this situation, the facility should be asked to increase its monitoring of BOD and TSS to make sure maximum daily loads of BOD and TSS and the concentrations of these two pollutants are not exceeded. Specifics about what constitutes wet weather versus dry weather operation should be added to the permit. Does wet weather start when a storm event begins or when runoff-diluted influent arrives at the facility or when CSO surcharges begin? At what point is a wet weather event over? It does not appear BOD and TSS loads and concentration limits are suspended during wet weather events. We support the permit maintaining these limits at all times. We are particularly supportive of the addition of BOD and TSS load limits.

Response: The secondary treatment regulations require a minimum of 85% removal efficiency for BOD₅ and TSS over a 30 day average unless special circumstances apply pursuant to 40 CFR 133.103 apply. The regulations at 40 CFR 133.103(a) allow a relaxation of the 85% removal requirement for facilities with combined sewer systems and it has been removed from the final permit.

Facilities with combined sewers usually can not meet the 85% removal requirement on a monthly average because the influent is too dilute during storm events as you have noted in your comment. Due to the difficulties in separating wet and dry weather data, EPA New England does not typically include the 85% removal requirement in permits for facilities with CSOs.

EPA's National CSO Control Policy defines wet weather flow in a combined sewer system as dry weather flow combined with storm water runoff and dry weather flow combined with inflow in a separate sewer. A wet weather event is over when the runoff that is conveyed through the POTW has stopped.

Comment #18: The Merrimack River in this section is impaired by several other pollutants in addition to pathogens: priority organics, and nutrients. The Spicket River has the additional impairments of: habitat alteration, unknown causes and objectionable deposits. The draft permit has no limits for nutrients but it does include a reporting requirement for phosphorus. The State will have to undertake and complete a TMDL for the Merrimack to set nutrient loads for all contributors. Without data about the contribution of nutrient loads from the many point source discharges, this task will be made difficult and result in potentially inaccurate load allocations because of a lack of definitive inputs into the model used to determine loads. The facility’s requirement to monitor and report total phosphorus will help in TMDL preparation. Monitoring of ammonia, nitrate and TKN, given Merrimack River flows to an estuary, would also provide valuable data and should be considered as additional monitoring parameters.

Response: The segment of the Merrimack River that receives the effluent from the GLSD is on the Massachusetts - Year 2002 Integrated List of Waters requiring a TMDL for nutrients as well as other pollutants. Quarterly reporting requirements for total ammonia nitrogen, nitrite/nitrate, and TKN have been added to the final permit. Two of the four samples are required to be collected during high flow events. For this permit, a high flow event is defined as flow that exceeds 30 MGD. See Footnote 8 in the final permit.
Comment #19: Footnote #6. The facility is required to report inadequate chlorine concentrations and record information about such incidents. As noted above, this river is heavily used and this requirement is a protective of public health. Elevated levels of chlorine are also problematic and can be harmful to aquatic life in the receiving water. The facility should also be required to record the amount of time the facility released effluent with TRC concentrations above permits limits with a notation on the DMR and by highlighting the recording charts from the continuous analyzer submitted with the DMRs showing the number of hours of exceedances and maximum concentration recorded by the analyzer. Since only one grab sample a day is used for compliance purposes, not the continuous monitor, the facility could be above TRC concentration limits at some point or points during a day without the one grab sample capturing these periods of elevated TRC. Highlighting exceedances captured by the automatic recorder will help plant operators and regulators track patterns of TRC problems at the facility should there be any. The facility’s present DMR data showed a daily max of 1.02 mg/l in April 2004. This is a significant exceedance given the toxicity of chlorine to aquatic organisms but the amount of time such heavily chlorinated effluent flowed into the river is also significant. Knowing the duration of these elevated concentrations should be highlighted and made accessible.

Response: The permittee is required to submit graphs showing results from the continuous recorder. While the duration of peak chlorine discharges will not be recorded on the monthly graphs submitted with the DMRs the data will be part of the official file and can be obtained from EPA or MA DEP.

Comment #20: The I/I remediation requirements in the draft permit are much needed to try to reduce flows to the facility there by benefitting daily operations and reducing CSO frequencies and volumes. The monthly average flow for April of this year was just under maximum capacity at 51.9 MGD. This would suggest many days during April 2004 when the facility was near and over capacity and there would have been significant CSO surcharge hours. Hopefully I/I elimination can be accomplished expediently and the District can work to maximize treatment at the plant at all times to reduce the frequency and volume of CSO discharges. In this light, the District should not allow any additional hook up to the Greater Lawrence system until significant progress has been made on I/I removal. Subsequent to I/I progress, any new tie ins remove at least one for one, and preferably more, of I/I above the level outlined in the annual I/I corrective actions planned. One possibility for encouraging work in priority areas to maximize the efficiency of the system to reduce CSO surcharges would be to allow a trading or banking program among the member communities so an additional hook up in one community could be offset in another community whose I/I corrective actions would benefit the overall system the most. The entire District should agree on how to prioritize I/I corrective actions and agree on criteria to use in the prioritization. Standard criteria would facilitate banking/trading endeavors and provide the general public with a defined ranking system should they be interested in better understanding this primarily rate-payer funded undertaking.

Response: The Agencies support your suggestion that the District work with the
Communities to develop and implement a prioritization plan that maximizes the reduction of I/I. A trading program is one approach for the District and the member communities to consider.

These are good suggestions and we encourage the Communities to incorporate them into their I/I plans.

Comment #21: The level of I/I in this system has an alternate side. There is probably exfiltration from the sewer infrastructure during periods of drought and low groundwater levels. Priority should be given to rectifying degraded infrastructure in areas near sensitive receptors, such as small streams or wetlands. This should issue be part of the prioritization criteria for deciding on I/I remediation projects.

Response: Maintaining the integrity of the infrastructure is an important component of the I/I program and, correcting structural problems will also address exfiltration in these areas. We recommend prioritizing any area exhibiting local water quality problems that may in part be due to exfiltration.

Comment #22: The permit requirements for CSO control, effluent limitations, and reporting are enthusiastically supported. We would like one augmentation considered relative to the nine minimum control technologies detailed in Attachment E. under control 7.e. Street cleaning is an important facet of pollution control. We would like to see this expanded to include sidewalks. In New England, with our snowy winters, a significant volume of sand and salt laden snow can be piled on the side of roads. During snow melt, this sediment and accumulated litter remains on the sidewalks beneath the snow piles and is not dealt with during street sweeping and is left to runoff into storm drains. Areas under bridges and sidewalks with pest waste pose and additional contribution of pollutants to storm water runoff that could also be at least partially ameliorated by regular sidewalk sweeping.

Response: This is a good suggestion. We recommend it be implemented under number seven of the Nine Minimum Controls, Pollution prevention program that focus on contaminant reduction activities., listed in Part G.1.a.of the final permit.


Comment #23: A reasonable monitoring plan needs to be implemented for systems of the Massachusetts Municipal Co-Permittees in order to detect:

Unauthorized discharges of either water quantity or water quality prior to entry to the Lowell Regional Wastewater Utility treatment works.
Wet weather illegal sump pumps inflow activity.
Failures of the performance capacity of Pre-Treatment Processes of Industrial Users.
Uncontrolled microbiological growth during infrastructure low flow conditions resulting in odorific and potentially unhealthy aerosol components being released into the natural and residential ambient atmospheres.

Response: Part I.C. Unauthorized Discharges and Part I.D. Operation and Maintenance of
the Sewer System of the final permit addresses unauthorized discharges and increased inflow activity. This permit only authorizes discharges from outfalls identified in the final permit to the Merrimack and Spicket Rivers and, any other discharges are unauthorized in accordance with Part II. General Requirements, Section D. 1.e.

Part I. Section D. Operation and Maintenance of the Sewer System requires each Co-permittee implement a plan to control infiltration/inflow from their separate collection system. Eliminating illegal sump pumps hooked up to the collection system is part of an I/I plan.

The permit requires proper operation and maintenance of the facility, which should minimize odor problems. MA DEP has authority under the State's air pollution laws to address nuisance odor issues.

Comment #24: Numerous microbiological discharge exceedances which have continued to occur at Greater Lawrence Sanitary District call for a review of the operational protocols and procedures as well as a review of the capacity, training and scheduling of staff and supervisory management.

Response: We are supportive of any effort the GLSD devotes to staff training and updating operational procedures at the facility. We also believe that recent and future upgrades to the facility and the sewer system will contribute to reducing effluent exceedances. Continued non-compliance may be addressed through an enforcement action.

Comment #25: Subsequent to any exceedance in discharge limits by Industrial Users, an unannounced on-site inspection should be performed by Lowell Regional Wastewater Utility staff or subcontract personnel to insure actual operation of the pre-treatment system. Continuous and chronic exceedances should result in an over-all evaluation of the appropriate design and operational capacity of the pre-treatment system. Necessary maintenance, repair and re-design of pre-treatment systems should be attentively enforced.

Response: The pretreatment program for GLSD was approved by EPA on September 24, 1984. Scheduled and unscheduled inspections at industrial facilities that discharge to the POTW are part of any approved Pretreatment Program. As part of their NPDES permit, the District has the responsibility to enforce the requirements of the Pre-Treatment Program such as an exceedance of capacity that could potentially impact the process at the treatment facility.

Comment #26: Chronic and unattenuated wet weather CSO discharge remains problematic. Monitoring programs and sampling protocols should be adjusted to include single sample (non-composite) wet weather CSO discharge measurements for the following parameters:

- BOD mg/l
- TSS mg/l
Fecal coliform cfu's
Toxicity.

Risk assessment and management based on average monthly values does not address possible and probable exposures of humans during primary and secondary contact recreation, and of fish, other aquatic life, and wildlife in their natural habitat to maximum and peak levels of pollutants and pathogens.

Response: The District has developed a CSO Long Term Control Plan to address discharges from combined sewers and, the permittee is implementing Phase I of the Plan now. One of the primary objectives of the plan is to bring all wet weather combined sewer discharges into compliance with the Clean Water Act (CWA) and minimize impacts of CSOs on water quality, aquatic biota and human health. The poor quality of the CSO discharge is well documented. The focus needs to be on reducing the frequency and volume of CSO discharges and not further monitoring.

Part I.F. the Nine Minimum Controls listed in the final permit requires public notification. The objective is to ensure the public receives adequate notification of CSO impacts on water use areas. In areas used for recreation, the permittee must inform the public of potential health risks associated with the use of the river.

Comment #27: Public notification of CSO outfalls and potential health risks should include elements suitable for local cable television, radio and newspapers in appropriate local languages. Anyone in a CSO wet weather discharge area will already be exposed to potentially harmful water through direct contact or aerosol before they ever see a sign or even if they do not ever see or read a sign.

Response: The permit requires notification signs for all CSO outfalls be located at areas where recreational activities take place. The signs must be visible from both land and water and readable by the public.

Language has been added to the final permit that requires public notification signs in the vicinity of a given outfall structure be in English. In areas where the primary language of a substantial percentage of the residents in the vicinity of an outfall structure is not English, the permittee shall place additional signs in languages that appropriately notify the community of the location of CSO outfalls. See Section G.2.f.of the final permit.

D) Comment submitted by the Frank McCann, Director of Public Works, City of Lawrence, Lawrence, MA on June 28, 2004.

Comment #28: Part I.D. of the permit includes development and implementation of an I/I control plan for separate sewer systems. We note that the Lawrence collection system is primarily a combined system and, therefore, I/I monitoring and reduction requirements do not apply. Furthermore, we note that the Lawrence system has adequate capacity to convey all dry weather flow to the GLSD for treatment, as evidenced by the fact that the City has not experienced any
sanitary sewer overflow (SSO) events.

Given the combined nature of the Lawrence system, we request confirmation from EPA that the requirements of Part I.D will not be applied to Lawrence or, if they are applied, that:

This application be limited to the relatively small portions of the Lawrence system that are separate in nature.

The study and resolution of I/I issues will only be required in the cases where (1) violations of permit regulations occur due to excessive I/I, as is stated in the permit under I-D.3, and that excessive I/I is understood to be the 4,000 gpd/im guideline used by MADEP; and (2) I/I removal is cost effective.

I/I removal to offset the effect of new sewer connections and extensions will not be required given the combined nature of the system, such a requirement would entail significant monitoring but provide little benefit in terms of reduced volume and frequency of CSO discharges.

Response: Part I.E. Operation and Maintenance of the Sewer System in the draft and final permit applies only to the City’s separate sewers. Development and implementation of an I/I plan for the separate sewer system is required. The plan must ensure that there are no sanitary sewer overflows (SSO’s) and that the I/I does not result in violations of the permit discharge conditions.

I/I removal that may be necessary to offset the effect of all new sewer connections and extensions can be accomplished in either the separate or combined system. The goal of this requirement is to prevent increases in the frequency, duration and volume of CSO discharges due to new sewer connections and extensions.

The CSO and I/I control programs in the City must keep pace with new sewer connections such that the work accomplished by the CSO program will not be diminished.

Comment #29: Combined Sewer Overflows

As a member of the GLSD, the City’s CSO issues are being addressed as part of the Phase I Long Term Control Plan that has been reviewed and approved by EPA and DEP. Therefore, the requirements of Part I.E of the permit should apply to the District rather than the City of Lawrence.

Response: Part 1.E. of the both the draft and final permit pertain to the City’s separate collection system rather than CSO’s. While GLSD may be addressing CSO issues as far as a long term control plan, the City is responsible for CSOs in the City sewer system and for implementing some of the nine minimum controls.

Specifically, the City of Lawrence is responsible for implementing six of the Nine.
Minimum Controls (#1,2,3,4,6 and, 7) in Part 1.G. of the final permit for the City's combined collection system as stipulated on page 1 of the final permit.

E) Comment submitted by the Division of Marine Fisheries on June 29, 2004.

Comment #30: Recently, MarineFisheries re-classified the Merrimack River from prohibited to conditional status for the purpose of harvesting shellfish. This re-classification is the result of reductions in fecal coliform levels in the receiving waters. In order to remain aware of potential sources of fecal coliform bacteria that may effect this new classification, MarineFisheries request to be notified under “Section I. Reporting and Monitoring” within twenty-four hours when a permit excursion for fecal coliform or plant failure occurs. A twenty four hour notification of a permit excursion or plant failure should be sent to the following address and telephone number:

Division of Marine Fisheries
Shellfish Management Program
30 Emerson Avenue
Gloucester, MA 01930
(978)282-0308

Response: This address has been added in the final permit.

8/17/05 updated