

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

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

City of Newburyport

is authorized to discharge from the facility located at:

**Newburyport Water Pollution Control Facility
157 Water Street
Newburyport, MA 01950**

to receiving water named:

Merrimack River (MA 84A-06)

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

This permit shall become effective on the first day of the calendar month immediately following 60 days after 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 May 3, 2004 and the permit modification issued on October 19, 2006.

This permit consists of 15 pages in Part I including effluent limitations, monitoring requirements, 25 pages in Part II including Standards Conditions, and Attachment A - Marine Acute Toxicity Test Procedure and Protocol; Attachment B - Reassessment of Technically Based Industrial Discharge Limits, Attachment C - NPDES Permit Requirement for Industrial Pretreatment Annual Report, and Attachment D - Summary of Required Reports Submittals.

Signed this 15th day of August, 2012

/S/ SIGNATURE ON FILE

Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Director
Massachusetts Wastewater Management Program
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 001 to the Merrimack River. The discharge shall be limited and monitored as specified below.								
EFFLUENT CHARACTERISTIC	EFFLUENT LIMITS						MONITORING REQUIREMENTS ³	
	Mass Limits			Concentration Limits				
Parameter	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow	***	***	***	3.4 MGD ²	***	Report MGD	Continuous	Recorder
Flow	***	***	***	Report MGD	***	***	Continuous	Recorder
BOD ₅ ⁴	851 lbs/day	1276 lbs/day	Report	30 mg/l	45 mg/l	Report mg/l	3/Week	24-Hour Composite ⁵
TSS ⁴	851 lbs/day	1276 lbs/day	Report	30 mg/l	45 mg/l	Report mg/l	2/Week	24-Hour Composite ⁵
pH Range ¹	6.5-8.5 SU (See Permit Page 5 of 14, Paragraph I.A.1.b.)						5/Week	Grab
Total Residual Chlorine ^{1,7,8,9}	***	***	***	0.23 mg/l	***	0.39 mg/l	5/Week	Grab
Fecal Coliform Bacteria ^{1,6,7,8}	***	***	***	88 CFU/100 ml	***	400 CFU/100 ml	5/Week	Grab
Enterococci ^{1,7}	***	***	***	35 Colonies /100 ml	***	104 Colonies /100 ml	5/Week	Grab
Total Ammonia Nitrogen, as N	Report lbs/day	***	***	***	***	Report mg/l	1/Month	24-Hour Composite ⁵
Total Kjeldahl Nitrogen	Report lbs/day	***	***	***	***	Report mg/l	1/Month	24-Hour Composite ⁵
Total Nitrate/Nitrite	Report lbs/day	***	***	***	***	Report mg/l	1/Month	24-Hour Composite ⁵
Whole Effluent Toxicity ^{10,11,12,13}	Acute LC ₅₀ ≥ 100%						4/Year	24-Hour Composite ⁵

Sampling Location: Following dechlorination, just prior to discharge to outfall pipe.

Footnotes:

1. Required for State Certification.
2. Report annual average, monthly average, and the maximum daily flow. The limit is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic average of the monthly average flow for the reporting month and the monthly average flows for the previous eleven months.
3. All required effluent samples shall be collected at the point specified on page 2. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented in correspondence appended to the applicable discharge monitoring report.

All samples shall be tested using analytical methods found in 40 CFR § 136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR § 136.

4. Sampling required for influent and effluent.
5. 24-hour composite samples will consist of at least twenty four (24) grab samples taken during one consecutive 24 hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.
6. A monthly geometric mean limit of 88 cfu per 100 ml and a maximum daily limit of 400 cfu per 100 ml shall apply. No more than 10% of samples shall exceed 260 cfu per 100 ml. Monitoring of this parameter shall be conducted concurrently with the TRC sampling.
7. Fecal coliform bacteria, enterococci and total residual chlorine limits and monitoring requirements are in effect year round. As enterococci monitoring is a new requirement, the permittee shall monitor only for the first year of the permit without an effluent limit. After one year, the effluent limits for enterococci apply. The average monthly limit for fecal coliform bacteria is expressed as a geometric mean. Samples for fecal coliform bacteria and enterococci shall be taken at the same time as a total residual chlorine sample. Sampling is required five days per week.
8. The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum detection level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 20 ug/l or less shall be reported as zero on the discharge monitoring report.

Chlorination and dechlorination systems include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent 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 chlorine or dechlorination chemicals occurred.

The alarm system shall specifically include a low TRC level alarm on the pre-dechlorination TRC analyzer. The alarm shall be set at a level that ensures an adequate kill of fecal coliform bacteria. The alarm shall be connected to the WPCF alarm pager system. Once notified of low TRC levels, the WPCF staff shall visit the plant to investigate the cause of the alarm **and immediately sample the effluent for TRC and fecal coliform bacteria**. All alarms must be recorded in the operator's log book including the time of alarm, time of system investigation, duration and magnitude of the event, the cause for the alarm and how the event was resolved.

The permittee must also notify the Massachusetts Division of Marine Fisheries (*Marine Fisheries*) within 4 hours (See Section D for the description of the related immediate warning system developed with *Marine Fisheries*.)

9. For every day that more than two samples are analyzed, the monthly DMR shall include an attachment documenting the individual grab sample results for that day, the date and time of each sample, the analytical method, and a summary of any operational modifications implemented in response to the sample results. This requirement applies to all samples taken, including screening level and process control samples. All test results utilizing an EPA approved analytical method shall be used in the calculation and reporting of the monthly average and maximum daily data submitted on the DMR (see Part II, Section D.1.d(2)).
10. The permittee shall conduct acute toxicity tests four (4) times per year using Mysid Shrimp and Inland Silverside. Toxicity test samples shall be collected during 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 by 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.

Test Dates	Submit Results by:	Test Species	Acute Limit LC ₅₀
January April July October	February 28 th , March 31 st , August 31 st , November 30 th	Mysid Shrimp Inland Silverside	≥100%

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

11. The LC₅₀ 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.
12. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A (Marine Acute Toxicity**

Test Procedure and Protocol) Section IV., DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, which may be found on the EPA Region I web site at <http://www.epa.gov/Region1/enforcementandassistance/dmr.html> . If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlines in **Attachment A**. Any modification or revocation to this guidance will be transmitted to the permittees. However, at any time, the permittee may choose to contact EPA-New England directly using the approach in **Attachment A**.

13. The permit shall be modified, or alternatively revoked and reissued, to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of the toxicity tests indicate the discharge causes an exceedance of any State Water Quality Criterion. Results from these tests are considered “new information” and the permit may be modified pursuant to 40 CFR 122.6(a)(2).

Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
 - b. The pH of the effluent shall not be less than 6.5 nor greater than 8.5 and not more than 0.2 standard units outside of the natural background range.
 - c. The discharge shall not cause objectionable discoloration of the receiving waters.
 - d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
 - e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both biochemical oxygen demand (BOD₅) and total suspended solids (TSS). The percent removal shall be based on monthly average values.
 - f. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
 - g. The results of sampling for any parameter done in accordance with EPA approved methods above its required frequency must also be reported.
 - h. If the average annual flow in any calendar year exceeds 90% of the facility's design flow (3.06 MGD), the permittee shall submit a report to MassDEP by March 31 of the following calendar year describing its plans for further flow increases and describing how it will maintain compliance with the flow limit and all other effluent limitations and conditions.
2. All POTWs must provide adequate notice to the Director of the following:
 - a. Any new introduction of pollutants into that POTW from an indirect discharger which would be subject to section 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; and
 - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

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

- (1) The quantity and quality of effluent introduced into the POTW; and
- (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

3. Prohibitions Concerning Interference and Pass Through:

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

B. UNAUTHORIZED DISCHARGES

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

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

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions. The permittee is required to complete the following activities for the collection system which it owns:

1. Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Collection System O & M Plan required pursuant to Section C.5. below.

2. Preventive Maintenance Program

The permittee shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Collection System O & M Plan required pursuant to Section C.5. below.

3. Infiltration/Inflow

The permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Collection System O & M Plan required pursuant to Section C.5. below.

4. Collection System Mapping

Within 30 months of the effective date of this permit, the permittee shall prepare a map of the sewer collection system it owns (see page 1 of this permit for the effective date). The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up to date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

- a. All sanitary sewer lines and related manholes;
- b. All combined sewer lines, related manholes, and catch basins;
- c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);
- d. All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;
- e. All pump stations and force mains;
- f. The wastewater treatment facility(ies);
- g. All surface waters (labeled);
- h. Other major appurtenances such as inverted siphons and air release valves;
- i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- j. The scale and a north arrow; and
- k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

5. Collection System Operation and Maintenance Plan

The permittee shall develop and implement a Collection System Operation and Maintenance Plan.

- a. Within twelve (12) months of the effective date of the permit, the permittee shall submit to EPA and MassDEP
- (1) A description of the collection system management goals, staffing, information management, and legal authorities;
 - (2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
 - (3) A schedule for the development and implementation of the full Collection System O & M Plan including the elements in paragraphs b.1. through b.8. below.
- b. The full Collection System O & M Plan shall be completed, implemented and submitted to EPA and MassDEP within thirty-six (36) months from the effective date of this permit. The Plan shall include:
- (1) The required submittal from paragraph 5.a. above, updated to reflect current information;
 - (2) A preventive maintenance and monitoring program for the collection system;
 - (3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
 - (4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
 - (5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
 - (6) A description of the permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts; and
 - (7) An educational public outreach program for all aspects of I/I control, particularly private inflow.
 - (8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

6. Annual Reporting Requirement

The permittee shall submit a summary report of activities related to the implementation of its Collection System O & M Plan during the previous calendar year. The report shall be submitted to EPA and MassDEP annually by March 31. The summary report shall, at a minimum, include:

- a. A description of the staffing levels maintained during the year;

- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
- d. A map with areas identified for investigation/action in the coming year;
- e. If treatment plant flow has reached 90% of its design flow [3.06 mgd] based on the annual average flow during the reporting year, or there have been capacity related overflows, submit a calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year; and
- f. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit.

7. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works¹ it owns and operates.

D. IMMEDIATE WARNING SYSTEM

Within twelve (12) months of the effective date of the permit issuance, the permittee shall submit a report to EPA and MassDEP detailing any updates to the design and operation of an immediate warning system developed with input from *MarineFisheries*.

At a minimum the immediate warning system shall incorporate all of the total residual chlorine monitoring and alarms systems required in footnote 8, and shall include procedures for immediate (within 4 hours) notification of *MarineFisheries* if a low TRC alarm occurs. The City shall continue to work cooperatively with *MarineFisheries* to develop and implement the system.

E. INDUSTRIAL USERS AND PRETREATMENT PROGRAM

1. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 120 days of the effective date of this permit, the permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to revise local limits. As part of this evaluation, the permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the permittee shall complete and submit the attached form (Attachment B) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the

¹ As defined at 40 CFR §122.2, which references the definition at 40 CFR §403.3

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

2. 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.
3. The permittee shall provide the EPA and MassDEP with an annual report describing the permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to the due date in accordance with 403.12(i). The annual report shall be consistent with the format described in Attachment C of this permit and shall be submitted no later than March 1 of each year.
4. 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).
5. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR 405 et. seq.
6. The permittee must modify its pretreatment program, if necessary, to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes, if applicable, to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.

F. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practice, including EPA regulations promulgated at 40 CFR Part 503, which prescribe “Standards for the Use and Disposal of Sewage Sludge” pursuant to Section 405(d) of the CWA, 33 U.S.C. § 1345(d).
2. If both state and federal requirements apply to the permittee’s sludge use and/or disposal practices, the permittee shall comply with the more stringent of the applicable requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use and 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 requirements of 40 CFR Part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These requirements also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g. lagoons, reed beds), or are otherwise excluded under 40 CFR §503.6.
5. The 40 CFR Part 503 requirements include the following elements:
 - General requirements
 - Pollutant limitations
 - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
 - Management practices
 - Record keeping
 - Monitoring
 - Reporting

Which of the 40 CFR Part 503 requirements apply to the permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 Guidance document, “EPA Region 1 – NPDES Permit Sludge Compliance Guidance” (November 4, 1999), may be used by the permittee to assist it in determining the applicable requirements.²

6. The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen vector attraction reduction (land application and surface disposal) at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.

² This guidance document is available upon request from EPA Region 1 and may also be found at: <http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf> .

less than 290	1/ year
290 to less than 1500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

Sampling of sewage sludge shall use the procedures detailed in 40 CFR 503.8.

7. Under 40 CFR § 503.9(r), the permittee is a “person who prepares sewage sludge” because it “is...the person who generates sewage sludge during the treatment of domestic sewage in a treatment works...” If the permittee contracts with *another* “person who prepares sewage sludge” under 40 CFR § 503.9(r) – i.e., with “a person who derives a material from sewage sludge” – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the permittee does not engage a “person who prepares sewage sludge,” as defined in 40 CFR § 503.9(r), for use or disposal, then the permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 503.7. If the ultimate use or disposal method is land application, the permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
8. The permittee shall submit an annual report containing the information specified in the 40 CFR part 503 requirements (§503.18 (land application), §503.28 (surface disposal), or §503.48 (incineration) by **February 19** (*see also* “EPA Region 1 – NPDES Permit Sludge Compliance Guidance”). Reports shall be submitted to the address contained in the reporting section of the permit. If the permittee engages a contractor or contractors for sludge preparation and ultimate use or disposal, the annual report need contain only the following information:
 - Name and address of contractor(s) responsible for sludge preparation, use or disposal.
 - Quantity of sludge (in dry metric tons) from the POTW that is transferred to the sludge contractor(s), and the method(s) by which the contractor will prepare and use or dispose of the sewage sludge.

G. MONITORING AND REPORTING

1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. **Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR
 - a. Submittal of Reports using NetDMR

NetDMR is accessed from <http://www.epa.gov/netdmr> . **Within one year of the effective date of this permit**, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative

infeasibility, that precludes the use of NetDMR for submitting DMRs and reports (“opt-out request”).

DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA, including the MassDEP Monthly Operations and Maintenance Report, as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Monthly Operation and Maintenance Reports) to MassDEP until further notice from MassDEP.

b. Submittal of NetDMR Opt-Out Requests

Opt-out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt-out request and such request is approved by EPA. All opt-out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

And

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

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on a separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period. All reports required under this permit, including MassDEP Monthly Operation and Maintenance Reports, shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (OES04-SMR)
5 Post Office Square – Suite 100
Boston, Massachusetts 02109-3912

Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following addresses:

**MassDEP – Northeast Region
Bureau of Resource Protection (Municipal)
205B Lowell Street
Wilmington, MA 01887**

Copies of toxicity test reports only to:

**Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608**

Any verbal reports, if required in Parts I and/or II of this permit shall be made to both EPA – New England and to MassDEP.

Industrial Pretreatment Program Reports should be sent by the permittee to:

**EPA New England
Attn: Justin Pimpare
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and

**Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Industrial Wastewater Program
One Winter Street
Boston, MA 02108**

H. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c.21, §§ 26-53, and 314 C.M.R. 3.00. All of the requirements contained in the authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.
2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c.21, §27 and 314 CMR 3.07. All of the requirements (if any) contained in the MassDEP's water quality

certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.

3. 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.

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

- a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the 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 requirements.
- b. The CWA provides that any person who violates Section 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, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed \$25,000 per day for each violation. Any person who negligently 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 knowingly violates such requirements is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both.
- c. Any person may be assessed an administrative penalty by the Administrator for violating Section 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 are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

Note: See 40 CFR §122.41(a)(2) for complete “Duty to Comply” regulations.

2. 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 termination, or notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. 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.

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4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, 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.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

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

7. 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 submitter. 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 stamping 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 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

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8. 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 shall submit a new application at least 180 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 permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

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

10. Other Laws

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 obligation to comply with any other applicable Federal, State, or local laws and regulations.

PART II. B. 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. Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an 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 sludge use or disposal 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.

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- (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 be reasonably 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 cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs B.4.c. and 4.d. 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 D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

- (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- (2) 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 preventative maintenance; and
- (3) i) The permittee submitted notices as required under Paragraph 4.c. 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.

5. Upset

- a. Definition. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance 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.
- b. 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 B.5.c. of this section are met. No determination made during

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administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

- c. 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 D.1.a. and 1.e. (Twenty-four 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.

PART II. C. MONITORING REQUIREMENTS

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 for 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 3 years from the date of the sample, measurement, report or application except for the information concerning storm water 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 measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
- d. Monitoring results must be conducted according to 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 503, unless other test procedures have been specified in the permit.
- e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by

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imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The permittee shall allow the Regional Administrator or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. Planned Changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:
 - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR§122.29(b); or
 - (2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
 - (3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

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incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

- 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 Director 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 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
 - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director 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 exact 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 reoccurrence 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 40 CFR §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 40 CFR §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.

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- f. Compliance Schedules. Reports of compliance or noncompliance with, 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 reports 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. Signatory Requirement
- a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §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 noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.
3. 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 statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

Administrator 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”, pretreatment standards, and “standards for sewage sludge use and disposal” under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the CWA.

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Application means the EPA standard national 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 means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or 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” measured during the calendar week divided by the number of “daily discharges” measured during the week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of 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 (BPJ) 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).

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

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume 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 consisting of the same number of grab samples, or greater, 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 a 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 effluent limitation guideline at 40 CFR Part 443.
- (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.

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- (d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved 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.

Contiguous 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.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the calendar day or any other 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 channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

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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.”

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 limitation 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 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 the CWA.

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

Interference 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 SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Landfill 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: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

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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 (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) 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 (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as “maximum concentration” or “Instantaneous Maximum Concentration” during the two hours of a chlorination cycle (or fraction 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 requirement, 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 the 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 the CWA. The term includes an “approved program”.

New Discharger means any building, structure, facility, or installation:

- (a) From which there is or may be a “discharge of pollutants”;
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source”; and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site”.

This definition includes an “indirect discharger” which commences discharging into “waters of the United States” after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a “site” for which it does not have a permit; and any offshore rig or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a “site” under EPA’s permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Regional Administrator shall consider the factors specified in 40 CFR §§125.122 (a) (1) through (10).

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An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a “new discharger” only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a “discharge of pollutants”, the construction of which commenced:

- (a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means “National Pollutant Discharge Elimination System”.

Owner or operator means the owner or operator of any “facility or activity” subject to regulation under the NPDES programs.

Pass through means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, 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).

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 40 CFR §122.2).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, 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 discarded 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 is approved by the 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.

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Primary industry category means any industry category listed in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D. D.C. 1979)); also listed in Appendix A of 40 CFR Part 122.

Privately owned treatment works means any device or system which is (a) 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 which is not a "primary industry category".

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

- (1) is listed at 40 CFR §372.65 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) is present at or above threshold levels at a facility subject to EPCRA Section 313 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.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a 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 pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

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Sewage sludge use or disposal practice 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, raw materials used in food processing or production, hazardous substance designated under section 101(14) of CERCLA, any chemical the facility is required to report pursuant to EPCRA Section 313, fertilizers, pesticides, and waste products such as ashes, slag, 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 CWA (see 40 CFR §110.10 and §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 which 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 (b)(14) 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 humans 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(f) 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.

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Waste Pile means any non-containerized accumulation of solid, non-flowing 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 tide;
- (b) All interstate waters, including interstate “wetlands”;
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa 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 purpose;
 - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “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 the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration 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.

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.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

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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.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

- (1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover 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 30 percent of the dry weight of the 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 equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away 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 be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds 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 §501.2, 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 § 122.2,

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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 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 septage 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 septage 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 strata on one side are displaced with respect to the 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.

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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 the measurements taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

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 reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation 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 1×10^{-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.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

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.

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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.

Person 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 organism 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 on 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 of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the 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 may be 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.

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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 a 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.

Seismic impact zone is an area that has 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 ash 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 either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

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 (ii).

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 Territory 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.

Store or storage of sewage sludge is the placement of sewage sludge 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.

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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.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

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

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting 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.

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl ₂	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

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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. M/day or M ³ /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	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH ₃ -N	Ammonia nitrogen as nitrogen
NO ₃ -N	Nitrate as nitrogen
NO ₂ -N	Nitrite as nitrogen
NO ₃ -NO ₂	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

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Temp. °C	Temperature in degrees Centigrade
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	Microgram(s) per liter
WET	“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 specified 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.

ATTACHMENT A
MARINE ACUTE
TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**
- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

Acute toxicity data shall be reported as outlined in Section VIII.

II. METHODS

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

<http://water.epa.gov/scitech/methods/cwa/wet/index.cfm#methods>

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

A discharge and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any hold time extension. Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine¹ (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to

¹ For this protocol, total residual chlorine is synonymous with total residual oxidants (July 2012)

sample use for toxicity testing. If performed on site the results should be included on the COC presented to WET laboratory.

Standard Methods for the Examination of Water and Wastewater 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. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

IV. DILUTION WATER

Samples of receiving water must be collected from a location in the receiving water body immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water is found to be, or suspected to be toxic or unreliable, ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is

species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity require ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency, Region 1
Five Post Office Square, Suite 100
Mail Code OEP06-5
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
Five Post Office Square, Suite 100
Mail Code OES04-4
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at <http://www.epa.gov/region1/enforcementandassistance/dmr.html> for further important details on alternate dilution water substitution requests.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST¹

1. Test type	48hr Static, non-renewal
2. Salinity	25ppt \pm 10 percent for all dilutions by adding dry ocean salts
3. Temperature ($^{\circ}$ C)	20 $^{\circ}$ C \pm 1 $^{\circ}$ C or 25 $^{\circ}$ C \pm 1 $^{\circ}$ C, temperature must not deviate by more than 3 $^{\circ}$ C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, <u>\leq 24 hours age range</u>
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> naupli while holding prior to initiating the test
13. Aeration ²	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	\geq 0.5
16. Number of dilutions ³	5 plus a control. An additional dilution at the permitted effluent concentration (%)

effluent) is required if it is not included in the dilution series.

- | | |
|----------------------------|---|
| 17. Effect measured | Mortality - no movement of body appendages on gentle prodding |
| 18. Test acceptability | 90% or greater survival of test organisms in control solution |
| 19. Sampling requirements | For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection. |
| 20. Sample volume required | Minimum 1 liter for effluents and 2 liters for receiving waters |
-

Footnotes:

- ¹ Adapted from EPA 821-R-02-012
- ² If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.
- ³ When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST¹

1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt \pm 10 % by adding dry ocean salts
3. Temperature	20°C \pm 1°C or 25°C \pm 1°C, temperature must not deviate by more than 3°C during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration ²	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	\geq 0.5
16. Number of dilutions ³	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

- ¹ Adapted from EPA 821-R-02-012.
- ² If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.
- ³ When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.2. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

If reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

V.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥ 3 standard deviations for IC25s and LC50 values and \geq two concentration intervals for NOECs or NOAECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	<u>Minimum Level for effluent^{*1} (mg/L)</u>
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine ^{*2}	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
<u>Total Metals</u>			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005

Superscript:

*1 These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

*2 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);
- Method 4500-CL G DPD Photometric Method.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See flow chart in Figure 6 on page 73 of EPA 821-R-02-012 for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 87 of EPA 821-R-02-012.

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) which includes:
 - Facility name
 - NPDES permit number
 - Outfall number
 - Sample type
 - Sampling method
 - Effluent TRC concentration
 - Dilution water used
 - Receiving water name and sampling location
 - Test type and species
 - Test start date
 - Effluent concentrations tested (%) and permit limit concentration
 - Applicable reference toxicity test date and whether acceptable or not
 - Age, age range and source of test organisms used for testing
 - Results of TAC review for all applicable controls
 - Permit limit and toxicity test results
 - Summary of any test sensitivity and concentration response evaluation that was conducted

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 ration 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 p.,3-28 in EPA's Guidance Manual on the Development and Implementation of Local Limits Under the Pretreatment Program, 12/87.

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

ITEM II.

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

ITEM III.

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

ITEM IV.

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

If yes, explain.

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

If yes, explain.

ITEM V.

Using current POTW influent sampling data fill in Column (1). In Column (2), list your Maximum Allowable 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.

Pollutant	Column (1) Influent Data Analyses		Column (2) MAHL Values (lb/day)	Criteria
	Maximum (lb/day)	Average (lb/day)		
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Other (List)				

ITEM VI.

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

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

*Hardness Dependent (mg/l - CaCO₃)

ITEM VIII.

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

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

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 the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraph below or any similar sampling program described in this Permit.

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

- | | |
|--------------------|-------------------|
| a.) Total Cadmium | f.) Total Nickel |
| b.) Total Chromium | g.) Total Silver |
| c.) Total Copper | h.) Total Zinc |
| d.) Total Lead | i.) Total Cyanide |
| e.) Total Mercury | 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 permittee is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.

Summary of Required Report Submittals*

Required Report	Date Due	Submitted by:	Submitted to:
Chlorination System Report (Part I.A.1. Footnote 9)	With monthly DMRs, if interruption or malfunction of the chlorine dosing system occurs (See Footnote 9).	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887
Whole Effluent Toxicity Test Report (Part I.A.1. Footnote 10)	By February 28th, March 31st, August 31st and November 30th of each year	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887
			MassDEP Division of Watershed Management Surface Water Discharge Permit Program 627 Main Street, 2 nd Floor Worcester, MA 01608
Notification of SSO discharge	Within 24 hours	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887

Required Report	Date Due	Submitted by:	Submitted to:
Collection System Mapping (Part I.C.4)	Within 30 months of the effective date	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887
Initial Collection System Operation and Maintenance Plan (Part I. C.5.a)	Within 6 months of the effective date	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887
Full Collection System Operation and Maintenance Plan (Part I. C.5.a)	Within 24 months of the effective date	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887

Required Report	Date Due	Submitted by:	Submitted to:
Annual Summary Report of Activities related to implementation of Collection System O & M Plan	Annually by March 31	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887
Local Limits Technical Evaluation (Part I.B.1)	Within 120 days of the effective date	Newburyport WPCF	EPA New England Attn: Justin Pimpare 5 Post Office Square Mail Code: OEP6-3 Boston, MA 02109-3912
			MassDEP Bureau of Waste Prevention Industrial Wastewater Program One Winter Street Boston, MA 02108
Annual Pretreatment Report (Part I. B.3)	Annually by March 1	Newburyport WPCF	EPA New England Attn: Justin Pimpare 5 Post Office Square Mail Code: OEP6-3 Boston, MA 02109-3912
			MassDEP Bureau of Waste Prevention Industrial Wastewater Program One Winter Street Boston, MA 02108

* This table is a summary of the reports required to be submitted under this NPDES permit as an aid to the permittee(s). If there are any discrepancies between the permit and this summary, the permittee(s) shall follow the permit requirements.

**EPA AND MASSDEP JOINT RESPONSE TO PUBLIC COMMENTS
NEWBURYPORT WATER POLLUTION CONTROL FACILITY
NPDES PERMIT NO. MA0101427**

From January 12, 2012 to February 10, 2012, Region 1 of the United States Environmental Protection Agency (“EPA”) and the Massachusetts Department of Environmental Protection (“MassDEP”) (together, the “Agencies”) solicited public comments on a draft National Pollutant Discharge Elimination System (“NPDES”) permit, developed pursuant to an application from the City of Newburyport, Massachusetts (“Permittee”) for the reissuance of its permit to discharge treated wastewater from the Newburyport Water Pollution Control Facility (WPCF) to the designated receiving water, the Merrimack River.

The table of contents below lists each party’s comments on the draft permit (essentially reproduced verbatim) and the page on which its comments begin. Each comment is followed by the Agencies’ response.

- | | | |
|----|---|-------|
| A) | Donna D. Holaday, Mayor, City of Newburyport | p. 2 |
| B) | Kathleen Keohane, MassDEP, Division of Watershed Management | p. 10 |

After considering the comments received on the draft permit, EPA has made a final decision to issue the permit authorizing the discharge. In accordance with the provisions of 40 CFR § 124.17, this document briefly describes and responds to the comments received on the draft permit, and explains any provision of the final permit that have been changed from the draft as well as the reasoning supporting those changes. Any clarifications that EPA considers necessary are also included in this document. A copy of the final permit may be obtained by writing or calling Michele Cobban Barden, United States Environmental Protection Agency, 5 Post Office Square, Suite 100, Mail Code:OEP06-1, Boston, Massachusetts, 02109-3912; Telephone (617) 918-1539. Copies of the final permit and the response to comments may also be obtained from the EPA Region 1 website at <http://www.epa.gov/region1/npdes/index.html>.

A) Comments received from Donna D. Holaday, Mayor, City of Newburyport, dated February 9, 2012

Draft NPDES Permit No. MA0101427

Comment A.1: *Page 2, BOD & TSS, Measurement Frequency. The city requests that EPA reduce the frequency of from 3 days/week to 2 days/week similar to other local plants such as Amesbury.*

Response: Monitoring frequency is determined on a case-by-case basis. EPA's Permit Writers' Manual advises that monitoring frequency should be established to ensure that there is sufficient data to characterize effluent quality and to detect events of noncompliance¹. The permit writer shall consider effluent variability; as well as, design capacity, treatment method, compliance history, cost of monitoring relative to the permittee's capabilities, location of the discharge and the nature of the pollutants².

EPA's "Interim Guidance for Performance-based Reduction of NPDES Permit Monitoring Frequencies"³ sets forth guidance on how to best implement reduction in reporting and monitoring based on historical performance. The guidance details specific entry criteria for participation which are outlined below:

1. Facility Enforcement History
 - a. Criminal Actions (all environmental statutes)
 - b. Civil Judicial Actions (Clean Water Act/NPDES)
 - c. Administrative Actions (Clean Water Act/NPDES)
2. Parameter-by-Parameter Compliance
 - a. Significant Noncompliance for Parameters under Consideration
 - b. Any Effluent Violations of Selected Parameters
3. Parameter-by-Parameter Performance History
4. Residency Criteria for Continued Participation

Region 1 has used this guidance to evaluate the City's request for reductions in monitoring frequency for BOD₅, TSS, TRC, and fecal coliform bacteria.

The Newburyport WPCF has been in compliance for most of the last 24 months (See Attachment 1). The facility is a 3.4 mgd secondary wastewater treatment facility currently operating at 78% of capacity. The

¹ EPA, 2010, "NPDES Permit Writers' Manual, p 8-5.

² *Ibid.*

³ EPA, 1996, "Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies".

plant is currently undergoing an upgrade from mechanical aeration to fine-bubble aeration which may improve effluent quality even with the facility nearing design capacity.

The facility did experience difficulties in October and November 2011 while the facility was undergoing construction related to the upgrade. The plant was down one secondary clarifier and also experienced some issues with electrical switching and power adding to the operational complications. Since that period, the facility is back in compliance and BOD₅ and TSS removal rates have improved.

There have been two consecutive violations of Whole Effluent Toxicity (WET) testing for *Menidia beryllina*. The permittee is investigating the cause of these violations. The plant has a new chemical addition system and SCADA system so the operators are continuing to adapt to the new systems and make the appropriate adjustments.

Facility Enforcement History

Based on a review of the EPA Region 1's records, the Newburyport WPCF meets the criteria for Facility Enforcement History.

Parameter-By-Parameter Compliance

The second criterion is "Parameter-By-Parameter Compliance" which requires a facility to not *have had any Significant Noncompliance (SNC) violations for the parameters which monitoring/reporting reductions are being considered during the last two years and, ... may not have had any effluent violation of selected (critical) parameters during the last year.*

As previously was discussed, the facility has had several violations of the permit effluent limits over the past 24 months. The interim guidance suggests that the "selected parameters" include pollutants which pose heightened risks to human or environmental health. The short-term BOD₅ and TSS exceedences do not pose heightened risks. Given that operation of the plant during that month was not typical, EPA has chosen to exclude that October 2011 from this evaluation.

Parameter-By-Parameter Performance History

The third criterion is "Parameter-By-Parameter Performance History" which requires EPA to use, at a minimum, the two most recent years of effluent data to calculate the long term average discharge rate. A ratio is then calculated between the long-term average and the permitted concentration for the selected parameters.

Table 1: Parameter-By-Parameter Evaluation of Performance History

	Long Term Average (LTA)	Monthly Average Limit	Ratio [(LTA/Permit Limit)*100]	Coefficient of Variation (Std Dev/Average)	Current Frequency	Proposed Frequency Based on Guidance
BOD₅ (mg/l)	23.5	30	78%	19%	3/WK	3/WK
TSS (mg/l)	15.73	30	52%	25%	3/WK	2/WK
TRC (mg/l)	0.05	.23	22%	45%	1/DAY	1/WK
Fecal Coliform (cfu/100 ml)	22.4	88	25%	84%	1/DAY	3/WK

BOD₅

BOD₅ data for the Newburyport WPCF has a LTA/Monthly Average Limit ratio of 78%. The guidance states that parameters that show a long-term discharge rate between the effluent limit and 76% of the limit, the coefficient of variation should be 20% or less. The coefficient of variation for BOD₅, when including the October 2011, is 23% which is higher than the recommended 20%. When October 2011 is removed from the data set, the coefficient of variation is 19%.

The interim guidance states that parameters for which there was any exceedence of the average monthly limit during the two year averaging period are not eligible for monitoring reductions. As previously stated, the violations of the monthly average for BOD₅ and TSS during the month of October 2011 will not be considered for this purpose because the plant was not operating as designed due to construction. However, even if the data for October 2011 is removed from the data set and compliance evaluation, the guidance indicates that parameters with a LTA/Monthly average ratio of 100-76% and a baseline monitoring frequency of three time per week is not eligible for a reduction (See Attachment 3).

TSS

The LTA/Monthly Average Limit ratio for TSS is 52%. The current sampling frequency is three times per week. The interim guidance (see Attachment 2) recommends that parameters that are monitored three times per week and have a ratio between 65-50% may be reduced to two times per week. EPA has reduced the monitoring frequency for TSS to two times per week.

Comment A.2.

Page 2, pH & TRC, Measurement Frequency. The city requests that EPA change the monitoring frequency from 7 days/week to 5 days/week. In other words, the monitoring should be conducted Monday through Friday during normal hours of plant operation. This will avoid the city incurring

overtime costs as the plant is not typically manned during weekends and legal holidays.

Response:

EPA has reviewed effluent data submitted by the facility and believes that the requested reduction of sampling frequency to 5 days per week will provide adequate data to characterize the discharge and detect non compliance events. EPA has therefore reduced the pH and total residual chlorine monitoring frequency from 7 days per week to 5 days per week (Monday – Friday). Given the frequent occurrence of holidays on Monday, meaning that the discharge would not be monitored for three consecutive days, we have not provided relief for sampling on holidays that occur during the week.

EPA did not further reduce the monitoring frequencies for TRC and fecal coliform to those developed in the previous response using the interim guidance because the TRC and fecal coliform bacteria monitoring is crucial to the management of the shellfishing beds just downstream of the Newburyport WPCF.

As part of this reduction, EPA has modified footnote 8 of the permit to require the permittee to sample total residual chlorine and fecal coliform bacteria anytime a low level TRC alarm occurs. The revision provides adequate data for Marine Fisheries to be able to make informed decisions about the management of the downstream shellfish beds. The revised footnote reads as follows (new language is bolded):

The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum detection level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 20 ug/l or less shall be reported as zero on the discharge monitoring report.

Chlorination and dechlorination systems include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent 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 chlorine or dechlorination chemicals occurred.

The alarm system shall specifically include a low TRC level alarm on the pre-dechlorination TRC analyzer. The alarm shall be set at a level that ensures an adequate kill of fecal coliform bacteria. The alarm shall be connected to the WPCF alarm pager system. Once notified of low TRC levels, the WPCF staff shall visit the plant to investigate the cause of the alarm **and immediately sample the effluent for TRC and fecal coliform bacteria.** All alarms must be recorded in the operator's log book including the time of alarm, time of system investigation, duration and magnitude of the event, the cause for the alarm and how the event was resolved.

The permittee must also notify the Massachusetts Division of Marine Fisheries (*Marine Fisheries*) within 4 hours (See Section D for the description of the related immediate warning system developed with *Marine Fisheries*.)

Comment A.3.

Page 2, Fecal Coliform Bacteria & Enterococci, Measurement Frequency. The city requests that EPA change the frequency for monitoring from 7 days/week to 5 days/week. In other words, the monitoring should be conducted Monday through Friday during normal hours of plant operation. This will avoid the city incurring overtime costs as the plant is not typically manned during weekends and legal holidays.

Response:

Consistent with the reasons expressed in the response to Comment A.2., EPA has reduced sampling frequency for fecal coliform and enterococci to 5 days/week but has not provided relief for sampling on holidays that occur during the week.

Comment A.4.

Page 5, Part I.A.1.(h) The city requests that EPA either delete this provision in its entirety or select a higher percentage from the threshold limit to trigger reporting. In 2008, the completed a facilities' planning effort which demonstrated only a marginal increase in flows was anticipated over the 20-year planning period. At the time, it was noted that there is limited growth potential for the sewer system in Newburyport since most of the population is already sewered. Based on review of plant flow data for calendar years 2008 through 2010, the average daily flow received by the Newburyport WPCF is 2.75 mgd. This is roughly equivalent to the 80% threshold limit for this permit condition and would suggest that the city needs to initiate planning for its future wastewater needs. Although the plant is currently undergoing a major upgrade to its existing treatment process and mechanical equipment, the hydraulic capacity of the plant is not being increased since it was determined that the design average daily flow capacity of 3.4 mgd was sufficient to handle future growth as documents on Page 7, Section 5.2 of the Fact Sheet. In consideration of the recent facilities planning efforts and the on-going

upgrade of the Newburyport WPCF, it appears that this provision may be too stringent.

Response: EPA recognizes that the City has recently completed a facilities' planning effort associated with the upgrade of the WPCF and that the upgrade does not include an increase in the hydraulic capacity of the facility. EPA has increased the triggering flow to 90% of the design flow (3.06 mgd).

Comment A.5. *Page 6, Part I.C. This section has been changed significantly from the pre-draft permit provided to the city in October 2011. Due to the on-going upgrade of the WPCF which is not scheduled to be completed until Fall 2013, the city requests additional time to comply with these new requirements as follows:*

- a. Page 8, Part I.C.5.(a). Change the time required for developing and implementing the initial Collection System O&M Plan outlined in Section 5a from 6 months to 12 months.*
- b. Page 8, Part I.C.5.(b). Change the time required for completing, implementing and submitting the full Collection System O&M Plan outlined in Section 5b from 24 months to 36 months.*

Response: EPA recognizes that the facility is in the midst of an upgrade and therefore has extended the deadline for developing and implementing the initial Collection System O&M Plan from 6 months to 12 months and the deadline for completing, implementing and submitting the full Collection System O&M Plan from 24 months to 36 months.

Comment A.6. *Page 9, Part I.C.6.(e). See comment 4 above.*

Response: Please see the response to Comment A.4.

Comment A.7. *Page 10, Part I.E.1. The city requests the EPA change the time for the submittal of a written technical evaluation from 120 days to 180 days.*

Response: EPA has not extended the deadline for this requirement. The written technical evaluation requires the permittee to simply complete a four page checklist. There are no sampling requirements associated with this evaluation.

Attachment C

Comment A.8. *Page 2, Initial Collection System O&M Plan. The city requests that EPA change the due date from 6 months to 12 months.*

Response: Please see the response to Comment A.5. The appropriate changes have been made to Attachment C.

Comment A.9. *Page 2, Full Collection System O&M Plan. The city requests that EPA change the due date from 24 months to 36 months.*

Response: Please see the response to Comment A.5. The appropriate changes have been made to Attachment C.

Comment A.10. *Page 2, Local Limits Technical Evaluation. The city requests that EPA change the due date from 120 days to 180 days.*

Response: Please see the response to Comment A.7.

Fact Sheet

Comment A.11. *Page 5, first paragraph. Change the completion date to the Fall of 2013.*

Response: EPA acknowledges that the requested change is correct and notes that EPA does not produce a new fact sheet to support the final permit decision. This Response to Comment is the record that the requested change is correct.

Comment A.12. *Page 6, Part 5.1, second paragraph, first sentence. Change “mechanical” to “fine-bubble diffused”.*

Response: EPA acknowledges that the requested change is correct and notes that EPA does not produce a new fact sheet to support the final permit decision. This Response to Comment is the record that the requested change is correct.

Comment A.13. *Page 6, Part 5.1, second paragraph, second sentence. Change “two mechanical aerators” to “fine-bubble diffused aeration grids”.*

Response: EPA acknowledges that the requested change is correct and notes that EPA does not produce a new fact sheet to support the final permit

decision. This Response to Comment is the record that the requested change is correct.

Comment A.14. *Page 6, Part 5.1. last paragraph, third to last sentence. Change the word “next” to “this” and delete the “will be replaced”.*

Response: EPA acknowledges that the requested change is correct and notes that EPA does not produce a new fact sheet to support the final permit decision. This Response to Comment is the record that the requested change is correct.

Comment A.15. Page 7, Part 5.2. With exception to the last two paragraphs, the entire discussion should be deleted in its entirety since it is no longer pertinent to the reissuance of this permit.

Response: EPA believes this section is necessary to document the source of the limits in the previous permit and the work done by the Permittee to address this issue. The comment is now part of the record for this permit.

Comment A.16. Page 12, Part 6.1.3.2.1, BOD₅. The city requests a reduction in the measurement frequency from three (3) to two (2) times per week similar to other local plants such as Amesbury.

Response: This comment is now part of the record. The requested change to the permit was made. Please see the response to Comment A.1.

Comment A.17. Page 12, Part 6.1.3.2.2, TSS. Same comment as above.

Response: This comment is now part of the record. The requested change to the permit was made. Please see the response to Comment A.1.

Comment A.18. Page 13, Part 6.1.3.2.4, pH. Daily monitoring should be conducted Monday through Friday during normal hours of operation.

Response: This comment is now part of the record. The requested change to the permit was made.. Please see the response to Comment A.2.

Comment A.19. Page 14, Part 6.1.3.2.5, Bacteria. The city requests that EPA change the daily frequency sampling to 5 days/week, or Monday through Friday during normal hours of operation.

Response: This comment is now part of the record. The requested change to the permit was made. Please see the response to Comment A.2.

Comment A.20. Page 21, Part 8, Operation and Maintenance of the Sewer System. As previously noted herein, the city requests additional time to comply with these new requirements which were not included in the pre-draft permit that EPA provided the city for review in October 2011.

Response: This comment is now part of the record. The requested change to the permit was made. Please see the response to Comment A.5.

B) Comments received from Comments received from Kathleen Keohane, MassDEP, Division of Watershed Management, via email on February 13, 2012

Comment B.1.: *The Department recognizes that the permit condition at Part 1, Section C.4 is a new requirement and the 30 month compliance schedule in which to complete all collection system mapping may not be sufficient in all cases. Technical knowledge and capacity to perform this work may need to be supported initially to accomplish these goals, and some permittees may want to coordinate this work with separately required stormwater collection system mapping requirements expected during the permit term. Initial feedback from a variety of permittees indicated that 48 months may be needed to accomplish this task, aligning the results with the permit compliance evaluation cycle. The Department supports a deadline of 48 months to reasonably accomplish this task. However, if at any time before the current schedule has expired, the permittee determines compliance with the current schedule will not be met, the permittee may submit in writing a request to both agencies to change the deadline in accordance with the regulatory provisions of each agency through permit modification establishing an alternative schedule. Such request must include: a) specific reasons why the extension is necessary; b) documentation dating the progress made to date; c) a proposed alternative date for completing the work; and d) any other relevant information supporting the request for a modified schedule.*

Response: EPA believes that the 30 month schedule for completing the required mapping included in the draft permit is reasonable and notes that there were no comments regarding this schedule submitted during the public

comment period. The 30 month schedule has been included in the final permit.

EPA acknowledges that EPA's recent draft NPDES municipal stormwater general permit for affected Massachusetts municipalities contains storm sewer mapping requirements as a component of the illicit discharge detection and elimination program, and that municipalities may want to conduct storm sewer mapping in conjunction with sewer system mapping. Further, EPA generally agrees with MassDEP that if the permittee submits information showing that despite its best efforts it is unable to complete the required sewer system mapping within the specified period (e.g. if field work for both sewer system mapping and collection system mapping is longer than for mapping the sewer system alone), EPA may allow a reasonable extension of the schedule. However, EPA will not be inclined to grant extensions to municipalities that seek schedule extensions that are based on a delay in initiating collection system mapping because they were awaiting issuance of the municipal stormwater permit.

Comment B.2: *Delete attachment G. This is referred to in the DMR instructions.*

Response: It is EPA's practice to include the appropriate WET testing guidance as an attachment to the permit. The Marine Acute Toxicity Test Procedure and Protocol is labeled as Attachment A to the Final Permit.

Comment B.3: *Add the attachment for the pretreatment annual report required in Section D[E].3 of the report. You may want to renumber the attachments.*

Response: Attachment B to the Final Permit is the NPDES Permit Requirement For Industrial Pretreatment Annual Report.

Comment B.4: Change the report summary table, page 3, so that the pretreatment reports refer to Section E.1 and E.3 of the permit.

Response: EPA has updated the Reports Summary Table.

C) Other Changes

Between the public notice of the draft permit and the issuance of the final permit, EPA Region 1 updated its Marine Acute Toxicity Protocol. The updated protocol has been attached to this final permit. Also, the word "modified" has been removed from the phrase "modified acute toxicity tests" in the first line of footnote 10, to make it clear that the permittee is only required to perform the standard marine acute toxicity test.

	Flow		BOD ₅			BOD % Removal			TSS			TSS % Removal			pH		Fecal Coliform Bacteria		Total Residual Chlorine	
	(MGD)		(mg/l)			lbs/day			(mg/l)			%			(S.U)		cfu/100 ml		mg/l	
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Minimum	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Minimum	Minimum	Maximum	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
Effluent Limit	3.4	REPORT	30	45	REPORT	851	1276	85%	30	45	REPORT	851	1276	85%	6.5	8.5	88	400	0.23	0.39
Apr-12	2.57	2.9	20	21.3	26	315	335	94%	9	11.8	24	142	196	98%	6.7	6.9	23.16	148	.04	.31
Mar-12	2.36	2.298	19	22	26	365	423	94%	9	10.6	16	173	204	97%	6.6	7.2	6	131	.05	.21
Feb-12	2.43	2.1	17	21	24	271	335	95%	11	16	37	176	255.3	97%	6.7	7	6.21	45	0.02	0.12
Jan-12	2.46	2.56	15	18	21	292	350.5	95%	12	21	36	234	409	97%	6.6	7.1	28.53	130	0.03	0.12
Dec-11	2.46	3.14	17	22	25	353	456.3	94%	16	23.8	44	332	493.6	95%	6.6	7.1	21.62	133	0.03	0.2
Nov-11	2.42	2.97	28	79.3	111	564	1587.8	92%	19	49.3	73	380	981	94%	6.7	7	12.62	125	0.11	0.38
Oct-11	2.4	3.619	41	55.7	101	939	1276	83%	35	55.7	125.2	802	1278.4	85%	6.7	7.1	61.89	168	0.05	0.37
Sep-11	2.355	2.73	25.3	45	64	489	876.1	91%	22.3	40.6	82.9	431	785.2	92%	6.4	7	23.98	380	0.07	0.33
Aug-11	2.33	2.81	29.7	45	79	602	911.9	91%	13.9	40.6	91.3	282	822.8	94%	6.6	7.1	10.57	124	0.03	0.17
Jul-11	2.32	4.84	30	36	44	672	806.1	90%	15.7	20.7	27.6	352	463.5	95%	7	7.2	30.99	170	0.04	0.3
Jun-11	2.296	3.11	30	34	38	631	715.4	88%	20.4	34.9	39.8	429	734.4	95%	6.7	7.1	30.35	202	0.08	0.32
May-11	2.395	2.59	27.2	32	36	532	625.8	88%	23.6	32.7	38.5	462	639.5	92%	6.8	7.2	34.57	192	0.08	0.33
Apr-11	2.395	2.775	23	31	32	472	686.3	94%	17	19	22.9	349	400.2	95%	6.7	7	7.1	158	0.06	0.21
Mar-11	2.513	4.46	19	23	29	451	545.7	92%	12	15	18	285	358.3	96%	6.7	7.6	2.75	130	0.06	0.3
Feb-11	2.63	2.814	23	24	35	418	436.5	93%	15	18	25	273	327.4	95%	6.6	7	2.48	118	0.04	0.18
Jan-11	2.677	2.626	22	23.7	31	384	414.1	93%	17.1	21.1	26.4	299	368.7	94%	6.8	7	4.93	61	0.05	0.32
Dec-10	2.72	2.45	19	25.7	29	339	451	92%	14.73	46.9	53.2	337	467.65	90%	6.7	7.2	17.38	235	0.08	0.24
Nov-10	2.81	2.45	28	34.3	48	500	613.3	92%	15.4	19.6	22.3	275.1	350.1	94%	6.8	7.3	82.45	274	0.03	0.08
Oct-10	2.87	2.63	23.5	35	36	417	620.3	92%	21.7	29.2	47.4	384.6	517.5	88%	6.8	7.2	46.34	155	0.03	0.09
Sep-10	2.917	2.32	23.9	25	31	420	439.7	90%	17.1	27.1	60.6	300.8	476.7	91%	6.7	7	11.89	182	0.03	0.06
Aug-10	2.96	3.35	29	36	43	537	676	87%	14.2	19.2	28.4	266.6	360.4	94%	6.8	7.1	11.6	133	0.04	0.1
Jul-10	3.02	3.08	27.2	43.7	44	536	861.6	92%	19.9	36.4	48.5	392.3	717.7	94%	6.7	7.1	38.85	242	0.07	0.3
Jun-10	3.1	3.207	24	31.3	37	570	746	92%	14.3	18	27.3	340.9	436	94%	6.7	7.3	50.95	238	0.04	0.31
May-10	3.1	3.63	23.4	28.6	32	625	764	91%	13.5	16.3	28.9	359.4	435.6	94%	6.6	7.2	22.38	125	0.03	0.21
Apr-10	3.06	5.56	20.9	28.3	40	675	914	90%	13.6	16.4	21.8	439.3	529.7	91%	6.7	7	9.95	40	0.06	0.35
Minimum	2.30	2.10	15.00	18.00	21.00	271.00	335.00	0.87	9.00	10.60	16.00	141.60	185.60	0.88	6.40	6.95	2.48	40.00	0.02	0.06
Maximum	3.10	5.56	30.00	79.30	111.00	675.00	1587.80	0.95	23.60	49.30	91.30	461.50	981.00	0.98	6.98	7.64	82.45	380.00	0.11	0.38
Average	2.63	3.06	23.50	31.88	40.04	476.28	649.63	0.92	15.73	25.18	39.20	320.52	488.31	0.94	6.70	7.13	22.40	161.29	0.05	0.23

	Ammonia Nitrogen	Total Kjeldahl Nitrogen	Nitrite + Nitrate	Dissolved Oxygen			LC50 - Menidia	LC50 - Mysid. Bahia
	mg/l	mg/l	mg/l	mg/l			%	%
	Average Monthly	Average Monthly	Average Monthly	Average Monthly	Average Weekly	Minimum Daily	Maximum Daily	Maximum Daily
Effluent Limit	REPORT	REPORT	REPORT	REPORT	REPORT	REPORT	100	100
Apr-12	22	22	2.25	8.19	9.42	6.51		
Mar-12	18	21	.34	8.54	9.72	6.21		
Feb-12	0.1	20	0.18	7.95	9.29	6.33	72	100
Jan-12	19	20	0.01	8.06	8.54	6.49		
Dec-11	19	22	0.89	8.74	9.96	6.16		
Nov-11	19	17	2.14	8.51	9.34	6.47	78.7	100
Oct-11	18	27	1.19	8.43	9.11	6.73	-	-
Sep-11	8.2	12	13.53	7.85	7	5.6		
Aug-11	24	23	0.95	8.15	9.21	5.82	100	100
Jul-11	18	18	1.42	10.46	9.02	7.47		
Jun-11	24	25	1	9.22	10.11	6.96		
May-11	19	20	1.13	7.63	8.5	5.84	100	100
Apr-11	17	19	0.78	8.31	9.14	5.73		
Mar-11	12	14	1.03	8.51	9.99	6.22		
Feb-11	19	23	1.6	8.18	9.46	6.42	100	100
Jan-11	18	22	1.49	8.06	8.35	6.06		
Dec-10	19	20	1.74	7.77	0.71	6.43		
Nov-10	15	19	2.1	7.45	8.16	5.93	100	100
Oct-10	14.1	19	1.39	6.76	7.57	5.38		
Sep-10	5.97	8.1	4.6	6.61	7.77	4.3		
Aug-10	18.3	22	1.12	7.2	7.81	5.42	100	100
Jul-10	19.2	26	0.51	6.89	8.04	5.52		
Jun-10	15.2	19	0.91	7.42	8.16	5.72		
May-10	10.5	13	3.74	8.84	7.7	5.83	100	100
Apr-10	9.15	11	1.16	8.43	9.35	6.27		
Minimum	0.10	8.10	0.01	6.61	0.71	4.30	72.00	100.00
Maximum	24.00	26.00	13.53	10.46	10.11	7.47	100.00	100.00
Average	15.95	18.96	1.92	8.07	8.43	6.05	93.84	100.00

Table 1

**Ratio of Long Term Effluent Average
 to Monthly Average Limit**

<u>Baseline Monitoring</u>	<u>75-66%</u>	<u>65-50%</u>	<u>49-25%</u>	<u><25%</u>
7/wk	5/wk	4/wk	3/wk	1/wk
6/wk	4/wk	3/wk	2/wk	1/wk
5/wk	4/wk	3/wk	2/wk	1/wk
4/wk	3/wk	2/wk	1/wk	1/wk
3/wk	3/wk	2/wk	1/wk	1/wk
2/wk	2/wk	1/wk	2/mo	1/mo
1/wk	1/wk	1/wk	2/mo	1/2mos
2/month	2/mo	2/mo	2/mo	1/quarter
1/month	1/mo	1/mo	1/quarter	1/6mos

Table 2

**Ratio of Long Term Effluent Average to Monthly Average Limit
100-76%**

Baseline
Monitoring

7/wk
6/wk
5/wk
4/wk
3/wk
2/wk
1/wk
2/month
1/month

Reduced
Monitoring

6/wk
5/wk
4/wk
4/wk
3/wk
2/wk
1/wk
2/month
1/month

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
FIVE POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912**

FACT SHEET

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

NPDES PERMIT NUMBER: MA0101427

NAME AND ADDRESS OF APPLICANT:

**City of Newburyport
157 Water Street
Newburyport, MA 01950**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Newburyport Water Pollution Control Facility
157 Water Street
Newburyport, MA 01950**

**RECEIVING WATERS: Merrimack River
(Merrimack River Watershed, Segment MA84A-06)**

CLASSIFICATION: Class SB, Shellfishing, CSO

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1. PROPOSED ACTION

The above named applicant has applied to the U.S. Environmental Protection Agency for the re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge into the designated receiving water. The current permit was issued on May 3, 2004. The permit did not become effective until March 13, 2006 because of a permit appeal. The permit expired on March 13, 2011. The permit was modified on October 19, 2006 in resolution of an appeal. The modification became effective on December 18, and expired on March 13, 2011, the same date as the underlying permit. A timely re-application was received on October 7, 2010. This draft permit is conditioned to expire five (5) years from the effective date.

2. TYPE OF FACILITY AND DISCHARGE LOCATION

The Newburyport Water Pollution Control Facility (WPCF) is a 3.4 million gallon per day (mgd) secondary wastewater treatment plant. The facility was originally built in 1964 and upgraded to secondary treatment in the 1980s. The facility is currently undergoing an upgrade; construction began April 26, 2010 and is expected to be completed by June 1, 2013. The first phase of improvements included replacement of the existing mechanical aerators with a new fine-bubble diffused aeration system which was completed in August 2011. The chlorination and dechlorination systems were also be replaced; changing from chlorine gas to liquid injection of sodium hypochlorite for disinfection and sodium bisulfate for dechlorination.

The facility discharges from a multiport diffuser approximately 1550 feet offshore on the bottom of the Merrimack River and east of Half Tide Rock (See Figure 1). The collection system is 100% separate sanitary sewer and serves a total population of 18,800 (City of Newburyport, 17,000 and Town of Newbury, 1,800). There are five (5) categorical industrial users (CIUs) discharging to the collection system.

The facility's discharge outfall is listed below:

<u>Outfall</u>	<u>Description of Discharge</u>	<u>Receiving Water</u>
001	Treated Effluent	Merrimack River

3. DESCRIPTION OF DISCHARGE

Quantitative descriptions of the discharge in terms of significant effluent parameters, based on discharge monitoring reports (DMRs) submitted for September 2009 through August 2011, and the October 2010 application, are shown in Tables 1 and 2 of this fact sheet, respectively.

4. LIMITATIONS AND CONDITIONS

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

5. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATIONS

5.1. *Process Description*

The Newburyport Water Pollution Control Facility (WPCF) is a secondary wastewater treatment facility, which discharges to the Merrimack River (Figure 2). Raw wastewater enters the plant through either a 30-inch diameter influent sewer or via a force main from Plum Island, and is diverted into one of three influent channels, each equipped with a sewage grinder. The influent channels discharge to a common channel which flows into a single grit removal chamber. Wastewater from the grit chamber is then transported via 24-inch gravity sewer main to one of two influent wet wells. The flow is then pumped up to a distribution structure at the primary clarifiers.

From the primary clarifiers, the wastewater flows by gravity to the secondary treatment system, which includes the activated sludge process, consisting of mechanical aeration, secondary settling, and return/waste activated sludge pumping. The activated sludge process takes place in four aeration basins, each equipped with two mechanical aerators. The aeration tank effluent is then directed to the two final clarifiers. Final effluent from the clarifiers then flows to one of two chlorine contact tanks for disinfection prior to being discharged to the Merrimack River. The disinfection process includes both chlorination and dechlorination. Due to the tidal influence of the river, effluent flow is pumped during high tide.

Primary and waste-activated sludge is co-settled in the primary clarifiers prior to thickening in one of two gravity thickener tanks. The thickened sludge is then dewatered by a belt filter press and then trucked to the Ipswich composting facility operated by Agresource, Inc. Currently, grit removed from the influent is mixed with the dewatered sludge and then hauled away for final disposal. Following the completion of phase 2 of the upgrade, grit will no longer be mixed with the sludge and disposal will be separate.

As previously stated, the facility is currently being upgraded, and the first phase of improvements is substantially complete. The first phase included replacement of the mechanical aerators with a fine-bubble diffused aeration system. The chlorination and dechlorination systems have been replaced, changing the chlorination system from chlorine gas to liquid injection of sodium hypochlorite, and the dechlorination system from sulfur dioxide gas to liquid injection of sodium bisulfate. A second phase of improvements is scheduled to begin construction next spring, including replacing the sludge dewatering process will be replaced in its entirety. The existing belt filter presses will be replaced with two Fournier rotary screen presses. In addition, the existing grit removal system will be replaced with a new grit washing and disposal system.

5.2. *Flow/Capacity Issues*

At the time of the last permit reissuance, the City of Newburyport, in coordination with the Town of Newbury, was in the process of extending the sewer collection system to accept flows from newly sewered areas of Plum Island, which is split between the municipalities of Newburyport and Newbury. Commenters on the draft NPDES permit expressed concerns about the ability of the Newburyport Wastewater Treatment Plant to accept and treat these additional flows without exceeding the facility flow limit or other effluent limitations. EPA reviewed the concerns and determined that the flows from the sewer extension would not require an increase in the facility's effluent limitations; and so, EPA did not include any specific conditions regarding the sewer extension in the final permit. The sewer extension project was reviewed and approved by the Commonwealth of Massachusetts^{1,2} in accordance with state law.

Commenters also identified inconsistencies in the flow records from the treatment facility. The Newburyport WWTP has both an influent and an effluent flow meter. Significant differences were noted between the flow rates measured at the two meters. In order to address this issue, the City of Newburyport conducted several studies including the temporary installation of a Doppler ultrasonic meter, volumetric testing and calibration of the meters.

The Doppler metering was conducted in the spring of 2001². Doppler measurements were made for several days just upstream of the effluent meter. The Doppler meter was then relocated for a few more days, just upstream of the influent meter. The measurements were much better correlated with the influent flow meter than the effluent flow meter. There was an 80-90% correlation with the influent meter and only a 60% correlation with the effluent meter.

Following the Doppler metering, both meters were recalibrated on May 30, 2001. The influent meter was re-calibrated and was confirmed to be accurate to less than 1% error. A significant zero error was found in the effluent meter transmitter. It was corrected and the meter was re-calibrated and was confirmed to be accurate to less than 1% error.

In order to confirm the accuracy of the influent meter, a volumetric test was also conducted in the spring of 2001. During the volumetric test, all plant flows were diverted into an empty aeration basin. Flow readings were taken concurrently with each 6 inch increase in basin stage. The test showed that the influent meter was accurate to within 1%. The effluent meter, however, showed a significant error of +13% when compared with the influent meter. The error in the effluent meter was reported by the City's consultant to be the result of less than ideal installation conditions. Since 2002, the permittee, with concurrence from MassDEP, has used the more accurate influent meter for NPDES reporting.

¹ November 30, 2001, Certificate of the Secretary of Environmental Affairs on the Final Environmental Impact Report for Utility Service to Plum Island, Newbury/Newburyport, EOEPA Project Number 12416, Commonwealth of Massachusetts, EOEPA, MEPA Office.

² June 8, 2001, Ltr to Thomas D. Mahin, MassDEP; RE: Newburyport Wastewater Treatment Facility Flow Metering Evaluation, from Kent M. Nichols, Jr., P.E., Project Manager, Weston and Sampson Engineers, Inc.

The permittee conducted subsequent volumetric testing with the following results for the influent meter:

Year	Error
2003	+5.58%
2004	+0.06%
2005	±2.15%
2006	-0.27%
2007	-.076%
2008	+2%
2009	-2.5%
2010	+18.71% (see text)
2011	-12.2%

These errors are minimal when compared with industry wide expectations of +/- 10% with the exception of the 2010 and 2011 calibrations. The 2010 result is not consistent with the results of the past seven (7) years. The permittee and its consultant theorize that errors (i.e. all flows not diverted to the tank or a change in level due to rising flows in a basin back in the plant) may have occurred during the testing; however, this is only speculation. The permittee tested again in August 2011 following the upgrade of the aeration system. The results showed that a -12.2% error existed on the plant recorder. The error offsets the 2010 error and may have been caused by the plant water system being left on during the test.³

The 2004 NPDES permit reissuance required the City of Newburyport to conduct four (4) instrument calibrations and one (1) volumetric calibration per year. The requirement also allowed the permittee to request a reduction in the frequency of calibration. In August 2009, EPA, in response to a request by the City of Newburyport, reduced the frequency of the meter calibrations to one per year and maintained the volumetric test frequency at once per year⁴.

As part of the WPCF upgrade, a new effluent flow meter was installed. The installation and calibration reports for the new meter were submitted to MassDEP and EPA, and found acceptable. The permittee received authorization to use the new meter for NPDES reporting on January 3, 2012⁵. Accordingly, the special flow meter volumetric testing and calibration requirements are not included in the draft permit.

5.3. Co-permitting

The Newburyport WPCF treats wastewater from the municipalities of Newburyport and

³ August 23, 2011, Email from Gilbert A. Parrot, New England Instrument Service to Joseph Dugan, Chief Operator, Newburyport WWTF.

⁴ August 17, 2009, Ltr from Roger A. Janson, EPA to Joseph Dugan, City of Newburyport, Re: Request for reduction of meter calibration under NPDES Permit MA0101427.

⁵ January 3, 2012, Ltr from Brian Pitt, EPA to Joseph Dugan, City of Newburyport, Re: NPDES #MA0101427, Request for use of new effluent meter for NPDES reporting.

Newbury. Recently, EPA Region 1 has included municipalities who own and operate a sewer collection system but do not own or operate the treatment facility as limited co-permittees to assure that the collection system owned by the municipality is properly operated and maintained. The Town of Newbury was not included as a co-permittee in the current permit as the collection system from Newbury to the Newburyport WWTF was not complete at the time of permit issuance.

EPA will not include the Town of Newbury as a co-permittee in this proposed permit in deference to the Environmental Appeals Board decision in *In re Upper Blackstone Water Pollution Abatement District*, NPDES Appeal Nos. 08-11, 08-12, 088-13, 08-14, 08-15, 08-16, 08-17, 08-18, 09-06 (EAB May 28, 2010), 14 E.A.D.). In that decision, the Board remanded the co-permittee requirements of that permit to EPA for further articulation of the statutory, regulatory, and factual bases for expanding the scope of NPDES authority beyond the treatment plant owner and operator to separately owned and operated collection systems. EPA is currently developing an appropriate response to the questions posed by the Board on remand.

As was the case under the current permit, the City of Newburyport is responsible for preventing unauthorized discharges from its system, and must ensure that excess inflow and infiltration (regardless of the origin) does not cause (or contribute) to violations of effluent limitations or other permit requirements. If the City of Newburyport finds it appropriate to request that Newbury make certain improvements to its collection system in order to facilitate Newburyport's compliance with permit requirements, the City may refer its concerns directly to Newbury pursuant to intermunicipal agreement or other means outside the NPDES permit..

If EPA later determines that it is appropriate to include co-permittee requirements, EPA may take further action according to the procedures of 40 C.F.R. part 124.

6. Statutory and Regulatory Authority

6.1. General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. An NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements, including monitoring and reporting requirements. This draft NPDES permit was developed in accordance with the various statutory and regulatory requirements established pursuant to the CWA and any applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, and 125.

When developing permit limits, EPA is required to consider (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit. These requirements are described in the following paragraphs.

6.1.1. Technology-based Requirements

Under Section 301(b)(1)(B) of the Clean Water Act ("CWA"), publicly owned treatment works ("POTWs") must have achieved effluent limitations based upon Secondary Treatment by July 1, 1977. The secondary treatment requirements are set forth at 40 C.F.R. Part 133.102. In addition, Section 301(b)(1)(C) of the CWA requires that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water.

Pursuant to 40 C.F.R. § 122.44 (d), permittees must achieve water quality standards established under Section 303 of the Clean Water Act (CWA), including state narrative criteria for water quality. Additionally, under 40 C.F.R. § 122.44 (d)(1)(i), "Limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." When determining whether a discharge causes, or has the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numeric criterion, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, and where appropriate, consider the dilution of the effluent in the receiving water.

6.1.2. Water Quality Standards; Designated Use; Outfall 001

The Merrimack River, in the vicinity of the discharge, is classified in the Massachusetts Surface Water Quality Standards (314 CMR 4.00) as a Class SB water, and is designated for Shellfishing in the Table 20 of 314 CMR 4.06. Class SB waters are designated as habitat for fish, other aquatic life and wildlife, and for primary and secondary contact recreation. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). The waters shall have consistently good aesthetic value. The Merrimack River, downstream of the discharge, was approved for restricted shellfishing in 2006 by the Massachusetts Division of Marine Fisheries.

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those waterbodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such, require the development of total maximum daily loads (TMDL). This segment of the Merrimack River is listed on the Massachusetts 2008 Integrated List of Waters (303d) as needing a TMDL for priority organics and pathogens. Presently, the MassDEP has not developed a TMDL for this segment of the Merrimack River.

6.1.2.1. Massachusetts Division of Marine Fisheries Shellfishing Designation⁶

In 2006, the Massachusetts Division of Marine Fisheries (*Marine Fisheries*) re-classified and re-opened Merrimack River shellfish flats in Newburyport and Salisbury to the conditional harvest of soft-shell clams. These flats are located downstream of the Newburyport WWTF. The flats had been shut down for 20 years due to bacterial contamination. “Water quality testing conducted by *Marine Fisheries* confirms that the River meets moderately contaminated criteria during dry weather, for a *Conditionally Restricted* classification. Results also demonstrate rainfall cause intermittent and predictable periods of gross bacterial pollution. The resultant runoff from rain produces a sharp increase in bacteria above threshold levels.⁷” Softshell clams maybe harvested under special license but need depuration at the Shellfish Purification Plant at Plum Island Point, Newburyport.

The previous permit required the permittee to establish and implement an Immediate Warning System for the immediate notification of *Marine Fisheries* if un-disinfected effluent was discharged from the facility. According to *Marine Fisheries* (personal communication with Jack Schwartz, 5/2/2011), the system developed is adequate and the City and *Marine Fisheries* continue to work cooperatively.

6.1.2.2. Available Dilution

Where appropriate, water quality based limitations are established with the use of a calculated available dilution. The Newburyport WWTF discharge is from a multiport diffuser located on the bottom of the Merrimack River estuary. Dilution calculations are complicated by the dynamic tidal environment.

In the summer of 1997, a dye study was conducted at the mouth of the Merrimack River by the US Department of Health and Human Services at the request of *Marine Fisheries*. The purpose of the study was to trace the path of effluent as it traveled from the Newburyport WWTF outfall toward the mouth of the Merrimack River. The study approximated a dilution factor of 30. EPA ran a CORMIX model simulation of the diffuser system in 2003 to and determined a similar dilution factor. This dilution was used in the previous permit and the applicable variables have not changed. The same dilution is used in the draft permit.

As part of the phase one upgrade of the facility, divers removed plywood panels that had been left in place in several of the diffuser heads. The permittee states that the dilution factor of 30 may be understated; however, the COMIX modeling discussed previously assumed the operation of all diffuser heads. EPA has used a dilution factor of 30 in the water quality-based limit calculations in the draft permit.

⁶ The Massachusetts Division of Marine Fisheries (MADMF) shellfishing designation is not the same as the shellfishing designation in the MA Surface Water Quality Standards (MASWQS). Waters designated for shellfishing in the MASWQS are subject to shellfishing water quality criteria regardless of whether shellfishing areas in those waters are approved for shellfishing by MADMF.

⁷ MA Division of Marine Fisheries, 2006, Marine Fisheries Advisory “Marine Fisheries Announces the Conditional Re-Opening of Merrimack River Clam Flats”

6.1.3. Permit Basis and Explanation of Effluent Limitations

6.1.3.1. Flow

The proposed flow limit is based on the average daily design flow of the treatment plant, which is 3.4 mgd. Flow is to be measured continuously. The permittee shall report the annual average monthly flow using the annual rolling average method (See Permit Footnote 2). The average monthly and maximum daily flow for each month shall also be reported.

A review of 24 months of DMR data shows that the reported monthly flows have been in compliance with the 3.4 mgd flow limit (range = 2.30-3.10 mgd, avg = 2.76 mgd, n=24).

6.1.3.2. Conventional Pollutants

6.1.3.2.1. Biochemical Oxygen Demand (BOD₅)

The draft permit proposes the same BOD₅ limits as in the current permit, which are based on the secondary treatment requirements set forth at 40 CFR 133.102 (a)(1), (2), (4) and 40 CFR 122.45 (f). The secondary treatment limitations are a monthly average BOD₅ concentration of 30 mg/l and a weekly average concentration of 45 mg/l. The draft permit also requires the permittee to report the maximum daily BOD₅ value each month, but does not establish an effluent limit. The mass-based limitations for BOD are based on a 3.4 mgd design flow. The monitoring frequency continues to be three times per week.

A review of DMR data submitted over the last 24 months shows that there have been no permit violations of BOD₅ concentration limits. Based on the DMR data, the average values for BOD₅ monthly average, weekly average and maximum daily were 24.73 mg/l (range 15-30 mg/l; n=24), 30.87 mg/l (20.70-45 mg/l; n=24) and 38.58 (25-79 mg/l; n=24), respectively.

BOD Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly, average weekly and maximum daily BOD₅ are based on the following equation:

$L = C \times DF \times 8.34$ where:

L = Maximum allowable load in lbs/day.

C = Maximum allowable effluent concentration for reporting period in mg/l.

Reporting periods are average monthly and weekly and daily maximum.

DF = Annual average design flow of facility (3.4 mgd).

8.34 = Factor to convert effluent concentration in mg/l and design flow in MGD to lbs/day.

(Concentration limit) [30] X 8.34 (Constant) X 3.4 (Design flow) = 851 lb/day

(Concentration limit) [45] X 8.34 (Constant) X 3.4 (Design flow) = 1276 lb/day

6.1.3.2.2. Total Suspended Solids (TSS)

The draft permit proposes the same TSS limits as in the current permit, which are based on the secondary treatment requirements set forth at 40 CFR 133.102 (a)(1), (2), (4) and 40 CFR 122.45 (f). The secondary treatment limitations are a monthly average TSS concentration of 30 mg/l and a weekly average concentration of 45 mg/l. The draft permit also requires the permittee to report the maximum daily TSS value each month, but does not establish an effluent limit. The mass-based limitations for TSS are based on a 3.4 mgd design flow. The monitoring frequency continues to be three times per week.

A review of DMR data submitted over the last 24 months shows that there have been no permit violations of TSS concentration limits. Based on a review of 24 months of DMR data, the average values for TSS monthly average, weekly average and maximum daily were 16.01 mg/l (range 10.5-25.60 mg/l; n=24) , 24.08 mg/l (15.00-46.90 mg/l; n=24) and 35.95 (16.90-91.30 mg/l; n=24), respectively.

There was one (1) violation of the weekly average concentration limit of 45 mg/l with a reported value of 46.90 mg/l in December 2010. The average monthly value reported was 911.2 lbs/day, which is over the limit of 851 lbs/day. The average weekly value reported was 1455.8 lbs/day, which is over the 1276 lbs/day limit.

TSS Mass Loading Calculations:

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

$L = C \times DF \times 8.34$ where:

L = Maximum allowable load in lbs/day.

C = Maximum allowable effluent concentration for reporting period in mg/l.

Reporting periods are average monthly and weekly and daily maximum.

DF = Annual average design flow of facility (3.4 mgd).

8.34 = Factor to convert effluent concentration in mg/l and design flow in MGD to lbs/day.

(Concentration limit) [30] X 8.34 (Constant) X 3.4 (Design flow) = 851 lb/day

(Concentration limit) [45] X 8.34 (Constant) X 3.4 (Design flow) = 1276 lb/day

6.1.3.2.3. Eighty-Five Percent (85%) BOD₅ and TSS Removal Requirement

The provisions of 40 CFR "133.102(a)(3), (4) and (b)(3) requires that the 30 day average percent removal for BOD₅ and TSS be not less than 85%. This requirement was included in the previous permit.

A review of DMR data shows that BOD₅ and TSS removal percentages average 91 % and 93%, respectively. There have been no violations of the 85% removal

requirement for BOD₅ or TSS over the last 24 months.

6.1.3.2.4. pH

The draft permit includes pH limitations which are required by state water quality standards, and are at least as stringent as pH limitations set forth at 40 C.F.R. §133.102(c). The pH of the effluent shall not be less than 6.5 or greater than 8.5 standard units at any time. The monitoring frequency is daily.

A review of DMR data submitted over the last 24 months shows that there have been no violations for pH. Based on the DMR data, the pH values have ranged from 6.5-7.64 standard units.

6.1.3.2.5. Bacteria

The Massachusetts Water Quality Standards include criteria for two bacterial indicators for Class SB waters. Fecal coliform bacteria are applicable in water designated for shellfishing and enterococci criteria have been established to protect recreational uses. Criteria for enterococci were first promulgated for Massachusetts coastal waters by EPA on November 16, 2004 (see 40 CFR 131.41). Massachusetts subsequently adopted enterococci criteria for marine waters into its water quality standards that were approved by EPA on September 19, 2007.

6.1.3.2.5.1. Fecal Coliform

The current permit includes fecal coliform bacteria effluent limitations that were established using the criteria in the MA SWQS at 314 CMR 4.05(4)(b) that were in effect at the time the current permit was modified in 2006. These criteria have not changed, and require that SB waters designated for shellfishing not exceed a fecal coliform median or geometric mean MPN of 88 per 100 mg/l nor shall more than 10% of the samples exceed a MPN of 260 per 100 ml.

The current (and draft) permit include a monthly geometric mean limit of 88 colony forming units (cfu) per 100 ml, a requirement that not more than 10 percent of the samples in any month exceed 260 cfu/100 ml and a maximum daily limit of 400 cfu/ml. The maximum daily limit has been carried forward from previous permits, consistent with antibacksliding requirements.

A review of DMR data shows that the monthly geometric mean fecal coliform bacteria discharge range from 2.48 to 82.45 cfu/100 ml. The maximum value reported over the last 24 months is 274 cfu/100 ml. There have been no violations of the fecal coliform requirement over the last 24 months.

A daily sampling frequency has been maintained in the draft permit to ensure protection of the shellfishing use.

6.1.3.2.5.2. *Enterococci*

The water quality criteria for Class SB bathing beach waters require that no single sample shall exceed 104 colonies per 100 ml, and that the geometric mean of the five most recent samples taken within the same bathing season shall not exceed 35 enterococci colonies per 100 ml and during the non-bathing season, no single enterococci sample shall exceed 104 colonies per 100 ml and the geometric mean of all samples taken during the most recent six months typically based on a minimum of five samples shall not exceed 35 enterococci colonies per 100 ml.

As part of the application process, the Permittee conducted a single test for enterococci on September 24, 2009. The result was less than 10 cfu /100 ml.

As this is a new requirement, the draft permit includes a compliance schedule of one year to attain the limit.

6.1.3.2.6 *Dissolved Oxygen*

The current permit as modified in 2006 requires the permittee to monitor dissolved oxygen five (5) days per week. The permit also allowed the permittee to request a reduction in frequency or elimination of the monitoring requirement if, after one year of monitoring the data establishes that the effluent DO is consistently greater than 5.0 mg/l

After five (5) years of monitoring, the permittee requested an elimination of the monitoring requirement. The request was dated April 7, 2011. Since EPA was in the process of the drafting this permit, the elimination of the DO requirement is being addressed in this fact sheet.

Given that the effluent DO is consistently greater than 5.0 mg/l, there is no reasonable potential for the discharge to cause a violation of the water quality standard for DO; and therefore, no limit or further monitoring is required by the draft permit.

6.1.3.3. *Non-conventional pollutants*

6.1.3.3.1. *Total Residual Chlorine*

The draft permit includes proposed total residual chlorine limitations that are calculated using national recommended water quality criteria. Chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The acute (daily maximum) water quality criterion for chlorine is 13 ug/l and the chronic (monthly average) criterion is 7.5 ug/l.

Total Residual Chlorine Limitations:

(acute criteria * dilution factor) = Acute (Maximum Daily)
(13 ug/l * 30)= 390 ug/l = 0.39 mg/l

$$\begin{aligned} &(\text{chronic criteria} * \text{dilution factor}) = \text{Chronic (Monthly Average)} \\ &(7.5 \text{ ug/l} * 30) = 225 \text{ ug/l} = 0.23 \text{ mg/l} \end{aligned}$$

Compliance with the effluent limits are based on the grab samples of the discharge. However, the current permit requires the permittee to continuously monitor total residual chlorine. This condition was established to ensure that the facility consistently maintains an appropriate level of disinfection and dechlorination. A review of the DMRs, monthly reports and graphs from the continuous chlorine monitoring indicate that the DMR reporting accurately captures the total residual chlorine levels; the permittee shall continue to report the results from the continuous monitoring to assure that the facility maintains the appropriate disinfection.

A review of DMR data submitted over the last 24 months shows that there have been no permit violations of Total Residual Chlorine limits. Based on the DMR data, the average values for Total Residual Chlorine average monthly and maximum daily were 0.05 ug/l (range 0.03-0.08 ug/l; n=24) and 0.23 ug/l (range 0.06-0.36 ug/l; n=24), respectively.

6.1.3.3.2. Copper

Certain metals such as copper can be toxic to aquatic life. The maximum daily discharge of copper reported by this facility in the 2010 application was 0.02 mg/l. Because this discharge concentration does not exceed the limits calculated to meet water quality standards, the discharge of copper does not have the reasonable potential to cause or contribute to exceedances of the applicable water quality criteria (see calculations below), and no limits are required.

$$\begin{aligned} &(\text{chronic criteria} * \text{dilution factor}) / \text{conversion factor} = \text{Chronic (Monthly Average)} \\ &\text{Limit} \\ &(3.1 \text{ ug/l} * 30) / 0.83 = 112 \text{ ug/l} = 0.112 \text{ mg/l} > 0.02 \text{ mg/l} \\ &(\text{acute criteria} * \text{dilution factor}) / \text{conversion factor} = \text{Acute (Maximum Daily)} \\ &\text{Limit} \\ &4.8 \text{ ug/l} * 30 / 0.83 = 173.5 \text{ ug/l} = 0.174 \text{ mg/l} > 0.02 \text{ mg/l} \end{aligned}$$

6.1.3.3.3. Zinc

Zinc can be toxic to aquatic life. The maximum daily discharge of zinc reported by this facility in the 2010 application was 0.06. Because this discharge concentration is less than the limits calculated to meet water quality standards, the discharge of zinc does not have the reasonable potential to cause or contribute to exceedances of the applicable water quality criteria, and no limits are required.

$$\begin{aligned} &(\text{chronic criteria} * \text{dilution factor}) / \text{conversion factor} = \text{Chronic (Monthly Average)} \\ &\text{Limit} \\ &(81 \text{ ug/l} * 30) / 0.946 = 2568.7 \text{ ug/l} = 2.569 \text{ mg/l} > 0.06 \text{ mg/l} \end{aligned}$$

(acute criteria * dilution factor)/conversion factor = Acute (Maximum Daily) Limit
 $(90 \text{ ug/l} * 30) / 0.946 = 2854.1 \text{ ug/l} = 2.854 \text{ mg/l} > 0.06 \text{ mg/l}$

6.1.3.3.4. Cyanide

Cyanide can be toxic. The maximum daily discharge of cyanide reported by this facility in the 2010 application was 0.02 mg/l. Because this discharge concentration is less than the limits calculated to meet water quality standards, the discharge of zinc does not have the reasonable potential to cause or contribute to exceedances of the applicable water quality criteria, and no limits are required.

(chronic criteria * dilution factor) = Chronic (Monthly Average) Limit
 $(1 \text{ ug/l} * 30 = 30 \text{ ug/l} = 0.03 \text{ mg/l} > 0.02 \text{ mg/l}$

The acute criterion is the same as the chronic criterion, so the calculation is the same.

6.1.3.3.5. Total Phenolic Compounds

Total Phenolic Compounds can be toxic to aquatic life. The maximum daily discharge of total phenolic compounds reported by this facility in its 2010 application was 0.05 mg/l. This value is significantly less than the national recommended water quality criteria of 10 mg/l for water + organisms and 860 mg/l for organisms only. Based on the application data there is no reasonable potential for total phenol to exceed the criteria and therefore, no effluent limit is required.

6.1.3.3.6. Nutrients

The current permit requires the permittee to monitor for ammonia nitrogen, total kjeldahl nitrogen and nitrate + nitrite. These requirements were established in response to public comment and the low dissolved oxygen measurements that were reported in the 2002 application that were later determined to be inaccurate due to the sampling location. As previously discussed in the Section 6.1.3.2.6, Dissolved Oxygen levels that have been reported in compliance with the current permit are consistently higher than 5.0 mg/l.

The National Estuarine Eutrophication Assessment Update⁸ did not have data available for the assessment of the Merrimack River or its estuary. It did, however, identify Plum Island Sound, south of the Newburyport WWTP, as experiencing a moderate high level of overall eutrophication. The Sound is characterized by high chlorophyll-a and moderate nuisance /toxic blooms.

⁸2007, Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner, 2007. Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change. NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Silver Spring, MD. 328 pp.

Although Plum Island Sound is outside the immediate vicinity of the Newburyport WPCF, EPA has maintained the reporting requirements for ammonia nitrogen, total kjeldahl nitrogen and nitrate + nitrite concentrations and added requirements mass-based reporting in the proposed permit.

6.1.3.4. Whole Effluent Toxicity (WET)

Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Massachusetts Surface Water Quality Standards include the following narrative statement and requires that EPA criteria established pursuant to Section 304(a)(1) of the CWA be used as guidance for interpretation of the following narrative criteria:

All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

National studies conducted by the EPA have demonstrated that domestic sources contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Based on the potential for toxicity from domestic and industrial sources, the state narrative water quality criterion, 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 ($LC_{50} = 100\%$). (See also "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 49 Fed. Reg. 9016 March 9, 1984, and EPA's "Technical Support Document for Water Quality-Based Toxics Control", March, 1991.)

The Massachusetts Department of Environmental Protection's Division of Watershed Management's toxics policy requires toxicity testing for all major dischargers, such as the City of Newburyport WWTF. In addition, EPA recognizes that toxicity testing is required to assure that the synergetic effect of the pollutants in the discharge do not cause toxicity, even though the pollutants may be at low concentration in the effluent. Thus, the draft permit includes a whole effluent toxicity limitation requirement for the 001 outfall, to assure that the facility does not discharge combinations of toxic compounds into the Merrimack River in amounts which would affect aquatic or human life.

The draft permit carries forward a requirement for quarterly acute toxicity tests using the species Mysid Shrimp and Inland Silverside. The tests must be performed in accordance with the test procedures and protocols specified in **Permit Attachment A**. The tests will be conducted four times per year. The months the tests are to be conducted have been changed to January, April, July and October, consistent with the Massachusetts Watershed Initiative.

A review of 2 years of WET results shows consistent compliance for both Menidia and Mysid Bahia. There was one violation in the last 2 years with the February 2010 Menidia test.

The LC50 of $\geq 100\%$ is established by EPA/MassDEP policy for facilities with less than 100:1 dilution.

The permit shall be modified or alternatively revoked and reissued, to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of the toxicity tests indicate the discharge causes an exceedance of any state water quality criterion. Results from these toxicity tests are considered “New Information” and the permit may be modified pursuant to 40 CFR 122.62(a)(2).

7. INFLOW/INFILTRATION REQUIREMENTS

Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems.

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

The City of Newburyport submitted an Infiltration and Inflow Control Plan⁹, dated May 2007, in compliance with its current ND PES permit. The Plan included a full review of past investigations and repairs. Based on that review, a work plan and schedule for sewer system rehabilitation and future investigations was developed.

NEWBURYPORT INFILTRATION AND INFLOW CONTROL PLAN (Revised May 2007)	
Fiscal Year	Tasks
FY 2006-2007	Begin to implement inflow source reduction program <ul style="list-style-type: none"> • Educational outreach program • Basement inspection plan TV inspect 8,600 feet of sewer in subareas A,J,P & Q Inspect 136 manholes in subareas C,E,F,H,K,L,O,P & S Conducted limited house to house inspection program in subareas L,M & O
FY 2007-2008	Design and construction of projects to eliminate 14 public inflow sources Design and construction of 327 feet of sewers and 10 manholes in need of trenchless repairs.

⁹ Metcalf & Eddy/AECOM, 2007, “Final Report, Submitted to City of Newburyport, MA, Sewer Department, Infiltration and Inflow Control Plan”

FY 2008-2009	Design and construction of sewer and manholes in need of replacement as determined by TV and manhole inspection work performed in FY 2006-2007.
FY 2009-2010	Continuous monitoring of sewage flows should be performed in the Spring of 2010
FY 2010-2011	Prepare a focused I/I reduction program based on flow monitoring performed in FY 2009-2010.

Summary of Newburyport Annual Reports of I/I Work			
Year	Task	Cost	Total for CY
Calendar Year 2007	Hydraulic cleaning of 34,830 feet of existing sewer	\$26,100	
	Rehabilitation of 12 existing sewer manholes	\$9900	
	Rehabilitation of existing sewers with structural defects	\$11,700	
	TV inspection of sewers on 5 different streets	\$3900	
	Preparation and submittal of I/I Control Plan	\$6000	\$57,600

Calendar Year 2008	Hydraulic cleaning of 52,100 feet of existing sewer	\$39,100	
	Rehabilitation of 20 existing sewer manholes	\$18,600	
	Replacement of 220 feet of existing sewer	\$42,500	
	TV inspection of 3,100 feet of sewers on 9 different streets	\$2400	
	Inspected properties for illegal sump pump in association with the system wide replacement of water meters.	NA	
	Purchased a flow meter to measure flows to the WWTF from the Plum Island vacuum sewer system	\$5000	\$107,600
Calendar Year 2009	Hydraulic cleaning of 8,000 feet of existing sewer	\$14,720	
	Cleaned all 15 lift stations, May and October	(combined with above)	
	Repair work of Plum Island vacuum system	(not reported)	
	Adjustment of manhole frame and cover for existing low-lying manhole on Plum Island	\$2500	
	Replacement of 80 feet of existing sewer	\$18,000	

	Indicated design work for 3,520 feet of replacement sewer	\$44,370	\$79,590
Calendar Year 2010	Hydraulic cleaning of 71,400 feet of existing sewer	\$78,120	
	Cleaned all 15 lift stations, semi-annually	(combined with above)	
	Cleaned and TV inspected approximately 1,770 feet of existing sewer	\$2500	
	Purchased a new sewer jet truck	\$150,000	\$230,620

The draft permit includes requirements for the permittee to continue to control infiltration and inflow (I/I), and to revise its current I/I control program consistent with requirements in Part I.C of the draft permit, Operation and Maintenance of the Sewer System.

8. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

The standard permit conditions for “Proper Operation and Maintenance”, set forth at 40 C.F.R. §122.41(e), require the proper operation and maintenance of permitted wastewater systems and associated facilities to achieve permit conditions. The requirements at 40 C.F.R. §122.41(d) impose a “duty to mitigate” upon the permittee, which requires that “all reasonable steps be taken to minimize or prevent any discharge violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment”.

General requirements for proper operation and maintenance, and mitigation have been included in Part II of the permit. Specific permit conditions have also been included in Part I.D. and I.E. of the draft permit. These requirements include mapping of the wastewater collection system, preparing and implementing a collection system operation and maintenance plan, reporting of unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to separate sewer collection systems (combined sewers are not subject to I/I requirements) to the extent necessary to prevent SSOs and I/I related effluent violations at the wastewater treatment plant, and maintaining alternate power where necessary. These requirements are included to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment.

Several of the requirements in the draft permit are not included in the current permit, including collection system mapping, and preparation of a collection system operation and maintenance plan. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules for completing these requirements in the draft permit

9. SLUDGE INFORMATION AND REQUIREMENTS

The draft permit requires that the permittee comply with all existing federal and state laws that apply to sewage sludge use and disposal practices and with the Clean Water Act Section 405(d) technical standards (see 40 CFR Section 503) and that it submit an annual reports describing its sludge disposal practices. Sludge from the treatment facility is currently sent to AgreSource Inc. Composting Facility in Ipswich, MA. Because the final disposal or use of the permittees sludge is done by others, the permittee is not currently subject to the requirements of 40 CFR Section 503. However, if the ultimate sludge disposal method changes, the permittee is responsible for complying with the applicable state and federal requirements.

The draft permit requires the permittee to submit an annual report by February 19th.

10. INDUSTRIAL USERS

The permittee is required to administer a pretreatment program based on authority granted under 40 C.F.R. Part 403 and Section 307 of the CWA. The permittee's pretreatment program received EPA approval on September 28, 1984 and, as a result, appropriate pretreatment program requirements were incorporated into the existing permit which were consistent with the approval and federal pretreatment regulations in effect when the permit was issued.

Periodically, the Federal Pretreatment Regulations in 40 C.F.R. Part 403 are amended. Those amendments establish new requirements for implementation of the pretreatment program. Upon reissuance of this NPDES permit, the permittee is obligated to modify its pretreatment program to be consistent with the 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 NPDES permit.

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

11. ANTI-BACKSLIDING

Anti-backsliding as described in Section 402 (o) of the Clean Water Act and 40 CFR §122.44(l)(1), requires reissued permits to contain limitations as stringent than those of the previous permit. There are limited exceptions to this requirement..

The draft permit does not include any less stringent effluent limitations and so is consistent with antibacksliding.

12. ANTIDegradation

The Massachusetts Antidegradation Policy is found at Title 314 CMR 4.04. The Commonwealth has also developed implementation procedures¹⁰. All existing uses of the Merrimack River must be protected. EPA believes that the antidegradation policy has been met because the draft permit is being reissued with allowable discharge limits as or more stringent than the current permit with the same parameter coverage.

13. ESSENTIAL FISH HABITAT

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

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

13.1. EFH Species

The following is a list of the EFH species and applicable lifestage(s) for the area that includes Atlantic Ocean Waters around Newburyport:

Name of Estuary/ Bay/ River: Merrimack River, Massachusetts

10 x 10 latitude and longitude squares included in this bay or estuary or river (southeast corner boundaries):

4250/7040; 4250/7050; 4240/7040; 4240/7050; 4240/7100; 4240/7110

Species	Eggs	Larvae	Juveniles	Adults	Spawning
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¹⁰ Haas, Glenn, MassDEP, 2009, “Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00”.

					Adults
Atlantic salmon (<i>Salmo salar</i>)			F,M	F,M	
pollock (<i>Pollachius virens</i>)	M	M	M		
whiting (<i>Merluccius bilinearis</i>)	M				
white hake (<i>Urophycis tenuis</i>)	M				
winter flounder (<i>Pleuronectes americanus</i>)	M	M	M	M	M
yellowtail flounder (<i>Pleuronectes ferruginea</i>)	S	S			
Atlantic halibut (<i>Hippoglossus hippoglossus</i>)	S	S	S	S	S
Atlantic sea herring (<i>Clupea harengus</i>)		M	M		
Atlantic mackerel (<i>Scomber scombrus</i>)	M	M			

S ≡ The EFH designation for this species includes the seawater salinity zone of this bay or estuary (salinity > 25.0‰).

M ≡ The EFH designation for this species includes the mixing water / brackish salinity zone of this bay or estuary (0.5 < salinity < 25.0‰).

F ≡ The EFH designation for this species includes the tidal freshwater salinity zone of this bay or estuary (0.0 < salinity < 0.5‰).

The Merrimack River estuary in the vicinity of the Newburyport Wastewater Treatment Facility discharge is designated essential fish habitat (EFH) for 9 finfish species. EPA has concluded that the limits and conditions contained in this draft permit minimize adverse effects to the EFH species present for the following reasons:

- This is a reissuance of an existing permit;
- The dilution factor of 30;
- The facility discharges from a multiport diffuser approximately 1,550 feet offshore on the bottom of the Merrimack River. This section of the river is characterized by high tidal energy, which promotes dispersion of the effluent from the diffuser. These factors provide a sufficient zone of passage unaffected by the discharge to allow the movement of EFH species;
- Draft permit limits specifically protective of aquatic organisms have been established for chlorine, based on EPA water quality criteria;
- The facility withdraws no water from the Merrimack River, so no life stages of EFH species are vulnerable to impingement or entrainment from this facility;

- Acute toxicity tests will be conducted four times per year to ensure that the discharge does not present toxicity problems;
- The draft permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the draft permit were developed to be protective of all aquatic life;
- The draft permit prohibits violations of the state water quality standards.

EPA believes that the conditions and limitations contained within the draft permit adequately protect all aquatic life, including those species with EFH designation. Impacts associated with issuance of this permit to the EFH species, their habitat and forage, have been minimized to the extent that no significant adverse impacts are expected. Further mitigation is not warranted.

NMFS will be notified and EFH will be reinitiated if adverse impacts to EFH are detected as a result of this permit action or if new information becomes available that changes the basis for these conclusions.

14. ENDANGERED SPECIES ACT

The Endangered Species Act of 1973, as amended (ESA), imposes requirements on Federal agencies related to the potential effects of their actions on endangered or threatened species of fish, wildlife, or plants (listed species) and their designated “critical habitat.”

Section 7 of the ESA requires, in general, that Federal agencies insure that any actions they authorize, fund, or carry out, in the United States or upon the high seas, are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated “critical habitat” for those species. Federal agencies carry out their responsibilities under the ESA in consultation with, and assisted by, the Departments of Interior (DOI) and/or Commerce (DOC), depending on the species involved. The United States Fish & Wildlife Service (USFWS) of the DOI administers Section 7 consultations for freshwater species, while the National Marine Fisheries Service (NMFS) of DOC does so for marine species and anadromous fish.

The federal action being considered in this case is EPA’s proposed issuance of a new NPDES permit to the city of Newburyport to discharge effluent from the Newburyport Wastewater Treatment Plant (WWTP). The new permit is intended to replace the existing NPDES permit in governing wastewater discharges from the City’s WWTP, as discussed above.

The Newburyport WWTP is a 3.4 million gallon per day (mgd) secondary wastewater treatment plant. The facility discharges from a multiport diffuser approximately 1,550 feet offshore on the bottom of the Merrimack River, approximately 4.8 kilometers upstream of the mouth of the river (See Figure 1). The collection system is 100% separate sanitary sewer and serves a total population of 18,800 (City of Newburyport, 17,000 and Town of Newbury, 1,800). There are five (5) categorical industrial users (CIUs) discharging to the collection system.

As the federal agency charged with authorizing the discharge from this facility, EPA has reviewed available information and determined that a number of federally listed species inhabit (seasonally) waters in the broad general area of the relevant discharge and further analysis is necessary with regard to these species. Coastal areas of Massachusetts provide habitat for a number of federally protected marine species, including: mammals (whales: North Atlantic Right, Humpback, Fin, Sei, Sperm, Blue – all endangered); reptiles (sea turtles: Kemp’s Ridley, Leatherback, Green – all endangered; Loggerhead – Threatened but proposed for listing as endangered).

However, EPA does not consider the area influenced by facility discharge to be suitable habitat for the species listed above. Based on the normal distribution of these species, it is unlikely that any of the coastal NMFS listed species identified above would be expected to be present in the vicinity of the Newburyport WWTP discharge in the Merrimack River. EPA has made the determination that these protected species are not present in any area influenced by the discharge.

It is EPA’s understanding that the only federally listed species that has the potential to occur in the vicinity of the Newburyport WWTP is the shortnose sturgeon (*Acipenser brevirostrum*). Because this species may be affected by the discharges authorized by the proposed permit, EPA must consult with NMFS under Section 7 of the ESA. EPA has evaluated the potential impacts of the permit action on shortnose sturgeon. On the basis of this evaluation, which is discussed below, EPA’s preliminary determination is that this action “is not likely to adversely affect listed species or critical habitat.”¹¹ 16 C.F.R. § 402.13(a). As a result, EPA will, in a separate letter, request NMFS’s written concurrence with EPA’s determination conclusion in order to complete the consultation with NMFS on an “informal” basis. *See* 16 C.F.R. § 402.13(a). If NMFS does not concur, then “formal consultation” will be necessary.

14.1. Shortnose Sturgeon in the Merrimack River

According to information presented in the Final Recovery Plan for the Shortnose Sturgeon¹² studies done in 1989 and 1990 indicated that the Merrimack River supports a foraging, or total adult population, of less than 100 fish. Elsewhere in the document, a more specific estimate of approximately 33 adult shortnose sturgeon is recorded for the Merrimack River. These anadromous fish are benthic omnivores. In the Merrimack River, adults are thought to remain in freshwater all year, but some adults briefly enter low saline river reaches in May-June, then return upriver. The “concentration areas” used by fish in the Merrimack were identified as reaches where natural or artificial features cause a decrease in river flow, possibly creating suitable substrate conditions for freshwater mussels¹³, a major prey item for

¹¹ A project can be considered “unlikely to adversely affect” a listed species “when direct or indirect effects of the proposed project on listed species are expected to be discountable, insignificant or completely beneficial.” August 20, 2009, Letter from Patricia A. Kurkul, Regional Administrator, NOAA, National Marine Fisheries Service, Northeast Region, to Melville P. Cote, EPA Region 1 (“NOAA’s August 20, 2009, Rockport Consultation Letter”) (addressing ESA issues concerning EPA’s proposed NPDES permit for the Rockport, MA, POTW).

¹² National Marine Fisheries Service. 1998. Recovery Plan for the Shortnose Sturgeon (*Acipenser brevirostrum*). Prepared by the Shortnose Sturgeon Recovery Team for the National Marine Fisheries Service, Silver Spring, Maryland. 104 pages.

¹³ Kieffer, M., and B. Kynard. 1993. Annual Movements of shortnose and Atlantic sturgeons in the Merrimack

adult sturgeon. The fish are generally associated with shallow and deep tidal channels and overwinter in deeper water. Spawning is thought to take place in the most upstream reach of the river used by the sturgeon, and channels are important for spawning. In the Merrimack River, spawning males have been found at a depth of 2.3 to 5.8 meters¹⁴.

Further information on the location and site-specific behavior of shortnose sturgeon in the Merrimack River was provided by Jessica Pruden of NOAA Fisheries and Micah Kieffer of the U.S. Geological Survey. The upstream extent of the species in the Merrimack River is the Essex Dam at Lawrence, at River Kilometer (RKM) 46. Tracking data indicated that the majority of the population resided between RKM 7 and 32¹⁵. Only a rare individual was observed outside of this range (one tagged individual made a brief movement upstream to RKM 35 in the summer of 1989)¹⁶. The Newburyport WWTP discharge is located at approximately RKM 5.

Spawning has been confirmed at Haverhill, MA (RKM 30–32). Spawning success was confirmed by the capture of two live embryos in 1990 at RKM 32¹⁷. Early life stages have also been collected, though no information exists on rearing habitat or success¹⁸.

Some of the post-spawning and non-spawning adults move downstream to the salt/freshwater interface (RKM 7–12) to forage and remained for as long as six weeks (through mid-June). During the remainder of the year, shortnose sturgeon occupy an 11-km reach (RKM 13–23 between Haverhill and Amesbury) with reversing currents during flood tides and a maximum salinity penetration to RKM 16¹⁹. Tagged adult shortnose sturgeon tracked between late November–March overwintered within an 11-km reach^{20, 21}.

14.2. Outfall Characteristics and Merrimack River Conditions

As stated previously, the Newburyport WWTF discharge is from a multiport diffuser located approximately 1,550 feet offshore on the bottom of the Merrimack River estuary, at approximately RKM 5. A review of 24 months of DMR data shows that the reported monthly flows have been in compliance with the 3.4 mgd flow limit (range = 2.30-3.10 mgd, avg = 2.76 mgd, n=24). Dilution calculations are complicated by the dynamic tidal environment. In the summer of 1997, a dye study was conducted at the mouth of the Merrimack River by the US Department of Health and Human Services at the request of the Massachusetts Division of Marine Fisheries. The purpose of the study was to trace the path of effluent as it traveled from the Newburyport WWTP outfall toward the mouth of the Merrimack River. The study approximated a dilution factor of 30. This dilution was used in the previous permit and the applicable variables have not changed. The same dilution is used

River, Massachusetts. Transactions of the American Fisheries Society 122:1088-1103.

¹⁴ NMFS 1998.

¹⁵ Kieffer and Kynard, 1993.

¹⁶ Jessica Pruden to John H. Nagle, 4 February 2011, in possession of John H. Nagle.

¹⁷ Kieffer, M., and B. Kynard. 1996. Spawning of Shortnose Sturgeon in the Merrimack River. Transactions of the American Fisheries Society 125:179-186.

¹⁸ Jessica Pruden to John H. Nagle, 4 February 2011, in possession of John H. Nagle.

¹⁹ Jessica Pruden to John H. Nagle, 4 February 2011, in possession of John H. Nagle.

²⁰ Kieffer and Kynard, 1993.

²¹ Jessica Pruden to John H. Nagle, 4 February 2011, in possession of John H. Nagle.

in this re-issuance.

Hydrographic studies were also performed in the Merrimack River in May and June of 1997 as part of the Newburyport WWTP permit renewal process. The studies confirm a high-energy tidal flux of water moving in and out of the river, with average tidal velocities of from 0.74 knots to 1.53 knots. A 7Q10 flow or other low flow estimate for this section of the Merrimack River is not appropriate because it is tidally influenced. The average Merrimack River flow during the hydrographic study was estimated to be approximately 5000 cubic feet per second (cfs).

Because of the high energy tidal movement of water in this reach of the Merrimack River, it is difficult to pinpoint a meaningful zone of influence or discharge plume in the river resulting from the effluent of the bottom diffuser. However, descriptive information regarding the outfall and the river in the vicinity of the facility may provide a general assessment of the influence of the discharge. For example, the maximum allowed flow from the outfall bottom diffuser is 5.3 cfs (3.4 mgd). This is only 0.1% of the average Merrimack River flow of approximately 5000 cfs in the area. Also, the bottom diffuser is located approximately 1,550 feet offshore in an area of the river that is approximately 2,300 feet wide. Based on this information, the minimal discharge plume is not likely to adversely affect the movement of shortnose sturgeon in the river.

14.3. Pollutant Discharges Permitted

The draft permit has been developed to ensure that discharges will not cause or contribute to violations of the Massachusetts Water Quality Standards (WQS) in the Merrimack River. The Massachusetts WQS include turbidity, dissolved oxygen and other standards to protect aquatic life and incorporate EPA's aquatic life criteria for toxic pollutants unless a site specific criterion is established, which were designed to be protective of the most sensitive aquatic species nationwide. EPA has further reviewed the discharges and effluent limits to ensure that they are specifically protective of the shortnose sturgeon. Specific pollutants, criteria and effluent limits are discussed below.

14.3.1. Total Suspended Solids

TSS can affect aquatic life directly by killing them or reducing growth rate or resistance to disease, by preventing the successful development of fish eggs and larvae, by modifying natural movements and migration, and by reducing the abundance of available food²². These effects are caused by TSS decreasing light penetration and by burial of the benthos. Eggs and larvae are most vulnerable to increases in solids.

The draft permit proposes the same TSS concentration limitations as in the existing permit. The average monthly and average weekly limits are based on the secondary treatment requirements set forth at 40 CFR 133.102 (b)(1), (2) and 40 CFR 122.45 (f) and are a monthly average TSS concentration of 30 mg/l, and a weekly average concentration of 45 mg/l.

²² US EPA Red Book 1976, Quality Criteria for Water. EPA 440976023.

Studies of the effects of turbid waters on fish suggest that concentrations of suspended solids can reach thousands of milligrams per liter before an acute toxic reaction is expected²³. The studies reviewed by Burton demonstrated lethal effects to fish at concentrations of 580 mg/L to 700,000 mg/L depending on species. Sublethal effects have been observed at substantially lower turbidity levels. For example, prey consumption was significantly lower for striped bass larvae tested at concentrations of 200 and 500 mg/L compared to larvae exposed to 0 and 75 mg/L²⁴. Studies with striped bass adults showed that pre-spawners did not avoid concentrations of 954 to 1,920 mg/L to reach spawning sites²⁵. While there have been no directed studies on the effects of TSS on shortnose sturgeon, shortnose sturgeon juveniles and adults are often documented in turbid water. Dadswell²⁶ reports that shortnose sturgeon are more active under lowered light conditions, such as those in turbid waters. As such, shortnose sturgeon are assumed to be at least as tolerant to suspended sediment as other estuarine fish such as striped bass.

As noted above, shortnose sturgeon eggs and larvae are less tolerant to sediment levels than juveniles and adults. Several studies have examined the effects of suspended solids on fish larvae. Observations in the Delaware River indicated that larval populations may be negatively affected when suspended material settles out of the water column²⁷. Larval survival studies conducted by Auld and Schubel²⁸ showed that striped bass larvae tolerated 50 mg/l and 100 mg/l suspended sediment concentrations and that survival was significantly reduced at 1000 mg/L. According to Wilber and Clarke²⁹, hatching is delayed for striped bass and white perch eggs exposed for one day to sediment concentrations of 800 and 1000 mg/L, respectively.

In a study on the effects of suspended sediment on white perch and striped bass eggs and larvae performed by the ACOE³⁰, researchers found that sediment began to adhere to the

²³ Burton, G.A., Jr. 1993. Assessing the quality of life for aquatic biota. In, Proceedings 1992 International Symposium on Environmental Dredging, A Solution to Contaminated Sediments?. Erie County Environmental Education Institute, Inc. Buffalo, NY.

²⁴ Breitburg, D. L. 1988. Effects of turbidity on prey consumption by striped bass larvae. Transactions of American Fisheries Society. 117:72-77, referenced in Burton, 1993.

²⁵ Combs, D.L. 1979. Striped Bass Spawning in the Arkansas River Tributary of Keystone Reservoir, Oklahoma. Proc. Ann. Conf. S.E. Assoc. Fish Wildl. Agencies 33:371-383, referenced in Burton, 1993.

²⁶ Dadswell, M.J., B.D. Taubert, T.S. Squiers, D. Marchette and J. Buckley. 1984. Synopsis of biological data on shortnose sturgeon (*Acipenser brevirostrum*, LeSueur 1818). NOAA Tech, Rept. NMFS 14. 45 p., referenced in correspondence from Patricia A. Kurkul, NMFS to John H. Nagle, US EPA regarding Montague POTW Section 7 Consultation. September 10, 2008.

²⁷ Hastings, R.W. 1983. A study of the shortnose sturgeon *Acipenser brevirostrum* population in the upper tidal Delaware River: Assessment of impacts of maintenance dredging. Final Report to the U.S. Army Corps of Engineers, Philadelphia District. Rutgers University. 129 pp.

²⁸ Auld, A.H. and J.R. Schubel. 1978. Effects of suspended sediment on fish eggs and larvae: a laboratory assessment. *Estuarine and Coastal Marine Science* 6: 153-164.

²⁹ Wilbur, D.H., and Clarke, D.G., 2001. Biological effects of suspended sediments: A review of suspended sediment impacts on fish and shellfish with relation to dredging activities in estuaries. *North American Journal of Fisheries Management* 21(4): 855-875, as referenced in NMFS Montague POTW letter, September 10, 2008.

³⁰ Raymond P. Morgan, II, V. James Rasin, Jr., Linda A. Noe, 1973. Hydrographic and ecological effects of enlargement of the Chesapeake and Delaware Canal. Effects of suspended sediments on the development of eggs

eggs when sediment levels of over 1000 parts per million (ppm) were reached. No adverse effects to demersal eggs and larvae have been documented at levels at or below 50 mg/L. This is above the highest level authorized for the WWTP by this permit. Based on this information, it is likely that the discharge of sediment from the WWTP in the concentrations allowed by the draft permit will have an insignificant effect on shortnose sturgeon.

14.3.2. Biological Oxygen Demand

The biological oxygen demand (BOD) water test is used to determine how much oxygen is being used by aerobic microorganisms in the water to decompose organic matter. If these aerobic bacteria are using too much of the dissolved oxygen in the water, then there will not be enough available for the fish, insects, and other organisms that rely on oxygen. BOD has the potential to affect dissolved oxygen (DO) concentrations in the vicinity of and downstream from a wastewater treatment facility's outfall.

The draft permit for the WWTP proposes the same BOD₅ concentration limits as in the current permit, which are based on the secondary treatment requirements set forth at 40 CFR 133.102 (a)(1), (2), (4) and 40 CFR 122.45 (f). The secondary treatment limitations are a monthly average BOD₅ concentration of 30 mg/l and a weekly average concentration of 45 mg/l. EPA has determined that these effluent limits are sufficient to ensure that discharge from this facility does not cause an excursion below the Massachusetts water quality standard.

14.3.3. pH

The draft permit requires that the discharge maintain a pH of 6.5 – 8.5. A pH of 6.0 – 9.0 is harmless to most marine organisms and is within the normal range of pH for freshwater. A review of DMR data submitted over the last 24 months shows that there have been no violations for pH. Based on the DMR data, the pH values have ranged from 6.50-7.64 standard units. As such, no adverse effects to shortnose sturgeon are likely to occur as a result of the discharge of water of this pH into the Merrimack River.

14.3.4. Bacteria

The Massachusetts Water Quality Standards include criteria for two bacterial indicators for Class SB waters. Fecal coliform bacteria are applicable in water designated for shellfishing and enterococci criteria have been established to protect recreational uses. Criteria for enterococci were first promulgated for Massachusetts coastal waters by EPA on November 16, 2004 (see 40 CFR 131.41). Massachusetts subsequently adopted enterococci criteria for marine waters into its water quality standards that were approved by EPA on September 19, 2007. Fecal bacteria are not known to be toxic to aquatic life.

14.3.5. Chlorine

Based on the design flow of the WWTP and the dilution calculations, EPA has determined that a monthly average limit of 0.23 mg/l and a daily maximum limit of 0.39

and larvae of striped bass and white perch. National Resources Institute, Chesapeake Biological Laboratory, University of Maryland, Center for Environmental and Estuarine Studies, 15, [12] p. ill., map; 28 cm. (NRI ref.; no 73-110), as referenced in NMFS Montague POTW Letter, September 10, 2008.

mg/l of Total Residual Chlorine (TRC) would assure that the facility did not exceed the chronic and acute TRC criteria (7.5 ug/l and 13 ug/l respectively).

There are a number of studies that have examined the effects of TRC^{31,32,33} on fish; however, no directed studies that have examined the effects of TRC on shortnose sturgeon. The EPA has set the Criteria Maximum Concentration (CMC or acute criteria; defined in 40 CFR 131.36 as equals the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (up to 96 hours) without deleterious effects) at 0.019 mg/L, based on an analysis of exposure of 33 freshwater species in 28 genera (EPA 1986) where acute effect values ranged from 28 ug/L for *Daphia magna* to 710 ug/L for the threespine stickleback. The CMC is set well below the minimum effect values observed in any species tested. As the water quality criteria levels have been set to be protective of even the most sensitive of the 33 freshwater species tested, it is reasonable to assume that the criteria are also protective of shortnose sturgeon.

The anticipated TRC levels in the Merrimack River satisfy the EPA's ambient water quality criteria and are lower than TRC levels known to effect aquatic life. As such, the discharge of the permitted concentrations of TRC is likely to have an insignificant effect on shortnose sturgeon.

14.3.6. Nutrients

The current permit requires the permittee to monitor for ammonia nitrogen, total kjeldahl nitrogen and nitrate + nitrite. These requirements were established in response to public comment. The National Estuarine Eutrophication Assessment Update³⁴ did not have data available for the assessment of the Merrimack River. It did, however, identify Plum Island Sound, south of the Newburyport WWTP, as experiencing a moderate high level of overall eutrophication. The Sound is characterized by high chlorophyll-a and moderate nuisance /toxic blooms.

Although Plum Island Sound is outside the immediate vicinity of the Newburyport WPCF, , EPA has maintained the reporting requirements for ammonia nitrogen, total kjeldahl nitrogen and nitrate + nitrite concentrations and added requirements mass-based reporting in the proposed permit.

Plum Island Sound is not expected to be shortnose sturgeon habitat. As stated previously, the majority of the population resided upstream of the sound, between RKM 7 and 3235. However the monitoring and discharge limits proposed in the draft permit are designed to meet water quality standards and should not contribute to increased eutrophication or depressed dissolved oxygen values in the sound.

³¹ Buckley, J.A., "Acute Toxicity of Residual Chlorine in Wastewater to Coho Salmon (*Oncorhynchus kisutch*) and Some Resultant Hematologic Changes", *J. Fish. Res. Board Can.*, 33:2854-2856(1976).

³² US EPA Gold Book 1986, Quality Criteria for Water. EPA 440586001.

³³ Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks and J. Woerner, 2007. Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change. NOAA Coastal Ocean Program Decision Analysis Series No. 26 National Centers for Coastal Ocean Science, Silver Spring, MD. 328 pp.

³⁴ 2007, Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner, 2007.

³⁵ Kieffer and Kynard, 1993.

14.3.7. Other toxic pollutants

As discussed fully in Part 6.1.3 of this fact sheet, EPA reviewed extensive analytical data submitted with the facility's NPDES permit application to determine whether the facility discharges toxic pollutants in amounts that have a reasonable potential to cause or contribute to water quality violations. These data included expanded effluent testing data for over one hundred pollutants, including metals, VOCs and other toxic pollutants, and representing a total of over one thousand analyses. The WWTP WET Reports provide additional analyses of potentially toxic metals and include analyses of receiving water samples, allowing the facility's contribution to be assessed in the context of ambient conditions.

Copper, zinc, cyanide, total phenolic compounds all showed no reasonable potential to exceed their respective applicable water quality criteria.

14.3.8. Whole Effluent Toxicity

The Massachusetts Department of Environmental Protection's Division of Watershed Management's toxics policy requires toxicity testing for all major dischargers, such as the City of Newburyport WWTF. In addition, EPA recognizes that toxicity testing is required to assure that the synergetic effect of the pollutants in the discharge do not cause toxicity, even though the pollutants may be at low concentration in the effluent. Thus, the draft permit includes a whole effluent toxicity limitation requirement for the 001 outfall, to assure that the facility does not discharge combinations of toxic compounds into the Merrimack River in amounts which would affect aquatic or human life.

The draft permit carries forward a requirement for quarterly acute toxicity tests using the species Mysid Shrimp and Inland Silverside. The tests must be performed in accordance with the test procedures and protocols specified in **Permit Attachment A**. The tests will be conducted four times per year.

A review of 2 years of WET results shows consistent compliance for both Menidia and Mysid Bahia. There was one violation in the last 2 years with the February 2010 Menidia test.

The LC50 of $\geq 100\%$ is established by EPA/MassDEP policy for facilities with less than 100:1 dilution.

The permit shall be modified or alternatively revoked and reissued, to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of the toxicity tests indicate the discharge causes an exceedance of any state water quality criterion. Results from these toxicity tests are considered "New Information" and the permit may be modified pursuant to 40 CFR 122.62(a)(2).

EPA is reviewing recent comments made by NMFS regarding the selection of species for Whole Effluent Toxicity testing that are more sensitive and representative of the shortnose sturgeon (and Atlantic sturgeon). Using another test species (e.g. brook trout) to gain a comparison of the toxic effects seems appropriate in some cases, but EPA was

not able to properly evaluate the selection of an additional test species in time for the issuance of the draft permit. Based on EPA's continued assessment, as well as relevant comments received during the public comment period, it is expected that the final permit will fully address this issue.

14.4. Finding

Based on the above analysis of the location of the discharge, the expected distribution of shortnose sturgeon in the Merrimack River, the permit limits and the water quality effects of the permit action, EPA has made the preliminary determination that the proposed reissuance of the NPDES permit for this facility is not likely to adversely affect shortnose sturgeon. Therefore EPA has judged that a formal consultation pursuant to Section 7 of the ESA is not required. EPA is seeking concurrence from NMFS regarding this determination through the information in this fact sheet as well as a letter under separate cover.

Reinitiation of consultation will take place: (a) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the consultation; or (c) if a new species is listed or critical habitat is designated that may be affected by the identified action.

15. COASTAL ZONE MANAGEMENT (CZM) CONSISTENCY REVIEW

40 CFR § 122.49 (d) states: The Coastal Zone Management Act, 16 U.S.C. 1451 et seq. section 307(c) of the Act and implementing regulation (15 CFR part 930) prohibit EPA from issuing a permit for an activity affecting land or water in the coastal zone until the applicant certifies that the proposed activity complies with the State Coastal Zone Management program, and the State or its designated agency concurs with the certification (or the Secretary of Commerce) overrides the State's nonconcurrence).

The discharge is within the defined CZM boundaries. The permittee has submitted a letter dated October 7, 2010 to the Massachusetts Coastal Zone Management Program stating their intention to abide by the CZM water quality and habitat policies. EPA expects that CZM will find the discharge consistent with its policies.

16. MONITORING AND REPORTING

The effluent monitoring requirements have been established to yield data representative of the discharge under the authority of Section 308 (a) of the CWA in accordance with 40 CFR §§122.41(j), 122.44(l), and 122.48.

The draft permit includes new provisions related to Discharge Monitoring Report (DMR) submittals to EPA and the State. The draft permit requires that, no later than one year after the effective date of the permit, the permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR unless the permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for

submitting DMRs and reports that precludes the use of NetDMR from submitting DMRs and reports (“opt-out request”). In the interim (until one year from the effective date of the permit), the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR § 122.41 and § 403.12. NetDMR is accessed from the following url: <http://www.epa.gov/netdmr>. Further information about NetDMR, including contacts for EPA Region 1 is provided on this website.

EPA currently conducts free training on the use of NetDMR and anticipates that the ability of this training will continue to assist permittees with the transition to use of NetDMR. To participate in upcoming trainings, visit <http://www.epa.gov/netdmr> for contact information for Massachusetts.

The draft permit requires the permittee to report monitoring results obtained during each calendar month using Net DMR, no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees must continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

The draft permit also includes an “opt-out” request process. Permittees, who believe they cannot use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing, to EPA at least sixty (60) days prior to the date the facility would otherwise be required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months from the date of EPA approval. The opt-outs expire at the end of this twelve (12) month period. Upon expiration, the permittee must submit DMRs and reports to EPA using NetDMR, unless the permittee submits a renewed opt-out request sixty (60) days prior to expiration of its opt-out, and such a request is approved by EPA.

Until electronic reporting using NetDMR begins, or for those permittees that receive written approval from EPA to continue to submit hard copies of MRs, the draft permit requires that submittal of DMRs and other reports required by the permit continue in hard copy format. Hard copies of DMRs must be postmarked no later than the 15th day of the month following the completed reporting period.

17. STATE PERMIT CONDITIONS

The NPDES Permit is issued jointly by the U. S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under federal and state law, respectively.

As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the MassDEP Commissioner.

18. GENERAL CONDITIONS

The standard conditions of the permit are based on 40 CFR Parts 122, Subparts A and D and 40 CFR 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

19. STATE CERTIFICATION REQUIREMENTS

The staff of the Massachusetts Department of Environmental Protection ("MassDEP") has reviewed the draft permit. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the draft permit will be certified.

20. PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of Ecosystem Protection, Attn: Michele Cobban Barden, 5 Post Office Square, Suite-100, (OEP06-1), Boston, Massachusetts 02109-3912 or via email to barden.michele@epa.gov. The comments should reference the name and permit number of the facility for which they are being provided.

Any person, prior to such date, may submit a request in writing to EPA and the State's Agency for a public hearing to consider the draft permit. 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 a significant public interest. In reaching a final decision on the draft 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 a hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following the notice of final permit decision, permit may be appealed to the Environmental Appeals Board in the manner described at 40 CFR § 124.19.

21. EPA AND MassDEP CONTACTS

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

Michele Cobban Barden
EPA New England, Region1
5 Post Office Square, Suite-100 (OEP06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1539, FAX: (617)918-0539
Email: barden.michele@epa.gov

Kathleen Keohane
Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608
Telephone: (508) 767-2856, FAX: (508) 791-4131
Email: kathleen.keohane@state.ma.us

January 3, 2012
Date

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

Figure 1

Location of the Newburyport Wastewater Treatment Plant

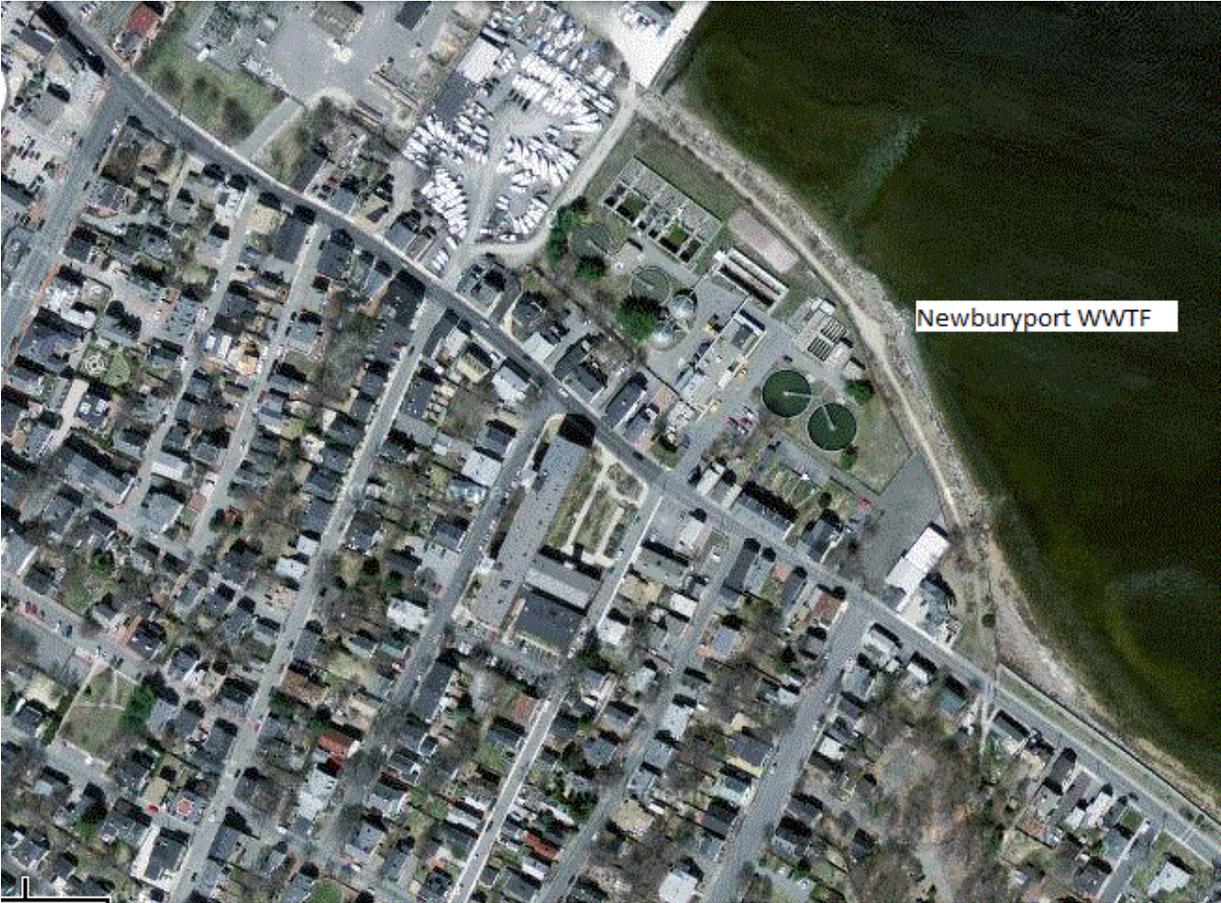


Table 1
 Summary of Effluent Characteristics at Outfall 001

The following effluent characteristics were derived from analysis of discharge monitoring data collected from Outfall 001 from September 2009 through August 2011. All data taken from the monthly Discharge Monitoring Reports as retrieved from EPA's Permit Compliance System (PCS) data base. These effluent values characterize the treated wastewater discharged from this facility.

Effluent Parameter	Average of Monthly Averages	Range of Monthly Averages	Maximum of Daily M
Flow (MGD)	2.76	2.30-3.10	8.05
BOD ₅ (mg/l)	24.73	15-30	79
TSS (mg/l)	16.01	10.50-25.60	91.30
pH (standard units)	***	6.50-7.64 ¹	***
Fecal Coliform Bacteria (cfu/100 ml)	22.43	2.48-82.45	274
Total Residual Chlorine (mg/l)	0.05	0.03-0.08	0.36
Ammonia Nitrogen	16.07	5.97-24	***
Total Kjeldahl Nitrogen	17.89	0.20-26.00	***
Nitrite + Nitrate	1.64	0.51-4.60	***
Dissolved Oxygen	8.01	6.61-10.46	4.30 ²
LC50 (% effluent) <i>Menidia</i>	***	74.4-100	74.4 ³
LC50 (% effluent) <i>Mysid Bahia</i>	***	100-100	100 ^s

¹ Numbers listed are minimum and maximum daily readings.

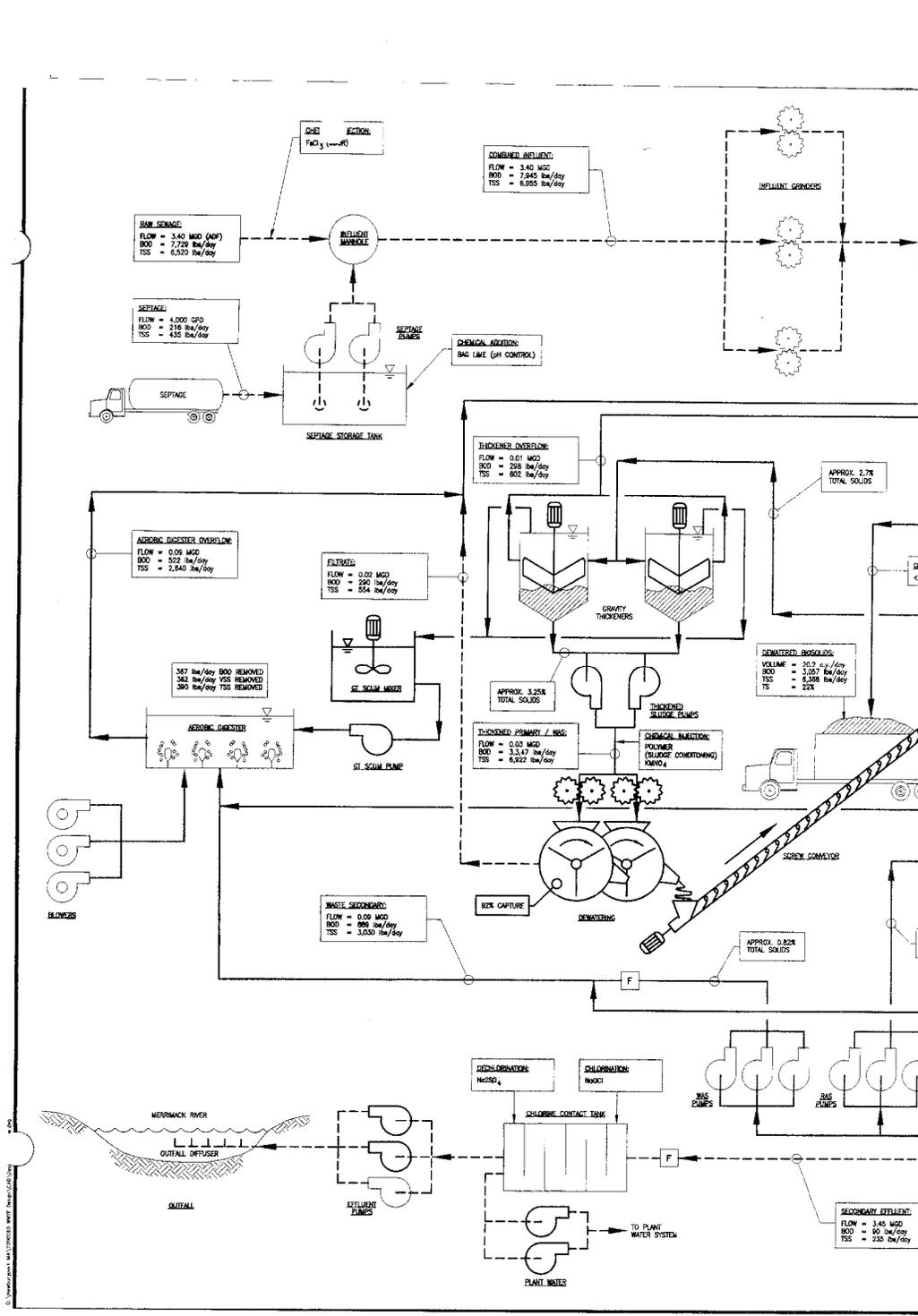
² Minimum of the minimum daily readings.

³ Minimum reading during reporting period.

Table 2
 Summary of Effluent Characteristics from 2010 NPDES Application

Parameter	Maximum Daily Value	Average Daily Value	Units	Number of Samples
pH (minimum)	6.5	***	Standard Units	***
pH (maximum)	7.3	***	Standard Units	***
Flow Rate	8.31	3.18	MGD	365
Temperature (Winter)				
Temperature (Spring)				
BOD	49.00	24.20	mg/l	155
Fecal Coliform Bacteria	238.00	30.10	#/100 mg	365
Total Suspended Solids	85.50	14.20	mg/l	249
Ammonia	31.00	15.33	mg/l	54
Total Residual Chlorine	0.36	0.04	mg/l	365
Dissolved Oxygen	6.26	2.47	mg/l	250
Total Kjeldahl Nitrogen	25.00	17.86	mg/l	54
Nitrate Nitrogen	5.90	0.65	mg/l	54
Oil and Grease	BDL	BDL	mg/l	5
Phosphorus (Total)	1	0.67	mg/l	2
Total Dissolved Solids	500	480	mg/l	2
Enterococci	***	BDL	EC/100 ml	1
Copper	0.02	BDL	mg/l	54
Zinc	0.06	BDL	mg/l	54
Cyanide	0.02	BDL	mg/l	54
Total Phenolic Compounds	0.05	BDL	mg/l	8

Figure 2
 Newburyport Water Pollution Control Facility
 Flow Diagram, Page 1



APPEALING NPDES PERMITS

If you wish to contest any of the provisions of this permit, you must petition the **Environmental Appeals Board**, (EAB), within thirty (30) days. If you received notice of this permit via certified mail, the 30-day period begins on the date of receipt. If you were served by regular mail, note that an additional three days are added to the period within which to appeal in order to compensate for mail delay.

In order to be eligible to petition, you must have filed comments on the draft permit or participated in any public hearing that may have been held pertaining to this permit. In addition, the issues raised in the appeal must have been raised during the public comment period so long as they were reasonably ascertainable. Any person who failed to file comments or failed to participate in any public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision.

The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by NPDES regulations and when appropriate, a showing that the condition in question is based on: (i) a finding of fact or conclusion of law which is clearly erroneous or (ii) an exercise of discretion or an important policy consideration which the EAB should review.

Procedures for appealing permits can be found at 40 CFR §§124.19, 124.20, and 124.60. Copies of the regulations are below. More information on the appeals process and EAB can be found on the Internet at <http://www.epa.gov/eab>. The Practice Manual can be found on the Internet at <http://www.epa.gov/eab/pmanual.pdf>. The EAB website and the Practice Manual should be carefully reviewed prior to filing an appeal.

STAYS OF NPDES PERMITS

The effects of a properly filed appeal of an NPDES permit on the conditions and effective date of the permit can be found at 40 CFR §124.16 and §124.60. Copies of the regulations are below.

FREQUENTLY ASKED QUESTIONS

What is the Environmental Appeals Board?

The Environmental Appeals Board (EAB) of the U.S. Environmental Protection Agency is the final Agency decisionmaker on administrative appeals under all major environmental statutes that EPA administers. It is an impartial body independent of all Agency components outside the immediate Office of the Administrator. It was created in 1992 in recognition of the growing importance of EPA adjudicatory proceedings as a mechanism for implementing and enforcing the environmental laws. The EAB sits in panels of three and makes decisions by majority vote.

The EAB's caseload consists primarily of appeals from permit decisions and civil penalty decisions. The EAB has authority to hear permit and civil penalty appeals in accordance with regulations delegating this authority from the EPA Administrator. Appeals from permit decisions made by EPA's Regional Administrators (and in some cases, state permitting officials) may be filed either by permittees or other interested persons. A grant of review of a permit decision is at the EAB's discretion. Permit appeals are governed primarily by procedural regulations at 40 CFR. Part 124. Appeals of civil penalty decisions made by EPA's administrative law judges may be filed, as a matter of right, either by private parties or by EPA. Penalty appeals are governed primarily by procedural regulations at 40 CFR. Part 22.

A substantial additional portion of the EAB's caseload consists of petitions for reimbursement of costs incurred in complying with cleanup orders issued under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The EAB decides these matters pursuant to a delegation of authority from the Administrator. The EAB is also authorized to hear appeals from various administrative decisions under the Clean Air Act's acid rain program at 40 CFR. Part 78 and appeals of federal Clean Air Act Title V operating permits issued pursuant to 40 CFR. Part 71.

How can I contact the Board?

The Board's telephone number is (202) 233-0122.

The Board's fax number is (202) 233-0121.

Where should I file a pleading in a matter before the Board?

a. EAB Mailing Address

All documents that are sent through the U.S. Postal Service (except by Express Mail) MUST be addressed to the EAB's *mailing address*, which is:

*U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001*

Documents that are sent to the EAB's *hand-delivery address* (below) through the U.S. Postal Service (except by Express Mail) will be returned to the sender and shall not be considered as filed. (Express Mail is hand-delivered by the U.S. Postal Service and must be delivered as outlined in part b below; Documents sent by Federal Express and UPS are also hand-delivered and must be delivered as outlined in part b below).

b. Hand Delivery Address

Documents that are hand-carried in person, delivered via courier, mailed by Express Mail, or delivered by a non-U.S. Postal Service carrier (e.g., Federal Express or UPS) MUST be delivered to:

*U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board
Colorado Building
1341 G Street, N.W., Suite 600
Washington, D.C. 20005*

Documents that are hand-carried may be delivered to the Clerk of the Board from 8:30 a.m. to 12:00 p.m. and from 1:00 p.m. to 4:30 p.m., Monday through Friday (excluding federal holidays).

Is there a fee for filing a petition or an appeal with the EAB?

No

How many copies of each filing and each exhibit must I file?

The Board requests one original and five copies of any filing. Where exhibits are more than 30 pages, the Board requests that three sets of exhibits be filed.

Is a pleading timely if it is postmarked by the specified filing date or must it be actually received by the Board by the filing date?

Except for petitions for reimbursement filed pursuant to CERCLA § 106(b), the postmark date of a pleading is not determinative. If the pleading has been mailed to the Board, it must be received by the specified filing date. Similarly, if the pleading is hand-delivered directly to the Board, it must be received at the Board's offices by the specified date. If the Board establishes a briefing schedule by order, any date the Board specifies for filing a pleading means the date by which it must be received, unless otherwise specified in the order.

May I fax my petition for review, notice of appeal, or brief, to the EAB?

No. The Board will not accept petitions for review, notices of appeal, or briefs, for filing by facsimile.

May I fax a motion to the EAB?

Yes. The Board will consider motions that are faxed to the Board. However, if a motion is faxed to the Board, a copy of the motion should be placed in the mail or hand-delivered to the Board within 24 hours of faxing the motion. The copy need not be received by the

Board within the 24 hour period. Copies of the motion should also be faxed to other parties.

Is there a required format for a petition for review or notice of appeal?

There is no required format for a petition for review or notice of appeal. However, the Board requests that these documents be typewritten and double-spaced on 8.5 x 11 paper. A petition for review should contain a caption that indicates the name of the case and the permit number. A notice of appeal in an enforcement matter should contain a caption that indicates the name of the case and the docket number. Both documents should contain the name, address, telephone number, and fax number (if any) of the person filing the pleading. Appendix 6 of the Environmental Appeals Board's Practice Manual (<http://www.epa.gov/eab/pmanual.pdf>) contains pleading templates for various filings in EAB proceedings.

Is there a required format for exhibits?

There is no required format for exhibits. Each exhibit should be clearly marked with consecutive numbers or letters to distinguish it from other exhibits. Exhibits should be clearly referenced in the pleadings. If multiple exhibits are submitted, at least one complete set of exhibits should be rubber banded or clipped together, not spiral or "comb" bound.

Can I find out when the Board will issue a decision in my case?

No. The Board will take under consideration a motion for expedited consideration of a particular matter, based on unusual and compelling circumstances. The motion should clearly state why the party believes the case deserves expedited consideration. However, the Board will not routinely provide information as to when any particular matter will be decided.

Addition Mailing Requirements – Case Name and Case Identified on Envelope or Outside Packaging

Any envelope or other packaging containing documents sent to the EAB's mailing address or hand-delivery address, as prescribed above in Question (3), should bear a complete and accurate return address in the upper left hand corner. The envelope or packaging should also clearly state the case name and case identifier in the lower left hand corner.

In all instances, if an appeal has already been filed with the Clerk of the Board, the case name and case identifier are the name and appeal number assigned to the matter by the Clerk. If an appeal has not yet been filed, state the name of the permittee or facility and the permit number (e.g., NPDES Permit No. ID-0000-00).

May I appeal the Board's decision to the Administrator?

No. Decisions of the Board are final and may not be further appealed to the Administrator. However, the parties (other than EPA) have statutory rights of appeal to federal court under the various environmental statutes.

What is the procedure for withdrawing a petition that has been filed with the Board?

The petitioner should file a motion requesting to withdraw the petition.

Whom may I call if I have additional questions that have not been answered here?

The Clerk of the Board is available to answer questions from 8:30 a.m. to 12:00 p.m. and from 1:00 p.m. to 4:30 p.m. Eastern Time Monday through Friday (excluding Federal holidays). Counsel to the Board are also available to answer general questions about the appeals process. Counsel will not discuss the merits or status of any matter before the Board. The Clerk of the Board and Counsel to the Board may be reached at (202) 233-0122.

TITLE 40 – PROTECTION OF ENVIRONMENT CHAPTER I – ENVIRONMENTAL PROTECTION AGENCY (CONTINUED) PART 124 – PROCEDURES FOR DECISIONMAKING

§ 124.16 Stays of contested permit conditions.

(a) *Stays.* (1) If a request for review of a RCRA, UIC, or NPDES permit under § 124.19 of this part is filed, the effect of the contested permit conditions shall be stayed and shall not be subject to judicial review pending final agency action. Uncontested permit conditions shall be stayed only until the date specified in paragraph (a)(2)(i) of this section. (No stay of a PSD permit is available under this section.) If the permit involves a new facility or new injection well, new source, new discharger or a recommencing discharger, the applicant shall be without a permit for the proposed new facility, injection well, source or discharger pending final agency action. See also § 124.60.

(2)(i) Uncontested conditions which are not severable from those contested shall be stayed together with the contested conditions. The Regional Administrator shall identify the stayed provisions of permits for existing facilities, injection wells, and sources.

All other provisions of the permit for the existing facility, injection well, or source become fully effective and enforceable 30 days after the date of the notification required in paragraph (a)(2)(ii) of this section.

(ii) The Regional Administrator shall, as soon as possible after receiving notification from the EAB of the filing of a petition for review, notify the EAB, the applicant, and all other interested parties of the uncontested (and severable) conditions of the final permit that will become fully effective enforceable obligations of the permit as of the date specified in paragraph (a)(2)(i) of this section. For NPDES permits only, the notice shall comply with the requirements of § 124.60(b).

(b) *Stays based on cross effects.* (1) A stay may be granted based on the grounds that an appeal to the Administrator under § 124.19 of one permit may result in changes to another EPA issued permit only when each of the permits involved has been appealed to

the Administrator and he or she has accepted each appeal.

(2) No stay of an EPA-issued RCRA, UIC, or NPDES permit shall be granted based on the staying of any State-issued permit except at the discretion of the Regional Administrator and only upon written request from the State Director.

(c) Any facility or activity holding an existing permit must:

(1) Comply with the conditions of that permit during any modification or revocation and reissuance proceeding under § 124.5; and

(2) To the extent conditions of any new permit are stayed under this section, comply with the conditions of the existing permit which correspond to the stayed conditions, unless compliance with the existing conditions would be technologically incompatible with compliance with other conditions of the new permit which have not been stayed.

[48 FR 14264, Apr. 1, 1983, as amended at 65 FR 30911, May 15, 2000]

§ 124.19 Appeal of RCRA, UIC, NPDES, and PSD Permits.

(a) Within 30 days after a RCRA, UIC, NPDES, or PSD final permit decision (or a decision under 270.29 of this chapter to deny a permit for the active life of a RCRA hazardous waste management facility or unit) has been issued under § 124.15 of this part, any person who filed comments on that draft permit or participated in the public hearing may petition the Environmental Appeals Board to review any condition of the permit decision. Persons affected by an NPDES general permit may not file a petition under this section or otherwise challenge the conditions of the general permit in further Agency proceedings. They may, instead, either challenge the general permit in court, or apply for an individual NPDES permit under § 122.21 as authorized in § 122.28 and then petition the Board for review as provided by this section. As provided in § 122.28(b)(3), any interested person may also petition the Director to require an individual NPDES permit

for any discharger eligible for authorization to discharge under an NPDES general permit. Any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision. The 30-day period within which a person may request review under this section begins with the service of notice of the Regional Administrator's action unless a later date is specified in that notice. The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by these regulations and when appropriate, a showing that the condition in question is based on:

(1) A finding of fact or conclusion of law which is clearly erroneous, or

(2) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

(b) The Environmental Appeals Board may also decide on its own initiative to review any condition of any RCRA, UIC, NPDES, or PSD permit decision issued under this part for which review is available under paragraph (a) of this section. The Environmental Appeals Board must act under this paragraph within 30 days of the service date of notice of the Regional Administrator's action.

(c) Within a reasonable time following the filing of the petition for review, the Environmental Appeals Board shall issue an order granting or denying the petition for review. To the extent review is denied, the conditions of the final permit decision become final agency action. Public notice of any grant of review by the Environmental Appeals Board under paragraph (a) or (b) of this section shall be given as provided in § 124.10. Public notice shall set forth a briefing schedule for the appeal and shall state that any interested person may file an amicus brief. Notice of denial of review shall

be sent only to the person(s) requesting review.

(d) The Regional Administrator, at any time prior to the rendering of a decision under paragraph (c) of this section to grant or deny review of a permit decision, may, upon notification to the Board and any interested parties, withdraw the permit and prepare a new draft permit under § 124.6 addressing the portions so withdrawn. The new draft permit shall proceed through the same process of public comment and opportunity for a public hearing as would apply to any other draft permit subject to this part. Any portions of the permit which are not withdrawn and which are not stayed under § 124.16(a) continue to apply.

(e) A petition to the Environmental Appeals Board under paragraph (a) of this section is, under 5 U.S.C. 704, a prerequisite to the seeking of judicial review of the final agency action.

(f)(1) For purposes of judicial review under the appropriate Act, final agency action occurs when a final RCRA, UIC, NPDES, or PSD permit decision is issued by EPA and agency review procedures under this section are exhausted.

A final permit decision shall be issued by the Regional Administrator:

(i) When the Environmental Appeals Board issues notice to the parties that review has been denied;

(ii) When the Environmental Appeals Board issues a decision on the merits of the appeal and the decision does not include a remand of the proceedings; or

(iii) Upon the completion of remand proceedings if the proceedings are remanded, unless the Environmental Appeals Board's remand order specifically provides that appeal of the remand decision will be required to exhaust administrative remedies.

(2) Notice of any final agency action regarding a PSD permit shall promptly be published in the FEDERAL REGISTER.

(g) Motions to reconsider a final order shall be filed within ten (10) days after service of the final order. Every such motion must set forth the matters claimed to have been erroneously decided and the nature of the alleged errors. Motions for reconsideration

under this provision shall be directed to, and decided by, the Environmental Appeals Board. Motions for reconsideration directed to the administrator, rather than to the Environmental Appeals Board, will not be considered, except in cases that the Environmental Appeals Board has referred to the Administrator pursuant to § 124.2 and in which the Administrator has issued the final order. A motion for reconsideration shall not stay the effective date of the final order unless specifically so ordered by the Environmental Appeals Board.

[48 FR 14264, Apr. 1, 1983, as amended at 54 FR 9607, Mar. 7, 1989; 57 FR 5335, Feb. 13, 1992; 65 FR 30911, May 15, 2000]

§ 124.20 Computation of time.

(a) Any time period scheduled to begin on the occurrence of an act or event shall begin on the day after the act or event.

(b) Any time period scheduled to begin before the occurrence of an act or event shall be computed so that the period ends on the day before the act or event.

(c) If the final day of any time period falls on a weekend or legal holiday, the time period shall be extended to the next working day.

(d) Whenever a party or interested person has the right or is required to act within a prescribed period after the service of notice or other paper upon him or her by mail, 3 days shall be added to the prescribed time.

§ 124.60 Issuance and effective date and stays of NPDES permits.

In addition to the requirements of §§ 124.15, 124.16, and 124.19, the following provisions apply to NPDES permits:

(a) Notwithstanding the provisions of § 124.16(a)(1), if, for any offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig which has never received a final effective permit to discharge at a "site," but which is not a "new discharger" or a "new source," the Regional Administrator finds that compliance with certain permit conditions may be necessary to avoid irreparable

environmental harm during the administrative review, he or she may specify in the statement of basis or fact sheet that those conditions, even if contested, shall remain enforceable obligations of the discharger during administrative review.

(b)(1) As provided in § 124.16(a), if an appeal of an initial permit decision is filed under § 124.19, the force and effect of the contested conditions of the final permit shall be stayed until final agency action under § 124.19(f). The Regional Administrator shall notify, in accordance with § 124.16(a)(2)(ii), the discharger and all interested parties of the uncontested conditions of the final permit that are enforceable obligations of the discharger.

(2) When effluent limitations are contested, but the underlying control technology is not, the notice shall identify the installation of the technology in accordance with the permit compliance schedules (if uncontested) as an uncontested, enforceable obligation of the permit.

(3) When a combination of technologies is contested, but a portion of the combination is not contested, that portion shall be identified as uncontested if compatible with the combination of technologies proposed by the requester.

(4) Uncontested conditions, if inseparable from a contested condition, shall be considered contested.

(5) Uncontested conditions shall become enforceable 30 days after the date of notice under paragraph (b)(1) of this section.

(6) Uncontested conditions shall include:

(i) Preliminary design and engineering studies or other requirements necessary to achieve the final permit conditions which do not entail substantial expenditures;

(ii) Permit conditions which will have to be met regardless of the outcome of the appeal under § 124.19;

(iii) When the discharger proposed a less stringent level of treatment than that contained in the final permit, any permit conditions appropriate to meet the levels proposed by the discharger, if the measures required to attain that

less stringent level of treatment are consistent with the measures required to attain the limits proposed by any other party; and

(iv) Construction activities, such as segregation of waste streams or installation of equipment, which would partially meet the final permit conditions and could also be used to achieve the discharger's proposed alternative conditions.

(c) In addition to the requirements of § 124.16(c)(2), when an appeal is filed under § 124.19 on an application for a renewal of an existing permit and upon written request from the applicant, the Regional Administrator may delete requirements from the existing permit which unnecessarily duplicate uncontested provisions of the new permit.

[65 FR 30912, May 15, 2000]

**Information for Filing an Adjudicatory Hearing Request with the Commonwealth
of Massachusetts Department of Environmental Protection**

Within thirty days of the receipt of this letter the adjudicatory hearing request should be sent to:

Docket Clerk
Office of Administrative Appeals
Department of Environmental Protection
One Winter Street, Second Floor
Boston, MA 02108

In addition, a valid check payable to the Commonwealth of Massachusetts in the amount of \$100 must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The hearing request to the Commonwealth will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver.

The filing fee is not required if the appellant is a city, town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee for a permittee who shows that paying the fee will create an undue financial hardship. A permittee seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

August, 2006