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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 1  
1 CONGRESS STREET, SUITE 1100  
BOSTON, MASSACHUSETTS 02114-2023

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

May 7, 2004

Brendan O'Regan, Superintendent  
City of Newburyport  
Newburyport Wastewater Treatment Facility  
157 Water Street  
Newburyport, MA 01950

Re: Public Notice  
NPDES Application No. MA0101427

Dear Mr. O'Regan:

Enclosed is your final National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to the Clean Water Act (the "Federal Act"), as amended, and the Massachusetts Clean Waters Act (the "State Act"), 21 M.G.L. §§43-45, as amended. The Environmental Permit Regulations, at 40 C.F.R. §124.15, 48 Fed. Reg. 14271 (April 1, 1983), require this permit to become effective on the date specified in the permit.

Also enclosed is a copy of the Massachusetts State Water Quality Certification for your final permit, the Agency's response to the comments received on the draft permit, if any, and information relative to appeals and stays of NPDES permits. Should you desire to contest any provision of the permit, your petition should be submitted to the Environmental Appeals Board as outlined in the enclosure and a similar request should also be filed with the Director of the Office of Watershed Management in accordance with the provisions of the Massachusetts Administrative Procedures Act, the Division's Rules for the Conduct of Adjudicatory Proceedings and the Timely Action Schedule and Fee Provisions (see enclosure).

We appreciate your cooperation throughout the development of this permit. Should you have any questions concerning the permit, feel free to contact Michele Barden at 617/918-1539.

Sincerely,

  
Roger Janson, Director  
NPDES Permit Program

Enclosures

Toll Free • 1-888-372-7341

Internet Address (URL) • <http://www.epa.gov/region1>

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cc: Paul Hogan, MADEP, Division of Watershed Management  
M.R. Eigerman, Island Futures Group  
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David J. McFarlane  
Anne Giblin, Ph.D.  
Robin Guritz  
James Corbin, Vice Chairman/Acting Chairman, Salisbury Harbor Commission  
Judith Chaffee  
Susan Vladeck  
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THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
251 Causeway Street, Suite 900, Boston, MA 02114-2136  
(617) 626-1200 fax: (617) 626-1240

TO: MICHELE BARDEN  
FAX: 617 918 0539  
FROM: TODD CALLAHAN

5.3.04

April 22, 2004

Brendan O'Regan, Superintendent  
Newburyport Wastewater Treatment Facility  
City of Newburyport  
157 Water Street  
Newburyport, MA 01950

RE: CZM Federal Consistency Review: Newburyport Wastewater Treatment Facility;  
Newburyport

Dear Mr. O'Regan:

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the Newburyport Wastewater Treatment Facility discharge to the Merrimack River.

We concur with your certification and find that the activity as proposed is consistent with the CZM enforceable program policies.

If the above-referenced proposal, which has received this concurrence from CZM, is modified in any manner or is noted to be having effects on the coastal zone or its uses that are substantially different than originally proposed, please submit an explanation of the nature of the change to this Office pursuant to 301 CMR 21.17 and 15 CFR 930.66.

Thank you for your cooperation with CZM.

Sincerely,

Tom Skinner  
Director

TWS/tpc  
czm#1840

cc: Brian Pitt, Chief  
MA NPDES Permit Unit, EPA  
Paul Hogan,  
DEP Worcester  
Andrea Cooper  
CZM North Shore Regional Coordinator





COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

MITT ROMNEY  
Governor

KERRY HEALEY  
Lieutenant Governor

ELLEN ROY HERZFELDER  
Secretary

ROBERT W. GOLLEDGE, Jr.  
Commissioner

April 2, 2004

Brian Pitt, Chief  
Massachusetts NPDES Permit Program Unit  
USEPA - New England  
1 Congress Street, Suite 1100  
Boston, MA 02114-2023

Re: **Water Quality Certification**  
**NPDES Permit MA0101427**  
**City of Newburyport Wastewater Treatment Plant**

Dear Mr. Pitt:

Your office has requested the Massachusetts Department of Environmental Protection to issue a water quality certification pursuant to Section 401(a) of the Federal Clean Water Act ("the Act") and 40 CFR 124.53 for the above referenced NPDES permit. The Department has reviewed the proposed draft permit and has determined that the conditions of the permit will achieve compliance with sections 208(e), 301, 302, 303, 306, and 307 of the Federal Act, and with the provisions of the Massachusetts Clean Waters Act, M.G.L. c. 21, ss. 26-53, and regulations promulgated thereunder. The permit conditions are sufficient to comply with the antidegradation provisions of the Massachusetts Surface Water Quality Standards [314 CMR 4.04] and the policy [October 6, 1993] implementing those provisions.

The Department hereby certifies the referenced permit.

Sincerely,

Glenn Haas, Director  
Division of Watershed Management  
Bureau of Resource Protection

cc: Paul Hogan  
Todd Callaghan, MACZM  
file

This information is available in alternate format. Call Debra Doherty, ADA Coordinator, at 1-617-292-5565. TDD Service - 1-800-298-2207.

DEP on the World Wide Web: <http://www.state.ma.us/dep>

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**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 Wastewater Treatment Plant  
157 Water Street  
Newburyport, MA 01950**

to receiving water named

**Merrimack River (Merrimack River Watershed - 84)**

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

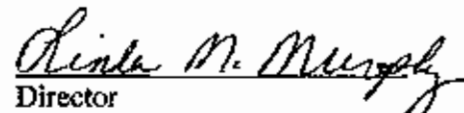
This permit shall become effective 60 days after signature.

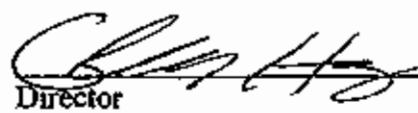
This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on September 17, 1998.

This permit consists of 13 pages in Part I including effluent limitations, monitoring requirements, Attachments A, B & C and 35 pages in Part II including General Conditions and Definitions.

Signed this 3 day of May, 2004

  
Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

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

PART I

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

PARAMETER	EFFLUENT LIMITS				MONITORING REQUIREMENTS		
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	MEASUREMENT FREQUENCY	SAMPLE TYPE
FLOW <sup>1</sup>	***	***	3.4 MGD <sup>2</sup>	***	REPORT MGD	CONTINUOUS	RECORDER
BOD <sub>5</sub> <sup>3</sup>	851 lbs/Day 387 kgs/Day	1276 lbs/Day 580 kgs/Day	30 mg/l	45 mg/l	REPORT	3/WEEK	24-HOUR COMPOSITE <sup>4</sup>
TSS <sup>5</sup>	851 lbs/Day 387 kgs/Day	1276 lbs/Day 580 kgs/Day	30 mg/l	45 mg/l	REPORT	3/WEEK	24-HOUR COMPOSITE <sup>4</sup>
pH <sup>1</sup>	6.5 - 8.5 SU SEE PERMIT PAGE 5 PARAGRAPH 1.A.1.b.						
TOTAL RESIDUAL CHLORINE <sup>4</sup>	6.5 lbs/Day 3 kgs/Day	11 lbs/Day 5 kgs/Day	0.23 mg/l	***	0.39 mg/l	2/DAY	GRAB
FECAL COLIFORM BACTERIA <sup>4,5</sup>	***	***	200 cfu/100 ml	***	400 cfu/100 ml	1/DAY	GRAB
FECAL COLIFORM BACTERIA <sup>1,5,6</sup> (Four months after the permit effective date)	***	***	88 MPN/100 ml	***	260MPN/100 ml	1/DAY	GRAB
AMMONIA NITROGEN	***	***	***	***	REPORT	1/MONTH	24-HOUR COMPOSITE <sup>4</sup>
TOTAL KJELDAHL NITROGEN	***	***	***	***	REPORT	1/MONTH	24-HOUR COMPOSITE <sup>4</sup>
NITRITE & NITRATE NITROGEN	***	***	***	***	REPORT	1/MONTH	24-HOUR COMPOSITE <sup>4</sup>
WHOLE EFFLUENT TOXICITY <sup>4,6,11</sup>	Acute LC <sub>50</sub> ≥ 100%						
						4/YEAR	24-HOUR COMPOSITE <sup>4</sup>

Footnotes:

1. Required for State Certification.
2. For flow, report maximum and minimum daily rates and total flow for each operating date. This is an annual average limit, which shall be reported as a rolling average. The first value will be calculated using the monthly average flow for the first full month ending after the effective date of the permit and the eleven previous monthly average flows. Each subsequent month's DMR will report the annual average flow that is calculated from that month and the previous 11 months.
3. The permittee must develop a plan for conducting a monthly calibration to assure representative flows are reported. A copy of the plan must be submitted to EPA and DEP within 60 days of the effective date of the permit. The plan methodology shall be followed within 30 days of submittal, if there is no comment from EPA or DEP. If comments are received by either EPA or DEP, the plan shall become effective within 30 days of approval by EPA and DEP. Annually, by July 1 of each year, the permittee shall submit a report documenting the annual calibration of the influent and effluent meters. The annual calibration must include a volumetric test. All reported flows must be certified as consistent with the Part II - General Conditions. This requirement will be reconsidered should the facility install new flow meters.
4. Samples taken in compliance with monitoring requirements specified in this permit shall be taken at a representative point prior to mixing with the receiving water. Any change in sampling location must be reviewed and approved in writing by EPA and MADEP. All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. All samples shall be 24-hour composites unless specified as a grab sample in 40 CFR §136.
5. Sampling required for influent and effluent.
6. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one working day.
7. The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum 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, or USEPA manual of Methods of Analysis of Water and Wastes, Method 330.5. 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.
8. Total Residual Chlorine (TRC) shall be monitored continuously both pre and post dechlorination, however, the permittee shall report the results of grab samples on its DMRs for compliance determinations. The permittee must collect four (4) TRC grab samples daily, two (2) prior to



dechlorination and two (2) post-dechlorination. One set of samples must be collected concurrent with the daily Fecal Coliform Bacteria sample.

Grab samples shall be compared with data from the continuous analyzers, including the date and time each grab sample is taken, and this information shall be attached to the monthly DMRs. Eight (8) continuous recording charts, two charts per week showing weekly data, one for pre-dechlorination and one for post-dechlorination, shall be submitted with the monthly DMRs. The permittee shall report the average monthly and daily maximum discharge of TRC using the grab sample data collected post-dechlorination.

9. For four months following the effective date of this permit, a fecal coliform monthly geometric mean limit of 200 cfu/100 ml and maximum daily limit of 400 cfu/100 ml shall apply. Following that period, a monthly geometric mean MPN limit of 88 per 100 ml and a maximum daily MPN limit of 260 per 100 ml shall apply. This monitoring shall be conducted concurrently with the TRC sampling.
10. The permittee shall perform modified acute toxicity tests four times per year. The tests must be performed in accordance with test procedures and protocols specified in Attachment A of this permit.

Test Dates Second Week in:	Submit Results By:	Test Species	Acute Limit LC <sub>50</sub>
January April July October	February 28 <sup>th</sup> May 31 <sup>st</sup> August 31 <sup>st</sup> November 30 <sup>th</sup>	Mysid Shrimp Inland Silverside	≥ 100%

After submitting 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 specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.

11. The LC<sub>50</sub> is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.

Part I.A.1. (Continued)

- 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 at any time and not more than 0.2 units outside the normally occurring range, unless these values are exceeded due to natural causes.
- 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 total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
- f. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the designed flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
- g. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
- h. The results of sampling for any parameter above its required frequency must also be reported.

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

- a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For purposes of this paragraph, adequate notice shall include information on:
  - (1) the quantity and quality of effluent introduced into the POTW; and
  - (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

3. Prohibitions Concerning Interference and Pass Through

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

- b. If, within 30 days after notice of an interference or pass through violation has been sent by EPA to the POTW, and to persons or groups who have requested such notice, the POTW fails to commence appropriate enforcement action to correct the violation, EPA may take appropriate enforcement action.

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

### B. 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 in accordance with Section D.1.e. (1) of the General Requirements of this permit (Twenty-four hour reporting).

### 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:

#### 1. Maintenance Staff

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

#### 2. Preventative Maintenance Program

The permittee shall maintain an ongoing preventative 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.

### 3. Infiltration/Inflow Control Plan:

The permittee shall develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer system. The plan shall be submitted to EPA and MA DEP within six (6) months of the effective date of this permit (see page 1 of this permit for the effective date) and shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

The plan shall include:

- An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.
- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.
- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.
- An educational public outreach program for all aspects of I/I control, particularly private inflow.

#### Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MA DEP annually, by the anniversary date of the effective date of this permit. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.
- A map with areas identified for I/I-related investigation/action in the coming year.

- A calculation of the annual average I/I, the maximum month I/I for the reporting year.
- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

#### 4. Alternate Power Source

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

#### 5. Outfall Inspection and Report

Within eighteen (18) months of the effective date of the permit, the permittee shall conduct an inspection of the diffuser. The inspection is necessary to achieve several objectives: confirm the diffuser was installed as designed, gather important details of the diffuser design, including the diameter of jets in the orifice plate, and evaluate the current condition of the diffuser.

The inspection report will detail the information gathered during the inspection including rectifying the installation details and conditions with the design plans. The report shall also address the current condition of the outfall and prioritize maintenance activities so the design dilution can be achieved.

#### 6. Immediate Warning System

Within twelve (12) months of the effective date of the permit, the permittee shall submit a letter to EPA and MA DEP detailing the design and operation of the immediate warning system developed with input of the Massachusetts Division of Marine Fisheries (MA DMF).

The system shall automatically notify the plant operators and MA DMF of a disinfection failure (fecal coliform bacteria results exceeding the permit limits or a failure of the chlorination system). The system shall also automatically notify the plant operators and MA DMF if total residual chlorine levels exceed the permit limits or a failure of the dechlorination system. Notification by this system shall be immediate due to the short travel time to the shellfish beds. Details of the system should be acceptable to resource managers at the Division of Marine Fisheries.

### D. SLUDGE CONDITIONS

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

2. The permittee shall comply with the more stringent of either the state or federal (40 CFR part 503), requirements.
3. The requirements and technical standards of 40 CFR part 503 apply to facilities which perform one or more of the following use or disposal practices.
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge only landfill
  - c. Sewage sludge incineration in a sludge only incinerator
4. The 40 CFR part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g. lagoons-reed beds), or are otherwise excluded under 40 CFR 503.6.
5. The permittee shall use and comply with the attached compliance guidance document to determine appropriate conditions. Appropriate conditions contain the following elements.
  - General requirements
  - Pollutant limitations
  - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
  - Management practices
  - Record keeping
  - Monitoring
  - Reporting

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

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

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

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

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

#### **E. INDUSTRIAL PRETREATMENT PROGRAM**

1. Pollutants introduced into POTW's by a non-domestic source (user) shall not Pass Through the POTW or Interfere with the operation or performance of the works.
2. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit 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 90 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 order to assist with this evaluation, the permittee shall also complete the attached form (Attachment C) 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. EPA has received a letter dated 2/5/03 reviewing current local limits, however, the completion of Attachment C will further assist with this re-evaluation. Should the evaluation reveal the need to revise local limits, the permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA Guidance Manual for the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (December, 1987).

3. 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.
4. The permittee shall provide the EPA (and States) 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(j). The annual report shall be consistent with the format described in Attachment B of this permit and shall be submitted no later than March 1 of each year.
5. 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).
  6. 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.
  7. 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.A.3.b.



## **F. MONITORING AND REPORTING**

### **1. Reporting**

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

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

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

The State Agency is:

Massachusetts Department of Environmental Protection  
Northeast Regional Office- Bureau of Resource Protection  
1 Winter Street  
Boston, MA 02108

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

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

Reports required under Section E, Industrial Pretreatment Program, should be also be sent to:

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

## **G. STATE PERMIT CONDITIONS**

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

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



## RESPONSE TO PUBLIC COMMENTS

From June 12, 2003 to August 29, 2003, the United States Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MADEP) solicited public comments on a draft National Pollutant Discharge Elimination System (NPDES) permit, developed pursuant to an application from the City of Newburyport for the reissuance of the permit for the Newburyport Wastewater Treatment Facility in Newburyport, Massachusetts to discharge sanitary and industrial wastewater from outfall 001 to the Merrimack River. A public hearing was requested and held regarding this permit on July 15, 2003.

After a review of the comments received, EPA has made a final decision to issue the permit authorizing the discharge. The following response to comments describes the changes that have been made to this permit from the draft, the reasons for these changes and briefly describes and responds to the comments on the draft permit during the public comment period and the public hearing. A copy of the final permit may be obtained by writing or calling Michele Barden, United States Environmental Protection Agency, 1 Congress Street, Suite 1100 (CPH), Boston, Massachusetts 02114-2023; Telephone (617) 918-1539.

EPA acknowledges and thanks all parties who participated in the permitting process by attending and testifying at the public hearing and by providing written comments on the draft permit. The following parties commented and their comments and EPA's response to those comments can be found on the following pages.

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**A) Comments submitted by Brendan O'Regan, Superintendent, Office of the Sewer Department, City of Newburyport, dated July 15, 2003 and August 27, 2003**

**Comment #1:** The City does not believe that a dissolved oxygen (DO) effluent limitation should be incorporated in the WWTF's final NPDES permit.

**Response:** EPA has removed this limit from the final permit. In discussions with the permittee, EPA and MADEP were informed that the few DO results submitted in the application were collected from the beginning of the effluent pump building prior to a drop where air is incorporated. A second set of samples were collected at the end of the building after the drop. Those results were never below 6 mg/l.

**Comment # 2:** That the outfall diffuser dilution factor be maintained at 39:1 as currently accepted and used in the existing WWTF NPDES permit.

As described in the draft NPDES permit fact sheet, a dilution of 30:1 was chosen by EPA for use in the draft permit, apparently based solely upon interpretation of an initial dilution estimate provided in a 1997 hydrographic study conducted by the US Department of Health and Human Services. This initial dilution is described in the draft permit as having "approximated a dilution factor of 30." Because CORMEX model results were inconclusive, this approximated dilution factor was then used to back calculate an average monthly limitation using EPA's chronic toxicity criteria for saltwater.

The City has initiated a review of the report dated August 8, 1997 and wishes to note it is a preliminary draft edition. The City has been unable to ascertain whether a revised draft or final version of this report has been prepared.

The City notes that the dye study conducted in 1997 appears to have used the WWTF effluent flow meter to estimate dye feed rates for analysis. Use of the effluent flow meter, however, would not have been accurate for this purpose, because it has been shown to overestimate the quantity of flow through the treatment facility. By adjusting dye addition rates using the effluent flow meter measurements, as suggested by the report, excess dye would have been added to the discharge resulting in an underestimation of initial dilution at the outfall site.

Notwithstanding the fact that the 1997 report is a preliminary draft, the city notes that the study verifies the previously established dilution factor of 39:1. The first conclusion states the "the minimum initial dilution was in the 27 to 40:1 range determined at a high tide near slack water. The dilution was greater after the tidal current began. Measured dilution with distance from the outfall is illustrated in Figures 9 and 16 of the draft report, which clearly demonstrates that dilution factors increase with increasing distance from the outfall. Accordingly, the City disagrees with EPA's interpretation of the 1997 preliminary draft study as the basis for establishing the 30:1 dilution factor and thus the TRC effluent limitations contained in the permit. The City requests that the previously established

dilution factor of 39:1 be maintained and used for the purpose of establishing the TRC limitations.

**Response:** The Newburyport WWTF discharge is to the estuary of the Merrimack River. Determining dilution for this discharge is complicated by numerous, ever-changing conditions such as tides, river input, winds, temperature and salinity. Further complicating the determination of dilution is the limited detailed information on the diffuser and the fact that the diffuser is located in very shallow water with mean low water depths of 2-3 feet. In response to comments received during the public notice period, EPA conducted a new dilution analysis.

A regulatory mixing zone has not been established for the Newburyport WWTF discharge. Therefore, dilution was determined at the edge of the Zone of Initial Dilution (ZID). The ZID is defined as the near-field, which is the region where mixing is driven by momentum, buoyancy and the outfall geometry. The near field can be delineated through modeling.

EPA's Technical Support Document for Water Quality-Based Toxics Control, (March 1991) (TSD) defines the critical design period that should be used when conducting mixing zone analyses. In estuaries without stratification, the critical design conditions includes a combination of low water slack at spring tide for the estuary and design low flow for the riverine flow.

EPA employed the Cornell Mixing Zone Expert System (CORMIX) to conduct the mixing zone analysis. EPA used the draft 1997 US Department of Health and Human Services Hydrographic Study as a data source for the ambient river conditions, such as velocity, temperature and salinity, during a period of low water slack conditions. The ambient conditions were monitored as part of the drogue studies completed in 1997 and have been verified by the MA Division of Marine Fisheries (DMF). Limited "design" information on the outfall diffuser and its geometry was taken from design plans submitted by the permittee. It should be noted that the diffuser has not been inspected to verify that the installation and current conditions are in accordance with the design condition.

EPA re-ran several iterations of the CORMIX model during low water slack conditions. The CORMIX 2 multiport diffuser subsystem returned extremely low dilutions (i.e. 5:1), however, the calculated dilution may be overly conservative due to the very limited water depths which causes plume impingement on the bottom. The CORMIX 1 submerged single port subsystem was then run for a single diffuser port. The dilution reported at the critical design condition was 27.3, which is just below the dilution factor of 30 used in the draft permit. When the model was re-run using the average ebb velocity a dilution factor of 30.5 was returned. EPA believes the dilution factor of 30 used in the draft permit is a reasonable estimate of dilution during critical conditions.

EPA also notes that the dye testing results in the draft hydrographic study were

reviewed. The purpose of the hydrographic study was to determine if the effluent from the WWTF impacted the shellfish resource areas. Therefore, the dye studies were conducted at high water tidal periods when the shellfish beds are flooded. They were ultimately not used in determining the dilution factor, since it was determined that the crucial condition, per the TSD was low water, slack tide.

Comment #3: The City does not believe that the proposed new TRC effluent limitations should be incorporated in the WWTF's final NPDES permit.

The Newburyport WWTF uses chlorine as a disinfectant followed by dechlorination using sulfur dioxide to minimize potential impacts of residual chlorine on receiving water biota. As part of its commitment of ensuring appropriate level of disinfection without excessive discharge of chlorine, the City has voluntarily spent in excess of \$75,000 for equipment upgrades and modification to the chlorination and dechlorination processes at the WWTF. The chlorination/dechlorination process at the WWTF is regulated through flow proportioning. By continuously monitoring flow and adjusting chlorine and sulfur dioxide feed rates, the facility has consistently maintained compliance with technology based fecal coliform levels (i.e. number of colony forming units per 100 ml) as well as discharge limitations for TRC.

Under the draft permit, EPA proposes to modify the existing maximum day permit limit for total residual chlorine of 0.30 mg/l and replace it with an average monthly discharge limitation of 0.23 mg/l and a maximum daily limit of 0.39 mg/l. The City respectfully disagrees with the proposed revisions to the TRC effluent limitations for the following reasons:

- The key factor in deriving the TRC effluent limitations contained in the draft permit is the available dilution.
- The revised average monthly total residual chlorine concentration of 0.23 mg/l will increase operation and maintenance (O&M) costs for dechlorination, but is not anticipated to have any beneficial impact on receiving water quality.
- Reducing the TRC level at the down gradient end of the chlorine contact tank may adversely impact disinfection efficiency of the treatment facility. At the NPDES permit flow rate (3.4 MGD), it has been calculated that an additional 33 minutes of detention time is achieved in the outfall pipe prior to discharge to the receiving waters through the multi-port diffuser. Reducing the TRC level prior to entering the outfall pipe would reduce the concentration of disinfectant available over the 33-minute contact time in the outfall pipe. The potential impacts of reducing the TRC concentration on disinfection effectiveness must be considered prior to modifying /reducing the existing effluent limitation for TRC. The lower average daily flows experienced at the WWTF would reduce the above-referenced contact time.

**Response:** The issue of the dilution factor was addressed in a previous response. The dilution factor will remain 30 as set forth in the draft permit. The Total Residual Chlorine limits are based on the National Recommended Water Quality Criteria, 2002 (EPA-822-R-02-047). In the previous permit, the chronic criteria (monthly average) was used to calculate the acute limit (maximum daily). This error resulted in a maximum day limitation which was more stringent than required. EPA has corrected that error in this permit and has included a monthly average limit based on the chronic criteria.

**Comment #4:** The City will continue to work with the Massachusetts Division of Marine Fisheries in developing a suitable notification procedure if shellfish restrictions are removed from the Merrimack River Estuary. For the follow reasons, the City does not believe that continuous monitoring for TRC is necessary or appropriate.

- Continuous monitoring equipment was installed during the past year to track TRC effluent concentrations prior to discharge. Plant operators are continuing to develop experience with its operation. Continuous monitoring equipment is not available to assess TRC levels prior to dechlorination.
- Continuously monitoring chlorine levels prior to dechlorination offers only an indirect measure of disinfection capability, since disinfection effectiveness also depends on contact time and the total suspended solids concentration of the effluent.
- The Newburyport WWTF has not had a history of chlorination failures in the past and this performance can be expected in the future.
- Operation of continuous chlorine monitors/analyzers cannot be performed reliably without daily grab sampling for calibration purposes. Under the current permit, daily grab sampling is used to confirm total residual chlorine concentrations in the effluent. Since daily grab sampling results are required by either system, and noting that analytical data is more accurate than continuous monitors, the City feels that the additional O&M expenditures required for continuous monitors does not enhance overall chlorination/dechlorination system reliability or effectiveness.
- Existing internal feed-back systems are already in place to identify if there are problems with either the chlorine feed system or the dechlorination system.
- According to our review of continuous chlorine analyzers, we are informed that [they] are viewed as "secondary instruments," meaning that they require regular calibration from a standard method or primary laboratory instrument. Our supplier recommends that the daily calibration sample for the analyzer is a better data source to determine chlorine residual compliance.



In light of the above, the City believes that it would be more beneficial to conduct additional grab sample tests of total chlorine residual both prior to and following the dechlorination process. The City suggests increasing the frequency of grab sampling from once per day, as contained in the existing permit, to sampling at points both prior to and following dechlorination two times per day, as proposed in the draft permit.

**Response:** The Newburyport WWTF is *required* to develop an immediate warning system with the Massachusetts Division of Marine Fisheries to notify DMF of a disinfection failure or if TRC concentrations exceed the permit limit. *This is a requirement regardless of the shellfish resource classification.* The city must submit a letter to EPA and MADEP within twelve (12) months of the effective date of the permit, detailing the system and its operation.

The permit requires the permittee to continuously monitor TRC levels prior to dechlorination. This condition is an essential element of the immediate warning system which is a requirement of this permit. EPA recognizes that the continuous monitoring of total residual chlorine levels prior to dechlorination is only an indirect measure of disinfection effectiveness, but it is crucial to protect the downstream shellfishing resources.

EPA has reconsidered using continuous monitoring of TRC as a compliance requirement. In the final permit, EPA is requiring that TRC be monitored continuously and will require the City to report the results of grab samples on its DMRs for compliance determinations. The permittee must collect four (4) TRC grab samples daily, two (2) prior to dechlorination and two (2) post-dechlorination. Two of the samples must be collected concurrent with the daily Fecal Coliform Bacteria sample. The permittee is reminded that monitoring and records must be in compliance with the Part II - General Conditions which is attached to the permit. These conditions require that samples and measurement must be representative of the monitored activity. Records of monitoring must include the date, exact place and time of sampling or measurement, the individual who performed the sampling or measurements, the date the analyses was performed, the individual who performed the analyses, the methods or techniques used and the results of the analyses. It is also noted that any monitoring done more frequently than required by the permit using approved test methods shall be reported (Please see Part II General Conditions D. 1.(d).)

Grab samples shall be compared with data from the continuous analyzers, including the date and time each grab sample is taken and this information shall be attached to the monthly DMRs. Eight (8) continuous recording charts, two charts per week showing weekly data, one for pre-dechlorination and one for post-dechlorination, shall be submitted with the monthly DMRs. The permittee shall report the average monthly and daily maximum discharge of TRC using the grab sample data collected post-dechlorination.

Comment #5: The City does not believe that the requirement should be added to install a continuous chlorine monitor prior to dechlorination. First, the capital cost of adding a second continuous chlorine monitor prior to dechlorination is expected to range from \$30,000 to \$40,000. The City contends that this amount of money will be necessary to achieve other requirements in the permit that will enhance overall treatment efficiency or effectiveness.

In summary, for the reasons described above, the City requests the following:

1. That the requirement to install additional monitoring equipment to measure and continuously record total chlorine residual prior to the dechlorination process be removed from the final permit.
2. That the requirement to continuously record total chlorine residual prior to discharge to the outfall diffuser be removed from the final permit.

Response: As stated above, EPA believes this is an essential element of this permit and necessary to protect the shellfish bed resources downstream.

Comment #6: As acknowledged in the Fact Sheet issued by the EPA (pages 3 and 4) for the Draft NPDES Permit, inflow and infiltration (I/I) removal have been prioritized by a city wide I/I study. In addition to the city wide I/I study, funding in the capital budget has been provided to perform television inspections of sewer pipelines, sewer manhole frame and cover replacement work, testing and sealing, pipeline lining, and other sewer system rehabilitation work. Additional I/I control is achieved through the City's on-going sewer line maintenance program that results in every sewer line being inspected and cleaned at a frequency of every 4 to 6 years.

The City requests that a clarification be added to the request for I/I control plan information to ensure that the City is permitted to provide existing information cost-effectively.

In addition, in light of the significant level of sewer line maintenance and I/I work completed, underway, and planned, the City requests that the timeframe for submission of an I/I plan (Part LC.3 of the draft permit) be adjusted from within six (6) months of the effective date of the permit to within twelve (12) months of the effective date of the permit. The adjustment to the timeframe is requested in order to provide sufficient time for the City to assess the cost implications of this permit requirement; to allocate appropriate funds within the Sewer Department operating budget and obtain approval of the funding from the City Council; and to procure any needed consulting engineer and/or specialty contractor services. We are currently in the FY04 Budget cycle (July 2003 to June 2004). Preparation of the FY05 budget will begin in February 2004 and be completed by June 2004. There will also be a need to dedicate an appropriate amount of time to assure proper procurement of these services.

Response: It is true the City has provided significant information regarding infiltration and inflow reduction efforts. The I/I Control Plan and Annual Report required as a condition of this

permit is a state certification requirement. This requirement has been made of all POTWs in Massachusetts. If the City already has an adequate I/I control program, this permit requirement does not place a significant financial burden on the City.

The permittee is required to evaluate their existing I/I control program with regard to the minimum requirements outlined in the permit. The annual report is required to be submitted annually by the anniversary date of the effective date of the final permit.

**Comment #7:** The City requests that the timeframe for conducting an inspection of the diffuser be adjusted from within twelve (12) months of the effective date of the permit to within twenty-four (24) months of the effective date of the permit. Additionally, the City requests that the permit schedule submission of the inspection report within thirty (30) months of the effective date of the permit (the draft permit does not specify a schedule for submission of the outfall inspection report). The adjustments to the timeframes are requested in order to provide sufficient time for the City to assess the cost implications of this permit requirement; assess the condition of the outfall and prioritize any needed maintenance activities; to allocate appropriate funds within the Sewer Department operating budget and obtain approval of the funding from the City Council; and to procure any needed consulting engineer and/or specialty contractor services.

**Response:** The timeframe for conducting the diffuser inspection has been extended to 18 months from the effective date of the permit. The inspection report shall be submitted to EPA and MADEP within 6 months of the completion of the inspection at the addresses found in Section F of the permit.

**B) Comments submitted by M.R. Eigerman, President, Island Futures Group on behalf of the Island Futures Group, Newburyport, MA, dated July 15, 2003 and August 29, 2003**

**Comment #1:** IFG remains gravely concerned over the current proposal to expand the City's sewer system to all of Plum Island – an action that would contribute at least 425,000 gallons per day of nitrogen- and bacteria-laden sewage to the Facility for “treatment” and discharge into the Merrimack River at a location directly upriver of public shellfish beds. On April 28, 2003, the City filed an application for sewer extension permit with the DEP that purportedly “supersedes” the City's prior application of June 26, 2001. In that application, the City indicates that the Plum Island Sewer Project would discharge approximately 424,500 gallons per day of sewage into the Facility – a 40 percent increase over the 273,000 gallons per day that previously was disclosed by the City to DEP and EPA. According to the application, those flows would result from sewage discharges from 1,210 existing dwellings, as well as the additional 647 bedrooms that would be added to existing dwellings and the 242 bedrooms that would be part of the 88 new dwellings that are both authorized for construction under the City's and the Town of Newbury's respective “growth-control” regulations. Actual flows may be higher than 425,000 gallon per day if the number of existing bedrooms and the amount of potential future

development have not been accurately estimated.

**Response:** As stated in the Fact Sheet, the decision to allow a sewer extension is not an NPDES permit issue. Sewer extensions are reviewed and approved by MADEP and for projects meeting the Massachusetts Environmental Policy Act (MEPA) review thresholds, the MEPA program provides a comprehensive level of project review. This project was reviewed under the MEPA process and an Environmental Impact Report (EIR) was completed. The Massachusetts Secretary of Environmental Affairs has issued a certificate to this project.

It should be noted, however, that the City of Newburyport is responsible for assuring that any additional flows to the facility will not lead to violations of NPDES permit limits. Furthermore, the permit requires that when the flow discharged for a period of 90 days exceeds 80 percent of the design flow, the permittee is required to submit to the permitting authorities a projection of loadings up to the time the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality plans.

**Comment #2:** Today, over thirty years after the passage of the Act, the "fishable-swimmable" goal established by the Congress for the Merrimack River estuary remains unachieved. This is due, in a material part, to the discharge from the Facility. The quality of effluent from the Facility is not consistent with satisfying the SB/SA standards set for its receiving waters and areas influenced by tidal effects.

**Response:** The segment of Merrimack River in the vicinity of discharge, defined in the Massachusetts Surface Water Quality Standards as Creek Brook, Haverhill to the Atlantic Ocean is classified as Class SB, CSO with Shellfishing (Restricted). The only SA classification on the Merrimack River is for The Basin in the Merrimack River Estuary, Newbury and Newburyport. The Basin, although downstream from the Newburyport WWTF, is far outside the zone of initial dilution. EPA believes the effluent limitations and the conditions of the permit are consistent with the Clean Water Act.

The classification has been discussed with MADEP. MADEP concurs that the SB classification is correct.

According to MADEP, this segment of the Merrimack River (MA84A-06) does support the primary contact ("swimmable") and secondary contact ("fishable") recreation designated uses. However, this segment is listed on the 2002 Integrated Waters list as a segment requiring a TMDL for pathogens and priority organics. The area is currently (November 2003) classified by DMF as Prohibited for shellfishing; however, a report is due to be released by DMF which will reclassify the area as Restricted. The 1999 MADEP Assessment reports that the geometric mean for each of the eleven (11) DMF classification sampling stations, sampled between February 1996 and July 2000, does not exceed 68 cfu/100 ml. The report, however, also notes that four tributaries of this

segment of the Merrimack (Morrill, Middle, Shad and Black Rock Creeks) have been sampled by DMF. The highest fecal coliform bacteria counts have been found in Black Rock Creek following heavy rain events (maximum is greater than 2,400 cfu/100 ml).

**Comment #3:** The Draft Permit does not require that *currently known* technical problems which exist at the Facility, such as those concerning the flow meters, flow splitting to clarifiers, deficient aeration, and laboratory mismanagement, be corrected within a reasonable time period.

**Response:** Given the questions about the accuracy of flow measurements, EPA believes the following requirements will help ensure that the reported flows are representative as required by the Part II-General Conditions. The permittee must develop a plan for conducting a monthly calibration to assure representative flows are reported. A copy of the plan must be submitted to EPA and DEP within 60 days of the effective date of the permit. The plan methodology shall be followed after 30 days of submittal, if there are no comments from EPA or DEP. Annually, the permittee shall submit a report documenting the annual calibration of the influent and effluent meters. The annual calibration must include a volumetric test. All reported flows must be certified as consistent with the Part II - General Conditions.

Furthermore, NPDES permits provide limitations and conditions necessary to achieve the goals of the Clean Water Act. All individual NPDES permits also include Part II-General Conditions. The Part II requirements, Section B, require the permittee to properly operate and maintain all facilities at all times. Proper operations includes adequate laboratory controls and appropriate quality assurance procedures. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action.

**Comment #4:** IFG also is concerned that the Draft Permit is premised on an artificially low and incorrect estimate of expected additional sewage flow from the Plum Island Water and Sewer Project, since the City recently revised upward that flow estimate by 40 percent.

**Response:** The permit limits are based on a monthly average design flow not on historic flow records. However, as previously stated, the City of Newburyport is responsible for assuring that any additional flows will not lead to violations of NPDES permit limits.

**Comment #5:** Finally, and most importantly, the Draft Permit is based on an *incorrect* water quality classification for the Merrimack River.

**Response:** EPA and MA DEP disagree. As previously stated, the segment of Merrimack River in the vicinity of discharge, defined in the Massachusetts Surface Water Quality Standards as Creek Brook, Haverhill to the Atlantic Ocean (mile points 21.09 to 0.0) is classified as

Class SB, CSO with Shellfishing (Restricted). The only SA classification on the Merrimack River is for The Basin in the Merrimack River Estuary, Newbury and Newburyport. The Basin although downstream from the Newburyport WWTF is significantly outside the zone of initial dilution.

**Comment #6:** Because of these issues, IFG respectfully submits that the Draft Permit cannot be issued in its current form, and that substantial additional review must be performed by EPA and the DEP. Given the paucity of technical information which exists concerning the operation and maintenance of the Facility, the success of the City I/I removal program, and whether the removal of non-polluted I/I flows will offset the addition of nitrogen-containing sewage from the Plum Island, IFG believes that the City must be required to prepare a comprehensive wastewater management plan in accordance with the DEPs requirements *before* EPA and DEP can complete that additional review. Once that review is completed, IFG believes that EPA and DEP must again issue the NPDES permit in *draft form* for public notice and comment.

**Response:** EPA believes it has sufficient information on which to base the permit. The city of Newburyport submitted a complete application and has provided additional information, as requested.

**Comment #7:** The Draft Permit proposes to establish an average monthly flow limit of 3.4 MGD. Compliance with that limit would be based on the "rolling twelve-month average" flow. Unlike the Facility's current permit, which measures average monthly flow based on the average flow for the month in question, the Facility instead would be allowed to average the "average monthly flow" for the current month with the "average monthly flows" for the preceding eleven months.

As such, the Draft Permit's revision to this average monthly flow limit represents an *increase* in the volume of effluent that is authorized for discharge. This increase in flow – coupled with the fact that an unknown volume of relatively clean I/I water will be replaced with 425,000 gallons per day of sewage from Plum Island – means that a larger amount of pollutants will be discharged to the Merrimack River estuary. That increase constitutes "back-sliding" which is expressly prohibited by the EPA's anti-backsliding regulations. See 40 CFR § 122.44(l). In addition, there is no indication that this increase was reviewed in compliance with the DEP's antidegradation requirements. See 314 CMR § 4.04. (IFG also notes that the increase in flow authorized by the Draft Permit likely violates the provisions of the Massachusetts Ocean Sanctuary Act, as the facility discharges directly into the North Shore Ocean Sanctuary. See MGL c132A §§ 15, 16A, 16B and 16C.)

EPA and DEP apparently realize this issue, as the Draft Permit imposes average weekly and monthly mass limitations on discharges of BOD and TSS. IFG congratulates EPA and DEP for imposing these limitations, although it notes that these limits would allow an

increased amount of TSS and BOD to be discharged from the Facility (based on the fact that the Facility currently discharges a substantial quantity of relatively clean I/I flows). Because of this fact, IFG believes the mass limitations for TSS and BOD set forth in the Draft Permit may not be stringent enough to protect water quality and existing uses in the Merrimack River, and opposes any proposal to weaken or remove these limitations from the final NPDES Permit.

**Response:** The flow limit is now expressed as an annual average, rather than a monthly average as in the current permit. This change is being made to all POTW permits in MA at the request of MADEP. The purpose of this change was to allow some variation in POTW flows in response to wet weather, and in recognition that the flow rate used as the monthly average is in most cases presented in the treatment plant planning documents as an annual monthly average. As part of this change in how flow limits are written, DEP and EPA agreed that mass limitations for BOD and TSS should be included as permit conditions to ensure that existing controls on mass discharges of BOD and TSS were maintained, in order to prevent degradation of the receiving water.

To provide some background, every treatment plant has any number of design flows. The design engineer could provide a design flow for any time period, including yearly, monthly, daily, and hourly. A design flow is simply the flow rate which the designer establishes can be adequately treated over a given time period. Typically, a treatment facility can provide adequate treatment for higher flow rates for short periods than it can for long periods, meaning that design flow increases as the time period decreases. The annual average design flow is almost always provided in the planning documents for POTWs. Other design flow rates are not as consistently calculated or provided in planning documents. The Newburyport facilities plan, dated February 1974, estimates the annual average flow of 3.4 mgd and a peak flow of 9.45 mgd.

Therefore, the previous use of an annual average flow as a monthly average limit provided some conservatism to the permit by not allowing the facility to operate at its maximum monthly hydraulic capacity. We believe that this was the intention of EPA and MADEP in limiting the flow in this manner. We have now decided to relax the flow limit somewhat, but have sought to balance this action by imposing mass limitations on the discharge of BOD and TSS to ensure that the easing of the flow restriction does not result in a significant increase of pollutants during months when the monthly average discharge flow exceeds the limit established in the current permit. We have also strengthened the I/I requirements of the permit to ensure that the permittee maintains efforts to minimize extraneous flows to the collection system.

EPA believes this policy changes does not constitute "back-sliding" or require State antidegradation review.

**Comment #8:** IFG also notes that the Draft Permit fails to impose similar mass limitations on discharges of fecal coliform bacteria or total residual chlorine. EPA's and DEP's failure to impose



such limitations constitute a clear violation of each agency's applicable "anti-backsliding" and "antidegradation" regulations. This fundamental flaw is sufficient to require that mass limitations for these pollutants be established, that the required antidegradation analysis be performed, and the permit be reissued in draft form for public notice and comment.

**Response:** Fecal coliform bacteria are measured as colony forming units per 100 milliliters of sample. These units are not appropriately expressed as a mass. This is consistent with 40 CFR 122.45(f) i.

The Total Residual Chlorine (TRC) limitations shall remain as concentration limitations. The National Recommended Water Quality Criteria for TRC are expressed as concentrations, and therefore, it is consistent for the permit limitations to be expressed in the same units. This is consistent with CFR 122.45(f) ii.

**Comment #9:** The Draft Permit contains no mass limitations on the discharge of total residual chlorine ("TRC") from the Facility. Of greater importance, is the fact the Draft Permit would authorize the Facility to *increase* its maximum daily discharge of TRC to 0.39 mg/l, from the 0.30 mg/l limit that is set forth in the current permit. This increase clearly violates the provisions of 40 CFR § 122.44(l), notwithstanding the explanation proffered by the agencies in the fact sheet. As such, the maximum daily limit set forth in the current NPDES Permit must be retained, and a mass limit established for discharges of TRC that reflects a discharge of 3.4 MGD of effluent from the Facility.

**Response:** Please see the response to comment A.3.

**Comment # 10:** In addition, IFG notes that the Draft Permit requires the Facility, due to its proximity to shellfish bed resources, to "work with the Massachusetts Division of Marine Fisheries to develop an immediate warning system notifying DMF of a disinfection failure or if TRC concentrations exceed the permit limit." Due to the current and future value of these shellfish resources, and the potential for substantial harm to public health and the environment to result from a disinfection failure or TRC exceedence, IFG requests that EPA and DEP *require* the Facility to develop and submit that system to each agency for review and approval within six months of issuance of the final Permit for the Facility.

**Response:** EPA has required the permittee to work with MA DMF to develop an immediate warning system. EPA believes that MADMF, as the agency who is legally charged with managing the shellfish resources in Massachusetts should be the lead in working with the City on this system. EPA shall require the permittee to submit a letter, within 12 months of the effective date of this permit, detailing the system and its operation.

**Comment #11:** The Draft Permit continues the current Permit's average monthly and maximum daily discharge limits for fecal coliform bacteria of 200/100 ml and 400/100 ml, respectively.



Those limits are predicated on the Facility discharging effluent to a class "SB" water, as designated by the DEP.

A review of DEP's water quality regulations indicates, however, that the Merrimack River *is not classified as SB* at the location of the Facility's discharge. Rather, those regulations establish that the receiving water body in question – namely, the Merrimack River between mile points 21.9 to 0.0 – is classified as SB with Restricted Shellfishing, or SB(R). See 314 CMR § 4.06(3), Figure 25 and Table 25. In addition, a downriver area in close proximity to the Facility, the Basin, is classified as a SA water with Open Shellfishing (Class SA(O)).

Because the Merrimack River at the point of discharge *is officially classified by the Commonwealth of Massachusetts* as a class SB(R) water, the fecal coliform bacteria discharge limits set forth in the Draft Permit are not correct, and are not sufficient to protect the designated water quality uses. Instead, DEP's regulations mandate that: (a) fecal coliform bacteria discharges from the Facility not exceed a median or geometric mean MPN of 88 per 100 ml, and (b) that no more than 10% of effluent samples from the Facility exceed a fecal coliform bacteria MPN of 260 per 100 ml. See 314 CMR § 4.05(b)(4)(a). Given the SB(R) classification of the receiving water, the proximity of SA(O) classified waters to the Facility, and the fact that discharges from the Facility likely impact those SA(O) waters, it is imperative that Draft Permit be revised to: (a) reduce the limits for fecal coliform discharges from the Facility to the levels specified by 314 CMR § 4.05(b)(4)(a); and (b) establish mass limitations on the discharge of fecal coliform bacteria which reflect a discharge of 3.4 MGD of effluent per day.

**Response:** The fecal coliform bacteria limits have been revised to reflect the SB Restricted criteria in the Massachusetts Surface Water Quality Standards. Accordingly, the final permit contains a monthly average geometric mean limit of 88/100 ml and a maximum daily limit of 260/100 ml.

EPA notes that on November 24, 2003, the Massachusetts Division of Marine Fisheries issued an advisory announcing the "conditional re-opening" of the Merrimack River Clam Flats.

Given that this is a more stringent water quality-based permit limit, the permittee has been given a compliance schedule of four (4) months from the effective date of the permit (for a total of 6 months, since the effective date is 60 days after signature) to comply with a monthly geometric mean limit of 88/100 ml and a maximum daily limit of 260/100 ml. Until that time, the previous permit's monthly geometric mean limit of 200 colony forming units (cfu)/100 ml and maximum daily limit of 400 cfu/100 ml remains in place.

**Comment #12:** The Draft Permit proposes that discharges from the Facility have a dissolved oxygen ("DO") content of not less than 5.0 mg/l. IFG enthusiastically supports this requirement, and urges that it not be relaxed or deleted from the final Permit.

**Response:** Please see the response to comment A .1.

**Comment #13:** IFG previously has raised concerns with both EPA and DEP concerning the existence of brown foam in the area of the Facility's effluent outfall.

IFG understands each agency's position that there is not direct "proof" that the brown foam is caused by the Facility's discharge. However, IFG also is not aware that either agency, except for the sampling undertaken by DEP, has undertaken any analysis as to the cause of the brown foam. Given the relatively low levels of fecal coliform in the surface water upstream and downstream of the Facility, the fact that the brown foam occurs primarily in the area of the Facility, and the fact that high levels of fecal coliform were present in both the foam and the Facility's effluent on the day of sampling, it seems highly probable that a link exists between the Facility's discharge and the brown foam, and that the foam is not attributable to effluent discharges from wastewater treatment facilities located upriver.

**Response:** We are not aware of any direct link between Newburyport's discharge and the brown foam observed in the River. If such a link were found, this would constitute new information pursuant to 40 CFR 122.62(a)(2), which would support a modification of the permit.

**Comment #14:** IFG applauds EPA's and DEP's decision to require the Facility to monitor and report concentrations of ammonia nitrogen in its effluent. However, IFG believes that the Facility should also monitor and report concentrations total nitrogen and nitrate in its discharge. As the agencies know, in addition to creating nitrification problems, the excessive discharges of nitrogen can also lead to low DO levels in the receiving water body (for example, ammonia nitrogen exhibits a high chemical oxygen demand, or COD, when it breaks down to nitrate in the environment).

**Response:** EPA has added monthly reporting requirements for Total Ammonia, Total Kjeldahl Nitrogen, Nitrate and Nitrite.

**Comment #15:** IFG has reviewed the engineering evaluation performed for the City on the calibration of both the influent and effluent meters. A fundamental conclusion of that study is that both meters are not correctly installed at the Facility. In response to this information, the Draft Permit merely requires the Facility to calibrate both meters on an annual basis. This response is not adequate.

Instead, IFG believes that the Facility should be required to retrofit both meters, within the next twelve months, to ensure that they are correctly installed. Until that time, the Facility should be required to report flow measurements that are taken at both meters, as opposed to only the influent meter as the Draft Permit would require.

Response: Please see the response to comment B.3.

**Comment #16:** Many of the problems which exist with respect to the Facility, and which are identified by IFG in this letter, stem from the lack of information concerning the Facility's operations and the impact of those operations on the Merrimack River. IFG notes that in instances such as this, the DEP's practice is require the applicant (in this case the City) to develop a comprehensive wastewater management plan in accordance with State regulations, and to both reflect and implement that plan in concert with the NPDES permit. IFG can only question why such planning was not required here, as development of such a plan would have avoided, and indeed likely would have addressed and resolved, the anti-backsliding and antidegradation issues raised by the Draft Permit. As such, IFG submits that the NPDES permit must impose a comprehensive wastewater management planning requirement on the Facility.

Response: EPA does not have the authority through the NPDES program to require comprehensive wastewater management planning.

**Comment #17:** The permit should include a limitation on maximum daily flow

Response: EPA does not believe a maximum daily flow limit is necessary to achieve the goals of the Clean Water Act. If EPA were inclined to set a maximum daily limit, it would be difficult to determine what that value would be. The facility plan only includes a peak (instantaneous) flow value.

**Comment #18:** The permit should require the construction of upgrades to the facility's aeration system and secondary clarifiers before the facility is allowed to accept additional flows from any new sewer system extension or connection.

Response: EPA can only issue schedules in permits for construction necessary to achieve new water quality requirements, and EPA can only require construction through enforcement actions where necessary to correct violations of a permit or the Clean Water Act.

**Comment #19:** The facility must promptly determine whether it discharges foam in violation of the draft permit conditions.

Response: Please see the response to comment B.13.

**Comment #20:** The facility must be required to calibrate its faulty measurement meters on a monthly basis and be subject to an enforceable schedule requiring the installation of the new measurement meters.

Response: Please see the response to comment B.3.

Comment #21: The facility should be required to install additional emergency generation equipment.

Response: In accordance with Part C.4 of the permit, Alternative Power Source, the permittee is required to provide an alternative power source which is sufficient to operate its treatment works as defined at 40 CFR 122.2.

Comment #22: The City must be required to timely document the results of its I/I removal program.

Response: The City must submit a summary report of all activities undertaken to minimize I/I during the previous calendar year. The first annual report is due, by the anniversary date of the effective date of the permit. The permittee is also required to submit an I/I control plan within 6 months of the effective date of the permit. Details of these requirements can be found in Part C.3 of the permit.

**C) Comments submitted by Robert V. Finneran, Esq., Newburyport, MA, dated August 27, 2003**

Comment #1: Others have commented at length about the facility discharge meters. Apparently the meters have documented calibration flaws. While I lack the technical sense to add much to the intelligent criticisms of others, I can add a few common sense observations about the discharge meters. We need accurate and consistently reliable discharge readings.

Response: Please see the response to comment B.3.

Comment #2: As far as I can determine, the truth is that pollution threatens our water quality and the cause is hidden. The Applicant and the discharge facility have too much at stake to be considered impartial and reliable reporters. There is a significant lack of independent data at the facility discharge area and the Merrimac (sp) River mouth. More data is needed and the data must be independently verified.

Response: The NPDES program by regulation depends on self-reporting by facilities. The Part II General Requirements included as part of every NPDES permit states in Section C.1.e, "The Clean Water Act 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 imprisonment for not more than 2 years, or both."

There is significant water quality data for the mouth of the Merrimack River. For nearly a decade, the Massachusetts Division of Marine Fisheries has been collecting and

analyzing water quality data collected at the mouth of the Merrimack and in the vicinity of the discharge. MA DMF will be issuing a report on November 1, 2003 addressing water quality shellfishing and in this area.

**Comment #3:** I have concerns surrounding the Massachusetts Division of Marine Fisheries located on Plum Island. Where the Applicant and facility management seek to increase chlorination levels of its discharge, I do not want such chlorine level in our water or in our fish. My concerns are for the clam flats across the way in Salisbury and downstream at Joppa. What I do seek is a restricted chlorine discharge limit. Also, whenever the facility discharges in excess of its permit, the facility should immediately and automatically notify the Massachusetts Division of Marine Fisheries. This concerns the food people consume. A monthly average or periodic mean, even with a subsequent notification, is not adequate to protect public health.

**Response:** The Newburyport WWTF did not request to increase the chlorination level in their discharge. Please see the response to comment A.3.

**Comment #4:** I am told that the discharge facility does not handle surface and storm runoff from the Applicant municipality. The parties say that this is a plus in their determination to seek an expanded and extended discharge permit. On the other hand, in my opinion, I feel that surface and storm runoff is one of the greatest threats to our water quality. Surely the Applicant permit can be considered in light of the Applicant's surface and storm runoff when its discharge is into the same watershed area as its wastewater facility. This is the spirit and substance of the Clean Water Act and its your Agency's obligations to protect the water here at the mouth of the Merrimac (sp)River.

**Response:** This facility is served by a separate sewer collection system, so significant quantities of storm water are not sent to this facility. In fact, the final permit includes reporting for inflow and infiltration (groundwater and stormwater) reductions.

Storm water discharges from municipalities in EPA Region 1, New England are covered by Region 1's general permit for storm water discharges from small municipal separate storm sewer systems (MS4s). The City of Newburyport is regulated under this program, which requires the city to develop and implement a storm water management program. The storm water management program consists of six minimum control measures: public education and outreach; public participation; detection and elimination of illicit discharges; regulation of runoff from construction which disturbs an acre; regulation of post construction runoff from new development and redevelopment; and good house keeping in municipal operations. Additional information concerning EPA's storm water program is available on line at [cfpub.l.epa.gov/npdes/stormwater](http://cfpub.l.epa.gov/npdes/stormwater) is addressed through the stormwater permitting. On December 9, 1999, the Phase II Stormwater regulations were published. The date for submission of an NOI for coverage under the region's

permit was July 30, 2003.

Comment #5: Until and unless the Applicant can demonstrate the discipline and capacity to responsibly handle an additional 500,000 gallons of wastewater per day, whether by construction of new facilities or by vastly improving existing facilities, the applicant facility cannot accept wastewater from the Plum Island Project.

Response: Please see the response to comment B.1.

**D) Comments submitted by David J. McFarlane, Newburyport, MA, dated July 27, 2003**

Comment #1: It is strongly recommended that as a stipulation of the new permit that comprehensive wastewater management planning be performed as soon as possible and particularly before construction begins to extend sewer to Plum Island.

Response: Please see response to comment B.16.

Comment #2: Prior to new permit issuance it is asked why flows to capacity should not be provided along with an estimated time period to capacity? This should be required as the plant exceeded its permit requirement with flows over 80% of design flow for over 90 consecutive days followed by exceeding or reaching it (sp) design permit limits for 3 consecutive months. In addition the plant has been reported to be near design capacity over recent years, is facing new growth and future Plum Island flows and the amount of additional flow capacity from I/I rehabilitation work appears uncertain and likely insufficient based on a review of available data.

Response: EPA has reviewed Discharge Monitoring Reports (DMRs) from the Newburyport WWTF as part of the reissuance process. Based on that data, EPA disagrees that the facility has exceeded 80% of the design flow for 90 consecutive days.

Comment #3: It is recommended that the discrepancies and uncertainties between the plant meters be resolved either with new meters or by other adequate means prior to permit reissuance.

Response: Please see the response to comment B.3.

Comment #4: The rationale for relaxing the monthly flow requirement to a yearly or 12 month average is understood with the inclusion of mass limits on BOD and TSS. It is still believed that this is relaxation albeit somewhat compensated by the mass limits and that it will not prevent excessive pollution over long periods from occurring during heavy flows that can

be balanced for administrative compliance by low flow and load months during the year. Of concern particularly is pollution from fecal coliform bacteria and TRC which may be excessive during heavy flow conditions and are unlikely to be diminished sufficiently to meet water quality requirements. Also, until assurance that flows are being reliably measured there remains a concern that mass loading will not be properly accounted for. If this approach is to be pursued, daily reliable flow data for both influent and effluent should be report along with maximum daily and monthly flow data. Also a maximum monthly flow should be imposed consistent with the plants design capability.

Response: Please see the responses to comments, B.3 and B.7.

Comment #5: Can the water quality requirements for fecal coliform bacteria defined for this state's define SB(R) location be met following discharge from the diffuser? If not what other procedures are the permitting authorities using to assure the permit requirements will sufficient to meet water quality requirements? How close to the diffuser discharge can water quality requirements be met and does this require a mixing zone to be defined? Can a mixing zone be used in this estuary with SB(R) quality waters?

Response: The fecal coliform bacteria limits established in this permit are consistent with the Massachusetts Surface Water Quality Standards. A regulatory mixing zone has not been establish for this discharge.

Comment #6: Are other dilution factors in addition to those associated with the diffuser employed for this location? Are the dilution factors for the diffuser the same for gravity flow and pumped effluent flow to the diffuser?

Response: Please see the response to comment A.2.

Comment #7: Since the draft permit requires TRC to be continuously recorded it seem appropriate and is recommended that TRC readings at the same time the daily grab sample is taken for fecal coliform be reported in DMRs.

Response: Concurrent grab sampling for fecal coliform bacteria and TRC is required. Please see the response to comment A.4.

Comment #8: What is EPA's position on this anti-backsliding matter relative to TRC and the relaxation from monthly average to an annual average flow requirement?

Response: Please see the responses to comments, A.3 and B.7.

**Comment # 9:** Are TRC values listed appropriately in the draft permit as average monthly values and maximum daily values? How does this relate to the Gold Book criteria? How will these levels be calculated and reported and how will they be calculated and reported if they are defined in EPA gold book for marine waters.

**Response:** Please see the response to comment A.3.

**Comment #10:** DEP agreed that the influent meter be utilized for regulatory reporting requirements in a letter dated on June 27, 2001. This letter received on the day a sewer extension permit application was submitted to DEP for extending sewer to PI, included statements that "A correlation between all measuring location indicated that the readings at the influent meter were confirmed to be accurate." And: "For the effluent meter an error was found and corrected." The department agreed that the influent meter be utilized for regulatory reporting requirements. It also required to be informed of action to be taken for correcting the inaccuracy at the effluent metering station and submit evidence that both the influent and effluent meter reflect the actual flow entering and leaving the wastewater treatment facility."

Based on data subsequent to this time it is unclear if the meters remained error free and if so for how long. It is also unknown of what action was taken at that time and subsequently for correcting the meter inaccuracy.

Has any such action been taken and evidence submitted and did or has EPA agreed with the use of the influent meter based on current knowledge or any new evidence?

**Response:** Please see the response to comment B.3.

**Comment #11:** It appears the DMR's continued to report flows as those recorded at the effluent meter until the ending months of 2002 but then used influent meter reading through June of 2003. It is also noted that annual flows for the last three years submitted with the permit application are influent flow averages.

Does EPA as well as DEP concur that this is an appropriate submittal for the prior three years of flow and that effluent data on discharges are less accurate? What other action other than annual calibration has been performs since June 2001?

**Response:** EPA has no evidence that information provided by the permittee is not representative.

**E) Comments submitted by Anne Giblin, Ph.D., Senior Scientist, Marine Biological Laboratory, Woods Hole, MA, dated August 26, 2003**



**Comment #1:** The existing permit allows a discharge of total residual chlorine (TRC) 0.3 mg/l and the new permit proposes to increase this to 0.39 mg/l. I was quite surprised to see that the EPA is considering increasing TRC when the discharge is into marine waters.

**Response:** Please see the response to comment A.3.

**Comment #2:** It is critical that the plant meet reasonable dissolved oxygen limit if marine resources are to be protected. I note that the current plant has reported very low values for dissolved oxygen for 2002, less than 1.6 mg/l for an average daily discharge.

**Response:** Please see the response to comment A.1.

**Comment # 3:** I was surprised to see that only ammonia (+ammonium) is being measured. This will not allow the EPA to calculate the total nitrogen load coming from the plant. Although TMDLs have not yet been established for nitrogen in estuaries it is likely that they are coming. It is important that both the City of Newburyport and the EPA know the total N being discharged from the plant. In addition, a better idea of the nitrogen species will help determine if the plant is operating properly, and if nitrite is being discharged. Nitrite is normally a minor component of the total N being discharged but it is harmful to marine organisms. Under conditions of low oxygen, such as are currently present in the plant, nitrification may stop at nitrite, rather than being carried all the way through to nitrate. I suggest that at a minimum the plant monitor nitrate, nitrite and TKN, which is standard for most secondary plants today. The sum of these will give total N. Because this plant discharges into surface waters a measure of ammonia (+ammonium), separate from TKN would also be advisable.

**Response:** Please see the response to comment B.14.

**Comment #4:** The City of Newburyport is clearly basing their assumption that they will not exceed the capacity of the plant with further expansion on these new lower flows. This is a critical assumption and must be carefully examined. Finally, it is also critical that good data on flows be obtained. Important decisions on this permit cannot be made relying on flow meters which do not agree and which are known to be inaccurate.

**Response:** Please see the response to comment B.1.

**F) Comments submitted by Robin Guritz, Newburyport, MA, dated August 25, 2003**

**Comment #1:** I was told the Plum Island project was not going to be a topic of discussion at the public hearing, so I was quite shocked to here the first 5 speakers to oppose the permit all

alluded to the additional demands on the plants due to the Plum Island project.

Response: Please see the response to comment B.1.

**G) Comments submitted by James Corbin, Vice Chairman/Acting Chairman, Salisbury Harbor Commission, dated August 15, 2003**

**Comment #1:** The Commission is concerned that the proposed approval of this permit will exacerbate the existing water quality problems in the Merrimac (sp) River. These problems have been investigated by The Salisbury Harbor Commission, the Harbormaster, and the Town's Health Agent and have identified the Newburyport outfall as the source of the brown foam that floats in the river. On June 26, 2002, Massachusetts DEP personnel together with town officials witnessed brown foam rising to the surface at the location of the Newburyport outfall pipe. Samples were taken and then tested. These and numerous other samples taken in our harbor near the Newburyport Treatment plant outfall pipe show high levels of fecal matter. Our records of testing results, combined with comments by numerous boaters and fisherman, clearly indicates that a problem exists which must be addressed.

Response: Please see the response to comment B.13.

**Comment #2:** The Salisbury Harbor Commission urges you not to allow any increase in the quantity of discharge or increase in pollutants discharged by the Newburyport Wastewater Treatment Facility.

Response: The permittee has not made any requests for increases in permit limits.

**H) Comments submitted by Judith Chaffec, Newbury, MA, undated**

**Comment #1:** Which is more pervasive in causing the pollution, the Newburyport Treatment Plant or the Septic Systems on Plum Island and along the Parker River? If you do not have a direct answer, then more study is needed. If you do have then answer, then that should influence your decision in granting or denying the permit.

Response: The National Pollutant Discharge Elimination System permitting process is not necessarily one of granting or denying permits. The Newburyport WWTF submitted a re-application as required by regulation. NPDES permits are issued for a term no longer than 5 years and the Newburyport permit was up for re-issuance. The Newburyport WWTF has not requested any change in coverage (i.e. increase in flow) from their existing permit. EPA through the NPDES program is responsible for issuing permits with effluent limitations and conditions which protection the interests of the Clean Water Act. For more information please see 40 CFR 122.

Please also see the response to comment B.1.

**I) Comments submitted by Susan Vladeck, Newbury, MA, dated July 16, 2003**

Comment #1: To begin with, foam is everyone's problem and can just as well come from up river as it can come from the septic systems on Plum Island that are out of compliance with title 5. The discussion around the expanded needs for sewerage treatment focused on Plum Island. However, increased development in Newburyport, the opening of the Audubon facility on the Plum Island Turnpike, and the future opening of the new headquarters for the Parker River Refuge are similar in kind, and all demand regional long term planning for development and growth. The wastewater plant may need to keep pace, but that is a planning issue.

Response: Please see the response to comment B.1.

Comment # 2: I would like to see you grant permit number MA0101427, with the requested amendments by Newburyport, to the city of Newburyport.

Response: Please see the response to comment H.1.

**J) Comments submitted by Kent McLeroth, Newbury, MA, undated**

Comment #1: No one has demonstrated that any brown foam is in any way connected with the Newburyport Wastewater Treatment Facility. As you know, there are numerous treatment plants up and down the Merrimack River, some operating at much higher capacities and much less efficiently than the Newburyport facility, and their discharge eventually winds up here. The foam and discoloration may be seen well upriver from the Newburyport facility, indicating the problem is originating elsewhere. To restrict the exemplary operation of the Newburyport Wastewater Treatment Facility, with no evidence that is causing a problem, is clearly unfair.

Response: Please see the response to comment B.13.

Comment #2: This permit is not about the Plum Island project, but about Newburyport's ability to treat wastewater. If the Island Futures Group hopes to stop the Plum Island Project, as is their publically stated mission, they should do so with the merits of their case against the project itself, not by interfering with Newburyport's ability to treat wastewater.

Response: Please see the response to comment B.1.

**Comment #3:** In closing, I ask that you make your decision based on scientific fact rather than the misdirection offered by the opponents of the Plum Island Project. I ask that you take into consideration the exemplary performance of the facility and staff of Newburyport Wastewater Treatment. I ask that you grant the City of Newburyport Permit Number MA0101427, with the amendments requested by Superintendent O'Regan.

**Response:** Please see the response to comment H.1.

**K) Comments submitted by Sue McLeroth, Newbury, MA, undated**

**Comment #1:** It is my opinion that the Island Futures Group is using this forum to try and stop the Plum Island water/sewer project. They would love to have these stricter limitations put on the plant to make it impossible for the Plum Island project to hook up to the treatment plant.

**Response:** Please see the response to comment B.1.

**Comment #2:** My request is that you grant the City of Newburyport Permit number MA0101427, with the amendments requested by Superintendent O'Regan.

**Response:** Please see the response to comment H.1.

**L) Comments submitted by Neil Harrington, Town Manager, Town of Salisbury, on behalf of the Salisbury Board of Selectman, dated July 15, 2003**

**Comment #1:** First, the Town of Salisbury is opposed to the potential approval of any plan that will cause an increase in Total Residual Chlorine (TRC) levels in the Merrimack River estuary.

**Response:** Please see the response to comment A.3.

**Comment #2:** Second, Salisbury objects to the proposal to bring a potential 424,500 gallons per day of sewage to the Newburyport plant with the inclusion of Plum Island and the Turnpike area bordering the estuary.

**Response:** Please see the response to comment B.1.

**Comment # 3:** Even if the Plum Island sewer project is approved, it would make more sense to require that the outfall pipe from Newburyport treatment plant be extended than to exacerbate the current unhealthy situation for wildlife that currently make their homes in Salisbury

waters. The enclosed picture illustrates one of the potential results of the current outflow situation. Please do not make a bad situation worse.

**Response:** Please see the response to comment B.13.

**Comment #4:** Finally, as you know, the Town of Salisbury received a federal EPA grant in 1989 to provide for construction of wastewater and conveyance facilities. The terms of the grant included conditions that required the Town to implement mitigation measures relative to the discharge of wastewater into the Town's POTW so as to prevent any negative impact on the Town's wetlands, floodplains, or barrier beach areas. Specifically, the conditions prohibited connections to the Town's sewer system from "any new development" built within these three areas [wetlands, floodplains, or barrier beach areas]. Why then would the EPA be considering the approval of a NPDES permit for the Newburyport wastewater treatment facility that would eventually facilitate the extension of sewer to the environmentally sensitive Plum Island barrier beach area? Is the EPA contemplating the discouragement/prohibition of additional connections to such a sewer system from any future "new development" on Plum Island.

**Response:** EPA has the authority to determine how EPA grant monies are used by grantees as in the case of the Salisbury POTW. The Plum Island project, however, is not using EPA grant monies for the project and as such EPA does not have the authority to set such conditions.

Please also see the responses to comments, B.1 and H.1.

**M) Comments submitted by John L. Davenport, Conservation Law Foundation, dated July 15, 2003**

**Comment #1:** CLF endorses the comments on the above draft NPDES Permit (the "Draft Permit") submitted by Island Futures Group, Inc. in its letter of today's date.

**Response:** EPA appreciates the Conservation Law Foundation participation in the NPDES permitting process. Please see the responses to the Island Futures Group's comment in Section B.

**Comment #2:** Without derogating from IFG's other comments, we are particularly concerned that the City of Newburyport Wastewater Treatment Facility will not be able to handle the additional sewerage flows, - now estimated by the City at 425,000 GPD (a 40% increase from its original estimate), - from the proposed expansion of the sewer system to Plum Island without violating the Clean Water Act and further degrading the Merrimack River estuary, making achievement of the "fishable-swimmable" goal established by Congress

for that estuary and the reopening of its public shellfish beds even more unlikely. There is not enough evidence to support the City's contention that these additional flows of nitrogen-loaded sewage will be neutralized by the I/I program's removal of an unknown amount of non-polluted flows from the system.

Response: Please see the responses to comments B.1 and B.2.

Comment #3: CLF is also concerned with the use of the rolling twelve-month average to determine compliance with the Draft Permits's average monthly flow limit of 3.4 MGD. That revised method of calculation, particularly when combined with the substitution of the additional sewage flows from Plum Island for an unknown volume of relatively clean water removed from the system by the I/I program, results in an increase in the discharge flow limit from the current permit in violation of the EPA's anti-backsliding provisions and without the review required by the DEP's antidegradation provisions.

Response: Please see the response to comment B.7.

Comment #4: CLF joins with IFG in urging that the Draft Permit not be issued in its current form until the City develops a comprehensive wastewater management plan in accordance with DEP regulations and EPA and DEP then perform additional review to resolve the several issues raised in IFG's letter.

Response: Please see the response to comment B.16.

Comment #5: CLF also believes with IFG that, following such review, EPA and DEP must issue the revised NPDES Permit in draft form for public notice and comment.

Response: EPA does not believe that the information submitted during the public comment period has raised substantial new questions pursuant to 40 CFR 124.15 and do not, therefore, justify the need for a new draft permit.

**N) Comments submitted by Lou Wagner, Regional Scientist, Massachusetts Audubon Society, Lincoln, MA, dated July 10, 2003**

Comment #1: Questions have recently been raised regarding plant capacity and we are pleased to see this issue evaluated and resolved during the permitting process. We are pleased EPA has included a provision in the draft permit requiring measures to ensure compliance with discharge limits should future flows reach 80 percent of plant design flow for 90 consecutive days.

**Response:** EPA appreciates Massachusetts Audubon Society's participation in the NPDES permitting process.

**Comment #2:** We are especially pleased to learn from the draft permit fact sheet that closed shellfish beds located in the Merrimack River estuary may be reopened for restricted conditional shellfishing and that provisions have been included in the draft permit to ensure that if this occurs, discharge limits for the WWTP will be adjusted accordingly to ensure the protection of this resource.

**Response:** EPA appreciates Massachusetts Audubon Society's participation in the NPDES permitting process.

**Comment #3:** Mass Audubon supports the draft permit issued by EPA. We believe that this permit will help to protect and restore water quality in the Merrimack estuary.

**Response:** EPA appreciates Massachusetts Audubon Society's participation in the NPDES permitting process.

**M) Comments submitted by Paul Diodati, Director, Commonwealth of Massachusetts, Division of Marine Fisheries, Boston, MA, dated July 9, 2003.**

**Comment #1:** Marine Fisheries believes the effluent limitations in the permit, including enhanced monitoring of the chlorination process for the effluent, will serve to better protect anadromous and marine fishery resources in the designated receiving waters.

**Response:** EPA appreciates DMF's participation in the NPDES permitting process.

**N) Comments submitted by W.W. "Chip" and Barbara Wyser, Newburyport, MA, dated July 17, 2003**

**Comment #1:** The ongoing efforts by Newburyport's Sewer Department to create capacity at the wastewater treatment plant by reducing "I&I" (inflows and Infiltration) has not been completed, nor has final verification of the results been independently evaluated.

**Response:** Please see the response to comment B.1.

**Comment #2:** We are concerned that the Sewer Department has no valid 20-year plan to accommodate predictable growth in demand for treatment. If we are to run out of capacity in 10 years,

is it wise to be spending significant money to rehab this elderly plant?

**Response:** The NPDES permit requires proper operation and maintenance. Effluent limits must be met, there is the 80% of design flow trigger, but no requirement for long-term planning.

**Comment #3:** The plant uses significant amounts of Potassium Permanganate in the inflow to mitigate odor. We are concerned about the influence of this chemical on the toxicity of the outflow.

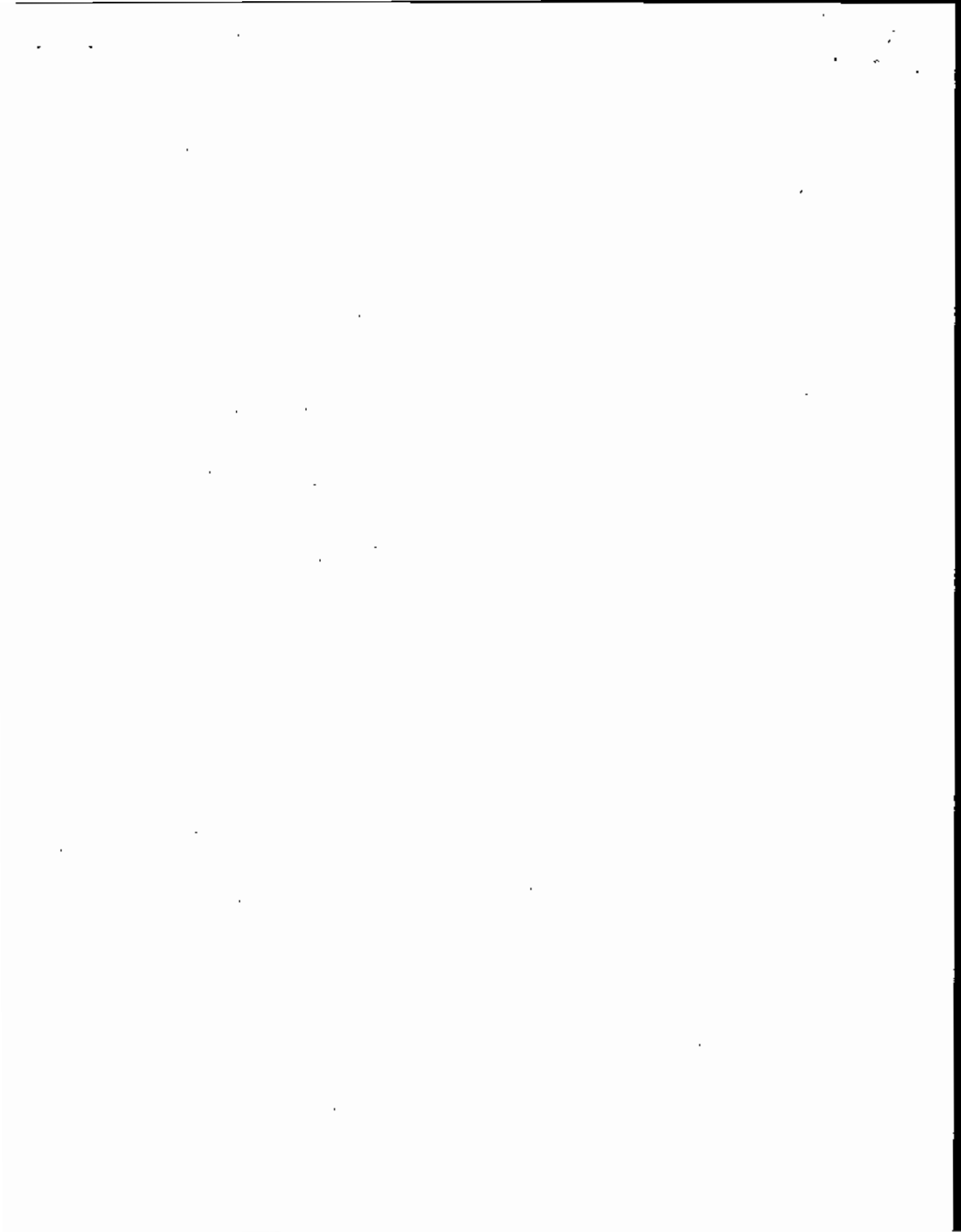
**Response:** The concentrations of potassium permanganate are very dilute. No toxicity problems have been indicated in the Whole Effluent Toxicity testing which is a requirement of the permit.

**Comment #4:** Plum Islanders have a problem with excessive nitrates in their soil, and we do not believe the wastewater treatment plant monitors that element in its outflows.

**Response:** The Newburyport WWTF is required to monitor and report the results for Total Ammonia, Total Kjeldahl Nitrogen, Nitrate and Nitrite. However, high nitrate levels in Plum Island soils can probably be attributed to failing septic systems.

EPA believes the comments and responses detailed above adequately represent the comments heard at the public hearing held at the Newburyport Public Library on July 15, 2003. Copies of the complete transcript may be review at EPA's Region 1 office.





SECTION 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 and is grounds for enforcement action; for permit termination, revocation and reinstatement, 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 CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405 (d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

b. The CWA provides that any person who violates Sections 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 Sections 402 (a)(2) or 403 (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. Notes see 40 CFR §122.41(a)(2) for additional enforcement criteria.

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

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SECTION A. GENERAL REQUIREMENTS

1. Duty to Comply
2. Permit Actions
3. Duty to Provide Information
4. Recapture Clause
5. Oil and Hazardous Substances Liability
6. Property Rights
7. Confidentiality of Information
8. Duty to Reapply
9. Right of Appeal
10. State Laws
11. Other Laws

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

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

SECTION C. MONITORING AND RECORDS

1. Monitoring and Records
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SECTION D. REPORTING REQUIREMENTS

1. Reporting Requirements
  - a. Planned changes
  - b. Anticipated noncompliance
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  - d. Monitoring reports
  - e. Twenty-four hour reporting
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  - g. Other noncompliance
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2. Signatory Requirement
3. Availability of Reports

SECTION E. OTHER CONDITIONS.

1. Definitions for Individual NPDES Permits including Storm Water Requirements
2. Definitions for NPDES Permit Sludge Use and Disposal Requirements
3. Abbreviations

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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.

#### 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 a notification of planned changes or anticipated noncompliance does not stay any permit condition.

#### Right to Provide Information

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

#### Reopener Clause

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

Permit modification or revocation will be conducted according to 40 CFR 55122.62, 122.63, 122.64 and 122.5.

#### Pollution Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee

from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 111 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 21.302(a)(2).
- c. Information required by NPDES application forms provided by the Regional Administrator under 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.

#### 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.)

7. RIGHT OF APPEAL

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

10. 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.

11. 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, and local laws and regulations.

SECTION 11. 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.

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.

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

b. Bypass not expanding 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 provisions 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.a (24-hour notice).

d. Prohibition of bypass.

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

- (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- (b) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
- (c) (i) The permittee submitted notices as required under Paragraph 4.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.

## Upset

- a. **Definition.** "Upset" means an exceptional incident in which there is unintentional and temporary non-compliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include non-compliance 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 non-compliance with such technology-based permit effluent limitations if the requirements of Paragraph 4.5.c of this section are met. No determination made during administrative review of claims that non-compliance was caused by upset, and before an action for non-compliance, 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.a (24-hour notice); and
  - (4) The permittee complied with any remedial measures required under B.3. above.
- d. **Burden of proof.**  
In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

## SECTION C. MONITORING AND RECORDS

1. **Monitoring and Records:**
- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
  - b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample measurement, report or application except for the information concerning storm water discharge which must be retained for a total of 5 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;

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- (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.

The Clean Water Act 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 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 Clean Water Act, any substances or parameters at any location.

#### SECTION 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 required only 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 5122.29(b); or
  - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject to the effluent limitations in the permit, not to the notification requirements under 40 CFR 5122.42(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 incorporate such other requirements as may be necessary under the Clean Water Act. (See 5122.51) in some cases, modification or revocation and reissuance is mandatory.)

4. Monitoring results. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

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

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 502, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Administrator.

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

5. Twenty-four hour reporting.

(1) The permittee shall report any noncompliances 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 recurrence of the noncompliance.

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

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

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

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

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

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

g. Other noncompliances.

The permittee shall report all instances of noncompliances 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.a of this section.

b. 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 §122.22)

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

Availability of Reports.

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

SECTION E. OTHER CONDITIONS.

1. DEFINITIONS FOR INDIVIDUAL NPDES PERMITS INCLUDING STORM WATER REQUIREMENTS.

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

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, 303, 304, 306, 307, 308, 403, and 405 of CMA.

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 - 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" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

Best Management Practices (BMPs) means schedules of activities, prohibitions 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 (BPNJ) 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 §135.3 (d).

Class I Sludge Management Facility means any POTW identified under 40 CFR §403.6(a) as being required to have an approved pretreatment program (including such POTWs located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10(e)) and any other treatment works treating domestic sewage classified as a "Class I Sludge Management Facility" by the Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sludge use or disposal practices to adversely affect public health and the environment.

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

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

Construction Activities. The following definitions apply to construction activities:

- (a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.



(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to 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 emission effluent limitation guidelines 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.

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

Contiguous 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. 96-576, Pub. L. 96-483 and Pub. L. 97-117; 33 U.S.C. §§1251 et seq.

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

Director normally means the person authorized to sign SPOES 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 form 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 to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

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

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

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.

Effluent limitations guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations."

EPA means the United States "Environmental Protection Agency."

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

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

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

Industrial 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 of 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 Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SWDA); the Clean Air Act; the Toxic Substances Control Act; and the Marine Protection Research and Sanctuaries Act.

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 Appendixes F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendixes 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 Chlorine (TRC)) is defined as "Maximum Concentration or 'Instantaneous Maximum Concentration' during the two hours of a chlorination cycle (or fractions thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 413. These three synonyms 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 312.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

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

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

New discharger means any building, structure, facility, or installation;

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- (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 developmental drilling rig) such as a seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore 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 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).

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 program.

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 §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. §5201 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 used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

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. 1873 (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 category which is not a "Primary Industry category."

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

- (1) listed at 40 CFR §72.65 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) 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

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

Sewage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or 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, sludge, 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.

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; finished materials such as metallic products; raw materials used in food processing; or production; hazardous substances designated under Section 101(a) of CERCLA; any chemical the facility is required to report pursuant to EPCRA section 313; fertilizers; pesticides; and waste products such as ashes, slags and sludges that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under section 311 of the Clean Water Act (see 40 CFR §110.10 and CFR §117.21) or Section 102 of CERCLA (see 40 CFR §302.4).

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

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

Stormwater 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.

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

Waters of the United States means:

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

(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 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.

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

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

2. DEFINITIONS FOR NPDES PERMIT SLODGE USE AND DISPOSAL REQUIREMENTS.

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

Aerobic digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

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

Aerobic 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.

Amifur 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 use 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 sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

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

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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 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 publically owned treatment works (PTW), as defined in 40 CFR §403.4, required to have an approved pretreatment program under 40 CFR §403.4 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (a) and any treatment works treating domestic sewage, as defined in 40 CFR §122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environmental adversely.

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

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

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

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

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

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

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Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic sewage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic sewage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial, vegetable 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 strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

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

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

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

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

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

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

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

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

Land with a low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a recreation 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  $1 \times 10^{-7}$  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 of

an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201(e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use, or disposal of sewage sludge.

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

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

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

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

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

Person who produces 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 on a surface disposal site means disposal of sewage sludge on a surface disposal site.

Pollutant is defined in sludge disposal regulations as 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 of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or

physical deformations in either organisms or offspring of the organisms.

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

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

Qualified ground-water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground-water hydrology and related fields, as 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.

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

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

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

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic sewage, slum or solids removed in primary, secondary, or advanced wastewater treatment processes, and a material derived from sewage sludge. Sewage sludge does not



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 transmission 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. THE COMMONLY USED ABBREVIATIONS ARE LISTED BELOW.

BOD Five-day biochemical oxygen demand unless otherwise specified

CBOD Carbonaceous BOD

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 load 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 installed.

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 5122.2.

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 551.100(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 CMA.

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.

COO	Chemical oxygen demand	Nitrogen	Total nitrogen
CFS	Cubic feet per second	Total N	Ammonia nitrogen as nitrogen
Chlorine		NH <sub>3</sub> -N	Nitrate nitrogen as nitrogen
Cl <sub>2</sub>	Total residual chlorine	NO <sub>3</sub> -N	Nitrite nitrogen as nitrogen
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)	NO <sub>2</sub> -N	Combined nitrate and nitrite nitrogen as nitrogen
TRC	Total residual chlorine in marine waters where halogen compounds are present FAC Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)	NO <sub>3</sub> -NO <sub>2</sub>	Total Kjeldahl nitrogen as nitrogen
Collifora		TKN	Free extractable material
Collifora, Fecal	Total fecal coliform bacteria	Oil & Grease	Polychlorinated biphenyl
Collifora, Total	Total coliform bacteria	PCB	A measure of the hydrogen ion concentration. A measure of alkalinity of a liquid or solid material.
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e.: flow, temperature, pH, etc.	pH	Surface-active agent
cu. M/day or M <sup>3</sup> /day	Cubic Meters per Day	Surfactant	Temperature in degrees Centigrade
MG	Dissolved Oxygen	Temp. °C	Temperature in degrees Fahrenheit
kg/day	Kilograms per Day	Temp. °F	Total organic carbon
lbs/day	Pounds per Day	TOC	Total phosphorus
mg/l	Milligram(s) per Liter	Total P	Total suspended solids or total nonfilterable residue
ml/l	Milliliter(s) per Liter	TSS or NFR	Turbidity measured by the Nephelometric Method (NTU)
MGD	Million Gallons per Day	Turb. or Turbidity	Micrograms per liter

"Whole Effluent Toxicity" is the total effect of an effluent, measured directly with a toxicity test.

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

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

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.

Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.



**PERMIT 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:

- Mysid Shrimp (Mysidopsis bahia or Americamysis bahia) definitive 48 hour test.
- Inland Silverside (Menidia beryllina) definitive 48 hour test.

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

**II. METHODS**

Methods to follow are those recommended by EPA in:

Weber, C.I. et al. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, Fourth Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH. August 1993, EPA/600/4-90/027F.

Any exceptions are stated herein.

**III. SAMPLE COLLECTION**

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

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 1.0 mg/L chlorine. A thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) should also be run.

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

#### IV. DILUTION WATER

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

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

Director  
Office of Ecosystem Protection  
U. S. Environmental Protection Agency-New England  
One Congress Street  
Suite 1100 - CAA  
Boston, MA 02114-2023

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

#### V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA New England 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 Mysid and Menidia toxicity test conditions and test acceptability criteria:

**EPA NEW ENGLAND RECOMMENDED EFFLUENT TOXICITY TEST CONDITIONS  
FOR THE MYSID, MYSIDOPSIS BAHIA 48 HOUR TEST<sup>1</sup>**

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1. Test type	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
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml
7. Test solution volume	200 ml
8. Age of test organisms	1-5 days
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> nauplii while holding prior to initiating the test
13. Aeration <sup>2</sup>	None
14. Dilution water	Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	$\geq$ 0.5
16. Number of dilutions <sup>3</sup>	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

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Footnotes:

1. Adapted from EPA/600/4-90/027F.
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 RECOMMENDED TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST<sup>1</sup>**

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1. Test Type	Static, non-renewal
2. Salinity	25 ppt $\pm$ 2 ppt by adding dry ocean salts
3. Temperature	20°C $\pm$ 1°C or 25°C $\pm$ 1°C
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 <sup>2</sup>	None
14. Dilution water	Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	$\geq$ 0.5
16. Number of dilutions <sup>3</sup>	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/600/4-90/027F.
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.

## 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 Quanti- fication Level (mg/L)</u>
pH	x	x	---
Salinity	x	x	PPT(o/oo)
Total Residual Oxidants <sup>1</sup>	x	x	0.05
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	0.001
Cr		x	0.005
Pb		x	0.005
Cu		x	0.0025
Zn		x	0.0025
Ni		x	0.004
Al		x	0.02

### Superscript:

#### <sup>1</sup> Total Residual Oxidants

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.

or use USEPA Manual of Methods Analysis of Water or Wastes, Method 330.5.

## 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-Kärber
- Trimmed Spearman-Kärber
- Graphical

See flow chart in Figure 6 on page 77 of EPA 600/4-90/027F for appropriate method to use on a given data set.

### No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 94 of EPA 600/4-90/027F.

## VIII. TOXICITY TEST REPORTING

The following must be reported:

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



**PERMIT ATTACHMENT B**  
**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.





PERMIT ATTACHMENT C

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 TBLs 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  
(TBLs)**

POTW Name & Address : \_\_\_\_\_

NPDES PERMIT # : \_\_\_\_\_

Date EPA approved current TBLs : \_\_\_\_\_

Date EPA approved current Sewer Use Ordinance : \_\_\_\_\_

**ITEM I.**

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

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

ITEM II.

EXISTING TBLs

POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)	POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----

ITEM III.

Note how your existing TBLs, 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 TBLs 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)		Column (2)	
	Influent Data Maximum (lb/day)	Analyses Average (lb/day)	MAHL Values (lb/day)	Criteria
Arsenic	-----	-----	-----	-----
Cadmium	-----	-----	-----	-----
Chromium	-----	-----	-----	-----
Copper	-----	-----	-----	-----
Cyanide	-----	-----	-----	-----
Lead	-----	-----	-----	-----
Mercury	-----	-----	-----	-----
Nickel	-----	-----	-----	-----
Silver	-----	-----	-----	-----
Zinc	-----	-----	-----	-----
Other (List)	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----

**ITEM VI.**

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

dilution ratio used in your new/reissued NPDES permit.

Pollutant	Column (1)		Columns	
	Effluent Data Maximum (ug/l)	Analyses Average (ug/l)	(2A) Water Quality Criteria (Gold Book) From TBLs (ug/l)	(2B) Criteria Today (ug/l)
Arsenic	-----	-----	-----	-----
*Cadmium	-----	-----	-----	-----
*Chromium	-----	-----	-----	-----
*Copper	-----	-----	-----	-----
Cyanide	-----	-----	-----	-----
*Lead	-----	-----	-----	-----
Mercury	-----	-----	-----	-----
*Nickel	-----	-----	-----	-----
Silver	-----	-----	-----	-----
*Zinc	-----	-----	-----	-----
Other (List)	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
*Hardness Dependent (mg/l - CaCO3)	-----	-----	-----	-----

ITEM VII.

In Column (1), identify all pollutants limited in your new/reissued NPDES permit. In Column (2), identify all pollutants that were limited in your old/expired NPDES permit.

Pollutants	Column (1)	Pollutants	Column (2)
	NEW PERMIT Limitations (ug/l)		OLD PERMIT Limitations (ug/l)
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----

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**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 TBLs 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 Average (mg/kg)	(2A) Biosolids Criteria From TBLs (mg/kg)	(2B) Criteria New (mg/kg)
Arsenic	-----	-----	-----
Cadmium	-----	-----	-----
Chromium	-----	-----	-----
Copper	-----	-----	-----
Cyanide	-----	-----	-----
Lead	-----	-----	-----
Mercury	-----	-----	-----
Nickel	-----	-----	-----
Silver	-----	-----	-----
Zinc	-----	-----	-----
Molybdenum	-----	-----	-----
Selenium	-----	-----	-----
Other (List)	-----	-----	-----