

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),

**Charles River Pollution Control District**

is authorized to discharge from the facility located at

**66 Village Street  
Medway, Massachusetts 02003**

to receiving water named

**Charles River (MA 72-05)**

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

The Towns of Franklin, Medway, Millis, and Bellingham are co-permittees for specific activities required in Sections I.B - Unauthorized Discharges and I.C - Operation and Maintenance of the Sewer System, which include conditions regarding the operation and maintenance of the collection systems. The responsible municipal Departments are:

**Town of Franklin  
Town Administration  
355 East Central Street  
Franklin, MA 02038**

**Town of Medway  
Department of Public Services  
155 Village Street  
Medway, MA 02053**

**Town of Millis  
Department of Public Works  
Veterans Memorial Building  
900 Main Street  
Millis, MA 02054**

**Town of Bellingham  
Department of Public Works  
26 Blackstone Street  
Bellingham, MA 02019**

This permit shall become effective (See below)\*\*

This permit supersedes the permit issued on September 29, 2000 and modified on April 22, 2002.

This permit consists of 15 pages in Part I including effluent limitations, monitoring requirements, Attachment A, Freshwater Chronic Toxicity Tests Procedure and Protocol; Attachment B, EPA New England Reassessment of Technically Based Industrial Discharge Limits; Attachment C, NPDES Permit Requirement for Industrial Pretreatment Annual Report; Attachment D, EPA Region 1 NPDES Permit Sludge Compliance Guidance; and 25 pages in NPDES Part II Standard Conditions.

Signed this 23rd day of July, 2014

/S/SIGNATURE ON FILE

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Ken Moraff, Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

/S/SIGNATURE ON FILE

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

\*\* This permit will become effective on the date of signature if no comments are received during public notice. If comments are received during public notice, this permit will become effective 60 days after signature.

**PART I**

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

<u>EFFLUENT CHARACTERISTIC</u>			<u>EFFLUENT LIMITS</u>		<u>MONITORING REQUIREMENTS</u>		
<b>PARAMETER</b>	<b>AVERAGE MONTHLY</b>	<b>AVERAGE WEEKLY</b>	<b>AVERAGE MONTHLY</b>	<b>AVERAGE WEEKLY</b>	<b>MAXIMUM DAILY</b>	<b>MEASUREMENT FREQUENCY</b>	<b>SAMPLE<sup>3</sup> TYPE</b>
FLOW	*****	*****	5.7 MGD <sup>2</sup>	*****	Report MGD	Continuous	Recorder
FLOW (July 1 - September 30)	*****	*****	4.5 MGD	*****	Report MGD	Continuous	Recorder
CBOD <sub>5</sub> (November 1 - April 30)	570 lbs/day	950 lbs/day	15 mg/l	25 mg/l	Report mg/l <sup>1</sup>	3/week <sup>4</sup>	24-Hour Composite <sup>5</sup>
CBOD <sub>5</sub> (May 1- October 31)	265 lbs/day	380 lbs/day	7 mg/l	10 mg/l	Report mg/l <sup>1</sup>	3/week <sup>4</sup>	24-Hour Composite <sup>5</sup>
TSS (November 1 - April 30)	570 lbs/day	950 lbs/day	15 mg/l	25 mg/l	Report mg/l <sup>1</sup>	3/week <sup>4</sup>	24-Hour Composite <sup>5</sup>
TSS (May 1 - October 31)	265 lbs/day	380 lbs/day	7 mg/l	10 mg/l	Report mg/l <sup>1</sup>	3/week <sup>4</sup>	24-Hour Composite <sup>5</sup>
pH RANGE <sup>1</sup>	6.5 - 8.3 SU See Permit Page 6, Paragraph I.A.1.b.					1/day	Grab
TOTAL CHLORINE RESIDUAL <sup>1,6,7</sup> (March 1 - November 30)	*****	*****	17 ug/l	*****	30 ug/l	2/day	Grab
FECAL COLIFORM <sup>1,6</sup> (March 1 – November 30)	*****	*****	200 cfu/100 ml	*****	400 cfu/100 ml	3/week	Grab
<u>ESCHERICHIA COLI BACTERIA</u> <sup>1,6</sup> (March 1 – November 30)	*****	*****	126 cfu/100 ml	*****	409 cfu/100 ml	3/week	Grab
DISSOLVED OXYGEN (April 1 - October 31)	Not less than 6 mg/l					1/day	Grab or Meter
WHOLE EFFLUENT TOXICITY SEE FOOTNOTES 8, 9, 10, and 11	Acute LC <sub>50</sub> ≥ 100% Chronic C-NOEC > 63%					4/year	24-Hour Composite <sup>5</sup>

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<u>EFFLUENT CHARACTERISTIC</u>			<u>EFFLUENT LIMITS</u>		<u>MONITORING REQUIREMENTS</u>		
<b>PARAMETER</b>	<b>AVERAGE MONTHLY</b>	<b>AVERAGE WEEKLY</b>	<b>AVERAGE MONTHLY</b>	<b>AVERAGE WEEKLY</b>	<b>MAXIMUM DAILY</b>	<b>MEASUREMENT FREQUENCY</b>	<b>SAMPLE<sup>3</sup> TYPE</b>
TOTAL AMMONIA-NITROGEN, as N (November 1 - March 31)	Report lbs/day	Report lbs/day	Report mg/l	*****	Report mg/l	1/month	24-Hour Composite <sup>5</sup>
TOTAL AMMONIA-NITROGEN, as N (April 1 - April 30)	380 lbs/day	570 lbs/day	10 mg/l	15 mg/l	20 mg/l	1/month	24-Hour Composite <sup>5</sup>
TOTAL AMMONIA-NITROGEN, as N (May 1 - May 31)	190 lbs/day	285 lbs/day	5 mg/l	7.5 mg/l	10 mg/l	3/week	24-Hour Composite <sup>5</sup>
TOTAL AMMONIA-NITROGEN, as N (June 1 - October 31)	38 lbs/day	57 lbs/day	1.0 mg/l	1.5 mg/l	2.0 mg/l	3/week	24-Hour Composite <sup>5</sup>
TOTAL PHOSPHORUS <sup>12</sup> (November 1 - March 31)	*****	*****	0.30 mg/l	*****	*****	1/month	24-Hour Composite <sup>5</sup>
TOTAL PHOSPHORUS <sup>12</sup> (April 1 - October 31)	*****	*****	0.10 mg/l	*****	*****	3/week	24-Hour Composite <sup>5</sup>
TOTAL COPPER	*****	*****	13 ug/l	*****	23 ug/l	1/month	24-Hour Composite <sup>5</sup>

Footnotes:

1. Required for State Certification.
2. For flow, report annual average, monthly average, maximum and minimum daily rates and total flow for each operating date. This is an annual average flow limit, which shall be reported as a rolling average. The annual average shall be calculated as the arithmetic mean of the monthly average flow from the reporting month and the monthly average flow from the previous 11 months.
3. All sampling shall be representative of the influent and of the effluent discharged through outfall 001, except whole effluent toxicity samples, shall be collected at the bottom of the cascade steps. Whole effluent toxicity samples shall be collected after filtration and prior to chlorination. A routine sampling program shall be developed in which samples are taken at the same location, same time, and same days of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report submitted to EPA. 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 twenty-four hour composites unless specified as grab or meter sample in 40 CFR §136.
4. Sampling required for the influent and effluent.
5. A twenty-four hour composite sample will consist of at least twenty four (24) grab samples taken during a consecutive twenty-four hour period (e.g. 0700 Monday to 0700 Tuesday).
6. The average monthly limits for fecal coliform bacteria and *E. coli* are expressed as geometric means. Samples for fecal coliform bacteria and *E. coli* shall be taken at the same time as the total residual chlorine sample.

The bacteria limits and monitoring requirements are in effect from March 1 to November 30 after the effective date of this permit. The seasonal monitoring and reporting requirements for *E. coli* are in effect on the effective date of this permit; the monitoring frequency for *E. coli* during the first year is 1/month. The following season beginning March 1, the fecal coliform limit and monitoring requirement will end and the *E. coli* limits will be in effect and the monitoring frequency for *E. coli* will be 3/week.

Fecal coliform bacteria and total residual chlorine monitoring will be conducted during the period March 1 to November 30 to reflect the seasonal chlorination period. Fecal coliform bacteria discharges shall not exceed a monthly geometric mean of 200 colony forming units (cfu) per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum. *E. coli* discharges shall not exceed a monthly geometric mean of 126 colony forming units (cfu) per 100 ml, nor shall they exceed 409 cfu per 100 ml as a daily maximum. This monitoring shall be conducted concurrently with the TRC sampling described below.

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, 21st Edition, 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. The permittee shall conduct chronic (and modified acute) toxicity tests four times per year. The chronic test may be used to calculate the acute LC50 at the 48 hour exposure interval. The permittee shall test the fathead minnows, *Pimephales promelas* and the daphnid, *Ceriodaphnia dubia*. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A, Freshwater Chronic Toxicity Test Procedure and Protocol** of this permit. If the results of any acute or chronic tests fail to comply with the LC50 and Chronic NOEC limits, the permittee must perform an additional tests on an effluent sample obtained within fourteen days of the date on which the failed test sample was collected. Toxicity test samples shall be collected and the results submitted according to the following schedule:

Test Date months	Submit Results By:	Test Species	Acute Limit LC50	Chronic Limit C-NOEC
January	February 28	<i>Ceriodaphnia dubia</i> (daphnid)	≥100%	≥ 63%
April	May 31			
July	August 31	<i>Pimephales promelas</i> (fathead minnows)		
October	November 30			
		See Attachment A		

9. The LC50 is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
10. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life-cycle or partial life-cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The "63% or greater" limit is defined as a sample which is composed of 63% (or greater) effluent, the remainder being dilution water. This is a maximum daily limit derived as a percentage of the inverse of the dilution factor of 1.59.
11. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A, Freshwater Chronic Toxicity Test Procedure and Protocol, Section IV. Dilution Water** in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which maybe used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water.

This guidance is found in Attachment G of NPDES Permit Program Instructions for the Discharge Monitoring Forms (DMR) which is sent to all permittees with their annual set of DMRs and may also be found on the EPA Region 1 web site at <http://www.epa.gov/region1/enforcementandassistance/dmr.html>. If this guidance is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A, Freshwater Chronic Toxicity Test Procedure and Protocol**.

When using alternate dilution water, the permittee shall continue to submit the results of chemistry tests for the all controls i.e., site water controls and lab water controls.

Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A, Freshwater Chronic Toxicity Test Procedure and Protocol**.

12. See Section I.H. for compliance schedule.

**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 S.U. nor greater than 8.3 S.U. at any time, unless these values are exceeded as a result of an approved treatment process.
- 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. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
- g. Sample results using EPA approved methods for any parameter above its required frequency must also be reported.
- h. If the average annual flow in any calendar year exceeds 80 percent of the facility's design flow, the permittee shall submit a report to MassDEP by March 31 of the following calendar year describing its plans for further flow increases and describing how it will maintain compliance with the flow limit and all other effluent limitations and conditions.

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

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

### **B. UNAUTHORIZED DISCHARGES**

The permit only authorizes discharges 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 (24-Hour Reporting). Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers).

The reporting form and instruction for its completion may be found on-line at <http://www.mass.gov/dep/water/approvals/surffms.htm#sso>.

### **C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM**

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of NPDES Part II, Standard Conditions and the following terms and conditions. The permittee and each co-permittee are required to complete the following activities for the collection system which it owns:

#### 1. Maintenance Staff

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

#### 2. Preventive Maintenance Program

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

3. Infiltration/Inflow

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

4. Collection System Mapping

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

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

5. Collection System Operation and Maintenance Plan

The permittee and each co-permittee shall develop and implement a Collection System Operation and Maintenance Plan for the collection system it owns.

- a. Within six (6) months of the effective date of the permit, the permittee and each co-permittee shall submit to EPA and MassDEP
  - (1) A description of the collection system management goals, staffing, information management, and legal authorities;
  - (2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
  - (3) A schedule for the development and implementation of the full Collection System O & M Plan including the elements in paragraphs b.1. through b.8. below.
- b. The full Collection System O & M Plan shall be submitted to EPA and MassDEP within twenty four (24) months from the effective date of this permit. The full Collection System O & M plan shall be implemented within the same time frame. The Plan shall include:

- (1) The required submittal from paragraph 5.a. above, updated to reflect current information;
- (2) A preventive maintenance and monitoring program for the collection system;
- (3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
- (4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
- (5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
- (6) A description of the permittee's and co-permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts; and
- (7) An educational public outreach program for all aspects of I/I control, particularly private inflow.
- (8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

6. Annual Reporting Requirement

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

- a. A description of the staffing levels maintained during the year;
- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
- d. A map with areas identified for investigation/action in the coming year;
- e. If treatment plant flow has reached 80% of the design flow [4.56 MGD, October 1 through June 30 and 3.6 MGD, July 1 through September 30] or there have been capacity related overflows, submit a calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year; and
- f. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit.

7. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee and each co-permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works<sup>1</sup> it owns and operates.

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<sup>1</sup> As defined at 40 CFR §122.2, which references the definition at 40 CFR §403.3

#### D. CHLORINATION SYSTEM

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

#### E. LIMITATIONS FOR INDUSTRIAL USERS

1. Pollutants introduced into POTWs 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 facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice to respond. Within 120 days of the effective date of this permit, the permittee shall prepare and submit a written technical report to EPA analyzing local limits. As part of the 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, activated sludge inhibition, worker health and safety, and collection system concerns. In preparing this evaluation, the permittee shall complete and submit the attached form of **Attachment B, EPA New England Reassessment of Technically Based Industrial Discharge Limits** 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. Upon completion of its review, EPA will notify the POTW if the evaluation reveals that the local limits should be revised. Should the local limits need to be revised, 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 analysis in accordance with EPA's Local Limit Development Guidance (EPA 833-R-04-002A, July 2004).

#### F. INDUSTRIAL PRETREATMENT PROGRAM

1. The permittee shall implement the industrial pretreatment program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR 403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
  - a. Carry out the 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 non-compliance by any industrial user with any pretreatment standard and/or requirement.

- d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
2. The permittee shall provide the EPA and MassDEP with an annual report in accordance with 40 CFR 403.12(i), describing the permittee's pretreatment program activities for the period from July 1 to June 30. The annual report shall be consistent with the format described in **Attachment C, NPDES Permit Requirement for Industrial Pretreatment Annual Report** of this permit and shall be submitted no later than September 1 of each year.
3. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR 403.18(c).
4. 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.
5. The permittee must modify its pretreatment program to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes, if applicable, to the permittee's pretreatment program deemed necessary to assure conformity with current federal regulations. At a minimum, the permittee must address in its written submission the following areas: (1) enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.2.
6. On October 14, 2005 EPA published in the Federal Register final changes to the General Pretreatment Regulations. The final "Pretreatment Streamlining Rule" is designed to reduce the burden to industrial users and provide regulatory flexibility in technical and administrative requirements of industrial users and POTWs. Within 90 days of the effective date of this permit, the permittee must submit to EPA all required modifications of the Streamlining Rule in order to be consistent with the provisions of the newly promulgated Rule. To the extent that the POTW legal authority is not consistent with the required changes, they must be revised and submitted to EPA for review.

#### G. 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 (i.e., lagoons-reed beds), or are otherwise excluded under 40 CFR Part 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.

#### H. COMPLIANCE SCHEDULE

The permittee shall achieve compliance with the total phosphorus limits no later than 2.5 years from the effective date of the permit in accordance with the following schedule:

- Within 30 months of the effective date of the permit complete construction of the necessary upgrades.

The permittee shall notify EPA and MassDEP of the completion of this milestone, and in addition shall file a progress report each year, on the effective date of the permit (on page 1 of the Final Permit), detailing the status of the upgrades including a projected date for project completion.

For 30 months after the effective date of the permit, the monthly average phosphorus limit for the months of June through October is 0.2 mg/l and the monthly average limit for the months of November through March is 1.0 mg/l.

**I. MONITORING AND REPORTING**

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

- a. Submittal of Reports Using NetDMR

NetDMR is accessed from: <http://www.epa.gov/netdmr>. The permittee shall submit DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate on a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports (“opt out request”).

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

However, permittees shall continue to send hard MassDEP until further notice from MassDEP.

- b. Submittal of NetDMR Opt-Out Requests

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

**Attn: NetDMR Coordinator**  
**U.S. Environmental Protection Agency, Water Technical Unit**  
**5 Post Office Square, Suite 100 (OES04-1)**  
**Boston, MA 02109-3912**

And

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

- c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15<sup>th</sup> day of the month following the completed reporting period. All reports required under this permit, including MassDEP

Monthly Operation and Maintenance Reports, shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

**U.S. Environmental Protection Agency  
Water Technical Unit  
5 Post Office Square, Suite 100 (OES04-1)  
Boston, MA 02109-3912**

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

**Massachusetts Department of Environmental Protection  
Central Regional Office  
Bureau of Resource Protection  
627 Main Street  
Worcester, Massachusetts 01608**

Industrial pretreatment reports required in Parts I.E.2 and I.F.2 shall be submitted to the agencies listed above and to:

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

And

**Massachusetts Department of Environmental Protection  
Bureau of Waste Prevention  
Industrial Wastewater Section  
627 Main Street, 1st Floor  
Worcester, Massachusetts 01608**

#### **J. STATE PERMIT CONDITIONS**

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 CMR 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.
2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 CFR 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.
3. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency

**2014 Reissuance**

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 a 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.

# FRESHWATER CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL USEPA Region 1

## I. GENERAL REQUIREMENTS

The permittee shall be responsible for the conduct of acceptable chronic (and modified acute) toxicity tests using three fresh samples collected during each test period. The following tests shall be performed as prescribed in Part 1 of the NPDES discharge permit in accordance with the appropriate test protocols described below. (Note: the permittee and testing laboratory should review the applicable permit to determine whether testing of one or both species is required).

- **Daphnid (Ceriodaphnia dubia) Survival and Reproduction Test.**
- **Fathead Minnow (Pimephales promelas) Larval Growth and Survival Test.**

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

## II. METHODS

Methods to follow are those recommended by EPA in: Short Term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002. United States Environmental Protection Agency. Office of Water, Washington, D.C., EPA 821-R-02-013. The methods are available on-line at <http://www.epa.gov/waterscience/WET/> . Exceptions and clarification are stated herein.

## III. SAMPLE COLLECTION AND USE

A total of three fresh samples of effluent and receiving water are required for initiation and subsequent renewals of a freshwater, chronic, toxicity test. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. Fresh samples are recommended for use on test days 1, 3, and 5. However, provided a total of three samples are used for testing over the test period, an alternate sampling schedule is acceptable. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any hold time extension. All test samples collected may be used for 24, 48 and 72 hour renewals after initial use. All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol.

Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to sample use for toxicity testing.

If any of the renewal samples are of sufficient potency to cause lethality to 50 percent or more of the test organisms in any of the test treatments for either species or, if the test fails to meet its permit limits, then chemical analysis for total metals (originally required for the initial sample only in Section VI) will be required on the renewal sample(s) as well.

#### IV. DILUTION WATER

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

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

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

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

If the receiving water diluent is found to be, or suspected to be toxic or unreliable an ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity requires ADW use in future WET testing.

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

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

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

and

Manager  
Water Technical Unit (SEW)  
U.S. Environmental Protection Agency  
One Congress Street, Suite 1100  
Boston, MA 02114-2023

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

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

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

Method specific test conditions and TAC are to be followed and adhered to as specified in the method guidance document, EPA 821-R-02-013. If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

### **V.1. Use of Reference Toxicity Testing**

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

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

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

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

#### V.1.a. Use of Concurrent Reference Toxicity Testing

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

V.2. For the *C. dubia* test, the determination of TAC and formal statistical analyses must be performed using only the first three broods produced.

V.3. Test treatments must include 5 effluent concentrations and a dilution water control. An additional test treatment, at the permitted effluent concentration (% effluent), is required if it is not included in the dilution series.

## VI. CHEMICAL ANALYSIS

As part of each toxicity test's daily renewal procedure, pH, specific conductance, dissolved oxygen (DO) and temperature must be measured at the beginning and end of each 24-hour period in each test treatment and the control(s).

The additional analysis that must be performed under this protocol is as specified and noted in the table below.

<u>Parameter</u>	Effluent	Receiving Water	ML (mg/l)
Hardness <sup>1, 4</sup>	x	x	0.5
Total Residual Chlorine (TRC) <sup>2, 3, 4</sup>	x		0.02
Alkalinity <sup>4</sup>	x	x	2.0
pH <sup>4</sup>	x	x	--
Specific Conductance <sup>4</sup>	x	x	--
Total Solids <sup>6</sup>	x		--
Total Dissolved Solids <sup>6</sup>	x		--
Ammonia <sup>4</sup>	x	x	0.1
Total Organic Carbon <sup>6</sup>	x	x	0.5
Total Metals <sup>5</sup>			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02

Other as permit requires

#### Notes:

1. Hardness may be determined by:

- APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
    - Method 2340B (hardness by calculation)
    - Method 2340C (titration)
2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
    - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
      - Method 4500-CL E Low Level Amperometric Titration
      - Method 4500-CL G DPD Colorimetric Method
    - USEPA 1983. Manual of Methods Analysis of Water and Wastes
      - Method 330.5
  3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing
  4. Analysis is to be performed on samples and/or receiving water, as designated in the table above, from all three sampling events.
  5. Analysis is to be performed on the initial sample(s) only unless the situation arises as stated in Section III, paragraph 4
  6. Analysis to be performed on initial samples only

## **VII. TOXICITY TEST DATA ANALYSIS AND REVIEW**

### **A. Test Review**

#### **1. Concentration / Response Relationship**

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013.

Guidance for this review can be found at

<http://www.epa.gov/waterscience/methods/wet/pdf/wetguide.pdf> . In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

#### **2. Test Variability (Test Sensitivity)**

This review step is separate from the determination of whether a test meets or does not meet TAC. Within test variability is to be examined for the purpose of evaluating test sensitivity. This evaluation is to be performed for the sub-lethal hypothesis testing endpoints reproduction and growth as required by the permit. The test report is to include documentation of this evaluation to support that the endpoint values reported resulted from a toxicity test of adequate sensitivity. This evaluation must be performed as required in Section 10.2.8 of EPA-821-R-02-013.

To determine the adequacy of test sensitivity, USEPA requires the calculation of test percent minimum significant difference (PMSD) values. In cases where NOEC determinations are made based on a non-parametric technique, calculation of a test PMSD value, for the sole purpose of assessing test sensitivity, shall be calculated using a comparable parametric statistical analysis technique. The calculated test PMSD is then compared to the upper and lower PMSD bounds shown for freshwater tests in Section 10.2.8.3, p. 52, Table 6 of EPA-821-R-02-013. The comparison will yield one of the following determinations.

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.
- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-00-003, June 2002, Section 6.4.2. The following link: [Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program](#) can be used to locate the USEPA website containing this document. If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater than the PMSD lower bound, then the treatment is considered statistically significant.
- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

## B. Statistical Analysis

### 1. General - Recommended Statistical Analysis Method

Refer to general data analysis flowchart, EPA 821-R-02-013, page 43

For discussion on Hypothesis Testing, refer to EPA 821-R-02-013, Section 9.6

For discussion on Point Estimation Techniques, refer to EPA 821-R-02-013, Section 9.7

### 2. *Pimephales promelas*

Refer to survival hypothesis testing analysis flowchart, EPA 821-R-02-013, page 79

Refer to survival point estimate techniques flowchart, EPA 821-R-02-013, page 80

Refer to growth data statistical analysis flowchart, EPA 821-R-02-013, page 92

### 3. *Ceriodaphnia dubia*

Refer to survival data testing flowchart, EPA 821-R-02-013, page 168

Refer to reproduction data testing flowchart, EPA 821-R-02-013, page 173

## VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Test summary sheets (2007 DMR Attachment F) which includes:
  - Facility name
  - NPDES permit number
  - Outfall number
  - Sample type
  - Sampling method
  - Effluent TRC concentration
  - Dilution water used
  - Receiving water name and sampling location
  - Test type and species
  - Test start date
  - Effluent concentrations tested (%) and permit limit concentration
  - Applicable reference toxicity test date and whether acceptable or not
  - Age, age range and source of test organisms used for testing
  - Results of TAC review for all applicable controls
  - Test sensitivity evaluation results (test PMSD for growth and reproduction)
  - Permit limit and toxicity test results
  - Summary of test sensitivity and concentration response evaluation

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s)
- Reference toxicity test control charts
- All sample chemical/physical data generated, including minimum limits (MLs) and analytical methods used
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis
- A discussion of any deviations from test conditions
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint

**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 EPA's Local Limit Guidance Document (July 2004).

## Item VI.

- \* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in micrograms per liter) present your POTW's effluent. Current sampling data is defined as data obtained during the last 24 month period.

**(Item VI. continued)**

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 planing 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.



**ITEM II.**

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

**ITEM III.**

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

**ITEM IV.**

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

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

If  yes,  no, explain.

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**ITEM V.**

Using current POTW influent sampling data fill in Column (1). In Column (2), list your Maximum Allowable Headwork Loading (MAHL) values used to derive your TBLLs listed in Item II. In addition, please note the Environmental Criteria for which each MAHL value was established, i.e. water quality, sludge, NPDES etc.

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

**ITEM VI.**

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

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

\*Hardness Dependent (mg/l - CaCO3)



**ITEM VIII.**

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

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

NPDES PERMIT REQUIREMENT  
FOR  
INDUSTRIAL PRETREATMENT ANNUAL REPORT

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

1. An updated list of all industrial users by category, as set forth in 40 C.F.R. 403.8(f)(2)(i), indicating compliance or noncompliance with the following:
  - baseline monitoring reporting requirements for newly promulgated industries
  - compliance status reporting requirements for newly promulgated industries
  - periodic (semi-annual) monitoring reporting requirements,
  - categorical standards, and
  - local limits;
  
2. A summary of compliance and enforcement activities during the preceding year, including the number of:
  - significant industrial users inspected by POTW (include inspection dates for each industrial user),
  - significant industrial users sampled by POTW (include sampling dates for each industrial user),
  - compliance schedules issued (include list of subject users),
  - written notices of violations issued (include list of subject users),
  - administrative orders issued (include list of subject users),
  - criminal or civil suits filed (include list of subject users) and,
  - penalties obtained (include list of subject users and penalty amounts);
  
3. A list of significantly violating industries required to be published in a local newspaper in accordance with 40 C.F.R. 403.8(f)(2)(vii);
  
4. A narrative description of program effectiveness including present and proposed changes to the program, such as funding, staffing, ordinances, regulations, rules and/or statutory authority;
  
5. A summary of all pollutant analytical results for influent, effluent, sludge and any toxicity or bioassay data from the wastewater treatment facility. The summary shall include a comparison of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraph below or any similar sampling program described in this Permit.

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

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

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

6. A detailed description of all interference and pass-through that occurred during the past year;
7. A thorough description of all investigations into interference and pass-through during the past year;
8. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies;
9. A description of actions being taken to reduce the incidence of significant violations by significant industrial users; and,
10. The date of the latest adoption of local limits and an indication as to whether or not the permittee is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.

# **EPA REGION I**

## **NPDES PERMIT SLUDGE COMPLIANCE GUIDANCE**

**04 NOVEMBER 1999**

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## **1. LAND APPLICATION**

This section applies to sewage sludge from the permittee's facility which is applied to the land for the purpose of enriching the soil. The permittee should answer the following questions. The answers to these questions need to be evaluated to determine which permitting scenario for sewage sludge land application applies. After the permitting scenario is determined, the permittee must comply with the directives contained in the chosen scenario.

### **1.1 Question Algorithm**

The permittee should review and answer the following questions. The information gathered from answering these questions will aid the permittee to determine the appropriate land application scenario which applies to the sludge generated at the permittee's waste water treatment facility. The scenario selected will detail which specific Use or Disposal of Sewage Sludge, Part 503, regulations must be complied with for the land application method used by the permittee.

1. What type of land is the sewage sludge being applied to?

If the sewage sludge/material is to be sold or given away, or applied to a lawn or home garden, the sewage sludge MUST meet Class A pathogen reduction requirements.

2. Is all the sludge generated at the facility used in the same manner?

If all the sludge is not used the same way, the permittee needs to determine what amounts are used in what manner. Different scenarios may apply to the different portions.

3. Is the sewage sludge in bulk or is it a bagged material?

Scenario No.1 and No.6 can be applied to bagged materials. All other scenarios apply to bulk sewage sludge only. Bulk material is an amount of sewage sludge greater than one metric ton (2200 lbs).

4. What is the metals content in the sewage sludge for the following metals: arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc?

If any of the concentrations in Table 1 of 40 CFR §503.13 (b) (1) are exceeded on a dry weight basis, the sewage sludge cannot be land applied. Table 1 is summarized below:

**§503.13 Table 1**

**Maximum Pollutant Concentrations**

Arsenic	75 mg/kg
Cadmium	85 mg/kg
Copper	4300 mg/kg
Lead	840 mg/kg
Mercury	57 mg/kg
Molybdenum	75 mg/kg
Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	7500 mg/kg

5. Does the sludge qualify for “exceptional quality” criteria in accordance with Table 3, 40 CFR §503.13(b)(3) on a dry weight basis? Table 3 is summarized:

**§503.13 Table 3**

**Exceptional Quality Pollutant Concentrations**

Arsenic	41 mg/kg
Cadmium	39 mg/kg
Copper	1500 mg/kg
Lead	300 mg/kg
Mercury	17 mg/kg
Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	2800 mg/kg

In addition, Class A pathogen reduction (see Section 4), and achievement of one of the vector attraction reduction alternatives 1 through 8 (see Section 5) must be attained.

**NOTHING ELSE QUALIFIES AS EXCEPTIONAL QUALITY**

6. What is the level of pathogen reduction achieved, Class A or Class B?

Refer to Section 4, Pathogen Reduction, to select the appropriate method that is used to reduce the pathogens in the sewage sludge produced at the facility.

7. What is the method for vector attraction reduction?

Refer to Section 5, Vector Attraction Reduction, to select the appropriate method that is used to reduce the pathogens in the sewage sludge produced at the facility.

8. What is the amount of sewage sludge used in dry metric tons/365 day period?

This determines the frequency of monitoring (see Section 6) for the pollutants, pathogens and vectors. Use the table below to make the determination:

**Sampling Frequency Table**

<b>SEWAGE SLUDGE PRODUCED</b> (metric tons per 365 day period)	<b>SAMPLING FREQUENCY</b>
$0 < \text{Sludge (tons)} < 290$	Once Per year
$290 \leq \text{Sludge (tons)} < 1500$	Once Per Quarter (four times per year)
$1500 \leq \text{Sludge (tons)} < 15000$	Once Per 60 days (six times per year)
$\text{Sludge (tons)} \leq 15000$	Once Per Month (12 times per year)

## 1.2 Scenario Determination

After the information is gathered and evaluated from the questions in the preceding section, the permittee can select the appropriate land application scenario from the table on page 1.4.

**Land Application Scenario Selection Table**

<b>SCENARIO</b>	<b>LAND TYPE</b>	<b>BULK/BAGGED</b>	<b>POLLUTANT LIMITS<sup>2</sup></b>	<b>PATHOGENS<sup>3</sup></b>	<b>VECTORS<sup>3</sup></b>
No .1	ANY TYPE	BOTH (EQ)	TABLE 3	CLASS A	1-8 ONLY
No .2	SEE BELOW <sup>1</sup>	BULK	TABLE 3	CLASS A	9 OR 10
No .3	SEE BELOW <sup>1</sup>	BULK	TABLE 3	CLASS B	1-10
No .4	SEE BELOW <sup>1</sup>	BULK	TABLE 2	CLASS A	1-10
No .5	SEE BELOW <sup>1</sup>	BULK	TABLE 2	CLASS B	1-10
No .6	ANY TYPE	BAGGED	TABLE 4	CLASS A	1-8 ONLY

1. Land types: Agricultural land, forest, reclamation site or public contact site
2. Refer to 40 CFR §503.13 Table 2, Table 3 and Table 4
3. The Pathogen Reduction Section (Section 4) and Vector Attraction Reduction Section (Section 5) are located after the Scenario section.

**1.3. Scenarios**

This section contains the sewage sludge land application scenarios. One of these scenarios has been selected by the permittee, based on reading and answering the questions in Section 1.2, to regulate their treatment facility’s sewage sludge land application.

**1.3.1. Scenario No. 1**

This applies to bulk or bagged sewage sludge and materials derived from sewage sludge meeting the pollutant concentrations at §503.13(b)(3); one of the Class A pathogen reduction alternatives at §503.32(a); one of the vector attraction reduction requirements at §503.33(b)(1) through (b)(8). Materials meeting these characteristics are considered “Exceptional Quality” materials and are exempt from the general requirements at §503.12 and the management practices at §503.14. Sludges of this quality may be applied to any type of land.

## SLUDGE CONDITIONS

### 1. Pollutant Limitations

- a. The maximum concentrations of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic	75 mg/kg
Cadmium	85 mg/kg
Copper	4300 mg/kg
Lead	840 mg/kg
Mercury	57 mg/kg
Molybdenum	75 mg/kg
Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 1a. are exceeded.
- c. The monthly average concentration of metals in the sewage sludge shall not exceed the following (dry weight basis):

Arsenic	41 mg/kg
Cadmium	39 mg/kg
Copper	1500 mg/kg
Lead	300 mg/kg
Mercury	17 mg/kg
Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	2800 mg/kg

2. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40 CFR §503.32.
3. The permittee shall meet one of the vector attraction reduction requirements specified in 40CFR §503.33. The permittee may only utilize alternatives 1 through 8. If the permittee meets one of the vector attraction reduction alternatives 1 through 5, the Class A pathogen requirements must be met either prior to or at the same time as the vector attraction reduction requirement.
4. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 1a, the pathogen density and the vector attraction reduction requirements at the frequency specified in sludge condition 6 of the permit.
5. The permittee shall develop and retain the following information for five years:
  - a. The concentration of each pollutant listed in Paragraph 1a..
  - b. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in §503.32(a) and the vector attraction reduction requirements in [insert one of the vector attraction reduction requirements in §503.33(b)(1) through (b)(8)] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”
  - c. A description of how the Class A pathogen requirements are met.
  - d. A description of how the vector attraction reduction requirements are met.
6. The permittee shall report the information in Paragraphs 5a, b, c, and d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.
7. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in 40 CFR §503.8.

### **1.3.2. Scenario No.2**

This scenario applies to bulk sewage sludge or materials derived from bulk sewage sludge meeting the following criteria: the pollutant concentrations in §503.13(b)(3); Class A pathogen requirements in §503.32(a); and vector attraction §503.33(b)(9) or (b)(10). Sludge of this quality

may be applied to agricultural land, forest land, public contact site or reclamation site. This scenario has specific requirements for the preparer and the applier.

## **SLUDGE CONDITIONS**

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
  - a. Bulk sewage sludge shall not be applied the land except in accordance with 40 CFR Part 50J, Subpart B.
  - b. The permittee shall provide the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
  - c. The person who applies the bulk sewage sludge shall obtain notice and necessary information from the permittee to comply with the requirements of 40 CFR Part 503, Subpart B.
  - d. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage sludge notice and necessary information to comply with 40 CFR part 503, Subpart B.
  - e. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge the permittee shall provide the preparer notice and necessary information to comply with 40 CFR Part 503, Subpart B.
  - f. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with 40 CFR Part 503, Subpart B.
  - g. When bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:
    - i. The location of each site by either street address or latitude and longitude.
    - ii. The approximate period of time the bulk sewage sludge will be applied to each site.

- iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
- iv. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if applicable) for the person who applies the bulk sewage sludge.

2. Pollutant Limitations

- a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic	75 mg/kg
Cadmium	85 mg/kg
Copper	4300 mg/kg
Lead	840 mg/kg
Mercury	57 mg/kg
Molybdenum	75 mg/kg
Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraphs 2a are exceeded.
- c. The monthly average concentration of metals in the sewage sludge shall not exceed the following (dry weight basis):

Arsenic	41 mg/kg
Cadmium	39 mg/kg
Copper	1500 mg/kg
Lead	300 mg/kg
Mercury	17 mg/kg

Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	2800 mg/kg

3. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40 CFR §503.32
4. The person who applies the bulk sewage sludge shall meet either vector attraction reduction requirement 9 or 10 as specified in 40 CFR §503.33.
5. The bulk sewage sludge shall be injected below the surface of the land, or incorporated into the soil within 8 hours after discharge from the pathogen treatment process.
6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a and the pathogen density requirements at the frequency specified in sludge condition 6 of the permit.
7. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
  - a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated habitat.
  - b. The bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as defined in 40 CFR §122.2, except as provided in a permit issued pursuant to Section 402 or 404 of the Clean Water Act.
  - c. Bulk sewage sludge shall not be applied to agricultural land, forest land, and public contact site, or land reclamation site that is less than 10 meters (33 feet) from waters of the United States, as defined in 40 CFR §122.2.
  - d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.

8. The permittee shall develop and retain the following information for five years:
  - a. The pollutant concentration for each pollutant listed in Paragraph 2a. of this section.
  - b. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in §503.32 (a) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility for fine and imprisonment.”
  - c. A description of how the pathogen requirements are met.
9. The person who applies the bulk sewage sludge shall develop and retain the following information for five years:
  - a. The following certification requirement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14 and the vector attraction reduction requirement in [insert either §503.33 (b)(9) or (b)(10)] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment.”
  - b. A description of how the management practices in §503.14 are met for each site on which the bulk sewage sludge is applied.
  - c. A description of how the vector attraction reduction requirements are met for each site on which bulk sewage sludge is applied, including a description of how the requirement in Paragraph 5 is met.
10. The permittee shall report the information in paragraphs 8a, b and c annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.
11. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40 CFR §503.8.

12. The permittee shall supply the following information/requirements to the person who applies the bulk sewage sludge:
  - a. Information in Paragraph 1b.
  - b. Requirements in Paragraphs 1f and 5.
  - c. Management Practices in Paragraphs 7a through d.
  - d. Record keeping requirements in Paragraphs 9a through c.
  
13. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:
  - a. Describe the geographic area covered by the plan;
  - b. Identify site selection criteria;
  - c. Describe how sites will be managed; and
  - d. Provide for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

### **1.3.3. Scenario No. 3**

This scenario applies to bulk sewage sludge meeting the following criteria: pollutant concentrations at §503.13(b); Class B pathogens at §503.32(b); and one of the vector attraction reduction requirements found at §503.33(b). Bulk sewage sludge of this quality may be applied to agricultural land, forest land, public contact site or a reclamation site. There are specific requirements for the preparer and applier.

#### **SLUDGE CONDITIONS**

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
  - a. Bulk sewage sludge shall not be applied to the land except in accordance with 40 CFR Part 503 Subpart B.
  - b. The permittee shall provide the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
  - c. The person who applies the bulk sewage sludge shall obtain notice and necessary information from the permittee to comply with the requirements of 40 CFR Part 503 Subpart B.

- d. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- e. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the person who prepares the bulk sewage sludge notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- f. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- g. When bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:
  - i. The location of each site by either street address or latitude and longitude.
  - ii. The approximate period of time the bulk sewage sludge will be applied to each site.
  - iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
  - iv. The name, address, telephone number, and national Pollutant Discharge Elimination System permit number (if applicable) for the person who applies the bulk sewage sludge.

2. Pollutant Limitations

- a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic	75 mg/kg
Cadmium	85 mg/kg
Copper	4300 mg/kg

Lead	840 mg/kg
Mercury	57 mg/kg
Molybdenum	75 mg/kg
Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded
- c. The monthly average concentration of metals in the sewage sludge shall not exceed the following (dry weight basis):

Arsenic	41 mg/kg
Cadmium	39 mg/kg
Copper	1500 mg/kg
Lead	300 mg/kg
Mercury	17 mg/kg
Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	2800 mg/kg

- 3. The permittee shall meet Class B pathogen requirements utilizing one of the methods specified in 40CFR §503.32
- 4. The permittee shall meet one of vector attraction reduction requirements specified in 40CFR §503.33
- 5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density requirements and the vector attraction reduction requirements at the frequency specified in sludge condition 6 of the permit.
- 6. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:

- a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated habitat.
  - b. The bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as defined in 40 CFR 122.2, except as provided in a permit issued pursuant to Section 402 or 404 of the Clean Water Act.
  - c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is less than 10 meters (33 feet) from waters of the United States, as defined in 40 CFR §122.2.
  - d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.
7. The person who applies the bulk sewage sludge shall insure that the following site restrictions are met for each site on which the bulk sewage sludge is applied:
- a. Food crops with harvested parts that touch the sewage sludge/soil mixture and are not totally above the land surface shall not be harvested for 14 months after application of sewage sludge.
  - b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil.
  - c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into soil.
  - d. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.
  - e. Animals shall not be grazed on the land for 30 days after application of sewage sludge.

- f. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with high potential for public exposure or a lawn.
  - g. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge.
  - h. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.
8. The permittee shall develop and retain the following information for five years:
- a. The concentration of each pollutant listed in Paragraph 2a of this section.
  - b. The following certification statement:  

“I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirement in §503.32(b) and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in §503.33 (b)(1) through (b)(8), if one of those requirements is met] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment.”
  - c. A description of how the Class B pathogen requirements are met.
  - d. When the permittee is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.
9. The person who applies the bulk sewage sludge shall develop and maintain the following information for five years:

- a. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14, the site restrictions in §503.32(b)(5), and the vector attraction reduction requirements in [insert either §503.33(b)(9) or (b)(10), if one of those requirements is met] was prepared for each site on which sewage sludge is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including

the possibility of fine and imprisonment.”

- b. A description of how the management practices in Paragraphs 6a through d are met for each site.
  - c. A description of how the site restrictions in Paragraphs 7a through h are met for each site.
  - d. When the applier is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirements in either §503.33(b)(9) or (b)(10) is met.
10. The permittee shall report the information in Paragraph 8a, b, c and d annually on February 19. Reports shall be submitted to the address in the Monitoring and Reporting section of this permit.
  11. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40CFR §503.8
  12. The permittee shall notify the person who applies the bulk sewage sludge of the following information/requirements:
    - a. Information in Paragraph 1b.
    - b. Requirement in Paragraph 1f.
    - c. Management practices in Paragraph 6a through d.
    - d. Site Restrictions in Paragraph 7a through h.
    - e. Record keeping requirements in Paragraphs 9a through d.
  13. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:
    - a. Describe the geographic area covered by the plan;
    - b. Identify site selection criteria;
    - c. Describe how sites will be managed; and
    - d. Provide for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

#### **1.3.4. Scenario No. 4**

This scenario applies to bulk sewage sludge meeting the following criteria: pollutant concentrations at §503.13(b)(2); Class A pathogen requirements at §503.32(a); and one of the

vector attraction reduction requirement found at §503.33(b). Bulk sewage sludge of this quality may be applied to agricultural land, forest land, public contact site or a reclamation site. There are specific requirements for the preparer and the applier.

## SLUDGE CONDITIONS

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
  - a. Bulk sewage sludge shall not be applied to the land except in accordance with 40 CFR Part 503 Subpart B.
  - b. Bulk sewage sludge shall not be applied if any of the cumulative pollutant loading rates in Paragraph 2c have been reached on the site.
  - c. The permittee shall provide the person who supplies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
  - d. The person who applies the bulk sewage sludge shall obtain notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart b.
  - e. The person who applies the bulk sewage sludge shall obtain the following information:
    - i. Prior to the application of bulk sewage sludge, the person who proposes to apply the bulk sewage shall contact the permitting authority for the state in which the bulk sewage sludge will be applied to determine whether bulk sewage sludge subject to the cumulative pollutant loading rates in §503.13(b)(2) has been applied to the site since July 20, 1993.
    - ii. If bulk sewage sludge subject to the cumulative pollutant loading rates has not been applied to the site, the cumulative amount for each pollutant listed in Paragraph 2c may be applied.
    - iii. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site since that date is known, the cumulative amount of each pollutant applied to the site shall be used to determine the additional amount of each pollutant that can be applied to the site such that the loading rates in Paragraph 2c are not exceeded.
    - iv. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative amount of

each pollutant applied to the site since that date is not known, an additional amount of any pollutant may not be applied to the site.

- f. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- g. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the person who prepares the bulk sewage sludge notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- h. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- i. When the bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:
  - i. The location of each site by either street address or latitude and longitude.
  - ii. The approximate period of time the bulk sewage sludge will be applied to each site.
  - iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
  - iv. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if applicable) for the person who applies the bulk sewage sludge.
- j. The person who applies the bulk sewage sludge shall provide written notice, prior to the initial application of the bulk sewage sludge, to the permitting authority for the State in which the bulk sewage sludge will be applied. The notice shall include:
  - i. The location, by either street address or latitude and longitude, of the land application site.

- ii. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) of the person who will apply the bulk sewage sludge.

2. Pollutant limitations

- a. The maximum concentration of metal in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic	75 mg/kg
Cadmium	85 mg/kg
Copper	4300 mg/kg
Lead	840 mg/kg
Mercury	57 mg/kg
Molybdenum	75 mg/kg
Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.
- c. The cumulative pollutant loading rates for each site shall not exceed the following (kilograms per hectare):

Arsenic	41 kilograms/hectare
Cadmium	39 kilograms/hectare
Copper	1500 kilograms/hectare
Lead	300 kilograms/hectare
Mercury	17 kilograms/hectare
Nickel	420 kilograms/hectare
Selenium	100 kilograms/hectare
Zinc	2800 kilograms/hectare

- d. Bulk sewage sludge shall not be applied to a site on which any of the cumulative pollutant loading rates have been reached.
3. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40CFR §503.32
4. The permittee shall meet one of the vector attraction reduction requirements specified in 40CFR §503.33. The permittee may only utilize alternatives 1 through 8. If the permittee meets one of the vector attraction reduction alternatives 1 through 5, the Class A pathogen requirements must be met either prior to or at the same time as the vector attraction reduction requirement.
5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density requirements and the vector attraction reduction requirements at the frequency specified in sludge condition 6 of the permit.
6. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
  - a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated habitat.
  - b. The bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as defined in 40 CFR §122.2, except as provided in a permit issued pursuant to Section 402 or 404 of the Clean Water Act.
  - c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site, or a land reclamation site that is less than 10 meters (33 feet) from waters of the United States, as defined in 40 CFR §122.2.
  - d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land and (ii) minimize the amount of nitrogen that passed below the root zone for the crop or vegetation grown on the land into the groundwater.
  - e. The permittee shall develop and maintain the following information for five years:
  - f. The concentration of each pollutant listed in paragraph 2a in the bulk sewage sludge.

g. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirement in §503.32(a) and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in §503.33(b)(1) through (b)(8), if one of the those requirements is met] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment.”

h. A description of how the Class A pathogen requirements are met.

i. When the permittee is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

7. The person who applies the bulk sewage sludge shall develop and retain the following information indefinitely:

a. The location, by either street address or latitude and longitude, of each site on which bulk sewage sludge is applied.

b. The number of hectares in each site on which bulk sewage sludge is applied.

c. The date bulk sewage sludge is applied to each site.

d. The cumulative amount of each pollutant listed in Paragraph 2a in the bulk sewage sludge applied to each site, including the amount in Paragraph 1e(iii) of this section (in kilograms).

e. The amount of sewage sludge applied to each site (in metric tons).

f. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the requirements to obtain information in §503.12(e)(2) {Paragraphs 1e (i) through iv) of this permit} was prepared for each site on which sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment.”

g. A description of how the requirements to obtain the information in Paragraph 1e

(i through iv) are met.

8. The person who applies the bulk sewage sludge shall develop and maintain the following information for five years:
  - a. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14 was prepared for each site on which sewage sludge was applied my direction and supervision in accordance with the system designed to ensured that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”
  - b. A description of how the management practices in Paragraphs 6a through d are met for each site.
  - c. When the applier is responsible for meeting the vector attraction reduction requirements, the following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in [insert either §503.33(b)(9) or (b)(10)] was prepared under my direction and supervision in accordance with the system designed to endure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”
  - d. When the applier is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirement in either §503.33(b)(9) or (b)(10) is met.
  - e. The permittee shall report the information in Paragraphs 7a, b, c and d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.
9. When 90 percent or more of any of the cumulative pollutant loading rates are reached, the person who applies the bulk sewage sludge shall report the information in Paragraphs 10a through d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.
10. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40CFR §503.8.

11. The permittee shall notify the applier of the following information/requirements:
  - a. Requirements in paragraphs 1b, 1d, 1e, 1j, 2c and 2d.
  - b. Information in Paragraph 1c.
  - c. The management practices in Paragraphs 6a through d.
  - d. Record keeping requirements in Paragraph 8a through g and Paragraphs 9a through d.
  - e. Reporting requirements in Paragraph 11.
  
12. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:
  - a. Describe the geographic area covered by the plan;
  - b. Identify site selection criteria;
  - c. Describe how sited will be managed; and
  - d. Provide for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

### **1.3.5 Scenario No.5**

This scenario applies to bulk sewage sludge meeting the following criteria: pollutant concentrations at §503.13(b)(2); Class B pathogen requirements at §503.32(b); and one of the vector attraction reduction requirements found at §503.33(b). Bulk sewage sludge of this quality may be applied to agricultural land, forest land, public contact site or a reclamation site. There are specific requirements for the preparer and the applier.

#### **SLUDGE CONDITIONS**

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
  - a. Bulk sewage sludge shall not be applied to the land except in accordance with 40 CFR Part 503 Subpart B.
  - b. Bulk sewage sludge shall not be applied if any of the cumulative pollutant loading rates in Paragraph 2c have been reached on the site.
  - c. The permittee shall provide the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
  - d. The person who applies the bulk sewage sludge shall obtain notice and necessary

information to comply with the requirements of 40 CFR Part 503 Subpart B.

- e. The person who applies the bulk sewage sludge shall obtain the following information:
  - i. Prior to application of bulk sewage sludge, the person who propose to apply the bulk sewage shall contact the permitting authority for the state in which the bulk sewage sludge will be applied to determine whether bulk sewage sludge subject to the cumulative pollutant loading rates in §503.13(b)(2) has been applied to the site since July 20, 1993.
  - ii. If bulk sewage sludge subject to the cumulative pollutant loading rates has not been applied to the site, the cumulative amount for each pollutant listed in Paragraph 2c may be applied.
  - iii. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site since that date is known, the cumulative amount of each pollutant applied to the site shall be used to determine the additional amount of each pollutant that can be applied to the site such that the loading rates in Paragraph 2c are not exceeded.
  - iv. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site since that date is not known, an additional amount of any pollutant may not be applied to the site.
- f. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- g. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the person who prepares the bulk sewage sludge notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- h. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- i. When bulk sewage sludge is applied in another state, the person who prepares the

sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:

- i. The location of each site by either street address or latitude and longitude.
  - ii. The approximate period of time the bulk sewage sludge will be applied to each site.
  - iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
  - iv. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who applies the bulk sewage sludge.
- j. The person who applies the bulk sewage sludge shall provide written notice, prior to the initial application of the bulk sewage sludge, to the permitting authority for the State in which the bulk sewage sludge will be applied. The notice shall include:
- i. The location, by either street address or latitude and longitude, of the land application site.
  - ii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if appropriate) of the person who will apply the bulk sewage sludge.

2. Pollutant limitations

- a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic	75 mg/kg
Cadmium	85 mg/kg
Copper	4300 mg/kg
Lead	840 mg/kg
Mercury	57 mg/kg
Molybdenum	75 mg/kg

Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	7500 mg/kg

- c. The sewage sludge shall not be applied to the land if any of the pollutant concentration in Paragraph 2a are exceeded.
- d. The cumulative pollutant loading rates for each site shall not exceed the following (kilograms per hectare):

Arsenic	41 kilograms/hectare
Cadmium	39 kilograms/hectare
Copper	1500 kilograms/hectare
Lead	300 kilograms/hectare
Mercury	17 kilograms/hectare
Nickel	420 kilograms/hectare
Selenium	100 kilograms/hectare
Zinc	2800 kilograms/hectare

- d. Bulk sewage sludge shall not be applied to a site on which any of the cumulative pollutant loading rates have been reached.
3. The permittee shall meet Class B pathogen requirements utilizing one of the methods specified in 40 CFR §503.32
  4. The permittee shall meet one of vector attraction reduction requirements specified in 40 CFR §503.33
  5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density requirements and the vector attraction reduction requirements at the frequency specified in sludge condition 6 of the permit.
  6. The person who applies the bulk sewage sludge shall insure that the following site restrictions are met for each site on which the bulk sewage sludge is applied:
    - a. Food crops with harvested parts that touch the sewage sludge/soil mixture and are

not totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

- b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil.
  - c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.
  - d. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.
  - e. Animals shall not be grazed on the land for 30 days after application fo sewage sludge.
  - f. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.
  - g. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge.
  - h. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.
7. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
- a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated habitat.
  - b. The bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as defined in 40 CFR §122.2, except as provided in a permit issued pursuant to Section 402 or 404 of the Clean Water Act.
  - c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public

contact site, or a land reclamation site that is less than 10 meters (33 feet) from waters of the United States, as defined in 40 CFR §122.2.

- d. The whole sludge application rate shall be applied at an agronomic rate designated to (i) provide the amount of nitrogen needed by the crop or vegetation grown on that land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.
8. The permittee shall develop and maintain the following information for five years:
    - a. The concentration of each pollutant listed in Paragraph 2a in the bulk sewage sludge.
    - b. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirement in §503.32(b) and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in §503.33(b)(1) through (b)(8), if one of those requirements is met] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility fo fine or imprisonment.”
    - c. A description of how the Class B pathogen requirements are met.
    - d. When the permittee is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.
  9. The person who applies the bulk sewage sludge shall develop and retain the following information indefinitely:
    - a. The location, by either street address of latitude and longitude, of each site on which bulk sewage sludge is applied.
    - b. The number of hectares in each site on which bulk sewage sludge is applied.
    - c. The date bulk sewage sludge is applied to each site.

- d. The cumulative amount of each pollutant listed in Paragraph 2a in the bulk sewage sludge applied to each site, including the amount in Paragraph 1e(iii) of this section. (in kilograms)
- e. The amount of sewage sludge applied to each site (in metric tons).
- f. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the requirement to obtain information in §503.12(e)(2){Paragraphs 1e (i through iv) of this permit.} was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment.”

- g. A description of how the requirements to obtain information Paragraphs 1.e. (i through iv) are met.

- 10. The person who applies the bulk sewage sludge shall develop and maintain the following information for five years:

- a. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14 was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

- b. A description of how the management practices in Paragraphs 7a through d are met for each site.

- c. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the site restriction in §503.32(b)(5) for each site on which Class B sewage sludge was applied was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment.”

- d. A description of how the site restrictions are met for each site.

- e. When the applier is responsible for meeting the vector attraction reduction requirements, the following certification statement:  
  
“I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in [insert either §503.33(b)(9) or (b)(10)] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”
  - f. When the applier is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirement in either §503.33(b)(9) or (b)(10) is met.
- 11. The permittee shall report the information in Paragraphs 8a, b, c and annually on February 19. Reports shall be submitted to the address in the Monitoring and Reporting section of this permit.
  - 12. When 90 percent or more of any of the cumulative pollutant loading rates are reached, the person who applies the bulk sewage sludge shall report the information in Paragraphs 10a through d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.
  - 13. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40 CFR §503.8
  - 14. The permittee shall notify the applier of the following information/requirements:
    - a. Requirements in Paragraphs 1b, 1d, 1e, 1j, 2c and 2d.
    - b. Information in Paragraph 1c.
    - c. The management practices in Paragraphs 7a through d.
    - d. The site restrictions in paragraphs 6a through h.
    - e. Record keeping requirements is Paragraph 9a through g and Paragraphs 10a through d.
    - f. Reporting requirements in Paragraph 12.
  - 15. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:

- a. Describe the geographic area covered by the plan;
- b. Identify site selection criteria;
- c. Describe how sites will be managed; and
- d. Provide for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

**1.3.6. Scenario No.6**

This scenario applies to bagged materials sold or given away meeting the annual pollutant loading rates at §503.32(a); and one of the vector attraction reduction requirements at §503.33(b)(1) through (b)(8).

**SLUDGE CONDITIONS**

- 1. The permittee and the applier shall meet the following requirements:
  - a. The sewage sludge shall be applied in accordance with 40 CFR Part 503 Subpart B.
  - b. The person who applies the sewage sludge shall obtain the information needed to comply with 40 CFR Part 503 Subpart B.
  - c. When the permittee provides the sewage sludge to a person who prepares the sewage sludge, the permittee shall provide the person who prepares the sewage sludge notice and necessary information to comply with 40 CFR Part 503 Subpart B.
- 2. Pollutant Limitations
  - a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic	75 mg/kg
Cadmium	85 mg/kg
Copper	4300 mg/kg
Lead	840 mg/kg
Mercury	57 mg/kg
Molybdenum	75 mg/kg

Nickel	420 mg/kg
Selenium	100 mg/kg
Zinc	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraphs 2a are exceeded.
- c. The product of the concentration of each pollutant in the sewage sludge and the annual whole sludge application rate for the sewage sludge shall not cause the annual pollutant loading rate for the pollutant loading rates are specified below (kilograms per hectare per 365 day period):

Arsenic	2.0
Cadmium	1.9
Copper	75
Lead	15
Mercury	0.85
Nickel	21
Selenium	5.0
Zinc	140

- d. The annual whole sludge application rate shall be determined in the following manner:
- i. Analyze a sample of the sewage sludge to determine the concentration for each pollutant listed in Paragraph 2a.
  - ii. Using the pollutant concentrations from Paragraph 2d(i) and the annual pollutant loading rates from Paragraph 2c, calculate the annual whole sludge application rate using the following equation:

$$\text{AWSAR} = \frac{\text{APLR}}{C \times 0.001}$$

Where:

AWSAR = Annual whole sludge application rate in metric tons per

hectare per 365 day period (dry weight basis)

APLR = Annual pollutant loading rate in kilograms per hectare per 365 day period.

C = Pollutant concentration in milligrams per kilogram of total solids (dry weight basis)

0.001 = Conversion factor

iii The AWSAR for the sewage sludge is the lowest AWSAR calculated in Paragraph 2d(ii).

### 3. Label Requirements

a. Either a label shall be affixed to the bag or other container in which the sewage sludge is sold or given away or an information sheet shall be provided to any person who receives the sewage sludge.

b. The label information sheet shall contain the following information:

i. The name and address of the person who prepared the sewage sludge.

ii. A statement that application of sewage sludge to the land is prohibited except in accordance with the instructions on the label or information sheet.

iii. The annual whole sludge application rate which does not cause the annual pollutant loading rates in Paragraph 2c to be exceeded.

4. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40 CFR §503.32

5. The permittee shall meet one of the vector attraction reduction requirements specified in 40 CFR §503.33. The permittee may only utilize alternatives 1 through 8. If the permittee meets one of the vector attraction reduction alternatives 1 through 5, the Class A pathogen requirements must be met either prior to or at the same time as the vector attraction reduction requirement.

6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density, and the vector attraction reduction requirement at the frequency specified in sludge condition 6 of the permit.

7. The permittee shall develop and retain the following information for five years:
  - a. The annual whole sludge application rate that does not cause the annual pollutant loading rates in Paragraph 2c to be exceeded.
  - b. The concentration of each pollutant in Paragraph 2a in the sewage sludge.
  - c. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the management practice in §503.14(e), the Class A pathogen requirement in §503.32(a), and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in §503.33(b)(1) through (b)(8)] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment.”
  - d. A description of how the Class A pathogen requirements are met.
  - e. A description of how the vector attraction reduction requirements are met.
8. The permittee shall report the information in Paragraphs 7a through e annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting Section of this permit.
9. All sewage sludge sampling and analysis procedures shall be in accordance with procedures detailed in 40 FR §503.8.

## 2. SURFACE DISPOSAL

This section applies to sewage sludge from the permittee's facility which is by surface disposed. The permittee should answer the following questions. The answer to these questions need to be evaluated to determine which permitting scenario for sewage sludge surface disposal applies. After the permitting scenario is determined, the permittee must comply with the directives contained in the chosen scenario. The permittee must also note the run-off from surface disposal units may be subject to stormwater regulations.

### 2.1 Question Algorithm

The permittee should review and answer the following questions. The information gathered from answering these questions will aid the permittee in determine the appropriate surface disposal scenario which applies to the sludge generated at the permittee's wastewater treatment facility. The scenario selected will detail which specific Use or Disposal of Sewage Sludge, Part 503, regulations must be complied with for the land application method used by the permittee.

1. Is the facility regulated under 40 CFR §503?

If the facility disposes of its sludge at a municipal solid waste landfill (MSWLF), 40 CFR §503 regulations do not apply. However, the permittee still has some responsibilities. Permit language is in Scenario No.4.

The 40 CFR §503 regulations also do not apply in the case of storage of sewage sludge. An EPA rule of thumb is sludge stored on the land for longer than two years is defined as surface disposal. If a permittee claims storage, or treatment, the permittee's facility must be specifically equipped to support sewage sludge storage. Further, the permittee must ultimately have a clear, final disposition for the sewage sludge.

2. Does the following situations exist at a permittee's active sewage sludge disposal unit?
  - a. The unit is located within 60 meters (200 feet) of a fault that has had displacement in the Holocene time (10,000 years);
  - b. A unit located in a unstable area; or
  - c. A unit located in a wetland without a Section 402 or 404 permit.

If any of these situations exist, the active sewage sludge unit should have closed by March 22, 1994. If the active sewage sludge disposal unit is still operating, but one of the previous situations does apply to the unit, that unit must be closed.

3. Can the permittee's sewage sludge disposal unit demonstrate they are designed to withstand seismic impacts? If this demonstration cannot be made, the unit must close. This demonstration should be made prior to permit issuance.
4. Does the facility have a liner and leachate collection system?

The liner must have a hydraulic conductivity of  $1 \times 10^{-7}$  centimeters per second or less. If the liner does not meet the specified hydraulic conductivity, the sludge disposal unit is regulated as an **unlined** sewage sludge disposal site. There are no pollutant limitations for lined units.

5. What is the distance from the property boundary to the boundary of the active sewage sludge unit? Use the tables below to determine appropriate pollutant limitations for units without a liner or leachate collection on a dry weight basis.

**§503.23 TABLE 1**  
**Active Unit Boundary is 150 Meters or More**  
**From Property Boundary**

Arsenic	73 mg/kg
Chromium	600 mg/kg
Nickel	420 mg/kg

**§503.23 TABLE 2**  
**Active Unit Boundary is Less Than 150 Meters**  
**From Property Boundary**

Distance (meters)	Pollutant Concentrations (mg/kg)		
	Arsenic	Chromium	Nickel
0<Distance<25	30	200	210
25<Distance<50	34	220	240
50<Distance<75	39	260	270
75<Distance<100	46	300	320
100<Distance<125	53	360	390
125<Distance<150	62	450	420

6. Does the facility cover the sewage sludge placed in the unit daily?

This practice is considered to achieve both pathogen reduction and vector attraction reduction. If a facility covers the sludge, the permittee must monitor for methane gas.

**2.2. Scenario Determination**

After the information is gathered and evaluated from the questions in the preceding section, the permittee can select the appropriate surface disposal scenario.

**Surface Disposal Scenario Selection Table**

<b>SCENARIO</b>	<b>LINED/UNLINED</b>	<b>DISTANCE TO UNIT BOUNDARY</b>
No.1	Unlined	<150m
No.2	Unlined	0 to 150m
No.3	Lined	NA
No.4	Disposed in Municipal Solid Waste Land Fill	NA

**2.3. Scenarios**

**2.3.1. Scenario No.1**

Active sewage sludge unit without a liner and leachate collection system with active sewage sludge unit boundary 150 meters or more from the property boundary.

**SLUDGE CONDITIONS**

1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
  - a. Sewage sludge shall not be placed in an active sewage sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.
  - b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to Section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.

- i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.
- ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.
- c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

2. Pollutant limitations

- a. The maximum concentration of pollutants in the sewage sludge placed in an active sewage sludge unit shall not exceed the following:

Arsenic	73 mg/kg
Chromium	600 mg/kg
Nickel	420 mg/kg

- b. Sewage sludge with metals concentrations which exceed the limitations in Paragraph 2a. shall not be placed in a surface disposal unit.

3. The permittee and the owner/operator shall comply with the following management practices:

- a. The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.
- b. The run-off from an active sewage sludge unit shall be collected and disposed in accordance with applicable stormwater regulations.
- c. The run-off collection system for an active sewage sludge unit shall have the capacity to control run-off from a 24 hour - 25 year storm event.

- d.
  - i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas during the period that the sewage sludge unit is active.
  - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas during the period that the sewage sludge unit is active.
- e.
  - i. When a final cover is placed on a sewage sludge unit at closure, and for three years after closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent by volume, for methane gas.
  - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas for three years after the sewage sludge unit closes.
- f. A food crop, a feed crop, or a fiber crop shall not be grown on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown on a sewage sludge unit.
- g. Animals shall not be grazed on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed on a sewage sludge unit.
- h. Public access to a surface disposal site shall be restricted for the period that the surface disposal site contains an active sewage sludge unit and for three years after the last sewage sludge unit closes.
- i.
  - i. Sewage sludge placed in an active sewage sludge unit shall not contaminate an aquifer.
  - ii. The permittee shall demonstrate that sewage sludge placed in an active sewage sludge unit does not contaminate an aquifer by either (1) submission of results of a groundwater monitoring program developed by a qualified groundwater scientist; or (2) submission of a certification by a

qualified groundwater scientist that the sewage sludge does not contaminate and aquifer.

4. The following conditions must be documented by the permittee and owner/operator:
  - a. An active sewage sludge unit shall not restrict the flow of a base flood.
  - b. If a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designated to withstand the maximum recorded horizontal ground level acceleration.
  - c. An active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.
  - d. An active sewage sludge unit shall not be located in an unstable area.
  - e. An active sewage sludge unit shall not be located in a wetland.
5. If the active sewage sludge unit is not covered daily, the permittee shall meet either Class A or Class B pathogen reduction utilizing one of the methods in Section 4, and one of the vector attraction reduction requirements in Section 5.
6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2, the pathogen density, and the vector attraction reduction requirements at the following frequency:

<b>SEWAGE SLUDGE PRODUCED (metric tons per 365 day period)</b>	<b>SAMPLING FREQUENCY</b>
$0 < \text{Sludge(tons)} < 290$	Once per year
$0 \leq \text{Sludge(tons)} < 1500$	Once per quarter (four times per year)
$1500 \leq \text{Sludge(tons)} < 15000$	Once per 60 days (six times per year)
$\text{Sludge(tons)} \leq 15000$	Once per Month (12 times per year)

7. When a daily cover is placed on an active sewage sludge unit, the air in the structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the time that the surface disposal site contains an active sewage sludge unit and for three years after the sewage sludge unit closes.

8. The permittee shall develop and retain the following information for five years:

a. The concentration for each pollutant listed in Paragraph 2a.

b. The following certification statement:

“I, certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in [insert §503.32(a), §503.32(b)(3) or §503.32(b)(4) when one of those requirements is met] and the vector attraction reduction requirements in [insert one of the vector attraction reduction requirements in §503.33(b)(1) through §503.33(b)(8) when one of those requirements is met] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including that possibility of fine or imprisonment.”

c. A description of how the pathogen requirements are met.

d. When the permittee is responsible for the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

9. The owner/operator of the surface disposal site shall develop and retain the following information for five years:

a. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.24 and the vector attraction reduction requirement in [insert one of the requirements in §503.33(b)(9) through (b)(11) if one of those requirements is met] was prepared under my direct supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

b. A description of how the management practices in Paragraphs 3a through 3i are met.

c. Documentation that the requirements in Paragraphs 4a through 4e are met.

d. A description of how the vector attraction reduction requirements are met, if the owner/operator is responsible for vector attraction reduction requirements.

10. The permittee shall report the information in Paragraphs 7a through 7d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of the permit.
11. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in Section 7.
12. If the permittee is not the owner/operator of the surface disposal site, the permittee shall notify the owner/operator of the following:
  - a. The requirements in Paragraphs 1a through 1c;
  - b. The management practices in Paragraphs 3a through 3i;
  - c. The requirements in Paragraphs 4a through 4e;
  - d. The requirement in Paragraph 7; and
  - e. The record keeping requirements in Paragraph 9a through 9d.

### **2.3.2. Scenario No.2**

Active sewage sludge unit without a liner and leachate collection system located less than 150 meters from the property line. The permittee is directed to §503.33 TABLE 2, Active Unit Boundary is Less Than 150 Meters From Property Boundary in order to determine the maximum concentrations pollutants for the appropriate distant to the units boundary.

#### **SLUDGE CONDITIONS**

1. The permittee and the owner/operator of an active sewage sludge unit shall comply with following requirements:
  - i. Sewage sludge shall not be placed in an active sewage sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.
  - ii. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to Section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.
    - i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.

ii The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.

c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

2. Pollutant limitations

a. The maximum concentration of pollutant in the sewage sludge placed in an active sewage sludge unit shall not exceed the following:

**§503.23 TABLE**  
**Active Unit Boundary is Less Than 150 Meters**  
**From Property Boundary**

Distance (meters)	Pollutant concentrations (mg/kg)		
	Arsenic	Chromium	Nickel
0<Distance<25	30	200	210
25<Distance<50	34	220	240
50<Distance<75	39	260	270
75<Distance<100	46	300	320
100<Distance<125	53	360	390
125<Distance<150	62	450	420

b. Sewage sludge with metals concentrations which exceed the limitations in Paragraph 2a. shall not be placed in a surface disposal unit.

3. The permittee and the owner/operator shall comply with the following management practices:

a. The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.

b. The run-off from an active sewage sludge unit shall be collected and disposed in accordance with applicable stormwater regulations.

- c. The run-off collection system for an active sewage sludge unit shall have the capacity to control run-off from a 24 hour - 25 year storm event.
- d.
  - i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas during the period that the sewage sludge unit is active.
  - 2. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas during the period that the sewage sludge unit is active.
- e.
  - i. When a final cover is placed on a sewage sludge unit at closure, and for three years after closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas.
  - 2. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas for three years after the sewage sludge unit closes.
- f. A food crop, a feed crop or fiber crop shall not be grown on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown on a sewage sludge unit.
- g. Animals shall not be grazed on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed on a sewage sludge unit.
- h. Public access to a surface disposal site shall be restricted for the period that the surface disposal site contains an active sewage sludge unit and for site contains an active sewage sludge unit and for three years after the last sewage unit closes.
- i.
  - i. Sewage sludge placed in an active sewage sludge unit shall not contaminate an aquifer.

2. The permittee shall demonstrate the sewage sludge place in an active sewage sludge unit does not contaminate an aquifer by either (i) submission of results of a groundwater monitoring program developed by a qualified groundwater scientist; or (2) submission of certification by a qualified groundwater scientist that the sewage sludge does not contaminate an aquifer.
  
4. The following conditions must be documented by the permittee and owner/operator:
  - a. An active sewage sludge unit shall not restrict the flow of a base flood.
  - b. If a surface disposal site is located in seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.
  - c. A active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.
  - d. An active sewage sludge unit shall not be located in an unstable area.
  - e. An active sewage sludge unit shall not be located in a wetland.
  
5. If the active sewage sludge unit is not covered daily, the permittee shall meet either Class A or Class B pathogen reduction utilizing one of the methods in Section 4, and one of the vector attraction reduction requirements in Section 5.
  
6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2, the pathogen density, and the vector attraction reduction requirements at the following frequency:

**Sampling Frequency Table**

<b>SEWAGE SLUDGE PRODUCED</b> (metric tons per 365 day period)	<b>SAMPLING FREQUENCY</b>
$0 < \text{Sludge(tons)} < 290$	Once per Year
$0 \leq \text{Sludge(tons)} < 1500$	Once Per Quarter (four times per year)
$1500 \leq \text{Sludge(tons)} < 15000$	Once per 60 Days (six times per year)
$\text{Sludge(tons)} \leq 15000$	Once per Month (12 times per year)

7. When a daily cover is placed on an active sewage sludge unit, the air in the structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the time that the surface disposal site contains an active sewage sludge unit and for three years after the sewage sludge unit closes.
8. The permittee shall develop and retain the following information for five years:
  - a. The following certification statement:

“I, certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in [insert §503.32(a), §503.32(b)(2), §503.32(b)(4) when one of those requirements is met] and the vector attraction reduction requirements in [insert one of the vector attraction reduction requirements in §503.33(b)(1) through §503.33(b)(8) when one of those requirements is met] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment.”
  - b. A description of how the pathogen requirements are met.
  - c. When the permittee is responsible for the vector attraction reduction requirements, description of how the vector attraction reduction requirements are met.
9. The owner/operator of the surface disposal site shall develop and retain the following information for five years:
  - a. The concentration of each pollutant listed in Paragraph 2a.
  - b. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.24 and the vector attraction reduction requirement in [insert one of the requirements in §503.33(b)(9) through (b)(11) if one of those requirements is met] was prepared under my direct supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”
  - c. A description of how the management practices in Paragraphs 3a through 3i are met.

- d. Documentation that the requirements in Paragraphs 4a through 4e are met.
  - e. A description of how the vector attraction reduction requirements are met, if the owner/operator is responsible for vector attraction reduction requirements.
10. The permittee shall report the information in Paragraphs 7a through 7d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of the permit.
11. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in Section 7.
12. If the permittee is not the owner/operator of the surface disposal site, the permittee shall notify the owner/operator of the following:
- a. The requirements in Paragraphs 1a through 1c;
  - b. The management practices in Paragraphs 3a through 3i;
  - c. The requirements in Paragraphs 4a through 4e;
  - d. The requirement in Paragraph 7; and
  - e. The record keeping requirements in Paragraph 9a through 9e.

### **2.3.3. Scenario No.3**

This applies to an active sewage sludge unit with a liner and a leachate collection system.

#### **SLUDGE CONDITIONS**

1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
- a. Sewage sludge shall not be placed in an active sewage sludge unless the requirement of 40 CFR Part 503, Subpart C are met.
  - b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to Section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of fault that has displacement in Holocene time, otherwise specified by the permitting authority.
    - i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the

date an active sewage sludge unit closes.

- ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.
  - c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.
2. The permittee shall comply with the following management practices:
- a. The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.
  - b. The run-off from an active sewage sludge unit shall be collected and disposed in accordance with applicable stormwater regulations.
  - c. The run-off collection system for an active sewage sludge unit shall have the capacity to handle run-off from a 24 hour - 25 year storm event.
  - d. The leachate collection system for an active sewage sludge unit shall be operated and maintained during the period the sewage sludge unit is active and for three years the sewage sludge unit closes.
  - e. The leachate shall be collected and disposed of in accordance with applicable regulations during the period the sewage sludge unit is active and for three years after it closes.
  - f.
    - i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas during the period that the sewage sludge unit is active.
    - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas during the period that the sewage sludge unit is active.

- g.
  - i. When a final cover is placed on a sewage sludge unit at closure, and for three years after closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas.
  - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas for three years after the sewage sludge unit closes.
- h. A food crop, a feed crop, or fiber crop shall not be grown on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown on a sewage sludge unit.
- i. Animals shall not be grazed on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed on a sewage sludge unit.
- j. Public access to a surface disposal site shall be restricted for the period that the surface disposal site contains an active sewage sludge unit and for three years the last sewage sludge unit closes.
- k.
  - i. Sewage sludge placed in an active sewage sludge unit shall not contaminate an aquifer.
  - ii. The permittee shall demonstrate that sewage sludge placed in an active sewage sludge unit does not contaminate an aquifer by either (1) submission of results of a groundwater monitoring program developed by a qualified groundwater scientist; or (2) submission of a certification by a qualified groundwater scientist that the sewage sludge does not contaminate an aquifer.
- 3. The following conditions must be documented by the permittee and owner/operator:
  - a. An active sewage sludge unit shall not restrict the flow of a base flood.
  - b. If a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.

- c. A active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.
  - d. An active sewage sludge unit shall not be located in an unstable area.
  - e. An active sewage sludge unit shall not be located in a wetland.
4. If the active sewage sludge unit is not covered daily, the permittee shall meet either Class A or Class B pathogen reduction utilizing one of the methods in Section 4, and one of the vector attraction reduction requirements in Section 5.
5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2, the pathogen density, and the vector attraction reduction requirements at the following frequency:

**Sampling Frequency Table**

<b>SEWAGE SLUDGE PRODUCED</b> (metric tons per 365 day period)	<b>SAMPLING FREQUENCY</b>
0<Sludge(tons)<290	Once per Year
0<Sludge(tons)<1500	Once Per Quarter (four times per year)
1500<Sludge(tons)<15000	Once per 60 Days (six times per year)
Sludge(tons)<15000	Once per Month (12 times per year)

6. When a daily cover is placed on an active sewage sludge unit, the air in the structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the time that the surface disposal site contains an active sewage sludge unit and for three years after the sewage sludge unit closes.
7. The permittee shall develop and retain the following information for five years:
- a. The following certification statement:

“I, certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in §503.32(a), §503.32(b)(2), §503.32(b)(3) or §503.32(b)(4) when one of those requirements is

met] and the vector attraction reduction requirements in [insert one of the vector attraction reduction requirements in §503.33(b)(1) through §503.33(b)(8) when one of those requirements is met] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment.”

- b. A description of how the pathogen requirements are met.
- c. When the permittee is responsible for the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

8. The owner/operator of the surface disposal site shall develop and retain the following information for five years:

- a. The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with management practices in §503.24 and the vector attraction reduction requirement in [insert one of the requirements in §503.33(b)(9) through (b)(11) if one of those requirements is met] was prepared under my direct supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

- b. A description of how the management practices in Paragraphs 2a through 2k are met.
- c. Documentation that the requirements in Paragraphs 3a through e are met.
- d. A description of how the vector attraction reduction requirements are met, if the owner/operator is responsible for vector attraction reduction requirements.

9. The permittee shall report the information in Paragraphs 8a through c annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of the permit.

10. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in Section 7.

11. If the permittee is not the owner/operator of the surface disposal site, the permittee shall notify the owner/operator of the following:
  - a. The requirements in Paragraphs 1a through e;
  - b. The management practices in Paragraphs 2a through k;
  - c. The requirements in Paragraph 3a through e;
  - d. The requirement in Paragraph 6; and
  - e. The record keeping requirements in Paragraphs 8a through d.

#### **2.3.4. Scenario No.4**

A permittee who dispose of their sludge in a municipal solid waste land fill are regulated under 40 CFR Part 258.

#### **SLUDGE CONDITIONS**

1. The permittee must dispose of the sewage sludge in a landfill which is in compliance with 40 CFR Part 258.
2. Sewage sludge disposed of in a municipal solid waste landfill shall not be hazardous. The Toxicity Characterization Leachate Protocol (TCLP) shall be used as demonstration that the sludge is non-hazardous.
3. The sewage sludge must not be liquid as determined by the Paint Filter Liquids Test method (Method 9095 as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, EPA publication No. SW-846).

### **3. Incineration**

Each facility that incinerates sewage sludge is still subject to 40 CFR Part 503 regulations. Implementation of these regulations are site specific. A facility which incinerates sewage sludge will have specific conditions for that incineration process included in the facility's NPDES permit.

## 4. Pathogens Reduction

Allowable pathogen reduction alternatives are listed in this section. The corresponding reference to the regulation is listed in parenthesis.

### 4.1 Class A Pathogen Reduction

#### 4.1.1. Class A – Alternative 1 (503.32(a)(3))

i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §5.3.10(c), §503.10(e) or §503.10(f).

ii. The temperature of the sewage sludge that is used or disposed shall be maintained at a specific value for a period of time.

a. When the percent solids of the sewage sludge is seven percent or higher, the temperature of the sewage sludge shall be 50 degrees Celsius or higher; the time period shall be 20 minutes or longer; and the temperature and time period shall be determined using equation (3), except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

$$D = \frac{13,700,000}{10^{0.1400t}} \quad (3)$$

Where,

D = time in days

T = temperature in degrees Celsius

b. When the percent solids of the sewage sludge is seven percent or higher and small particles of sewage sludge are heated by either warmed gases or an immiscible liquid, the temperature of the sewage sludge shall be 50 degrees Celsius or higher; the time period shall be 15 seconds or longer; and the temperature and time period shall be determined using equation (3).

c. When the percent solids of the sewage sludge is less than seven percent and the time period is at least 15 seconds, but less than 30 minutes, the temperature and time period shall be determined using equation (3).

- d. When the percent solids of the sewage sludge is less than seven percent; the temperature of the sewage sludge is 50 degrees Celsius or higher; and the time period is 30 minutes or longer, the temperature and time period shall be determined using equation (4).

$$D = \frac{50,070,000}{10^{0.1400t}} \quad (4)$$

Where,

D = time in days.

t = temperature in degrees Celsius.

#### 4.1.2. Class A - Alternative 2 (503.32(a)(4))

i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge shall be less than Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e) or §503.10(f).

ii a.. The pH of the sewage sludge that is used or disposal shall be raised to above 12 and shall remain above 12 for 72 hours.

b. The temperature of the sewage sludge shall be above 52 degrees Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12.

c. At the end of the 72 hour period during which the pH of the sewage sludge is above 12, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50 percent.

#### 4.1.3. Class A - Alternative 3 (503.32(a)(5))

i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e) or §503.10(f).

- ii.
  - a. The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses.
  - b. When the density of enteric values in the sewage sludge prior to pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses until the next monitoring episode for the sewage sludge.
  - c. When the density of enteric viruses in the sewage sludge prior to pathogen treatment is equal to or greater than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses in the sewage sludge after pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the enteric virus density requirement are documented.
  - d. After the enteric virus reduction in ii.c. of this subsection is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in ii.c. of this subsection.
- iii.
  - a. The sewage sludge shall be analyzed prior to pathogen treatment to determine Whether the sewage sludge contains viable helminth ova.
  - b. When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is less than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova until the next monitoring episode for the sewage sludge.
  - c. When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is equal to or greater than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova when the density of viable helminth ova in the sewage sludge after pathogen treatment is less than one per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meet the viable helminth ova density requirement are documented.
  - d. After the viable helminth ova reduction in iii.c. of this subsection is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to viable helminth ova when the values for the pathogen

treatment process operating parameters are consistent with the values of ranges of values documented in (iii)(c) of this subsection.

**4.1.4. Class A - Alternative 4 (503.32(a)(6))**

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10 (b), §503.10(c), §503.10(f).
- ii. The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e) or §503.10(f), unless otherwise specified by the permitting authority.
- iii. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b),§503.10(c), §503.10(e) or §503.10(f), unless otherwise specified by the permitting authority.

**4.1.5. Class A - Alternative 5 (503.32(a) (8))**

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the sludge shall be less than three Most Probable Number per four grams of total (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e) or §503.10(f).
- ii. Sewage sludge that is used or disposed shall be treated in one of the Processes to Further Reduce Pathogens described in Section 4.3.

#### **4.1.6. Class A - Alternative 6 (503.32(a)(8))**

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella, sp. bacteria in the sewage sludge shall be less than three Most Probable number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e) or §503.10(f).
- ii. Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Further Reduce Pathogens, as determined by the permitting authority.

#### **4.2 Class B Pathogen Reduction**

##### **4.2.1. Class B - Alternative 1 (503.32(b)(2))**

- i. Seven representative samples of the sewage sludge that is used or disposed shall be collected.
- ii. The geometric mean of the density of fecal coliform in the samples collected in (2) (i) of this subsection shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

##### **4.2.2. Class B - Alternative 2 (503.32 (b)(3))**

Sewage sludge that is used or diagnosed shall be treated in one of the Processes to Significantly Reduce Pathogens described in Section 4.3.

##### **4.2.3. Class B - Alternative 3 (503.32(b)(4))**

Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Significantly Reduce Pathogens, as determined by the permitting authority.

#### **4.3 Pathogen Reduction Processes**

##### **4.3.1. Process to Significantly Reduce Pathogens**

**1. Aerobic Digestion** - Sewage sludge is agitated with air or oxygen to maintain aerobic conditions for a specific mean cell residence time at a specific temperature. Values for

the mean cell residence time and temperature shall be between 40 days at 20 degrees Celsius and 60 days at 15 degrees Celsius.

**2. Air Drying** - Sewage sludge is dried on sand beds or on paved or unpaved basins. The sewage sludge dries for a minimum of three months. During two of the three months, the ambient average daily temperature is above zero degrees Celsius.

**3. Anaerobic Digestion** - Sewage sludge is treated in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35 to 55 degrees Celsius and 60 days at 20 degrees Celsius.

**4. Composting** - Using either the within vessel, static aerated pile, or windrow composting methods, the temperature of the sewage sludge is raised to 40 degrees Celsius or higher and remains at 40 degrees Celsius or higher for five days. For four hours during the five days, the temperature in the compost pile exceeds 55 degrees Celsius.

**5. Lime Stabilization** - Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 after two hours of contact.

#### **4.3.2. Process to Further Reduce Pathogens**

**1. Composting** - Using either the within vessel composting method or the static aerated pile composting method, the temperature of the sewage sludge is maintained at 55 degrees Celsius or higher for three days.

Using the windrow composting method, the temperature of the sewage sludge is maintained at 55 degrees or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees or higher, there shall be a minimum of five turnings of the windrow.

**2. Heat Drying** - Sewage sludge is dried by direct or indirect contact with hot gases to reduce the moisture content of the sewage sludge to 10 percent or lower. Either the temperature of the sewage sludge particles exceeds 80 degrees Celsius or the wet bulb temperature of the gas in contact with sewage sludge as the sewage sludge leaves the dryer exceeds 80 degrees Celsius.

**3. Heat Treatment** - Liquid sewage sludge is heated to temperature of 180 degrees Celsius or higher for 30 minutes.

**4. Thermophilic Aerobic Digestion** - Liquid sewage sludge is agitated with air or oxygen to maintain aerobic conditions and the mean cell residence time of the sewage

sludge is 10 days at 55 to 60 degrees Celsius.

**5. Beta Ray Irradiation** - Sewage sludge is irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).

**6. Gamma Ray Irradiation** - Sewage sludge is irradiated with gamma rays for certain isotopes, such as <sup>60</sup>Cobalt and <sup>137</sup>Cesium, at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).

**7. Pasteurization** - The temperature of the sewage sludge is maintained at 70 degrees Celsius or higher for 30 minutes or longer.

## **5. Vector Attraction Reduction**

The various vector attraction reduction means are listed in this section. The 40 CFR Part 503 section from which each reduction was excerpted is referenced in parenthesis.

### **5.1. Alternative 1 (503.33(b)(1))**

The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent.

### **5.2. Alternative 2 (503.33(b)(2))**

When the 38 percent volatile solids reduction requirement in §503.33(b)(1) cannot be met for an anaerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. When at the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved.

### **5.3. Alternative 3 (503.33(b)(3))**

When the 38 percent volatile solids reduction requirement in §503.33(b)(1) cannot be met for an aerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. When at the end 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent, vector attraction reduction is achieved.

### **5.4. Alternative 4 (503.33(b)(4))**

The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.

### **5.5. Alternative 5 (503.33(b)(5))**

Sewage sludge shall be treated in an aerobic process for 14 days or longer. During time, the temperature of the sewage sludge shall be higher than 40 degrees Celsius and the average temperature of the sewage sludge shall be higher than 45 degrees Celsius.

**5.6. Alternative 6 (503.33(b)(6))**

The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.

**5.7. Alternative 7 (503.33(b)(7))**

The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials.

**5.8. Alternative 8 (503.33 (b)(8))**

The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.

**5.9. Alternative 9 (503.33(b)(9))**

- i. Sewage sludge shall be injected below the surface of the land.
- ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

**5.10. Alternative 10 (503.33(b)(10))**

- i. Sewage sludge applied to the land surface or placed on an active sewage sludge unit shall be incorporated into the soil within six hours after application to or placement on the land unless otherwise specified by the permitting authority.
- ii. When sewage sludge that is incorporated into the soil is Class A with respect to pathogens, the sewage sludge shall be applied to or place on the land within eight hours after being discharged from the pathogen treatment program.

**5.11. Alternative 11 (503.33(b)(11))**

Sewage sludge placed on an active sewage sludge unit shall be covered with soil or other material at the end of each operating day.

## **6. CLOSURE AND POST CLOSURE PLAN**

The closure and post closure plan shall describe how the sewage sludge unit will close and how it will be maintained for three years after closure.

### **6.1. Minimum Elements**

The following items are the minimum elements that should be addressed in the closure plan.

#### **6.1.1. General Information**

- a. Name, address, and telephone number of the owner/operator
- b. Location of the site including size
- c. Schedule for final closure

#### **6.1.2. Leachate collection system**

- a. How the system will be operated and maintained for three years after closure
- b. Treatment and disposal of the leachate

#### **6.1.3. Methane Monitoring**

- a.. Description of the system to monitor methane within the structures at the property line
- b. Maintenance of the system

#### **6.1.4. Restriction of Public Access**

- a. Describe method of restricting public access for three years after the last surface disposal unit closes

#### **6.1.5. Other Activities**

- a. Groundwater monitoring
- b. Maintenance and inspection schedules
- c. Discussion of land use after cover
- d. Copy of notification to subsequent land owner

## **6.2. Notification to Land Owner**

The notification to the subsequent land owner shall include the following information:

- a. Name, address, and telephone number of the owner/operator of the owner/operator of the surface disposal site.
- b. A map and description of the surface disposal site including locations of surface disposal units.
- c. An estimate of the amount of sewage sludge placed on the site and a description of the quality of the sludge.
- d. Results of the methane gas monitoring and groundwater monitoring
- e. Discussion of the leachate collection system, if appropriate
- f. Demonstration that the site was closed in accordance with closure plan

## 7. SAMPLING AND ANALYSIS

### 7.1 Sampling

Representatives samples of sewage sludge that is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator shall be collected and analyzed.

### 7.2 Analytical Methods

The following methods shall be used to analyze samples of sewage sludge.

#### a. Enteric Viruses

ASTM Method D 499-89, "Standard Practice for Recovery of Viruses from Wastewater Sludge", Annual Book of ASTM Standards: Section 11, Water and Environmental Technology, 1992.

#### b. Fecal Coliform

Part 9221 E or Part 9222 D, "Standard Methods for the Examination of Water and Wastewater", 18<sup>th</sup> edition, American Public Health Association, Washington, D.C., 1992.

#### c. Helminth Ova

Yanko, W.A., "Occurrence of Pathogens in Distribution and Marketing Municipal Sludges", EPA 600/1-87-014, 1987. NTIS PB 88-154273/AS, National Technical Information Service, Springfield, Virginia.

#### d. Inorganic Pollutants

Method SW-846 in "Test Methods for Evaluating Solid Waste" U.S. Environmental Protection Agency, November 1986.

#### e. Salmonella sp. bacteria

Part 9260 D.1, "Standard Methods for the Examination of Water and Wastewater", 18<sup>th</sup> edition, American Public Health Association, Washington, D.C., 1992; or Kenner, B.B. and H.A. Clark, "Determination and Enumeration of Salmonella and Pseudomonas aeruginosa", J. Water Pollution Control Federation, 46 (9): 2163-2171, 1974.

f. Specific Oxygen Uptake Rate

Part 2710 B, “Standard Methods for the Examination of Water and Wastewater”, 18<sup>th</sup> edition, American Public Health Association, Washington, D.C., 1992.

g. Total Solids, Fixed Solids, and Volatile Solids

Part 2540 G, Standard Methods for the Examination of Water and Wastewater”, 18<sup>th</sup> edition, American Public Health Association, Washington, D.C., 1992.

**7.3 Percent Volatile Solids Reduction**

Percent volatile solids reduction shall be calculated using a procedure in “Environmental Regulations and Technology - Control of Pathogens and Vectors in Sewage Sludge”, EPA 625/R-92/013, U.S. Environmental Protection Agency, Cincinnati, Ohio, 1992.

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

- a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.
- b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed \$25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both.
- c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

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

2. Permit Actions

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

3. Duty to Provide Information

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

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4. Reopener Clause

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

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

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

5. Oil and Hazardous Substance Liability

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

6. Property Rights

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

7. Confidentiality of Information

- a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words “confidential business information” on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).
- b. Claims of confidentiality for the following information will be denied:
  - (1) The name and address of any permit applicant or permittee;
  - (2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).
- c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

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8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

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

10. Other Laws

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

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

### b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs B.4.c. and 4.d. of this section.

### c. Notice

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

### d. Prohibition of bypass

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

- (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
- (3)
  - i) The permittee submitted notices as required under Paragraph 4.c. of this section.
  - ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

## 5. Upset

- a. Definition. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

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

- c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
  - (2) The permitted facility was at the time being properly operated;
  - (3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
  - (4) The permittee complied with any remedial measures required under B.3. above.
- d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

**PART II. C. MONITORING REQUIREMENTS**

1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.
- c. Records of monitoring information shall include:
  - (1) The date, exact place, and time of sampling or measurements;
  - (2) The individual(s) who performed the sampling or measurements;
  - (3) The date(s) analyses were performed;
  - (4) The individual(s) who performed the analyses;
  - (5) The analytical techniques or methods used; and
  - (6) The results of such analyses.
- d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
- e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by

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

### 2. Inspection and Entry

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

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

## PART II. D. REPORTING REQUIREMENTS

### 1. Reporting Requirements

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

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

- d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
- (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.
  - (2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
  - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. Twenty-four hour reporting.
- (1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.  
  
A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
  - (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
    - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
    - (b) Any upset which exceeds any effluent limitation in the permit.
    - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)
  - (3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

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- f. Compliance Schedules. Reports of compliance or noncompliance with, any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
  - g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.
  - h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.
2. Signatory Requirement
- a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)
  - b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.
3. Availability of Reports.

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

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

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

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

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

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

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

*Average weekly discharge limitation* means the highest allowable average of “daily discharges” measured during the calendar week divided by the number of “daily discharges” measured during the week.

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

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

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

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

*Construction Activities* - The following definitions apply to construction activities:

- (a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.
- (b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.
- (c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

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- (d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.
- (e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

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

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

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

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

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

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

*Discharge of a pollutant* means:

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

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

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to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

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

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

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

*EPA* means the United States “Environmental Protection Agency”.

*Flow-weighted composite sample* means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

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

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

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

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

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

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

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

*Large and Medium municipal separate storm sewer system* means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

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populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

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

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

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

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

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

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

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

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

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

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

*NPDES* means “National Pollutant Discharge Elimination System”.

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

*Pass through* means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW’s NPDES permit (including an increase in the magnitude or duration of a violation).

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

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

*Point Source* means any discernible, confined, and discrete conveyance, including but not limited to any pipe ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

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

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

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

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

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

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

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

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

*Secondary Industry Category* means any industry which is not a “primary industry category”.

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

- (1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);
- (2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and
- (3) satisfies at least one of the following criteria:
  - (i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
  - (ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
  - (iii) are pollutants for which EPA has published acute or chronic water quality criteria.

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

*Sewage Sludge* means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

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

*Significant materials* includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets, raw materials used in food processing or production, hazardous substance designated under section 101(14) of CERCLA, any chemical the facility is required to report pursuant to EPCRA Section 313, fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

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

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

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

*Storm Water* means storm water runoff, snow melt runoff, and surface runoff and drainage.

*Storm water discharge associated with industrial activity* means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

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

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

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

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

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*Waste Pile* means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

*Waters of the United States* means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;
- (b) All interstate waters, including interstate “wetlands”;
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
  - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
  - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

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

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

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

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

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

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

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

- (1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and
- (2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

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

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

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

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

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

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

*Auxiliary fuel* is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

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

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

*Contaminate an aquifer* means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

*Class I sludge management facility* is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

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classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

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

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

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

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

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

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

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

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

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

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

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

*Feed crops* are crops produced primarily for consumption by animals.

*Fiber crops* are crops such as flax and cotton.

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

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

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

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

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

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

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

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

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

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

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

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

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

*Liner* is soil or synthetic material that has a hydraulic conductivity of  $1 \times 10^{-7}$  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 or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

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

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

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

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

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

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

*pH* means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

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

*Pollutant (as defined in sludge disposal requirements)* is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis 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 of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

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

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

*Range land* is open land with indigenous vegetation.

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

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

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

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

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

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

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

*Sewage sludge unit* is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

3. Commonly Used Abbreviations

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

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TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M <sup>3</sup> /day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH <sub>3</sub> -N	Ammonia nitrogen as nitrogen
NO <sub>3</sub> -N	Nitrate as nitrogen
NO <sub>2</sub> -N	Nitrite as nitrogen
NO <sub>3</sub> -NO <sub>2</sub>	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

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Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	“Whole effluent toxicity” is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	“Chronic (Long-term Exposure Test) – No Observed Effect Concentration”. The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	“Acute (Short-term Exposure Test) – No Observed Effect Concentration” (see C-NOEC definition).
LC <sub>50</sub>	LC <sub>50</sub> is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC <sub>50</sub> = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND - REGION I  
ONE CONGRESS STREET  
BOSTON, MASSACHUSETTS 02114-2023

**PARTIALLY REVISED FACT SHEET**

PARTIALLY REVISED DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE  
CLEAN WATER ACT (CWA)

NPDES PERMIT NO.: MA0102598

PUBLIC NOTICE DATE:

NAME AND ADDRESS OF APPLICANT AND OF FACILITY WHERE DISCHARGE OCCURS:

Charles River Pollution Control District  
66 Village Street  
Medway, Massachusetts 02053

The Towns of Franklin, Medway, Millis, and Bellingham are co-permittees for specific activities required in Part I.B, Unauthorized Discharges and Part I.C, Operation and Maintenance of the Sewer System of the Draft NPDES Permit. Part I.B, Unauthorized Discharges and Part I.C, Operation and Maintenance of the Sewer System include conditions that pertain to the operation and maintenance of the collection systems. The responsible municipal departments are:

Town of Franklin  
Town Administration  
355 East Central Street  
Franklin, MA 02038

Town of Medway  
Department of Public Services  
155 Village Street  
Medway, MA 02053

Town of Millis  
Department of Public Works  
Veterans Memorial Building  
900 Main Street  
Millis, MA 02054

Town of Bellingham  
Department of Public Works  
26 Blackstone Street  
Bellingham, MA 02019

RECEIVING WATER: Charles River (MA 72 - 05)

CLASSIFICATION: B (warm water fishery)

**PROPOSED ACTION**

Decision to Partially Reopen the Draft Permit for Public Comment

On July 3, 2008, the Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) released a Draft Permit for the Charles River Pollution Control District (CRPCD) wastewater treatment plant for public review and comment. The public comment period closed on August 1, 2008. Numerous comments were received, including comments from the CRPCD and

several of its member communities. Among the issues raised in the comments were the effluent limitation on total phosphorus and the legal basis for including several of the District member communities as co-permittees to the NPDES Draft Permit. The Draft Permit requirements that applied to the co-permittees were Sections I.B and I.C., which concern sewer system operation and maintenance and unauthorized discharges. Since the close of the public comment period, events have occurred that have influenced EPA's determinations regarding the Draft Permit.

Therefore, EPA and MassDEP have decided to partially reopen the Draft Permit for public comment on the following requirements in the Draft Permit; the total phosphorus limits, the addition of co-permittees for sewer system operation and maintenance and unauthorized discharges, recently revised requirements for submitting monitoring and reporting data and recently updated requirements of standard permit conditions. The specific changes are discussed in detail in this fact sheet. The fact sheet for the 2008 permit is also attached (see Attachment 2, 2008 Fact Sheet) so that the basis for the conditions in that version of the Draft Permit may be understood.

#### Phosphorus Limits

The total phosphorus limits in the partially revised Draft Permit have been changed to reflect the recommendations in the final version of the "*Total Maximum Daily Load (TMDL) for Nutrients in the Upper/Middle Charles River, Massachusetts Control Number: 272.0*". See <http://www.mass.gov/dep/water/resources/ucharles.doc>

#### Co-permittees

In a May 28, 2010 decision related to the appeal of the Upper Blackstone Water Pollution Abatement District permit, the Environmental Appeals Board (EAB) remanded to EPA conditions related to co-permittees, finding that EPA had failed to adequately articulate in the record of proceeding a rule-of-decision, or interpretation, identifying the statutory and regulatory basis for expanding the scope of NPDES authority beyond the treatment plant owner and operator to separately owned and operated collections systems. EPA Region I has conducted an evaluation of its legal authority and has developed a Regional permitting approach for satellite collection systems that supports the inclusion of the owners of satellite collection systems as co-permittees. The permitting strategy, has been included as **Attachment 1, EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEM** to this fact sheet.

#### Monitoring and Reporting

The partially revised Draft Permit includes reporting requirements using NetDMR. NetDMR is a national tool for permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR 122.41 and 403.12.

#### Revisions of Standard Permit Conditions

During the extended period since the Draft Permit was released for public comment, EPA has updated several standard permit conditions pertaining to collection system operation and maintenance, and monitoring report submissions. These updated conditions are also included in the partially revised Draft Permit, and are also described in a later section of this fact sheet.

EPA is soliciting public comment on those revisions.

### Scope of Opening

In accordance with 40 CFR § 124.14(c), comments filed on this Draft Permit during the reopened comment period are limited to the “substantial new questions that caused its reopening.” Substantial new questions that caused its reopening are the revised total phosphorus limitations based on new information and data in the TMDL report, the inclusion of the satellite sewer communities as limited co-permittees, the permittee and co-permittees responsibilities in Part I.C, Operation and Maintenance of the Sewer System, and the revisions in Part I. I Monitoring and Reporting, and Part I.J Standard Permit Conditions. Comments on other conditions of the permit will not be accepted. EPA will respond to all comments received on the 2008 Draft Permit and this partial reopening in its final permit decision.

### PERMIT BASIS AND EXPLANATION OF CHANGES

#### Phosphorus

Phosphorus is an essential nutrient for plant growth but, excessive amounts of phosphorus in a water body has the potential to accelerate stream eutrophication, characterized by excessive plant growth, low dissolved oxygen and, large diurnal swings in dissolved oxygen in the water body. The range of the monthly average phosphorus data reported on the facility’s discharge monitoring reports (DMRs) for the period from January 2009 through May 2012 was 0.07 mg/l to 2.07 mg/l.

The 2008 Draft Permit included a 0.12 mg/l monthly average limit for total phosphorus for the months of April through October, which was based on achieving EPA Gold Book criteria of 0.10 mg/l in the receiving water during the growing season, and a 1.0 mg/l monthly average limit for the months of November through March based on limiting the amount of particulate phosphorus in the discharge that would settle in the receiving water and be bioavailable during the growing season.

#### Regulatory Background

Massachusetts Water Quality Standards do not include numeric criteria for phosphorus. The Standards include narrative criteria, including, in 314 CMR 4.05(5)(c) that states “Unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site specific criteria developed in a TMDL or as otherwise established by the Department pursuant to 314 CMR 4.00.” Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses.”

In the absence of numeric criteria or a TMDL, EPA would interpret the narrative criteria using the procedures found at 40 CFR Part 122.44(d)(1)(vi), including the use of available guidance and other relevant information. In the fact sheet for the 2008 Draft Permit, EPA determined that there was reasonable potential for the discharge of phosphorus by the facility to cause or contribute to an exceedance of water quality standards, using the Gold Book-recommended criteria, and also established the monthly average limit using the criteria. The fact sheet for the 2008 Draft Permit includes a detailed discussion of the

process used by EPA to develop the phosphorus limits proposed in the 2008 Draft Permit. See Attachment 2, 2008 Fact Sheet.

The TMDL includes a phosphorus waste load allocation for the major and minor POTWs discharging into this segment of the river. Section 3 of the TMDL report discusses nutrient enrichment as it relates to this segment of the river and presents data used in the formulation of the suggested waste load allocation for the major POTWs. Section 7 of the TMDL recommends that reissued NPDES permits for the major POTWs in this reach of the river include total phosphorus limits of 0.10 mg/l from April through October and 0.30 mg/l from November through March. Regulations at 40 CFR 122.44(d)(1)(vii)(B) require that effluent limitations developed to protect water quality criteria be consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.

#### Limit Derivation/Compliance Schedule

The phosphorus limits, required by the TMDL, have been incorporated in the partially revised Draft Permit and are more stringent than the limits in the 2008 Draft Permit. A review of phosphorus data submitted on the Town's DMRs from January 2009 through May 2012 as shown in Table 1, Total Phosphorus DMR Data below indicates that the facility's effluent phosphorus concentrations are greater than the proposed permit limits, indicating that upgrades to the facility will be necessary to achieve the established limits. Extensive upgrades to treatment plant are being planned.

The CRPCD recognizes that upgrades to the treatment plant will have to be completed to be in compliance with the TMDL and has begun work on a preliminary design for the upgrades. A four year design/build schedule has been projected for completion of the necessary upgrades. Attachment 3, Charles River Pollution Control District Facility Upgrades, presents a list of process upgrades under consideration between CRPCD and their consultants.

Accordingly, a schedule of compliance has been included in the partially revised Draft Permit for attaining the proposed total phosphorus limits. The compliance schedule provides 48 months from the effective date of the permit for the completion of the necessary construction upgrades.

EPA believes this is a reasonable schedule of compliance, but invites comments from the permittee and other interested parties regarding the length of this schedule. The partially revised Draft Permit includes an interim monthly average limit of 0.2 mg/l for the months of April through October, and an interim monthly average limit of 1.0 mg/l for the months of November through March. These are the total phosphorus limits in the existing permit.

Month/Year	Mo.Avg (mg/l)						
01/2009	0.53	01/2010	1.8	01/2011	0.08	01/2012	0.65
02/2009	0.68	02/2010	0.88	02/2011	0.40	02/2012	0.86
03/2009	0.91	03/2010	1.6	03/2011	0.35	03/2012	0.52
04/2009	0.19	04/2010	0.25	04/2011	0.12	04/2012	0.34
05/2009	0.31	05/2010	0.15	05/2011	0.20	05/2012	0.62
06/2009	2.07	06/2010	0.18	06/2011	0.21		
07/2009	0.75	07/2010	0.15	07/2011	0.13		
08/2009	0.14	08/2010	0.15	08/2011	0.15		
09/2009	0.18	09/2010	0.19	09/2011	0.19		
10/2009	0.39	10/2010	0.65	10/2011	0.20		
11/2009	0.49	11/2010	0.21	11/2011	0.63		
12/2009	1.0	12/2010	0.070	12/2011	0.59		

Co-Permittees

The Towns of Franklin, Medway, Millis and, Bellingham were listed as co-permittees on the 2008 Draft Permit and shall remain co-permitttees on the partially revised Draft Permit. Each Town owns and operates a separate section of the sewer collection system that transports sewage to the CRPCD’s facility for treatment. As in the 2008 Draft Permit, the co-permittees are only subject to the requirements in Part I B, Unauthorized Discharges and Part I.C, Operation and Maintenance of the Sewer System of the partially revised Draft Permit. Comments received on the 2008 Draft Permit included comments from CRPCD and its satellite sewer communities opposing the inclusion of the satellite sewer communities as limited co-permittees.

On May 28, 2010, the Environmental Appeals Board (EAB) remanded to EPA the co-permitting provisions in a permit issued to the Upper Blackstone Water Pollution Abatement District in Millbury, Massachusetts, a large publicly owned treatment plant. These conditions had been appealed to the EAB by the permittee and four of its satellite communities. In its order, the EAB found that EPA had not adequately articulated in the record of the proceeding a rule-of-decision, or interpretation, identifying the statutory and regulatory basis for expanding the scope of NPDES authority beyond the treatment plant owner and operator to separately owned and operated collection systems that discharge to the treatment plant, and gave EPA the options of providing the appropriate legal and technical basis for supporting the co-permitting provision, or withdrawing the provisions. In the interest of quickly placing other contested provisions into effect, EPA withdrew the co-permitting requirements in that permit. See <http://www.epa.gov/region1/npdes/permits/2010/finalma0102369DeterminationOnRemand.pdf>

However, since that time, EPA Region 1 has developed a more comprehensive factual and legal rationale for its decision to regulate satellite collection systems. Attachment 1 of this fact sheet is a copy of “**EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS**”. This document establishes legal authority to include satellite communities as co-permittees.

### Unauthorized Discharges

The requirements in Part I. B, Unauthorized Discharges (Part I. B) allows discharges from the facilities that are in accordance to the terms and conditions of the Draft Permit. The only discharge authorized from this facility is the treatment plant outfall, as listed in Part I.A.1. All other discharges are prohibited including sanitary sewer overflows (SSOs).

Part I.B also requires that all unauthorized discharges, including sanitary sewer overflows be reported in accordance with general requirements of Part II, Standard Conditions of the Draft Permit. Therefore, the Towns that own and operate satellite collection systems are subject to this Part for the sections of the collections systems it owns and operates and unauthorized discharge from these collection systems must be reported by the owner.

The Part I.B requirements in the partially revised Draft Permit are the same as in the original Draft Permit.

### Operation and Maintenance of the Sewer System

Part I.C, Operation and Maintenance of the Sewer System (Part I.C) has also been reopened for public comment. The standard language and requirements in Part I. C have been updated from the requirements in the 2008 Draft Permit. The revised language and requirements reflect the standard requirements for all NPDES permits now being drafted for publicly owned treatment works in Massachusetts.

The revisions in Part I.C require CRPCD and each co-permittee to develop a collection system operation and maintenance plan, and to map its sanitary sewer system. The schedule for completing the collection system operation and maintenance plan has two milestones.

The first milestone is that within six (6) months of the effective date of the permit, the permittee and each co-permittee shall submit to EPA and MassDEP a description of the collection system management goals, staffing, information management, and legal authorities; a description of the overall condition of the collection system including a list of recent studies and construction activities; and a schedule for the development and implementation of the full Collection System O & M Plan.

The second milestone is that within twenty four (24) months from the effective date of the permit, the full Collection System O & M Plan shall be implemented, and a copy of the permittee's and each co-permittee's plan shall be submitted to EPA and MassDEP. The final plan is required to include: a preventative maintenance and monitoring program for the collection system; sufficient staffing to properly operate and maintain the sanitary sewer collection system; sufficient funding and the source(s) of funding for implementing the plan; identification of known and suspected overflows and back-ups, including manholes, a description of the cause of the identified overflows and back-ups, and a plan for addressing the overflows and back-ups consistent with the requirements of the permit; a description of the permittees and each co-permittees programs for preventing I/I-related effluent violations and all unauthorized discharges of wastewater, including overflows and bypasses, and an ongoing program to identify and remove sources of I/I. The program is required to also include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts; and an educational public outreach program for all aspects of I/I control, particularly private inflow.

The permit also requires that sanitary sewer mapping be completed within thirty (30) months of the effective date of the permit, and includes specific information to be recorded on the maps.

## Monitoring and Reporting

Part 1.I Monitoring and Reporting in the Draft Permit includes the new provisions related to the electronic submittals of Discharge Monitoring Reports (DMRs) known as NetDMR. NetDMR is a national tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to the U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR 122.41 and 403.12. NetDMR is a Web-based tool that allows NPDES permittees to electronically sign and submit their discharge monitoring reports (DMRs) to EPA's [Integrated Compliance Information System \(ICIS-NPDES\)](#) via the [Environmental Information Exchange Network](#).

NetDMR will reduce the burden on EPA, states, and the regulated community; improve data quality; and expand the ability of both states and EPA in targeting their limited resources to meet environmental goals. An essential component of NetDMR when fully implemented will be the exchange of data with ICIS-NPDES allowing permittees to complete a DMR that is specific to their permit limits and outfalls.

## Standard Permit Conditions

The language in Part 1.J, Standard Permit Conditions of the partially revised Draft Permit has also been updated. It includes information of the federal and state permit authorizations as they apply to the issuance of an NPDES permit and, provides information on the water quality certification authorization issued by MassDEP.

### **III. STATE CERTIFICATION REQUIREMENTS**

Staff of MassDEP have reviewed the partially revised Draft Permit. EPA has requested permit certification by the State pursuant to CWA § 401(a)(1) and 40 CFR § 124.53 and expects that the Draft Permit, as revised, will be certified.

### **IV. COMMENT PERIOD, HEARING REQUESTS, and PROCEDURES FOR FINAL DECISIONS**

All persons, including applicants, who believe the revised conditions of the partially revised Draft Permit are inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Betsy Davis, U.S. EPA, Office of Ecosystem Protection, Municipal Permits Section, 5 Post Office Square-Suite 100, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing for a public hearing to consider the revised conditions in the partially revised Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Pursuant to 40 CFR 124.17, at the time the final permit decision is issued, EPA will also issue a response to comments, which will include responses to all significant comments submitted on the 2008 Draft permit and on the 2012 partially revised Draft Permit.

**V. EPA AND MassDEP CONTACTS**

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

Betsy Davis  
US Environmental Protection Agency  
5 Post Office Square  
Suite 100 (CMA)  
Boston, Massachusetts 02109-3912  
Telephone: (617) 918-1576  
Fax: (617) 918-0565  
Email: [davis.betsy@epamail.epa.gov](mailto:davis.betsy@epamail.epa.gov)

or

Kathleen Keohane  
MA Department of Environmental Protection  
Division of Watershed Management  
627 Main Street  
Worcester, MA 01608  
Telephone: (508)767-2856  
Fax: (508) 791-4131  
Email: [kathleen.keohane@state.ma.us](mailto:kathleen.keohane@state.ma.us)

\_\_\_\_\_  
Date

Stephen S. Perkins, Director\*  
Office of Ecosystem Protection  
U.S. Environmental Protection System

Comments should be addressed to both Betsy Davis and Kathleen Keohane, not Stephen S. Perkins.

## Attachment 1

### **EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS**

This interpretative statement provides an explanation to the public of EPA Region 1's interpretation of the Clean Water Act ("CWA" or "Act") and implementing regulations, and advises the public of relevant policy considerations, regarding the applicability of the National Pollutant Discharge Elimination System ("NPDES") program to publicly owned treatment works ("POTWs") that are composed of municipal satellite sewage collection systems owned by one entity and treatment plants owned by another ("regionally integrated POTWs"). When issuing NPDES permits to these types of sanitary sewer systems, it is EPA Region 1's practice to directly regulate, as necessary, the owners/operators of the municipal satellite collection systems through a co-permitting structure. This interpretative statement is intended to explain, generally, the basis for this practice. In determining whether to include municipal satellite collection systems as co-permittees in any particular circumstances, Region 1's decision will be made by applying the law and regulations to the specific facts of the case before the Region.

EPA has set out a national policy goal for the nation's sanitary sewer systems to adhere to strict design and operational standards:

"Proper [operation and maintenance] of the nation's sewers is integral to ensuring that wastewater is collected, transported, and treated at POTWs; and to reducing the volume and frequency of ...[sanitary sewer overflow] discharges. Municipal owners and operators of sewer systems and wastewater treatment facilities need to manage their assets effectively and implement new controls, where necessary, as this infrastructure continues to age. Innovative responses from all levels of government and consumers are needed to close the gap."<sup>1</sup>

Because ownership/operation of a regionally integrated POTW is sometimes divided among multiple parties, the owner/operator of the treatment plant many times lacks the means to implement comprehensive, system-wide operation and maintenance ("O & M") procedures. Failure to properly implement O & M measures in a POTW can cause, among other things, excessive extraneous flow (*i.e.*, inflow and infiltration) to enter, strain and occasionally overload treatment system capacity. This failure not only impedes EPA's national policy goal concerning preservation of the nation's wastewater infrastructure assets, but also frustrates achievement of the water quality- and technology-based requirements of CWA § 301 to the extent it results in sanitary sewer overflows and degraded treatment plant performance, with adverse impacts on human health and the environment.

In light of these policy objectives and legal requirements, it is Region 1's permitting practice to subject all portions of the POTW to NPDES requirements in order to ensure that the treatment

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<sup>1</sup> See *Report to Congress: Impacts and Control of CSOs and SSOs* (EPA 833-R-04-001) (2004), at p. 10-2. See also "1989 National CSO Control Strategy," 54 Fed. Reg. 37371 (September 8, 1989).

system as a whole is properly operated and maintained and that human health and water quality impacts resulting from excessive extraneous flow are minimized. The approach of addressing O&M concerns in a regionally integrated treatment works by adding municipal satellite collection systems as co-permittees is consistent with the definition of “publicly owned treatment works,” which by definition includes sewage collection systems. Under this approach, the POTW in its entirety will be subject to NPDES regulation as a point source discharger under the Act. Region 1’s general practice will be to impose permitting requirements applicable to the POTW treatment plant along with a more limited set of conditions applicable to the connected municipal satellite collection systems.

The factual and legal basis for the Region’s position is set forth in greater detail in *Attachment A*.

## Attachment A

### **ANALYSIS SUPPORTING EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS**

- Exhibit A* List of POTW permits that include municipal satellite collection systems as co-permittees
- Exhibit B* Analysis of extraneous flow trends and SSO reporting for representative systems
- Exhibit C* Form of Regional Administrator’s waiver of permit application requirements for municipal satellite collection systems

#### Introduction

On May 28, 2010, the U.S. EPA Environmental Appeals Board (“Board”) issued a decision remanding to the Region certain NPDES permit provisions that included and regulated satellite collection systems as co-permittees. *See In re Upper Blackstone Water Pollution Abatement District*, NPDES Appeal Nos. 08-11 to 08-18 & 09-06, 14 E.A.D. \_\_ (Order Denying Review in Part and Remanding in Part, EAB, May 28, 2010).<sup>2</sup> While the Board “did not pass judgment” on the Region’s position that its NPDES jurisdiction encompassed the entire POTW and not only the treatment plant, it held that “where the Region has abandoned its historical practice of limiting the permit only to the legal entity owning and operating the wastewater treatment plant, the Region had not sufficiently articulated in the record of this proceeding the statutory, regulatory, and factual bases for expanding the scope of NPDES authority beyond the treatment plant owner/operator to separately owned/operated collection systems that do not discharge directly to waters of the United States, but instead that discharge to the treatment plant.” *Id.*, slip op. at 2, 18. In the event the Region decided to include and regulate municipal satellite collection systems as co-permittees in a future permit, the Board posed several questions for the Region to address in the analysis supporting its decision:

- (1) In the case of a regionally integrated POTW composed of municipal satellite collection systems owned by different entities and a treatment plant owned by another, is the scope of NPDES authority limited to owners/operators of the POTW treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that convey wastewater to the POTW treatment plant?

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<sup>2</sup> The decision is available on the Board’s website via the following link:  
[http://yosemite.epa.gov/oa/EAB\\_Web\\_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument](http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument).

- (2) If the latter, how far up the collection system does NPDES jurisdiction reach, *i.e.*, where does the “collection system” end and the “user” begin?
- (3) Do municipal satellite collection systems “discharge [ ] a pollutant” within the meaning of the statute and regulations?
- (4) Are municipal satellite collection systems “indirect dischargers” and thus excluded from NPDES permitting requirements?
- (5) Is the Region’s rationale for regulating municipal satellite collection systems as co-permittees consistent with the references to “municipality” in the regulatory definition of POTW, and the definition’s statement that “[t]he term also means the municipality...which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works”?
- (6) Is the Region’s rationale consistent with the permit application and signatory requirements under NPDES regulations?

See *Blackstone, slip op.* at 18, 20, n. 17.

This regional interpretative statement is, in part, a response to the Board’s decision. It details the legal and policy bases for regulating publicly owned treatment works (“POTWs”) that include municipal satellite collection systems through a co-permittee structure. Region 1’s analysis is divided into five sections. First, the Region provides context for the co-permitting approach by briefly describing the health and environmental impacts associated with poorly maintained sanitary sewer systems. Second, the Region outlines its evolving permitting practice regarding regionally integrated POTWs, particularly its attempts to ensure that such entity’s municipal satellite collection systems are properly maintained and operated. Third, the Region explains the legal authority to include municipal satellite collection systems as co-permittees when permitting regionally integrated POTWs. In this section, the Region answers the questions posed by the Board in the order presented above. Fourth, the Region sets forth the basis for the specific conditions to which the municipal satellite collection systems will be subject as co-permittees. Finally, the Region discusses other considerations informing its decision to employ a co-permittee structure when permitting regionally integrated POTWs.

## I. Background

A sanitary sewer system (SSS) is a wastewater collection system owned by a state or municipality that conveys domestic, industrial and commercial wastewater (and limited amounts of infiltrated groundwater and some storm water runoff ) to a POTW.<sup>3</sup> See 40 C.F.R. §

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<sup>3</sup> See generally Report to Congress: Impacts and Control of CSOs and SSOs (EPA 833-R-04-001) (2004), from which EPA Region 1 has drawn this background material.

35.2005(b)(37) (defining “sanitary sewer”). The purpose of these systems is to transport wastewater uninterrupted from its source to a treatment facility. Developed areas that are served by sanitary sewers often also have a separate storm sewer system (*e.g.*, storm drains) that collects and conveys runoff, street wash waters and drainage and discharges them directly to a receiving water (*i.e.*, without treatment at a POTW). While sanitary sewers are not designed to collect large amounts of runoff from precipitation events or provide widespread drainage, they typically are built with some allowance for higher flows that occur during periods of high groundwater and storm events. They are thus able to handle minor and controllable amounts of extraneous flow (*i.e.*, inflow and infiltration, or I/I) that enter the system. Inflow generally refers to water other than wastewater—typically precipitation like rain or snowmelt—that enters a sewer system through a direct connection to the sewer. Infiltration generally refers to other water that enters a sewer system from the ground, for example through defects in the sewer.

Municipal sanitary sewer collection systems can consist of a widespread network of pipes and associated components (*e.g.*, pump stations). These systems provide wastewater collection service to the community in which they are located. In some situations, the municipality that owns the collector sewers may not provide treatment of wastewater, but only conveys its wastewater to a collection system that is owned and operated by a different municipal entity (such as a regional sewer district). This is known as a satellite community. A “satellite” community is a sewage collection system owner/operator that does not have ownership of the treatment facility and the wastewater outfall but rather the responsibility to collect and convey the community’s wastewater to a POTW treatment plant for treatment. *See* 75 Fed. Reg. 30395, 30400 (June 1, 2010).

Municipal sanitary sewer collection systems play a critical role in protecting human health and the environment. Proper operation and maintenance of sanitary sewer collection systems is integral to ensuring that wastewater is collected, transported, and treated at POTW treatment plants. Through effective operation and maintenance, collection system operators can maintain the capacity of the collection system; reduce the occurrence of temporary problem situations such as blockages; protect the structural integrity and capacity of the system; anticipate potential problems and take preventive measures; and indirectly improve treatment plant performance by minimizing I/I-related hydraulic overloading.

Despite their critical role in the nation’s infrastructure, many collection systems exhibit poor performance and are subjected to flows that exceed system capacity. Untreated or partially treated overflows from a sanitary sewer system are termed “sanitary sewer overflows” (SSOs). SSOs include releases from sanitary sewers that reach waters of the United States as well as those that back up into buildings and flow out of manholes into city streets.

There are many underlying reasons for the poor performance of collection systems. Much of the nation’s sanitary sewer infrastructure is old, and aging infrastructure has deteriorated with time. Communities also sometimes fail to provide capacity to accommodate increased sewage delivery and treatment demand from increasing populations. Furthermore, institutional arrangements relating to the operation of sewers can pose barriers to coordinated action, because many

municipal sanitary sewer collection systems are not entirely owned or operated by a single municipal entity.

The performance and efficiency of municipal sanitary sewer collection systems influence the performance of sewage treatment plants. When the structural integrity of a municipal sanitary sewer collection system deteriorates, large quantities of infiltration (including rainfall-induced infiltration) and inflow can enter the collection system, causing it to overflow. These extraneous flows are among the most serious and widespread operational challenges confronting treatment works.<sup>4</sup>

Infiltration can be long-term seepage of water into a sewer system from the water table. In some systems, however, the flow characteristics of infiltration can resemble those of inflow, *i.e.*, there is a rapid increase in flow during and immediately after a rainfall event, due, for example, to rapidly rising groundwater. This phenomenon is sometimes referred to as rainfall-induced infiltration.

Sanitary sewer systems can also overflow during periods of normal dry weather flows. Many sewer system failures are attributable to natural aging processes or poor operation and maintenance. Examples include years of wear and tear on system equipment such as pumps, lift stations, check valves, and other moveable parts that can lead to mechanical or electrical failure; freeze/thaw cycles, groundwater flow, and subsurface seismic activity that can result in pipe movement, warping, brittleness, misalignment, and breakage; and deterioration of pipes and joints due to root intrusion or other blockages.

Inflow and infiltration impacts are often regional in nature. Satellite collection systems in the communities farthest from the POTW treatment plant can cause sanitary sewer overflows (“SSOs”) in communities between them and the treatment plant by using up capacity in the interceptors. This can cause SSOs in the interceptors themselves or in the municipal sanitary sewers that lead to them. The implication of this is that corrective solutions often must also be regional in scope to be effective.

The health and environmental risks attributed to SSOs vary depending on a number of factors including location and season (potential for public exposure), frequency, volume, the amount and type of pollutants present in the discharge, and the uses, conditions, and characteristics of the receiving waters. The most immediate health risks associated with SSOs to waters and other areas with a potential for human contact are associated with exposure to bacteria, viruses, and other pathogens.

Human health impacts occur when people become ill due to contact with water or ingestion of water or shellfish that have been contaminated by SSO discharges. In addition, sanitary sewer

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<sup>4</sup> In a 1989 Water Pollution Control Federation survey, 1,003 POTWs identified facility performance problems. Infiltration and inflow was the most frequently cited problem, with 85 percent of the facilities reporting I/I as a problem. I/I was cited as a major problem by 41 percent of the facilities (32 percent as a periodic problem).

systems can back up into buildings, including private residences. These discharges provide a direct pathway for human contact with untreated wastewater. Exposure to land-based SSOs typically occurs through the skin via direct contact. The resulting diseases are often similar to those associated with exposure through drinking water and swimming (*e.g.*, gastroenteritis), but may also include illness caused by inhaling microbial pathogens. In addition to pathogens, raw sewage may contain metals, synthetic chemicals, nutrients, pesticides, and oils, which also can be detrimental to the health of humans and wildlife.

## II. Region 1 Past Practice of Permitting POTWs that Include Municipal Satellite Collection Systems

Region 1's practice in permitting regionally integrated POTWs has developed in tandem with its increasing focus on addressing I/I in sewer collection systems, in response to the concerns outlined above. Up to the early 1990s, POTW permits issued by Region 1 generally did not include specific requirements for collection systems. When I/I and the related issue of SSOs became a focus of concern both nationally and within the region in the mid-1990s, Region 1 began adding general requirements to POTW permits that required the permittees to "eliminate excessive infiltration and inflow" and provide an annual "summary report" of activities to reduce I/I. As the Region gathered more information and gained more experience in assessing these reports and activities, it began to include more detailed requirements and reporting provisions in these permits.

MassDEP also engaged in a parallel effort to address I/I, culminating in 2001 with the issuance of MassDEP Policy No. BRP01-1, "Interim Infiltration and Inflow Policy." Among other provisions, this policy established a set of standard NPDES permit conditions for POTWs that included development of an I/I control plan (including funding sources, identification and prioritization of problem areas, and public education programs) and detailed annual reporting requirements (including mapping, reporting of expenditures and I/I flow calculations). Since September 2001, these requirements have been the basis for the standard operation and maintenance conditions related to I/I.

Regional treatment plants presented special issues as I/I requirements became more specific, as it is generally the member communities, rather than the regional sewer district, that own the collection systems that are the primary source of I/I. Before the focus on I/I, POTW permits did not contain specific requirements related to the collection system component of POTWs. Therefore, when issuing NPDES permits to authorize discharges from regionally integrated treatment POTWs, Region 1 had generally only included the legal entity owning and/or operating the regionally centralized wastewater treatment plant as the permittee. As the permit conditions were focused on the treatment plant and its effluent discharge, a permit issued only to the owner or operator of the treatment plant was sufficient to ensure that permit conditions could be fully implemented and that EPA had authority to enforce the permit requirements.

In implementing the I/I conditions, Region 1 initially sought to maintain the same structure, placing the responsibility on the regional sewer district to require I/I activities by the contributing

systems and to collect the necessary information from those systems for submittal to EPA. MassDEP's 2001 Interim I/I Policy reflected this approach, containing a condition for regional systems:

((FOR REGIONAL FACILITIES ONLY)) The permittee shall require, through appropriate agreements, that all member communities develop and implement infiltration and inflow control plans sufficient to ensure that high flows do not cause or contribute to a violation of the permittee's effluent limitations, or cause overflows from the permittee's collection system.

As existing NPDES permittees, the POTW treatment plants were an obvious locus of regulation. The Region assumed the plants would be in a position to leverage preexisting legal and/or contractual relationships with the satellite collection systems they serve to perform a coordinating function, and that utilizing this existing structure would be more efficient than establishing a new system of direct reporting to EPA by the collection system owners. The Region also believed that the owner/operator of the POTW treatment plant would have an incentive to reduce flow from contributing satellite systems because doing so would improve treatment plant performance and reduce operation costs. While relying on this cooperative approach, however, Region 1 also asserted that it had the authority to require that POTW collection systems be included as NPDES permittees and that it would do so if it proved necessary. Indeed, in 2001 Region 1 acceded to Massachusetts Water Resources Authority's ("MWRA") request to include as co-permittees the contributing systems to the MWRA Clinton wastewater treatment plant ("WWTP") based on evidence provided by MWRA that its relationship with those communities would not permit it to run an effective I/I reduction program for these collection systems. Region 1 also put municipal satellite collection systems on notice that they would be directly regulated through legally enforceable permit requirements if I/I reductions were not pursued or achieved.

In time, the Region realized that its failure to assert direct jurisdiction over municipal satellite dischargers was becoming untenable in the face of mounting evidence that cooperative (or in some cases non-existent) efforts on the part of the POTW treatment plant and associated satellites were failing to comprehensively address the problem of extraneous flow entering the POTW. The ability and/or willingness of regional sewer districts to attain meaningful I/I efforts in their member communities varied widely. The indirect structure of the requirements also tended to make it difficult for EPA to enforce the implementation of meaningful I/I reduction programs.

It became evident to Region 1 that a POTW's ability to comply with CWA requirements depended on successful operation and maintenance of not only the treatment plant but also the collection system. For example, the absence of effective I/I reduction and operation/maintenance programs was impeding the Region's ability to prevent or mitigate the human health and water quality impacts associated with SSOs. Additionally, these excess flows stressed POTW treatment plants from a hydraulic capacity and performance standpoint, adversely impacting effluent quality. See *Exhibit B* (Analysis of extraneous flow trends and SSO reporting for

representative systems). Addressing these issues in regional systems was essential, as these include most of the largest systems in terms of flow, population served and area covered.

The Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator represents a necessary and logical progression in its continuing effort to effectively address the serious problem of I/I in sewer collection systems.<sup>5</sup> In light of its past permitting experience and the need to effectively address the problem of extraneous flow on a system-wide basis, Region 1 decided that it was necessary to refashion permits issued to regionally integrated POTWs to include all owners/operators of the treatment works (*i.e.*, the regional centralized POTW treatment plant and the municipal satellite collection systems).<sup>6</sup> Specifically, Region 1 determined that the satellite systems should be subject as co-permittees to a limited set of O&M-related conditions on permits issued for discharges from regionally integrated treatment works. These conditions pertain only to the portions of the POTW collection system that the satellites own. This ensures maintenance and pollution control programs are implemented with respect to all portions of the POTW. Accordingly, since 2005, Region 1 has generally included municipal satellite collection systems as co-permittees for limited purposes while it required the owner/operator of the treatment plant, as the primary permittee, to comply with the full array of NPDES requirements, including secondary treatment and water-quality based effluent limitations. The Region has identified 25 permits issued by the Region to POTWs in New Hampshire and Massachusetts that include municipal satellite collection systems as co-permittees. *See Exhibit A.* The 25 permits include a total of 55 satellite collection systems as co-permittees.

### III. Legal Authority

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<sup>5</sup> Although the Region has in the past issued NPDES permits only to the legal entities owning and operating the wastewater treatment plant (*i.e.*, only a portion of the "treatment works"), the Region's reframing of permits to include municipal satellite collection systems does not represent a break or reversal from its historical legal position. Region 1 has never taken the legal position that the satellite collection systems are beyond the reach of the CWA and the NPDES permitting program. Rather, the Region as a matter of discretion had merely never determined it necessary to exercise its statutory authority to directly reach these facilities in order to carry out its NPDES permitting obligations under the Act.

Although the Region adopted a co-permittee structure to deal I/I problems in the municipal satellite collection systems, that decision does nothing to foreclose a permitting authority from opting for alternative permitting approaches that are consistent with applicable law. Each permitting authority has the discretion to determine which permitting approach best achieves the requirements of the Act based on the facts and circumstances before it. Upon determining that direct regulation of a satellite collection system via an NPDES permit is warranted, a permitting authority has the discretion to make the owner or operator of the collection system a co-permittee, or to cover it through an individual or general permit. Nothing in EPA regulations precludes the issuance of a separate permit to an entity that is part of the larger system being regulated. As in the pretreatment program, there are many ways to ensure that upstream collection systems are adequately contributing to the successful implementation of a POTW's permit requirements.

<sup>6</sup> EPA has "considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges." *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C.Cir.1977). ("[T]his ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.")

The Region's prior and now superseded practice of limiting the permit only to the legal entity owning and/or operating the wastewater treatment plant had never been announced as a regional policy or interpretation. Similarly, the Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator has also never been expressly announced as a uniform, region-wide policy or interpretation. Upon consideration of the Board's decision, described above, Region 1 has decided to supply a clearer, more detailed explanation regarding its use of a co-permittee structure when issuing NPDES permits to regionally integrated POTWs. In this section, the Region addresses the questions posed by the Board in the *Upper Blackstone* decision referenced above.

*(1) In the case of a regionally integrated POTW composed of municipal satellite collection systems owned by different entities and a treatment plant owned by another, is the scope of NPDES authority limited to owners/operators of the POTW treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that convey wastewater to the POTW treatment plant?*

The scope of NPDES authority extends beyond the owners/operators of the POTW treatment plant to include the owners/operators of the municipal satellite collection systems conveying wastewater to the treatment plant for the reasons discussed below.

The CWA prohibits the "discharge of any pollutant by any person" from any point source to waters of the United States, except, *inter alia*, in compliance with an NPDES permit issued by EPA or an authorized state pursuant to Section 402 of the CWA. CWA § 301, 402(a)(1); 40 C.F.R. § 122.1(b).

"Publicly owned treatment works" are facilities that, when they discharge, are subject to the NPDES program. Statutorily, POTWs as a class must meet performance-based effluent limitations based on available wastewater treatment technology. *See* CWA § 402(a)(1) ("[t]he Administrator may...issue a permit for the discharge of any pollutant...upon condition that such discharge will meet (A) all applicable requirements under [section 301]..."); § 301(b)(1)(B) ("In order to carry out the objective of this chapter there shall be achieved...for publicly owned treatment works in existence on July 1, 1977...effluent limitations based upon secondary treatment[.]"); *see also* 40 C.F.R. pt 133. In addition to secondary treatment requirements, POTWs are also subject to water quality-based effluent limits if necessary to achieve applicable state water quality standards. *See* CWA § 301(b)(1)(C). *See also* 40 C.F.R. § 122.44(a)(1) ("...each NPDES permit shall include...[t]echnology-based effluent limitations based on: effluent limitations and standards published under section 301 of the Act") and (d)(1) (same for water quality standards and state requirements). NPDES regulations similarly identify the "POTW" as the entity subject to regulation. *See* 40 C.F.R. § 122.21(a) (requiring "new and existing POTWs" to submit information required in 122.21(j)," which in turn requires "all POTWs," among others, to provide permit application information).

The CWA and its implementing regulations broadly define “POTW” to include not only wastewater treatment plants but also the sewer systems and associated equipment that collect wastewater and convey it to the treatment plants. When a municipal satellite collection system conveys wastewater to the POTW treatment plant, the scope of NPDES authority extends to both the owner/operators of the treatment facility and the municipal satellite collection system, because the POTW is discharging pollutants.

Under section 212 of the Act,

“(2)(A) The term ‘treatment works’ means any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature to implement section 1281 of this title, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, *sewage collection systems* [emphasis added], pumping, power, and other equipment, and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land used for the storage of treated wastewater in land treatment systems prior to land application) or is used for ultimate disposal of residues resulting from such treatment.

(B) In addition to the definition contained in subparagraph (A) of this paragraph, ‘treatment works’ means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including storm water runoff, or industrial waste, including waste in combined storm water and *sanitary sewer systems* [emphasis added]. Any application for construction grants which includes wholly or in part such methods or systems shall, in accordance with guidelines published by the Administrator pursuant to subparagraph (C) of this paragraph, contain adequate data and analysis demonstrating such proposal to be, over the life of such works, the most cost efficient alternative to comply with sections 1311 or 1312 of this title, or the requirements of section 1281 of this title.”

EPA has defined POTW as follows:

“The term *Publicly Owned Treatment Works* or *POTW* [emphasis in original]...includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.”

See 40 C.F.R. §§ 403.3(q) and 122.2.

Thus, under the CWA and its implementing regulations, wastewater treatment plants and the sewer systems and associated equipment that collect wastewater and convey it to the treatment plants fall within the broad definition of “POTW.”

The statutory and regulatory definitions plainly encompass both the POTW treatment plant and municipal satellite collection systems conveying wastewater to the POTW treatment plant even if the treatment plant and the satellite collection system have different owners. Municipal satellite collection systems indisputably fall within the definition of a POTW. First, they are “sewage collection systems” under section 212(A) and “sanitary sewer systems” under section 212(B). Second, they convey wastewater to a POTW treatment plant for treatment under 40 C.F.R. § 403.3(q). The preamble to the rule establishing the regulatory definition of POTW supports the reading that the treatment plant comprises only one portion of the POTW. *See* 44 Fed. Reg. 62260, 62261 (Oct. 29, 1979).<sup>7</sup> Consistent with Region 1’s interpretation, courts have similarly taken a broad reading of the terms treatment works and POTW.<sup>8</sup> Finally, EPA has long recognized that a POTW can be composed of different parts, and that sometimes direct control is required under a permit for all parts of the POTW system, not just the POTW treatment plant segment. *See Multijurisdictional Pretreatment Programs Guidance Manual*, Office of Water (4203) EPA 833-B-94-005 (June 1994) at 19. (“If the contributing jurisdiction owns or operates the collection system within its boundaries, then it is a co-owner or operator of the POTW. As such, it can be included on the POTW’s NPDES permit and be required to develop a pretreatment program. Contributing jurisdictions should be made co-permittees where circumstances or experience indicate that it is necessary to ensure adequate pretreatment program implementation.”). The Region’s interpretation articulated here is consistent with the precepts of the pretreatment program, which pertains to the same regulated entity, i.e., the POTW.<sup>9</sup>

Thus, under the statutory and regulatory definitions, a satellite collection system owned by one

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<sup>7</sup> “A new provision...defining the term ‘POTW Treatment Plant’ has been added to avoid an ambiguity that now exists whenever a reference is made to a POTW (publicly owned treatment works). ...[T]he existing regulation defines a POTW to include both the treatment plant and the sewer pipes and other conveyances leading to it. As a result, it is unclear whether a particular reference is to the pipes, the treatment plant, or both. The term “POTW treatment plant” will be used to designate that portion of the municipal system which is actually designed to provide treatment to the wastes received by the municipal system.”

<sup>8</sup> *See, e.g., United States v. Borowski*, 977 F.2d 27, 30 n.5 (1st Cir. 1992) (“We read this language [POTW definition] to refer to such sewers, pipes and other conveyances that are publicly owned. Here, for example, the City of Burlington’s sewer is included in the definition because it conveys waste water to the Massachusetts Water Resource Authority’s treatment works.”); *Shanty Town Assoc. v. Env’tl. Prot. Agency*, 843 F.2d 782, 785 (4th Cir. 1988) (“As defined in the statute, a ‘treatment work’ need not be a building or facility, but can be any device, system, or other method for treating, recycling, reclaiming, preventing, or reducing liquid municipal sewage and industrial waste, including storm water runoff.”) (citation omitted); *Comm. for Consideration Jones Fall Sewage System v. Train*, 375 F. Supp. 1148, 1150-51 (D. Md. 1974) (holding that NPDES wastewater discharge permit coverage for a wastewater treatment plant also encompasses the associated sanitary sewer system and pump stations under § 1292 definition of “treatment work”).

<sup>9</sup> The fact that EPA has endorsed a co-permittee approach in addressing pretreatment issues in situations where the downstream treatment plant was unable to adequately regulate industrial users to the collection system in another jurisdiction reinforces the approach taken here.

municipality that transports municipal sewage to another portion of the POTW owned by another municipality can be classified as part of a single integrated POTW system discharging to waters of the U.S.

*(2) If the latter, how far up the collection system does NPDES jurisdiction reach, i.e., where does the “collection system” end and the “user” begin?*

NPDES jurisdiction extends beyond the treatment plant to the outer boundary of the municipally-owned sewage collection systems, that is, to the outer bound of those sewers whose purpose is to transport wastewater for others to a POTW treatment plant for treatment, as explained below.

As discussed in response to Question 1 above, the term “treatment works” is defined to include “sewage collection systems.” CWA § 212. In order to identify the extent of the sewage collection system for purposes of co-permittee regulation—*i.e.*, to identify the boundary between the portions of the collection system that are subject to NPDES requirements and those that are not—Region 1 is relying on EPA’s regulatory interpretation of the term “sewage collection system.” In relevant part, EPA regulations define “sewage collection system” at 40 C.F.R. § 35.905 as:

“.... each, and all, of the common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive waste waters directly from facilities which convey waste water from individual structures or from private property and which include service connection “Y” fittings designed for connection with those facilities. The facilities which convey waste water from individual structures, from private property to the public lateral sewer, or its equivalent, are specifically excluded from the definition....”

Put otherwise, a municipal satellite collection system is subject to NPDES jurisdiction under the Region’s approach insofar as it transports wastewater for others to a POTW treatment plant for treatment. This test (*i.e.*, common sewer installed to receive and carry waste water from others) allows Region 1 to draw a principled, predictable and readily ascertainable boundary between the POTW’s collection system and the users. This test would exclude, for example, single user branch drainpipes that collect and transport wastewater from plumbing fixtures in a commercial building or public school to the common lateral sewer, just as service connections from private residential structures to lateral sewers are excluded. This type of infrastructure would not be considered part of the collection system, because it is not designed to receive and carry wastewaters from other users. Rather, it is designed to transport its users’ wastewater to such a common collection system at a point further down the sanitary sewer system.

EPA’s reliance on the definition of “sewage collection system” from the construction grants regulations for interpretative guidance is reasonable because these regulations at 40 C.F.R. Part 35, subpart E pertain to grants specifically for POTWs, the entity that is the subject of this NPDES policy. Additionally, the term “sewage collection systems” expressly appears in the definition of treatment works under section 212 of the Act as noted above.

(3) *Do municipal satellite collection systems “discharge [] a pollutant” within the meaning of the statute and regulations?*

Yes, the collection system “discharges a pollutant” because it adds pollutants to waters of the U.S. from a point source. This position is consistent with the definition of “discharge of a pollutant” at 40 C.F.R. § 122.<sup>10</sup> The fact that a collection system may be located in the upper reaches of the POTW and not necessarily near the ultimate discharge point at the treatment plant, or that its contribution may be commingled with other wastewater flows prior to the discharge point, is not material to the question of whether it “discharges” a pollutant and consequently may be subject to conditions of an NPDES permit issued for discharges from the POTW.<sup>11</sup>

40 C.F.R. § 122.2 defines “discharge of a pollutant” as follows:

“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.

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.’”

POTW treatment plants as well as the municipal satellite collection systems that comprise portions of the larger POTW and that transport flow to the POTW treatment plant clearly add pollutants or combinations of pollutants to waters of the U.S. and to waters of the “contiguous zone” and are thus captured under sections (a) and (b) of this definition.<sup>12</sup>

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<sup>10</sup> This position differs from that taken by the Region in the *Upper Blackstone* litigation. There, the Region stated that the treatment plant was the discharging entity for regulatory purposes. The Region has clarified this view upon further consideration of the statute, EPA’s own regulations and case law and determined that a municipal satellite collection system in a POTW is a discharging entity for regulatory purposes.

<sup>11</sup> As explained more fully below, non-domestic contributors of pollutants to the collection system and treatment plant do not require NPDES permits because they are regulated through the pretreatment program under Section 307 of the CWA and are specifically excluded from needing an NPDES permit. 40 C.F.R. § 122.3(c).

<sup>12</sup> Some municipal satellite collection systems have argued that the addition of pollutants to waters of the United States from pipes, sewers or other conveyances that go to a *treatment plant* are not a “discharge of a pollutant” under 40 C.F.R. § 122.2. This is erroneous. Only one category of such discharges is excluded: indirect discharges. For the reasons explained below in section 4, the satellite system discharges at issue here are not indirect discharges. It is correct that the discharge of wastewater that does not go to the treatment works is included as a discharge under

(4) Are municipal satellite collection systems “indirect dischargers” and thus excluded from NPDES permitting requirements?

No, municipal satellite collection systems that convey wastewater from domestic sources to another portion of the POTW for treatment are not “indirect dischargers” to the POTW.

Section 307(b) of the Act requires EPA to establish regulatory pretreatment requirements to prevent the “introduction of pollutants into treatment works” that interfere, pass through or are otherwise incompatible with such works. Section 307 is implemented through the General Pretreatment Regulations for Existing and New Sources of Pollution (40 C.F.R. Part 403) and categorical pretreatment standards (40 C.F.R. Parts 405-471). Section 403.3(i) defines “indirect discharger” as “any non-domestic” source that introduces pollutants into a POTW and is regulated under pretreatment standards pursuant to CWA § 307(b)-(d). The source of an indirect discharge is termed an “industrial user.” *Id.* at § 403.3(j). Under regulations governing the NPDES permitting program, the term “indirect discharger” is defined as “a non-domestic discharger introducing ‘pollutants’ to a ‘publicly owned treatment works.’” 40 C.F.R. § 122.2. Indirect dischargers are excluded from NPDES permit requirements at 40 C.F.R. § 122.3(c), which provides, “The following discharges do not require an NPDES permit: . . . The introduction of sewage, industrial wastes or other pollutants into publicly owned treatment works by indirect dischargers.”

Municipal satellite collection systems are not indirect dischargers as that term is defined under part 122 or 403 regulations. Unlike indirect dischargers, municipal satellite collection systems are not a non-domestic discharger “introducing pollutants” to POTWs as defined in 40 C.F.R. § 122.2. Instead, they themselves fall within the definition of POTW, whose components consist of the municipal satellite collection system owned and operated by one POTW and a treatment system owned and operated by another POTW. Additionally, they are not a non-domestic *source* regulated under section 307(b) that introduces pollutants into a POTW within the meaning of § 403.3(i). Rather, they are part of the POTW and collect and convey municipal sewage from industrial, commercial and domestic users of the POTW.

The Region’s determination that municipal satellite collection systems are not indirect dischargers is, additionally, consistent with the regulatory history of the term indirect discharger. The 1979 revision of the part 122 regulations defined “indirect discharger” as “a non-municipal, non-domestic discharger introducing pollutants to a publicly owned treatment works, which introduction does not constitute a ‘discharge of pollutants’...” *See* National Pollutant Discharge

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the definition. However, interpreting the *inclusion* of such discharges under the definition as categorically *excluding* the conveyance of other discharges that do go to the treatment works is not a reasonable reading of the regulation. This argument is also flawed in that it incorrectly equates “treatment works,” the term used in the definition above, with “treatment plant.” To interpret “treatment works” as it appears in the regulatory definition of “discharge of a pollutant” as consisting of only the POTW treatment plant would be inconsistent with the definition of “treatment works” at 40 C.F.R. § 403.3(q), which expressly includes the collection system. *See also* § 403.3(r) (defining “POTW Treatment Plant” as “*that portion* [emphasis added] of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste.”)

Elimination System, 44 Fed. Reg. 32854, 32901 (June 7, 1979). The term “non-municipal” was removed in the Consolidated Permit Regulations, 45 Fed. Reg. 33290, 33421 (May 19, 1980) (defining “indirect discharger” as “a nondomestic discharger...”). Although the change was not explained in detail, the substantive intent behind this provision remained the same. EPA characterized the revision as “minor wording changes.” 45 Fed. Reg. at 33346 (Table VII: “Relationship of June 7[, 1979] Part 122 to Today’s Regulations”). The central point again is that under any past or present regulatory incarnation, municipal satellite collection systems, as POTWs, are not within the definition of “indirect discharger,” which is limited to non-domestic sources subject to section 307(b) that introduce pollutants to POTWs.

*(5) How is the Region’s rationale consistent with the references to “municipality” in the regulatory definition of POTW found at 40 C.F.R. § 403.3(q), and the definition’s statement that “[t]he term also means the municipality...which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works?”*

There is no inconsistency between the Region’s view that municipally-owned satellite collection systems fall within the definition of POTW, and the references to municipality in 40 C.F.R. § 403.3(q), including the final sentence of the regulatory definition of POTW in the pretreatment regulations.

The Region’s co-permitting rationale is consistent with the first part of the pretreatment program’s regulatory definition of POTW, because the Region is only asserting NPDES jurisdiction over satellite collection systems that are owned by a “State or municipality (as defined by section 502(4) of the Act).” The term “municipality” as defined in CWA § 502(4) “means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes...” Thus, in order to qualify under this definition, a wastewater collection system need only be “owned by a State or municipality.” There is no requirement that the constituent components of a regionally integrated POTW, *i.e.*, the collection system and regional centralized POTW treatment plant, be owned by the same State or municipal entity.

Furthermore, there is no inconsistency between the Region’s view that a satellite collection system is part of a POTW, and the final sentence of the regulatory definition of POTW in the pretreatment regulations. As noted above, the sentence provides that “POTW” may “also” mean a municipality which has jurisdiction over indirect discharges to and discharges from the treatment works. This is not a limitation because of the use of the word “also” (contrast this with the “only if” language in the preceding sentence of the regulatory definition).

*(6) How does the Region’s rationale comport with the permit application and signatory requirements under NPDES regulations?*

“Any person who discharges or proposes to discharge pollutants”... must comply with permit application requirements set forth in 40 C.F.R. § 122.21 (“Application for a Permit”), including the duty to apply in subsection 122.21(a). It is the operator’s duty to obtain a permit. *See* 40

C.F.R. § 122.21(b). An operator of a sewage collection system in a regionally integrated treatment works is operating a portion of the POTW and thus can be asked to submit a separate permit application pursuant to § 122.21(a) (requiring applicants for “new and existing POTWs” to submit information required in 122.21(j),” which in turn requires “all POTWs,” among others, to provide permit application information). In the Region’s experience, however, sufficient information about the collection system can be obtained from the treatment plant operator’s permit application. The NPDES permit application for POTWs solicits information concerning portions of the POTW beyond the treatment plant itself, including the collection system used by the treatment works. See 40 C.F.R. § 122.21(j)(1). Where this information is not sufficient for writing permit conditions that apply to a separately owned municipal satellite system, EPA can request that the satellite system to submit an application with the information required in 122.21(j), or alternatively use its authority under CWA section 308 to solicit the necessary information. Because Region 1 believes that it will typically receive information sufficient for NPDES permitting purposes from the POTW treatment plant operator’s application, the Region will formalize its historical practice by issuing written waivers to exempt municipal satellite collection systems from permit application and signatory requirements in accordance with 40 C.F.R. § 122.21(j).<sup>13</sup> To the extent the Region requires additional information, it intends to use its information collection authority under CWA § 308.

#### IV. Basis for the Specific Conditions to which the Municipal Satellite Collection Systems are Subject as Co-permittees

Section 402(a) of the CWA is the legal authority for extending NPDES conditions to all portions of the municipally-owned treatment works to ensure proper operation and maintenance and to reduce the quantity of extraneous flow into the POTW. This section of the Act authorizes EPA to issue a permit for the “discharge of pollutants” and to prescribe permit conditions as necessary to carry out the provisions of the CWA, including Section 301 of the Act. Among other things, Section 301 requires POTWs to meet performance-based requirements based on secondary treatment technology, as well as any more stringent requirements of State law or regulation, including water quality standards. See CWA § 301(b)(1)(B),(C).

The Region imposes requirements on co-permittees when it determines that they are necessary to assure continued achievement of effluent limits based on secondary treatment requirements and state water quality standards in accordance with sections 301 and 402 of the Act, and to prevent unauthorized discharges of sewage from downstream collection systems. With respect to achieving effluent limits, the inclusion of the satellite systems as co-permittees may be necessary when high levels of I/I dilute the strength of influent wastewater and increase the hydraulic load on treatment plants, which can reduce treatment efficiency (*e.g.*, result in violations of technology-based percent removal limitations for BOD and TSS due to less concentrated

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<sup>13</sup> EPA may waive applications for municipal satellite collection systems, when requiring such applications may result in duplicative or immaterial information. The Regional Administrator (“RA”) may waive any requirement of this paragraph if he or she has access to substantially identical information. 40 C.F.R. § 122.21(j). See generally, 64 Fed. Reg. 42440 (August 4, 1999). The RA may also waive any application requirement that is not of material concern for a specific permit. *Id.*

influent, or violation of other technology-based or water quality-based effluent limitations due to reduction in treatment efficiency). Excess flows from an upstream collection system can also lead to bypassing a portion of the treatment process, or in extreme situations make biological treatment facilities inoperable (*e.g.*, wash out the biological organisms that treat the waste).

By preventing excess flows, the co-permittee requirements will also reduce water quality standards violations that result from SSOs by lessening their frequency and extent. *See Exhibit B* (Analysis of extraneous flow trends and SSO reporting for representative systems). SSOs that reach waters of the U.S. are discharges in violation of section 301(a) of the CWA to the extent not authorized by an NPDES permit.

Imposing standard permit conditions on the satellite communities may be necessary to give full effect to some of the standard permit conditions applicable to all NPDES permits at 40 C.F.R. § 122.41 . To illustrate, NPDES permitting regulations require standard conditions that “apply to all NPDES permits,” pursuant to 40 C.F.R. § 122.41, including a duty to mitigate and to 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 the permit.” *Id.* at § 122.41(d), (e). If the owner or operator of a downstream POTW treatment plant is unable, due to legal constraints for example, or unwilling to ensure that upstream collection systems are implementing requirements concerning the collection system, such as I/I requirements, making the upstream POTW collection system subject to its own permit requirements may be the only or best available option to give full effect to these permit obligations.

## V. Conclusion

For all the reasons above, Region 1 has determined that it is reasonable to, as necessary, directly regulate municipal satellite collection systems as co-permittees when issuing NPDES permits for discharges from regionally integrated treatment works.

**Exhibit A**

<b>Name</b>	<b>Issue Date</b>
Massachusetts Water Resources Authority – Clinton (NPDES Permit No. MA0100404)	September 27, 2000
City of Brockton (NPDES Permit No. MA0101010)	May 11, 2005
City of Marlborough (NPDES Permit No. MA0100480)	May 26, 2005
Westborough Wastewater Treatment Plant (NPDES Permit No. MA0100412)	May 20, 2005
Lowell Regional Wastewater Utilities (NPDES Permit No. MA0100633)	September 1, 2005
Town of Webster Sewer Department (NPDES Permit No. MA0100439)	March 24, 2006
Town of South Hadley, Board of Selectmen (NPDES Permit No. MA0100455)	June 12, 2006
City of Leominster (NPDES Permit No. MA0100617)	September 28, 2006
Hoosac Water Quality District (NPDES Permit No. MA0100510)	September 28, 2006
Board of Public Works, North Attleborough (NPDES Permit No. MA0101036)	January 4, 2007
Town of Sunapee (NPDES Permit No. 0100544)	February 21, 2007
Lynn Water and Sewer Commission (NPDES Permit No. MA0100552)	March 3, 2007
City of Concord (NPDES Permit No. NH0100331)	June 29, 2007
City of Keene (NPDES Permit No. NH0100790)	August 24, 2007
Town of Hampton (NPDES No. NH0100625)	August 28, 2007
Town of Merrimack, NH (NPDES No. NH0100161)	September 25, 2007
City of Haverhill (NPDES Permit No. MA0101621)	December 5, 2007
Greater Lawrence Sanitary District (NPDES Permit No. MA0100447)	August 11, 2005

City of Pittsfield, Department of Public Works (NPDES No. MA0101681)	August 22, 2008
City of Manchester (NPDES No. NH0100447)	September 25, 2008
City of New Bedford (NPDES Permit No. MA0100781)	September 28, 2008
Winnepesaukee River Basin Program Wastewater Treatment Plant (NPDES Permit No. NH0100960)	June 19, 2009
City of Westfield (NPDES Permit No. MA0101800)	September 30, 2009
Hull Permanent Sewer Commission (NPDES Permit No. MA0101231)	September 1, 2009
Gardner Department of Public Works (NPDES Permit No. MA0100994)	September 30, 2009

## Exhibit B

### Analysis of extraneous flow trends and SSO reporting for representative systems

#### I. Representative POTWS

The **South Essex Sewer District (SESD)** is a regional POTW with a treatment plant in Salem, Massachusetts. The SESD serves a total population of 174,931 in six communities: Beverly, Danvers, Marblehead, Middleton, Peabody and Salem. The **Charles River Pollution Control District (CRPCD)** is a regional POTW with a treatment plant in Medway, Massachusetts. The CRPCD serves a total population of approximately 28,000 in four communities: Bellingham, Franklin, Medway and Millis. Both of these facilities have been operating since 2001 under permits that place requirements on the treatment plant to implement I/I reduction programs with the satellite collection systems, in contrast to Region 1's current practice of including the satellite collection systems as co-permittees.

#### II. Comparison of flows to standards for nonexcessive infiltration and I/I

Flow data from the facilities' discharge monitoring reports (DMRs) are shown in comparison to the EPA standard for nonexcessive infiltration/inflow (I/I) of 275 gpcd wet weather flow and the EPA standard for nonexcessive infiltration of 120 gallons per capita per day (gpcd) dry weather flow; the standards are multiplied by population served for comparison with total flow from the facility. See *I/I Analysis and Project Certification*, EPA Ecol. Pub. 97-03 (1985); 40 CFR 35.2005(b)(28) and (29).

Figures 1 and 2 show the Daily Maximum Flows (the highest flow recorded in a particular month) for the CRPCD and SESD, respectively, along with monthly precipitation data from nearby weather stations. Both facilities experience wet weather flows far exceeding the standard for nonexcessive I/I, particularly in wet months, indicating that these facilities are receiving high levels of inflow and wet weather infiltration.

Figure 1. CRPCD Daily Maximum Flow Compared to Nonexcessive I/I Standard

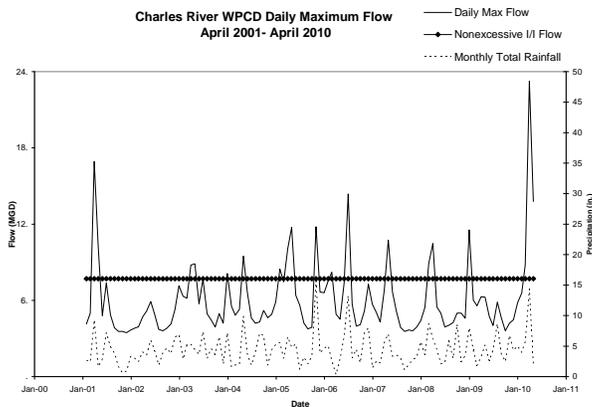
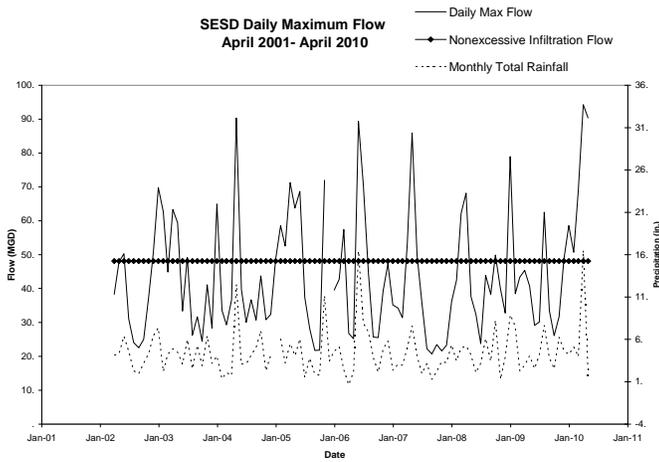


Figure 2. SESD Daily Maximum Flow Compared to Nonexcessive I/I Standard



Figures 3 and 4 shows the Average Monthly Flows for the CRPCD and SESD, which exceed the nonexcessive infiltration standard for all but the driest months. This indicates that these systems experience high levels of groundwater infiltration into the system even during dry weather.

Figure 3. CRPCD Monthly Average Flow Compared to Nonexcessive Infiltration Standard

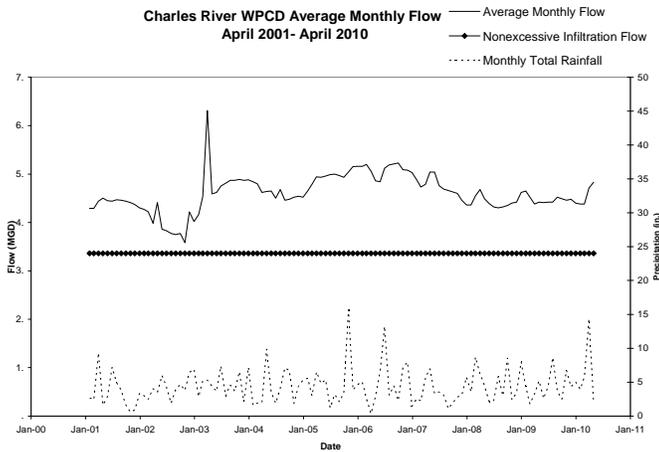
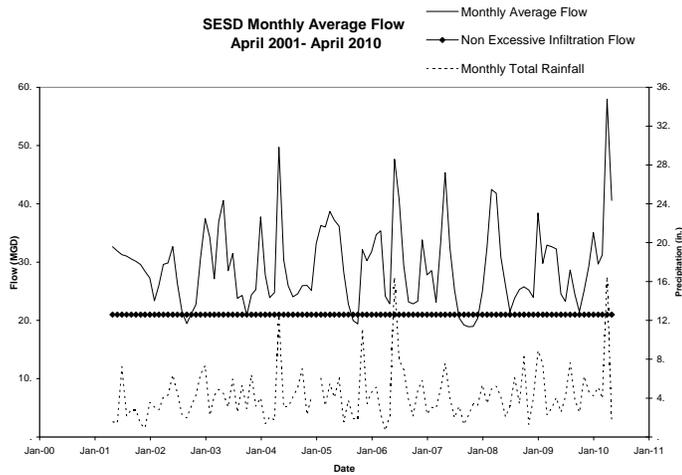


Figure 4. SESD Monthly Average Flow Compared to Nonexcessive Infiltration Standard



## II. Flow Trends

Figures 5 and 6 show the trend in Maximum Daily Flows over the period during which these regional facilities have been responsible for implementing cooperative I/I reduction programs with the satellite collection systems. The Maximum Daily Flow reflects the highest wet weather flow for each month. The trend over this time period has been of increasing Maximum Daily Flow, indicating that I/I has not been reduced in either system despite the permit requirements.

Figure 5. CRPCD Daily Maximum Flow Trend

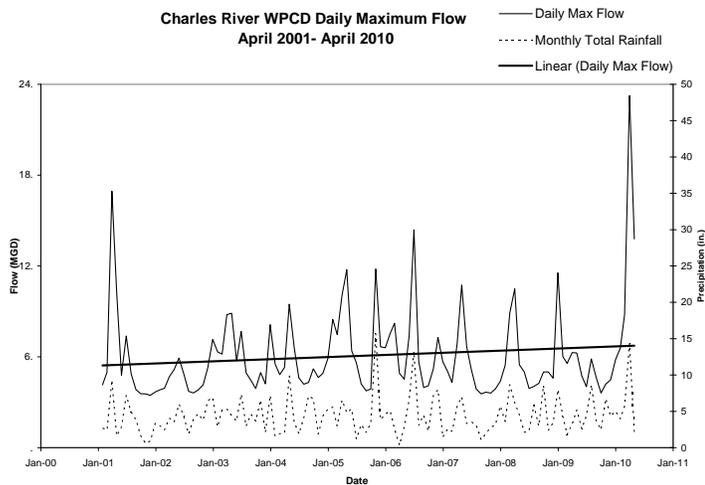
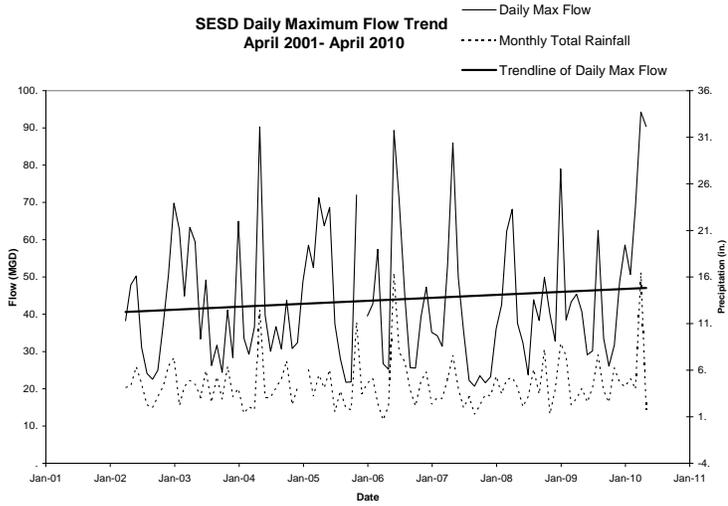


Figure 6. SESD Daily Maximum Flow Trend



### III. Violations Associated with Wet Weather Flows

Both the CRPCD and SESD have experienced permit violations that appear to be related to I/I, based on their occurrence during wet weather months when excessive I/I standards are exceeded. Figure 7 shows violations of CRPCD’s effluent limits for CBOD (concentration) and TSS (concentration and percent removal). Twelve of the sixteen violations occurred during months when daily maximum flows exceeded the EPA standard.

Figure 7. CRPCD CBOD and TSS Effluent Limit Violations

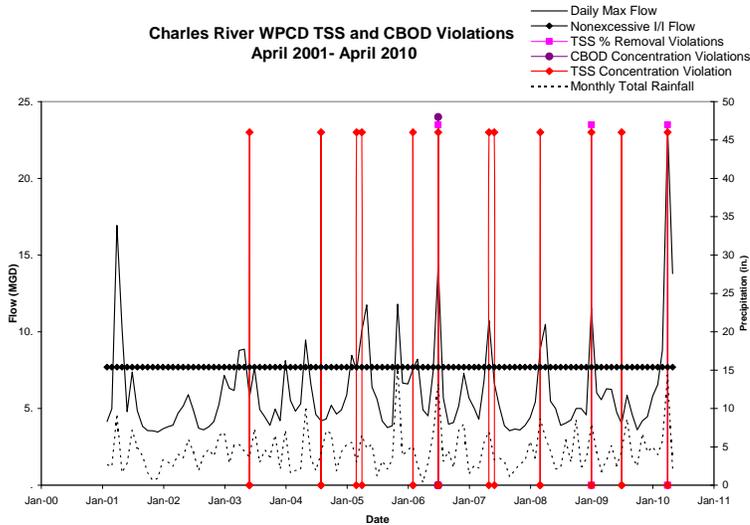
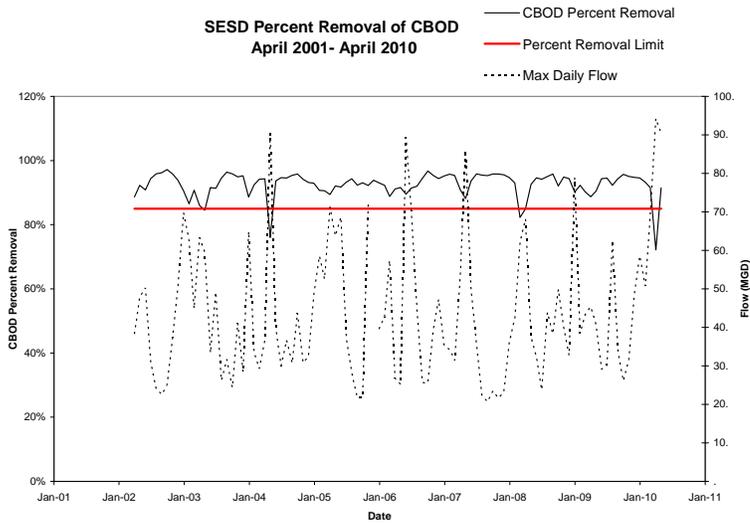


Figure 8 shows SESD's results for removal of CBOD, in percentage, as compared to maximum daily flow. SESD had three permit violations where CBOD removal fell below 85%, all during months with high Maximum Daily Flows.

Figure 8. SESD CBOD Percent Removal



#### IV. SSO Reporting

In addition, both of these regional POTWs have experienced SSOs within the municipal satellite collection systems. In the SESD system, Beverly, Danvers, Marblehead and Peabody have reported SSOs between 2006 and 2008, based on data provided by MassDEP. In the CRPCD system, both Franklin and Bellingham have reported SSOs between 2006 and 2009.

## Exhibit C

### Form of Regional Administrator's or Authorized Delegate's Waiver of Permit Application Requirements for Municipal Satellite Collection Systems



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

#### **Re: Waiver of Permit Application and Signatory Requirements for [Municipal Satellite Sewage Collection System]**

Dear \_\_\_\_\_:

Under NPDES regulations, all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed. Where the Region has “access to substantially identical information,” the Regional Administrator [or Authorized Delegate] may waive permit application requirements for new and existing POTWs. *Id.* Pursuant to my authority under this regulation, I am waiving NPDES permit application and signatory requirements applicable to the above-named municipal satellite collection systems.

Although EPA has the authority to require municipal satellite collection systems to submit individual permit applications, in this case I find that requiring a single permit application executed by the regional POTW treatment plant owner/operator will deliver “substantially identical information,” and will be more efficient, than requiring separate applications from each municipal satellite collection system owner/operator. Municipal satellite collection system owners/operators are expected to consult and coordinate with the regional POTW treatment plant operators to ensure that any information provided to EPA about their respective entities is accurate and complete. In the event that EPA requires additional information, it may use its information collection authority under CWA § 308. 33 U.S.C. § 1318.

This notice reflects my determination based on the specific facts and circumstances in this case. It is not intended to bind the agency in future determinations where a separate permit for municipal satellites would not be duplicative or immaterial.

If you have any questions or would like to discuss this decision, please contact [EPA Contact] at [Contact Info].

Sincerely,

Regional Administrator

Attachment 2-2008 Fact Sheet

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND - REGION I  
ONE CONGRESS STREET  
BOSTON, MASSACHUSETTS 02114-2023

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT  
TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO  
THE CLEAN WATER ACT (CWA)

NPDES PERMIT NO.: MA0102598

PUBLIC NOTICE DATE:  
NAME AND ADDRESS OF APPLICANT:

Charles River Pollution Control District  
66 Village Street  
Medway, Massachusetts 02053

The Towns of Franklin, Medway, Millis, and Bellingham are co-permittees for specific activities required in Sections I.B - Unauthorized Discharges and I.C - Operation and Maintenance of the Sewer System of the draft permit. Sections B - Unauthorized Discharges and C - Operation and Maintenance of the Sewer System include conditions regarding the operation and maintenance of the collection systems. The responsible municipal departments are:

Town of Franklin  
Department of Public Works  
150 Emmons Street  
Municipal Building, Lower Level  
Franklin, MA 02038

Town of Medway  
Department of Public Services  
155 Village Street  
Medway, MA 02053

Town of Millis  
Department of Public Works  
Veterans Memorial Building  
900 Main Street  
Millis, MA 02054

Town of Bellingham  
Department of Public Works  
26 Blackstone Street  
Bellingham, MA 02019

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Charles River Pollution Control District  
Water Pollution Abatement Facility  
66 Village Street  
Medway, Massachusetts 02053

RECEIVING WATER: Charles River (MA 72 - 05)

CLASSIFICATION: B (warm water fishery)

### **I. PROPOSED ACTION**

The above named applicant has requested that the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) reissue its NPDES permit to discharge into the designated receiving water, the Charles River. The current permit was issued on September 29, 2000, modified October 25, 2000, November 13, 2000, and April 22, 2002. The permit expired September 29, 2004, and was administratively continued. This permit will expire five (5) years from the effective date of the reissued permit.

The applicant filed a complete application for permit reissuance as required by 40 Code of Federal Regulations (CFR) § 122.6.

### **II. TYPE OF FACILITY AND DISCHARGE LOCATION**

The facility is engaged in the collection and treatment of wastewater from the towns of Franklin, Medway, Millis, and central and north Bellingham and serves approximately 28,000 people and four significant industrial users.

The existing permit authorizes a discharge from Outfall 001 to the Charles River as shown on **Figure 1**. The draft permit has been written to reflect the current operation and conditions at the facility.

### **III. DESCRIPTION OF THE DISCHARGE**

The Charles River Pollution Control District Water Pollution Abatement Facility (CRPCD WPAF) (**Figures 2 and 3**) is an advanced plant providing treatment to domestic, commercial, and industrial wastewater. The plant was expanded and upgraded in 2000 to increase the capacity of the flow from 4.5 to 5.7 MGD. The upgrades included an anoxic biological selector for filamentous bacteria control, two fine bubble diffused aeration basins to increase the aeration capacity, four 12-cloth disk filters to supplement the existing sand filters, and an upgrade to the plants electrical system. In 2003, new piping and pumps for the ferric chloride, ferrous sulfate, and lime systems were installed, and a hydrated lime mixing system was installed to replace the quick lime slaking system.

The unit processes and equipment at the plant now consist of a Parshall flume, two automatic bar racks, three influent pumps (lead/lag/standby), two aerated grit tanks where lime is added for pH control and ferric chloride for phosphorus control, two primary clarifiers, an anoxic selector, two fine bubble aeration chambers, eight mechanical aeration tanks, four secondary clarifiers, and four cloth filter basins. Solids are captured on the filter cloth and backwashed to the headworks, and the filtered water continues to the chlorine contact chamber. There are additional gravity sand filters for high flow periods. The effluent is disinfected in two chlorine contact chambers ( $\text{Cl}_2$  gas), dechlorinated with sodium bisulfate, passes down effluent cascade steps, and flows 3,375 feet through the outfall pipe to the Charles River.

The facility receives approximately 25,000 gallons of septage per day from Franklin, Medway, Millis, Bellingham, Norfolk, Sherborn, Dover, and Wrentham. There are two septage tanks, which are filled and batch discharged by gravity into the headworks. One septage tank is typically all that is needed however, the other tank is available for haulers to discharge into if it is needed. The facility checks the pH of each septage delivery and conducts micro-toxicity testing of the septage tank once per week. Ferrous chloride is added to the wet wells for odor control.

Primary sludge is pumped to a gravity belt thickener. Secondary sludge flows to the wet well and is

pumped to the gravity thickener with polymer added to aid thickening. The 7% solids sludge is held in wet wells and then trucked to the incinerator at Synagro in Woonsocket, RI.

A quantitative description of the discharge in terms of significant effluent parameters based on recent monitoring data is shown in **Fact Sheet Tables 1 and 2**.

#### **IV. LIMITATIONS AND CONDITIONS**

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

#### **V. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITS DERIVATION**

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

##### **Regulatory Basis.**

EPA is required to consider technology and water quality requirements when developing permit effluent limits. Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 402 and 301(b) of the Clean Water Act (CWA) (see 40 CFR 125 Subpart A). For publicly owned treatment works (POTWs), technology based requirements are the effluent limits based on secondary treatment defined in 40 CFR Part 133. EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve federal or state water quality standards.

Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limits based on water quality standards. The Massachusetts Surface Water Quality Standards (314 CMR 4.00) include requirements for the regulation and control of toxic constituents and also require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless a site-specific criteria is established. The state will limit or prohibit discharge of pollutants to surface waters to assure that water quality of the receiving waters are protected and maintained, or attained.

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

##### **Waterbody Classification and Usage**

The Charles River is classified as a Class B warm water fishery by the Massachusetts Surface Water Quality Standards [314 CMR 4.05(3)(b)]. Class B waters are designated as habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. Where designated, they shall be suitable as a source of public water supply with appropriate treatment. They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those waterbodies that are not expected to meet surface water quality standards after implementation of technology-based controls and as such require the development of total maximum daily loads (TMDL). The CRPCD WPAF discharges into Charles River segment MA 72-05, which extends from below Populatic Pond on the Norfolk/Medway line to the South Natick Dam. The Massachusetts Year 2006 Integrated List of Waters [Section 303(d) list] identifies segment MA-72-05 and segments downstream from the facility as not attaining water quality standards. Segment 72-05 is listed as impaired by unknown toxicity, metals, nutrients, organic enrichment/low dissolved oxygen, pathogens, noxious aquatic plants, and turbidity.

EPA and MassDEP have awarded grants to the Charles River Watershed Association (CRWA) for the Upper Charles River Watershed Total Maximum Daily Load Project (# 2001-03/104). Under these grants, CRWA has collected wet and dry weather water quality and flow data, is estimating pollutant loads from sources such as land use, septic systems, atmospheric deposition, sediment resuspension, and point sources, and is determining receiving water concentrations, estimating loading capacity; and establishing load allocations by source category. This information will be used to establish load allocations by source category and will be used by MassDEP to develop a TMDL and to evaluate Water Management Act and groundwater discharge permits for the Charles River watershed.

**Plant Design Flow**

The design flow of the plant is now 5.7 MGD. Plant flow is measured at the influent Parshall flume. The annual average flow rate was 5.16 MGD in 2005, 5.03 MGD in 2006 and 4.36 MGD in 2007. The range of the maximum daily flow rate between January 2005 and December 2007 was 3.55 MGD and 14.38 MGD.

During the 2000 public notice period, the District commented that they would not need the design capacity during the term of the permit in the summer months. The permit issued in 2000 included a monthly average flow limit of 4.5 MGD from July through September and the effluent limits for those months were calculated based on a flow of 4.5 MGD. The table below compares the monthly minimum river flow at the USGS station in Dover and the plant discharge.

*Charles River Minimum Mean Daily Discharge at USGS Gage in Dover and Average Monthly Plant Effluent Flow*

Year	July		August		September	
	River Flow, MGD	Plant Flow, MGD	River Flow, MGD	Plant Flow, MGD	River Flow, MGD	Plant Flow, MGD
2000	15.48	3.76	14.19	3.67	9.03	3.62
2001	46.44	4.17	29.67	3.51	19.35	3.35
2002	21.93	3.43	5.87	3.31	10.32	3.51
2003	72.89	4.17	38.70	3.85	36.12	3.74
2004	34.83	3.72	27.74	3.86	34.83	3.98
2005	25.80	3.79	14.19	3.48	11.61	3.55
2006	92.90	4.56	36.77	3.78	30.96	3.77

Because the monthly average flows typically remain below 4.5 MGD during the critical July through

September period, EPA and MassDEP have retained the seasonal flow limits in this draft permit. The flow limits in the draft permit are therefore 5.7 MGD as an annual average flow, and 4.5 MGD as a monthly average flow from July 1 to September 30. The monthly average and daily maximum flows shall be reported for all months.

**River Flow and Dilution Calculation**

The receiving water 7Q10, or the 7-day mean stream low flow with 10-year recurrence interval and the treatment plant design flow are used to calculate a dilution factor. A dilution factor is used to establish water quality based effluent limits in the draft permit.

EPA and MassDEP calculated the dilution factor in 2000 using the 7Q10 flow measured at the USGS gage in Dover<sup>1</sup> (01103500), average flows from the wastewater treatment plants discharging into the Charles and Stop Rivers upstream of the Dover gage during the week of August 7 through August 13, 1999, and the drainage areas upstream of the Dover gage and upstream of the CRPCD discharge. The treatment plant flows from this week were used because flows in the Charles River were approximately equal to the 7Q10 flows during this period so the plant discharge flows are representative of flows during a 7Q10 low flow period. EPA and MassDEP believe that this approach is still valid for use in this draft permit. The dilution factor was calculated using 4.5 MGD as the design flow. The dilution factor is 1.59. The calculations are as follows:

Dilution Factor Calculation:

**7Q10 at USGS station 0110350 Charles River at Dover = 12.2 cfs**

*Contributing flows from WWTPs upstream of the USGS gage (August 7 - 13, 1999):*

Milford WWTP	3.64 cfs
CRPCD	5.38 cfs
Medfield WWTP	1.11 cfs
Wrentham Developmental Ctr	0.114 cfs
Caritas Southwood Community Hospital <sup>2</sup>	0.015 cfs
<u>MCI-Norfolk WPCF</u>	<u>0.569 cfs</u>
Total	10.83 cfs

Base flow at USGS Dover = (7Q10) - (contributing flows) = 12.2 cfs - 10.83 cfs = 1.37 cfs

Base flow per square mile of drainage area:

The total drainage area upstream of the Dover gage is 183 sq mi, therefore the flow factor for the watershed is:

$$(1.37 \text{ cfs}) / (183 \text{ sq mi}) = 0.0075 \text{ cfs/sq mi}$$

*Base Flow at CRPCD:*

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<sup>1</sup> Current 7Q10 at the Dover gage is estimated at 12.9 cfs, only a small change from the estimate in 1999.

<sup>2</sup> Caritas Southwood Community Hospital is included in this calculation of upstream WWTP flow, but the discharge has since been terminated. The calculation has not changed given the minimal flow from this facility.

Using the calculated flow factor for the watershed and the drainage area upstream of CRPCD discharge (66.7 sq mi), the base flow in the Charles River at the discharge point is:

$$(0.0075 \text{ cfs/sq mi}) (66.7 \text{ sq mi}) = 0.5 \text{ cfs}$$

*7Q10 Flow at CRPCD (Base flow at CRPCD plus Milford WWTP flow):*

Adding the base flow and the flow discharged from the Milford WWTP, the only discharge upstream of CRPCD:

$$7Q10 = (0.5 \text{ cfs}) + (3.64 \text{ cfs}) = 4.14 \text{ cfs}$$

*Dilution factor:*

$$\text{CRPCD flow} = 4.5 \text{ MGD} = 6.96 \text{ cfs}$$

$$\text{DF} = \frac{7Q10 + \text{design flow}}{\text{design flow}} = \frac{4.14 \text{ cfs} + 6.96 \text{ cfs}}{6.96 \text{ cfs}} = 1.59$$

### **Conventional Pollutants**

#### CBOD<sub>5</sub> and TSS

The seasonal concentration and mass-based effluent limitations for CBOD<sub>5</sub> and TSS are the same limits as the current permit and are based on previous waste load allocations<sup>3</sup>, water quality considerations, and state certification requirements. The summer average monthly and average weekly limits are 7 mg/l and 10 mg/l, respectively. The winter average monthly and average weekly limits are 15 mg/l and 25 mg/l, respectively. The monitoring frequency remains the same. These limits were established to achieve the Class B water quality standards in the Charles River.

#### *CBOD<sub>5</sub> and TSS Mass Loading Calculations:*

Average monthly limits = (concentration) (design flow) (8.34) = lbs/day

CBOD<sub>5</sub> and TSS (summer) = (7 mg/l) (4.5 MGD) (8.34) = 265 lbs/day

CBOD<sub>5</sub> and TSS (winter) = (15 mg/l) (4.5 MGD) (8.34) = 570 lbs/day

Average weekly limits = (concentration) (design flow) (8.34) = lbs/day

CBOD<sub>5</sub> and TSS (summer) = (10 mg/l) (4.5 MGD) (8.34) = 380 lbs/day

CBOD<sub>5</sub> and TSS (winter) = (25 mg/l) (4.5 MGD) (8.34) = 950 lbs/day

Between January 2005 and December 2007, the average monthly CBOD<sub>5</sub> ranged from 1.1 to 5.9 mg/l, and the maximum daily ranged from 1.5 to 28 mg/l (Table 1). There were no exceedances of the CBOD<sub>5</sub> average monthly concentration limit.

During the same period, the average monthly TSS concentration ranged from 0.8 to 76 mg/l, and the maximum daily ranged from 1.5 to 509 mg/l. There were four exceedances of the TSS average monthly limit during this period.

The monthly average 85 percent removal requirements for CBOD<sub>5</sub> and TSS are based on the provisions of 40 CFR §133.102(a)(3) and (b)(3). The limit is carried forward from the current permit. There were no exceedances for the CBOD<sub>5</sub> 85% removal requirement between January 2005 and December 2007. There was one exceedance for the TSS 85% removal requirement in June 2006.

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<sup>3</sup> Massachusetts Department of Environmental Protection, Charles River Basin 1976 Water Quality Management Plan, Report 72 – D-1.

***Fecal Coliform, Escherichia coli (E. coli), Dissolved Oxygen (DO) and pH***

The numerical limitations for fecal coliform, E.coli, dissolved oxygen (DO) and pH are based on state certification requirements under Section 401(a) of the CWA, as described in 40 CFR 124.53 and 124.55, and the Massachusetts Surface Water Quality Standards at 314 CMR 4.05(3)(b). The limits for pH, dissolved oxygen, and fecal coliform will remain unchanged from the limits in the existing permit.

Massachusetts adopted revisions to the State Water Quality Standards on March 26, 2007, which were approved by EPA on September 19, 2007. For Class B waters, the bacteria indicator changed from fecal coliform to E.coli for non-bathing beaches and other waters.

Accordingly, the draft permit contains effluent limits for E.coli. The proposed limits include a monthly geometric mean of 126 colony forming units (cfu)/100 ml and a daily maximum of 409 cfu/100 ml (the daily maximum value is the 90% distribution of the geometric mean of 129 cfu/100 ml).

Because the E.coli limits are new water quality based limits, the Massachusetts Water Quality Standards allow a compliance schedule for achieving them. (see 314 CMR 4.03(1)(b) and Section H in the draft permit). The draft permit includes a compliance schedule requiring that the E.coli limit be achieved by March 2010. The current permit limits for fecal coliform are continued as interim limitations until the E.coli limits become effective. The bacteria limits are seasonal, and the seasons remain the same as in the current permit (March-November).

The fecal coliform and E.coli samples are to be collected at the same time as the total residual chlorine samples.

During the period of January 2005 through December 2007 there were two exceedances of the maximum fecal coliform limits, no exceedances of the maximum pH limit, and one exceedance of the DO requirement.

**Non-Conventional Pollutants**

***Phosphorus***

The existing permit includes a seasonal monthly average effluent limit for total phosphorus of 0.2 mg/l (April 1 through October 31) and a reporting requirement for the remainder of the year (November 1 through March 31). From January 2005 through December 2007, the monthly average phosphorus concentration ranged from 0.07 to 2.9 mg/l in the summer with seven exceedances and 0.09 to 1.4 mg/l in the winter (Table 2).

As discussed earlier, the segment of the Charles River receiving the facility's discharge is not attaining water quality standards and is listed as impaired by unknown toxicity, metals, nutrients, organic enrichment/low dissolved oxygen, pathogens, noxious aquatic plants, and turbidity. The Charles River has been included on the 2006 Massachusetts Section 303(d) CWA lists for nutrients because of cultural eutrophication. Phosphorus is an essential nutrient for plant growth and is the limiting nutrient in fresh water ecosystems. Phosphorus discharged by the CRPCD and other sources into the Charles River has the potential to accelerate eutrophication.

MassDEP has not adopted numeric nutrient criteria for phosphorus, but its water quality standards include narrative criteria for nutrients at 314 CMR 4.05(5)(c) specifying that " unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment

of existing or designated uses” and “any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface waters shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs...”. MassDEP construes “highest and best practical treatment” for POTWs as treatment achieving a monthly average total phosphorus concentration of 0.2 mg/l.

In the absence of a numeric criterion for phosphorus, EPA looks to nationally recommended criteria, supplemented by other relevant materials, such as EPA technical guidance and information published under Section 304(a) of the CWA, peer-reviewed scientific literature and site-specific surveys and data. *See* 40 CFR §122.44(d)(1)(vi)(B). EPA has produced several guidance documents which set forth total ambient phosphorus concentrations that are sufficiently stringent to control cultural eutrophication and other adverse nutrient-related impacts. These guidance documents present protective in-stream phosphorus concentrations based on two different analytical approaches. An effects-based approach provides a threshold value above which adverse effects (*i.e.*, water quality impairments) are likely to occur. It applies empirical observations of a causal variable (*i.e.*, phosphorus) and a response variable (*i.e.*, chlorophyll *a*) associated with designated use impairments. Alternatively, reference-based values are statistically derived from a comparison within a population of rivers in the same eco-region class. They are a quantitative set of river characteristics (physical, chemical and biological) that represent conditions in waters in that ecoregion that are minimally impacted by human activities (*i.e.*, reference conditions), and thus by definition representative of water without cultural eutrophication. Thus, while reference conditions, which reflect minimally disturbed conditions, will meet the requirements necessary to support designated uses, they may also exceed the water quality necessary to support such requirements.

The 1986 Quality Criteria of Water (commonly known as the “Gold Book”) follows an effects-based approach. It recommends maximum threshold concentrations designed to prevent or control adverse nutrient-related impacts from occurring. Specifically, the Gold Book recommends in-stream phosphorus concentrations of no greater than 0.05 mg/l in any stream entering a lake or reservoir, 0.1 mg/l for any stream not discharging directly to lakes or impoundments, and 0.025 mg/l within the lake or reservoir. A more recent technical guidance manual, the Nutrient Criteria Technical Guidance Manual: Rivers and Streams (EPA 2000) (“Nutrient Criteria Technical Guidance Manual”), cites a range of values drawn from the peer-reviewed scientific literature to control periphyton and plankton, two types of aquatic plant growth commonly associated with eutrophication. This guidance recommends an in-stream phosphorus concentration from 0.01 mg/l to 0.09 mg/l to control periphyton growth and concentrations from 0.035 mg/l to 0.070 mg/l to control plankton (see Table 4 on page 101).

EPA has also released recommended ecoregional nutrient criteria, established as part of an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country. The published criteria represent conditions in waters in that ecoregion that are minimally impacted by human activities, and thus free from cultural eutrophication. The CRPCD discharge is within sub-ecoregion 59 of Ecoregion XIV, Eastern Coastal Plains. The total phosphorus criterion for this sub-ecoregion, found in Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV (2000), is 24 ug/l (0.024 mg/l). The recommended chlorophyll *a* criterion for aggregate Ecoregion XIV streams is 3.75 ug/l.

#### *Phosphorus concentrations in the Charles River Basin*

The impacts associated with the excessive loading of phosphorus are well documented in three recent

reports on the Charles River Watershed Basin. The Charles River Basin 2002-2006 Water Quality Assessment Report published by MassDEP in April 2008 and its Appendix B, Technical Memorandum TM 72-9; the Upper Charles River Watershed Total Maximum Daily Load Project, project # 2001-03/104, Volume I: Phase I Final Report, dated May 2004, and the Upper Charles River Watershed Total Maximum Daily Load, Project # 2001-03/104, Volume I: Phase II Final Report and Phase III Data Report, dated July 2006.

The Charles River Watershed Basin 2002-2006 Water Quality Assessment Report provides data from nine samples collected by the Charles River Watershed Association for total phosphorus both upstream and downstream of the treatment plant's outfall (segment MA72-05) for the months of April through September. The range of phosphorus concentration upstream of the outfall is between 0.0386 to 0.0836 mg/l and the range downstream of the outfall is between 0.043 to 0.0717 mg/l.

The MassDEP Technical Memorandum T72-9, Charles River Watershed DWM Year 2002 Water Quality Monitoring Data – Rivers includes data from sampling locations on the Charles River, upstream of CRPCD's discharge and downstream of the discharge. A range of total phosphorus concentration from April through September measured below the detection limit to 0.055 mg/l upstream of the discharge and below the detection limit to 0.061 mg/l downstream of the discharge.

The Upper Charles River Watershed Total Maximum Daily Load, Project # 2001-03/104, Volume I: Phase I Final Report, and Volume I: Phase II Final Report and Phase III Data Report states that every tributary, wastewater treatment plant and, all but two main stem sites on the Charles River, (one in Milford and one in Millis) exceed the USEPA recommended action limit for total phosphorus of 0.024 mg/l. Data from dry weather sampling events conducted in August 2002 show that instream concentration of phosphorus downstream from the treatment plant is higher than upstream of the treatment plant and also shows elevated concentrations of chlorophyll a, dissolved oxygen, and pH, which are indicative of excessive plant growth. See the Table below.

*Charles River TMDL Water Quality Monitoring Data (mg/l)*

Dry Sampling Date	Total Phosphorus	Orthophosphate	Chlorophyll a	DO	Percent Saturation
Station 184S: USGS Gage Station, upstream of Populatic Pond, Medway					
8/13/2002	0.0472	0.0141	4.92 <sup>1</sup>	9.54 - 9.63 <sup>2</sup>	----
8/24/2005	0.0259	0.016	ND	8.84	99.7
Station 201S <sup>3</sup> : Outlet of Populatic Pond, Medway					
8/13/2002	0.0632	0.0201	0.0416	9.2	110
8/24/2005	0.0562	0.0134	0.022	10.10	119
Station 202W: CRPCD Discharge					
8/13/2002	0.106	0.116	0.0416	----	----
8/24/2005	0.0992	0.0897	0.022	7.7	----

Station 207S: One-half mile downstream of CRPCD outfall, Norfolk					
8/13/2002	0.0717	0.0312	38 <sup>1</sup>	9.85	115
8/24/2005	0.0536	0.0233	12	8.8	106.5
Station 229S: Two miles downstream of CRPCD, Millis					
8/13/2002	0.0230	0.0219	0.00804 <sup>1</sup>	7.9	----
8/24/2005	0.0375	0.0188	0.007	7.1	82.5
Station 290S: Nine miles downstream of CRPCD, Medfield (above Medfield WWTP)					
8/13/2002	0.0395/0.0378 <sup>4</sup>	0.00928/0.00943 <sup>4</sup>	0.00946/0.00928 <sup>4</sup>	7.9	----
8/24/2005	0.0415	0.011	0.015	7.2	90
Station 294S: Immediately below Medfield WWTP					
8/13/2002	0.100	0.0622	12.4	8.2	----
8/24/2005	0.041	0.0122	15	7.5	90
Station 318S: Route 27 Bridge, Medfield/Sherborn town line					
8/13/2002	0.0616	0.0187	1.93 <sup>1</sup>	8.83	----
8/24/2005	0.0377	0.0115	9	5.7	68.3
Station 387S: Cheney Bridge, Wellesley, downstream of South Natick					
8/13/2002	0.0307	0.182	7.48 <sup>1</sup>	5.37	----
8/24/2005	0.0462/0.0504 <sup>4</sup>	0.0137/0.0141 <sup>4</sup>	9/9 <sup>4</sup>	5.3	64.2
Station 407S: Claybrook Road, Dover					
8/13/2002	0.0384/0.0346 <sup>4</sup>	0.00614/0.00384 <sup>4,5</sup>	30.8/27.4 <sup>1,4</sup>	8.26	----
8/24/2005	0.043	0.0118	13	5.9	75
Station 447S: USGS Gage, Dover					
8/13/2002	0.0372	0.00476	10.7	6.42	----
8/24/2005	0.0572	0.00996	21	6.8	----

<sup>1</sup>Chlorophyll *a* equipment blanks for 8/13/02 are 0.00215 and 0.00301 mg/l.

<sup>2</sup> Unstable.

<sup>3</sup> Station 201S is located at the outlet of Populatic Pond upstream of the discharge

<sup>4</sup> Field Duplicate.

<sup>5</sup> Field Duplicate Relative Percent Difference is greater than acceptable range.

In addition to the data in the tables above, continuous dissolved oxygen data collected in Populatic Pond,

just upstream of the discharge, and from the first sampling site downstream of the CRPCD discharge (207S) show large diurnal variations in dissolved oxygen and very high levels of supersaturation (see Figures 2-27 and 2-28, from *Upper Charles River Watershed Total Maximum Daily Load Project, Volume I: Phased I Final Report*. This data is indicative of significant photosynthesis-driven fluctuations in dissolved oxygen, an indication large quantities of plant biomass are in the receiving water.

The Charles River Watershed 2002-2006 Water Quality Assessment Report notes a bloom of cyanobacteria algae in this segment of the Charles River in September 2004 and also notes large mats of filamentous algae downstream of Populatic Pond in July 2002.

In summary, the available data shows extremely high productivity in the receiving water upstream and downstream of the discharge as evidenced by high chlorophyll a, large diurnal variation in dissolved oxygen concentration and visible algae mats as noted in field observations.

As discussed previously, the existing permit includes a monthly average total phosphorus limit of 0.2 mg/l, which was based on MADEP's interpretation of highest and best practical treatment for POTWs. However, the receiving water data collected for the TMDL shows that this limit is not sufficiently stringent to achieve water quality standards. Pursuant to 40 CFR 122.44(d)(1) (v), where a State has not established a water quality criterion for a specific chemical pollutant that is present in the effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:

(A) – Establish effluent limits using a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use. Such a criterion may be derived using a proposed state criterion, or an explicit State policy or regulation interpreting its narrative criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents; or

(B) – Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information; or

(C) – Establish effluent limitations on an indicator parameter for the pollutant of concern.

EPA has produced several guidance documents which contain recommended total phosphorus criteria for receiving waters to which this data may be compared. The 1986 Quality Criteria for Water (EPA 440/5/86-001), commonly known as the "Gold Book", recommends a desired goal of 0.1 mg/l total phosphorus for the prevention of plant nuisances in streams or other flowing waters not discharging directly into lakes or impoundments.

More recently, EPA has released "Ecoregional Nutrient Criteria," established as part of an effort to reduce problems associated with excess nutrients in water in specific areas of the country. The published criteria represent conditions in waters in an ecoregion minimally impacted by human activities, and thus representative of water without cultural eutrophication. CRPCD WPAF is within Ecoregion XIV, Eastern Coastal Plains, Level III Northeastern Coastal Zone. The total phosphorus criteria for this ecoregion, found in Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State

and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV (EPA-822-B-00-022, December 2000), is 24 ug/l (0.024 mg/l). The chlorophyll *a* criteria for the aggregate ecoregion is 3.75 ug/l (0.004 mg/l). The report emphasizes that these values represent a starting point for states to develop more refined nutrient criteria for local conditions.

The current limit is not sufficiently stringent to achieve the Gold book criteria under 7Q10 conditions, or the Ecoregion Criteria under average summer conditions. A more stringent limit, based on the Gold Book criteria is proposed in the draft permit and was calculated as follows:

*Calculation of Summer Phosphorus Effluent Limits based on 1986 Quality Criteria for Water (EPA 440/5/86-001):*

**Average monthly summer total phosphorus limit:**

The effluent limit was calculated to assure that the instream total phosphorus concentration does not exceed 0.1 mg/l under 7Q10 low flow conditions with the treatment plant discharging at a flow of 4.5 MGD (6.96 cfs). A background concentration of 0.06 mg/l was assumed based on the instream data collected at sampling site 201S, just upstream of the discharge. The calculation of the limit is shown below

$$Q_r C_r = Q_d C_d + Q_s C_s$$

Where

- $Q_r$  = receiving water flow downstream of the discharge ( $Q_d + Q_s$ ), 11.1 cfs
- $C_r$  = total phosphorus concentration in the receiving water downstream of the discharge, 0.1 mg/l
- $Q_d$  = discharge flow from the facility, 6.96 cfs
- $C_d$  = total phosphorus concentration in the discharge
- $Q_s$  = receiving water flow upstream of the discharge, 4.14 cfs
- $C_s$  = total phosphorus concentration upstream of the discharge, 0.06 mg/l

Solving for  $C_d$  yields:

$$C_d = \frac{Q_r C_r - Q_s C_s}{Q_d}$$

$$C_d = \frac{(11.1)(0.1) - (4.14)(0.06)}{6.96}$$

$$C_d = 0.12 \text{ mg/l}$$

The draft permit therefore includes a monthly average summer phosphorus limit of 0.12 mg/l. In the future, should MassDEP adopt numeric phosphorus criteria, or a TMDL be approved by EPA, or should additional water quality information shows that a different (more or less stringent) phosphorus limit will result in attainment of water quality standards, the permit may be modified to include the appropriate limit.

The draft permit also includes a total phosphorus limitation of 1.0 mg/l for the period from November 1 through March 31. The basis for the limit is to protect the Charles River from cultural eutrophication. The discharge of particulate phosphorus from the facility during the winter months to the Charles River has the potential to settle and become incorporated into the bottom sediments within the Charles River system.

The potential for particulate phosphorus being stored in the Charles River system is high because of the physical characteristics of the downstream river system, which include low gradient segments, adjacent wetland/marshy areas, and impounded sections along the river (areas upstream of dams). These characteristics result in low flow velocities and long travel times which, allows particulate matter to settle from the water column and become part of the bottom sediments.

The primary concern with phosphorus being stored in the bottom sediments is that it may become available for algal and macrophyte growth during the summer growing season. Depending on water column conditions, sediment-bound phosphorus may be released to the water column. This is particularly true for impounded portions of the river that become stratified during the summer months and have low DO in the lower water column. Low DO at the sediment water interface promotes mobilization of phosphorus from the sediments to the water column. A limit of 1.0 mg/l from November 1 through March 31 will require removal of most of the particulate-bound phosphorus in the discharge. This will presumably allow the dissolved portion to pass out of the system during the winter and spring when flows are higher and plant uptake is low. Orthophosphorus will be monitored during the winter months to determine the bioavailable concentration of phosphorous in the water column.

In summary, the draft permit total phosphorus limit for the summer months is 0.12 mg/l and the winter limit is 1.0 mg/l. The monitoring frequency for the summer is 3/week, and the winter monitoring frequency is 1/month.

#### ***Ammonia***

Ammonia can impact the receiving stream's dissolved oxygen concentration and can be toxic at elevated levels. The ammonia limits are based on previous waste load allocations and water quality considerations. These limits have been established to achieve dissolved oxygen water quality standards for a Class B receiving water. The effluent limitations in the draft are the same as the limits in the existing permit. The average monthly, average weekly, and maximum daily concentration limits for the month of April are 10 mg/l, 15 mg/l, and 20 mg/l and for May the limits are 5 mg/l, 7.5 mg/l and 10 mg/l. The average monthly, average weekly, and maximum daily concentration limits for the months of June through October are 1 mg/l, 1.5 mg/l, and 2 mg/l.

During the winter months, ammonia limits may not be necessary to ensure compliance with water quality standards given the higher receiving water flows, reduced rates of biological degradation of ammonia and, higher instream concentrations of dissolved oxygen. However, winter limits may be necessary to ensure that ammonia toxicity does not cause or contribute to violations of water quality standards. The facility reports average monthly and maximum daily ammonia limits from November 1 through March 31 once per month. See Table 2 for total ammonia data reported on the facility's discharge monitoring report from January 2005 through December 2007.

In order to determine if there is a reasonable potential for the CRPCD discharge to cause a violation of the water quality standards, the potential winter limits were calculated as follows:

#### **Winter Ammonia Limits Calculations:**

The winter ammonia instream criteria is dependent on pH and temperature, as explained in 1999 Update of Ambient Water Quality Criteria for Ammonia (EPA-822-R-99-014), and Federal Register Vol. 64, No. 245, pgs. 71973 - 71980, December 22, 1999. The recommended chronic ammonia criteria is established as a 30-day concentration, therefore the monthly average limit has been calculated using a dilution factor based on 30-day mean low flow with a recurrent interval of 10 years (30Q10) and the discharge design

flow.

*Estimation of 30Q10 for period of November 1 to March 31:*

**Charles River 30Q10 at USGS station 0110350 Charles River at Dover = 72.1 cfs**

The contributing flows for the 30Q10 estimate are based on the design flows, in contrast to the 7Q10 estimate, where the flows were based on the actual discharge volumes during a period when 7Q10 conditions existed in the river.

Contributing flows from upstream WWTPs:

Milford WWTP	4.3 MGD	6.6 cfs
CRPCD	4.5 MGD	6.96 cfs
Medfield WWP	1.52 MGD	2.35 cfs
Wrentham Developmental Ctr	0.454 MGD	0.70 cfs
Caritas Southwood Hospital	0.055 MGD	0.085 cfs
<u>MCI-Norfolk</u>	<u>0.484 MGD</u>	<u>0.749 cfs</u>
Total contributing flows		17.4 cfs

\* Base flow at USGS Dover = (30Q10) - (contributing flows) = 72.1 cfs - 17.4 cfs = 54.7 cfs

*Base flow per square mile of drainage area (base flow factor):*

$$(54.7 \text{ cfs}) / (183 \text{ sq mi}) = 0.298 \text{ cfs/sq mi}$$

\* 30Q10 estimate at CRPCD:

$$(\text{base flow factor}) (\text{drainage area}) + (\text{Milford flow}) = (0.29) (66.7 \text{ sq mi}) + (6.6 \text{ cfs}) = 26.47 = 26.5 \text{ cfs}$$

*Instream dilution based on 30Q10:*

$$DF = \frac{30Q10 + \text{design flow}}{\text{design flow}} = \frac{26.5 + 6.96}{6.96} = 4.8$$

*Calculation of Ammonia Criteria:*

Temperature and pH data collected by the Charles River Watershed Association from 2000 through 2002 at station 165S, Shaw Street Bridge, Medway/Franklin ([www.crwa.org](http://www.crwa.org)), were reviewed to determine the pH and temperature values needed to calculate the ammonia criteria. On occasion, the pH in the winter months was below the minimum water quality standard of 6.5.

The CRWA data on the ammonia criteria for each sampling data are tabulated below. Based on this information, a criteria value of 4.36 mg/l based on a pH of 7.5 and temperature of 1<sup>0</sup> C was selected to be protective of the river during cold weather conditions.

*Calculation of Ammonia Criteria*

Month	pH	Temperature, °C	Instream Criteria, mg/l
March 2002	6.9	3.0	6.12
February 2002	7.4	2.0	4.73
November 2001	7.5	1.0	4.36
March 2001	6.7	0.5	6.44

November 2000	6.8	3.5	6.29
March 2000	7.3	0.0	5.08
February 2000	6.3	1.0	6.67
December 2000	6.9	---	6.12
November 2000	6.0	3.5	6.67

Average monthly winter ammonia limit = (ammonia criteria) (30Q10 DF) = (4.36 mg/l) (4.8) = 21 mg/l

The weekly average ammonia criteria should be no more than twice the monthly average limit:

Weekly average winter ammonia limit = (average monthly limit) (2) = (21 mg/l) (2) = 42 mg/l

The average monthly and maximum daily ammonia concentrations reported on the monthly discharge monitoring reports are listed in Table 2. Based on these calculations, reasonable potential of ammonia concentration in the effluent exceeding water quality criteria does not exist. Therefore winter ammonia limits are not required at this time. The reporting requirement and 1/month winter sampling frequency are carried over from the current permit.

***Total Residual Chlorine (TRC)***

The effluent is seasonally disinfected with chlorine gas and dechlorinated with sodium bisulfate. The chlorine is delivered by a vacuum-solution feed chlorinator. The chlorine feed rate and pounds remaining in the cylinder are checked every morning. In the event of loss of injector water, the chlorinator will respond to the loss of vacuum and automatically discontinue flow of chlorine gas supplied by the cylinder. The daily maximum concentration reported for effluent monitoring over the past two years ranged from below the detection limit of 0.05 mg/l to 0.9 mg/l, with four exceedances. Table 1 shows the TRC values recorded on the monthly discharge monitoring report.

Chlorine and chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The draft permit includes total residual chlorine limits based on Massachusetts Water Quality Standards [314 CMR 4.05(5)(e)] and the Massachusetts Implementation Policy for the Control of Toxic Pollutants in Surface Waters, February 23, 1990. The instream criteria for chlorine are found in the updated compilation of the National Recommended Water Quality Criteria: 2002 (EPA 822-R-02-047). The calculations for water quality based limits are as follows:

*National Recommended Water Quality Criteria 2002 (EPA 822-R-02-047):*

Chronic criteria (CCC) = 11 ug/l

\*Average monthly limit = (CCC) x (DF) = (11 ug/l) (1.59) = 17 ug/l

Acute criteria (CMC) = 19 ug/l

\*Maximum daily limit = (CMC) x (DF) = (19 ug/l) (1.59) = 30 ug/l

A monitoring frequency of 2/day for chlorine is the minimum frequency authorized in the permit. The minimum detection level (ML) for TRC has been lowered to 20 ug/l in the draft permit. This level may be obtained using the EPA methods specified in the permit. The average monthly TRC limit in the permit is below the analytical detection limit for this pollutant. In these situations, EPA Region I is following guidance set forth in Technical Support Document for Water Quality Based Toxics Control (EPA 505/2-90-001, March 1991, page 111), which recommends that “the compliance level be defined in the permit as the minimum level (ML).” Therefore, the limit at which compliance determinations will be based is the ML. For this permit, the ML for total residual chlorine is defined at 20 ug/l and any value

below 20 ug/l shall be reported as zero on the Discharge Monitoring Report. The ML value may be reduced by permit modification as EPA and the State approves more sensitive tests.

The E.coli bacteria samples shall be collected at the same time and location as the TRC sample.

#### ***Whole Effluent Toxicity Testing***

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

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

National studies conducted by the EPA have demonstrated that domestic sources contribute toxic constituents to POTWs above those which may be contributed from industrial users. These pollutants include metals, chlorinated solvents, aromatic hydrocarbons and other constituents. As a result, EPA Region I and MassDEP have developed toxicity control policies. These policies require wastewater treatment facilities to perform toxicity bioassays on their effluent. Discharges that have a dilution of less than 10:1 require acute and chronic toxicity limits.

Based on the potential for toxicity resulting from domestic sewage, and in accordance with EPA regulations and policy, the draft permit includes chronic and acute toxicity limitations and monitoring requirements. (See, e.g. Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants”, 50FR30784 (July 25, 1985); see also EPA Technical Support Document for Water Quality-Based Toxics Control,” (EPA/505/2-90-001, September 1991).

The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analysis; (2) bioavailability of pollutants after discharge is measured by toxicity testing including any synergistic effect of pollutants; and (3) pollutants for which there are inadequate analytical methods or criteria can be addressed. Therefore, toxicity testing is being used in connection with pollutant-specific control procedures to control the discharge of toxic pollutants.

The chronic no observed effect concentration (C-NOEC) whole effluent toxicity limit is calculated using the instream waste concentration (IWC) of the WPAF effluent. The IWC is the inverse of the dilution (1.59 cfs).

$$C\text{-NOEC} = 1 / \text{dilution factor} = 1 / 1.59 = 0.63 = 63 \%$$

Toxicity test requirements in the draft permit are the same as in the existing permit. The permittee shall test two species, the daphnid, Ceriodaphnia dubia and the fathead minnows, Pimephales promelas. The toxicity tests shall be conducted in the months of January, April, July and October to be consistent with

other facilities in the Charles River watershed. The draft permit requires that if any future toxicity test should fail to comply with the permit limits, the permittee must retest the effluent within fourteen days of the original test.

See Permit **Attachment A**, Freshwater Chronic Toxicity Test Procedure and Protocol, for a description of the testing requirements.

### **Toxic Pollutants**

Relatively low concentrations of trace metals in receiving waters can be toxic to resident aquatic life species. EPA is required to limit any pollutant that is, or may be discharged at a level that caused, or has reasonable potential to cause, or contributes to an excursion above any water quality criterion. See 40 CFR 122.44(d)(1)(vi). Effluent metals data submitted with toxicity tests results and discharge monitoring reports were reviewed to determine if any of the metals in the discharge have the potential to exceed aquatic life criteria in the Charles River.

The EPA recommended approach to set and measure compliance with water quality standards is to use dissolved metals, because dissolved metals more closely approximates the bioavailable fraction of metal in the water column than does total recoverable metal. Most toxicity to aquatic organisms is by adsorption or uptake across the gills which would require the metal to be in dissolved form. When toxicity tests were originally conducted to develop EPA's Section 304(a) metals criteria, the concentrations were expressed as total metals. Subsequent testing determined the percent of the total metals that is dissolved in the water column. The calculations that follow use the freshwater conversion factors to calculate the dissolved acute and chronic water quality criteria for metals (EPA National Recommended Water Quality Criteria: 2002, Appendix A).

However, the regulations in 40 CFR 122.45(c) require that the permit limits be based on total recoverable metals. The chemical differences between the effluent and the receiving water may cause changes in the partitioning between dissolved and particulate forms of metals. As the effluent mixes with the receiving water, adsorbed metals from the discharge may dissolve in the water column.

In this case, measuring dissolved metals would underestimate the impact on the receiving water, and an additional calculation, using a site-specific translator would determine total metal criteria. Based on EPA's Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion (EPA-823-B-96-007), the conversion factor is equivalent to the translator if site-specific studies for partitioning have not been conducted. In subsequent calculations, conversion from dissolved metals to total recoverable metals have been done using the conversion factor for the particular metal found in Appendix A of National Recommended Water Quality Criteria: 2002, in lieu of a translator.

**Copper** - The current permit includes an average monthly total recoverable copper limitation of 10 ug/l and a maximum daily total recoverable copper limitation of 14 ug/l. These limits were calculated using the EPA 1998 National Recommended Water Quality Criteria for Copper, using a hardness of 60 mg/l as CaCO<sub>3</sub>, which resulted in a total recoverable chronic criteria of 6 ug/l and a total recoverable acute criteria of 8.6 ug/l. These criteria were then multiplied by the dilution factor of 1.59 to calculate the limits.

The Massachusetts Surface Water Quality Standards were revised in December 2006 to include site-specific criteria for copper that were developed for specific receiving waters where national criteria are invalid due to site-specific physical, chemical, or biological considerations, and do not exceed the safe exposure levels determined by toxicity testing [314 CMR 4.05(5)(e) Table 28]. EPA approved an acute

criterion of 25.7 ug/l and chronic criterion of 18.1 ug/l for the Charles River on March 26, 2007.

Antibacksliding requirements found at CWA 402(o) and 40 CFR 122.44(l) generally prohibit relaxation of effluent limits. Water quality-based effluent limits can only be relaxed if one of the exceptions found at CWA 402(o)(2) is met or if the requirements of CWA 303(d)(4) are met. In this case, the requirements in CWA 303(d)(4) apply.

CWA 303(d)(4) requires that a determination be made whether the receiving water is attaining the applicable water quality standard. If the receiving water is in attainment of the standard, a relaxation of the limit would be allowed subject to the state antidegradation policy. If the receiving water is not in attainment of the applicable standard, the existing limit must be based on a wasteload allocation or a total maximum daily load, and the relaxed limit is only allowed if attainment of water quality standards is ensured.

The segment of the Charles River receiving the discharge from CRPCD is listed on the Massachusetts Integrated List of Waters as not attaining water quality standards, and metals is listed as one of the pollutants causing nonattainment. However, to the extent that copper is one of the metals in nonattainment, this listing is based on the earlier copper criteria, which, as has been discussed, is about three times more stringent than the site-specific criteria.

The existing instream concentration of copper downstream of the discharge under critical low flow conditions was estimated using upstream copper concentrations obtained from the dilution water samples from CRPCD's WET tests, the effluent concentration of copper from DMR data, the facility design flow and receiving water 7Q10. The estimates were made using the equation below.

$$Q_r C_r = Q_d C_d + Q_s C_s$$

$Q_r$  = receiving water flow downstream of the discharge (7Q10 + plant flow)  
 $C_r$  = copper concentration in the receiving water downstream of the discharge  
 $Q_d$  = design flow of the discharge  
 $C_d$  = copper concentration in the discharge  
 $Q_s$  = receiving water flow upstream of the discharge  
 $C_s$  = copper concentration in the receiving water upstream of the discharge

The upstream total copper concentration, as measured in the dilution water for the whole effluent toxicity tests, averaged 4.5 ug/l, with a maximum concentration of 7.5 ug/l. The discharge monitoring reports show that the total copper concentration in the treatment plant discharge averaged 6.9 ug/l over the past two years, with a maximum monthly average of 12.9 ug/l and a maximum daily discharge of 22.4 ug/l.

Using the treatment plant design flow, the 7Q10 flow and the maximum concentrations ( $Q_r = 7.18$  MGD,  $Q_d = 4.5$  MGD,  $C_d = 12.9$  ug/l – chronic and 22.4 ug/l acute,  $Q_s = 2.68$  MGD, and  $C_s = 7.5$  ug/l) the resulting instream chronic concentration downstream of the discharge is estimated to be 11 ug/l and maximum (acute) concentration is 17 ug/l.

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

Where:

$$\begin{aligned}Q_s &= 2.68 \text{ MGD} \\C_s &= 7.5 \text{ ug/l} \\Q_d &= 4.5 \text{ MGD} \\C_d &= 12.9 \text{ ug/l chronic, } 22.4 \text{ ug/l acute} \\Q_r &= 7.18 \text{ MGD}\end{aligned}$$

$$C_r(\text{chronic}) = \frac{(4.5)(12.9) + (2.68)(7.5)}{7.18} = 10.8 \text{ ug/l}$$

$$C_r(\text{acute}) = \frac{(4.5)(22.4) + (2.68)(7.5)}{7.18} = 16.8 \text{ ug/l}$$

Comparing these calculated values (11 ug/l chronic, 17 ug/l acute) to the site-specific criteria (18 ug/l chronic, 25.7 ug/l acute), it can be seen that under critical conditions the instream concentration of copper would be less than the site-specific water quality criteria, meaning that the Charles River is a high quality water for copper, and a relaxation of the limits can be considered pursuant to the state's antidegradation policy.

Using the above equation, effluent limitations can be calculated which would result in an instream concentration equal to the new criteria. Using an upstream concentration of 7.5 ug/l ( $C_s$ ), the treatment plant design flow 4.5 MGD ( $Q_d$ ), the upstream 7Q10 flow of 2.68 MGD ( $Q_s$ ), the downstream flow of 7.18 ( $Q_r$ ), and downstream concentration equal to the criteria ( $C_r = 18.1 \text{ ug/l-chronic}$ , and  $25.7 \text{ ug/l - acute}$ ) the monthly average and daily maximum total copper effluent limitations would be 24.4 ug/l – chronic and 36.5 ug/l- acute.

$$C_d = \frac{Q_r C_r - Q_s C_s}{Q_r - Q_s}$$

Where:

$$\begin{aligned}Q_s &= 2.68 \text{ MGD} \\C_s &= 7.5 \text{ ug/l} \\Q_d &= 4.5 \text{ MGD} \\C_r &= 18.1 \text{ ug/l chronic, } 25.7 \text{ ug/l acute} \\Q_r &= 7.18 \text{ MGD} \\C_d(\text{chronic}) &= \frac{(7.18)(18.1) - (2.68)(7.5)}{4.5} = 24.4 \text{ ug/l}\end{aligned}$$

$$C_d(\text{acute}) = \frac{(7.18)(22.4) - (2.68)(7.5)}{4.5} = 31.2 \text{ ug/l}$$

However, because the Charles River would be considered a high quality water for copper based on the new site-specific criteria, Tier 3 of the antidegradation review procedure must be followed, which requires that high quality waters be maintained at existing quality.

The effluent data submitted by the permittee for the period from January 2004 through December 2006 shows that the maximum daily discharge concentration of total recoverable copper ranged from 3 ug/l to 22.4 ug/l and the monthly average discharge concentration ranged from 2 ug/l to 12.9 ug/l. Therefore,

based on this data we have included a monthly average limit of 13 ug/l and a maximum daily limit of 23 ug/l in the draft permit.

**Hardness Dependent Metals**

EPA’s Office of Water - Office of Science and Water Technology stated in a letter dated July 7, 2000 that: “The hardness of water containing the discharged toxic metal should be used for determining the applicable criterion. Thus the downstream hardness should be used. The hardness of the Charles River downstream of the treatment plant was calculated based on ambient and effluent hardness data collected for the whole effluent toxicity test from 2001 through 2005.

Calculation of hardness of the receiving water:

*Calculation of hardness in the receiving water:*

In order to determine the hardness downstream of the treatment plant during the critical low flow periods, the effluent and ambient hardness values from whole effluent toxicity tests conducted in July and October were calculated using mass balance equations:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

Where:

- Q<sub>s</sub> = 7Q10 river flow upstream of plant = 4.14 cfs = 2.68 MGD
- Q<sub>d</sub> = Discharge flow from plant = 4.5 MGD
- Q<sub>r</sub> = Combined river flow (7Q10 + plant flow)
- C<sub>s</sub> = Upstream hardness concentration
- C<sub>d</sub> = Plant discharge hardness concentration
- C<sub>r</sub> = Receiving water hardness concentration

*Calculation of Downstream Hardness at CRPCD*

WET Test Date	Effluent Hardness, mg/l	Ambient Hardness, mg/l	Calculated Downstream Hardness, mg/l
10/05	180	36	126
07/05	190	44	135
10/04	170	72	133
07/04	150	62	117
10/03	136	72	112
07/03	124	60	100
10/02	208	100	168
07/02	104	72	92

WET Test Date	Effluent Hardness, mg/l	Ambient Hardness, mg/l	Calculated Downstream Hardness, mg/l
10/01	161	84	132
08/01	177	70	137

Example calculation:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_T} = \frac{(4.5 \text{ MGD})(104 \text{ mg/l}) + (2.68 \text{ MGD})(72 \text{ mg/l})}{(4.5 \text{ MGD} + 2.68 \text{ MGD})} = 92 \text{ mg/l}$$

The lowest downstream hardness of 92 mg/l from the above table was selected, as this would be the most protective of aquatic life.

Water Quality Criteria for hardness-dependent metals (see equations below):

Chronic criteria (dissolved) =  $\exp\{m_c [\ln (\text{hardness})] + b_c\}$  (CF)

Where :  
 $m_c$  = pollutant-specific coefficient  
 $c$  = pollutant-specific coefficient  
 $h$  = hardness of the receiving water = 92 mg/l as  $\text{CaCO}_3$   
 $\ln$  = natural logarithm  
 CF = pollutant specific conversion factor used to convert total recoverable to dissolved metal

Acute criteria (dissolved) =  $\exp\{m_a [\ln (\text{hardness})] + b_a\}$  (CF)

Where:  
 $m_A$  = pollutant-specific coefficient  
 $b_A$  = pollutant-specific coefficient  
 $h$  = hardness of the receiving water = 92 mg/l as  $\text{CaCO}_3$   
 $\ln$  = natural logarithm  
 CF = pollutant specific conversion factor used to convert total recoverable to dissolved

*Metal Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness Dependent*

Chemical	$m_A$	$b_A$	$m_C$	$b_C$	Freshwater Conversion Factors (CF)	
					CMC	CCC
Lead	1.273	-1.460	1.273	-4.705	0.803	0.803
Nickel	0.8460	2.255	0.8460	0.0584	0.998	0.997
Cadmium	1.0166	-3.924	0.7409	-4.715	0.947	0.912
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

Lead

*CCC = Chronic lead criteria (dissolved) =  $\exp\{1.273 [\ln(92)] - 4.705\} (0.803) = 2.3 \text{ ug/l}$*

Average Monthly Effluent limitation: (CCC) (dilution factor) = (2.3 ug/l) (1.59) = 3.7 ug/l (dissolved)

Total recoverable limit = 3.7 ug/l ÷ (0.803) = 4.6 ug/l = 5 ug/l

*CMC = Acute lead criteria (dissolved) =  $\exp\{1.273[\ln (92)] - 1.460\} (0.803) = 59 \text{ ug/l}$*

Maximum Daily Effluent limitation: (CMC) (dilution factor) = (59 ug/l) (1.59) = 94 ug/l (dissolved)

Total recoverable limit = 94 ug/l ÷ (0.803) = 117 ug/l

Lead is monitored as part of the chemical analysis in quarterly toxicity testing. The concentration of lead in the effluent has been consistently below the minimum detection level (ML) of 0.0050 mg/l. Therefore, there is no reasonable potential for a violation of the water quality standards and no limit is required.

Nickel

*CCC = Chronic nickel criteria (dissolved) =  $\exp\{0.8460 [\ln(92)] + 0.0584\} (0.997) = 48 \text{ ug/l}$*

Average Monthly Effluent limitation: (CCC) (dilution factor) = (48 ug/l) (1.59) = 76 ug/l (dissolved)

Total recoverable limit = 76 ug/l ÷ (0.997) = 76 ug/l

*CMC = Acute nickel criteria (dissolved) =  $\exp\{0.8460 [\ln (92)] + 2.255\} (0.998) = 436 \text{ ug/l}$*

Maximum Daily Effluent limitation: (CMC) (dilution factor) = (436 ug/l) (1.59) = 693 ug/l (dissolved)

Total recoverable limit = 693 ug/l ÷ (0.998) = 694 ug/l

Nickel is monitored as part of the chemical analysis in quarterly toxicity testing. The concentration of nickel in the effluent has been below the minimum detection level (ML) of 0.004 to 0.007 mg/l. Therefore, there is no reasonable potential for a violation of the water quality standards and no limit is required.

Cadmium

*CCC = Chronic cadmium criteria (dissolved) =  $\exp\{0.7409 [\ln(92)] - 4.72\} (0.912) = 0.23 \text{ ug/l}$*

Average Monthly Effluent limitation: (CCC) (dilution factor) = (0.23 ug/l) (1.59) = 0.36 ug/l (dissolved)

Total recoverable limit = 0.36 ug/l ÷ (0.912) = 0.4 ug/l

*CMC = Acute cadmium criteria (dissolved) =  $\exp\{1.0166 [\ln (92) - 3.924\} (0.947) = 2 \text{ ug/l}$*

Maximum Daily Effluent limitation: (CMC) (dilution factor) = (2 ug/l) (1.59) = 3.2 ug/l (dissolved)

Total recoverable limit = 3.2 ug/l ÷ (0.947) = 3.4 ug/l

Cadmium is monitored as part of the chemical analysis in quarterly toxicity testing. The concentration of cadmium has been below the minimum detection (ML) of 10 ug/l. Therefore, there is no reasonable potential for a violation of the water quality standards and no limit is required.

Zinc

*CCC = Chronic zinc criteria (dissolved) =  $\exp\{0.8473 [\ln(92)] + 0.884\} (0.986) = 110 \text{ ug/l}$*

Average Monthly Effluent limitation: (CCC) (dilution factor) = (110 ug/l) (1.59) = 175 ug/l (dissolved)

Total recoverable limit = 175 ug/l ÷ (0.986) = 177 ug/l

*CMC = Acute zinc criteria (dissolved) =  $\exp\{0.8473 [\ln (92)] + 0.884\} (0.978) = 109 \text{ ug/l}$*

Maximum Daily Effluent limitation: (CMC) (dilution factor) = (109 ug/l) (1.59) = 173 ug/l (dissolved)

Total recoverable limit = 173 ug/l ÷ (0.978) = 177 ug/l

Zinc is monitored as part of the chemical analysis in quarterly toxicity testing. The concentration of zinc in the effluent ranged from 0.017 to 0.031 mg/l. Therefore, there is no reasonable potential for a violation of the water quality standards and no limit is required.

#### Aluminum

The aluminum criterion is expressed in terms of total recoverable metal in the water column and is not hardness-dependent.

*CCC = Chronic aluminum criteria = 87 ug/l*

Average monthly effluent limitation:  $(CCC) (\text{dilution factor}) = (87 \text{ ug/l}) (1.59) = 0.14 \text{ mg/l}$

*CMC = Acute aluminum criteria = 750 ug/l*

Maximum daily effluent limitation:  $(CMC)(\text{dilution factor}) = (750 \text{ ug/l}) (1.59) = 1.2 \text{ mg/l}$

At the CRPCD WPAF, ferric chloride, rather than alum, is used for phosphorus control. The current permit includes a report only requirement, and the concentration of aluminum in the effluent has ranged from below detection to 0.03 mg/l (Table 2). Therefore, there is no reasonable potential for a violation of water quality standards and the effluent reporting requirement for aluminum has been eliminated. Aluminum will still be monitored as part of the chemical analysis in quarterly toxicity testing.

## **VI. UNAUTHORIZED DISCHARGES**

The permittee and co-permittees are authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall(s) 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 the permit and shall be reported in accordance with Section D.1.e (1) of the General Requirements of the permit (Twenty-four hour reporting).

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

## **VII. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM**

The Towns of Franklin, Medway, Millis, and Bellingham own and operate their portions of the sewer collection system that transports sewage to the treatment plant. The draft permit includes these towns as co-permittees for the operation and maintenance of each town's separate sewer system. The CRPCD and the towns are each required to comply with Part I.B, Unauthorized Discharges and I.C, Operation and Maintenance of the Sewer System.

#### Infiltration/Inflow Requirements

The draft permit includes requirements for the permittee and co-permittees to control infiltration and inflow (I/I). Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity and the efficiency of the treatment works, and may cause bypasses to secondary treatment. It greatly increases the potential for sanitary sewer overflows (SSO) in separate systems.

The 2007 Infiltration/Inflow report submitted by CRPCD estimated daily infiltration/inflow to the facility at an average of 0.28 MGD. The report states that CRPCD, Bellingham, Franklin, Medway, and Millis did not have any unauthorized discharges from their sewer systems.

In March 2002, CRPCD conducted TV inspections of the District's Charles River Interceptor, Chicken Brook Connector, and a portion of the Shepard's Brook Connector. The District wanted to determine if significant infiltration was present in its collection systems at the three river crossings and the interceptor adjacent to the Charles River. Seven locations with infiltration were found and sealed in July 2002 resulting in an estimated reduction of 50,000 gpd of infiltration.

***From 2002 to 2005, CRPCD assisted Franklin with TV inspections of 14,464 feet of sewer lines, and 11,166 feet were surveyed in Millis.***

During 2005, Franklin lined 10,774 feet of sewer pipe; tested and sealed 18,623 feet; and rehabilitated 74 manholes. Also, 34 spot repairs were performed by a curing-in-place process. An estimated 500,000 gpd were eliminated from the sewer system. In 2007, the Town inspected approximately 500 sewer manholes, performed flow isolation in four sub areas, identified and eliminated four direct sources of inflow, evaluated flows through two sewer pump stations to assess the magnitude of wet weather/dry weather flow and installed a flow meter in the Beaver Street Interceptor to provide monitoring of wet weather/dry weather flow.

In 2007, Medway continued to inspect manholes and has compiled a list for remedial action. The Town found no unauthorized discharges in 2007. In prior years Medway has repaired sewer connections and manholes to eliminate an estimated 288,000 gpd of I/I.

In 2007 Bellingham hired a consultant to study and overhaul the Stanwood Circle meter before the end of fiscal year 2008. The Town is also planning to install remote monitoring equipment within the sewer system which is expected to further efforts to identify areas with I/I. Bellingham completed a two-year program to continuously monitor pump station operation and meter readings, inspect and repair manholes, drop structures, and pipe lines in the Stanwood Meter (Pilgrim Village), North Main Street Pump Station (Wethersfield), and Mechanic Street Pump Station sub-systems. As a result, 20,000 gpd were eliminated. Bellingham has added a line item to their sewer enterprise fund to continue their efforts to reduce I/I.

The Town of Millis appropriated a sum of \$120,000 in the fall of 2007 to start an I/I identification removal program. The program was expected to begin in the spring and last for three years. In prior years, the Town has replaced several cracked and broken sewer manhole covers and rims and required a sewer contractor to repair a leaking newly installed sewer line extension.

The permit requirements for infiltration/inflow have been updated, and the permittee is required to submit a plan for controlling inflow/infiltration to the sewer system with the cooperation of the communities who are co-permittees in the District within six months of the effective date of the permit, and an annual report by March 31 of each year. The permittee and co-permittees shall develop an I/I removal program commensurate with the severity of the I/I in the collection system. Where portions of the collection system have little I/I, the control program will logically be scaled down. Significant I/I in a collection system may displace sanitary flow, reduce the capacity and the efficiency of the treatment works, and may cause bypasses at the treatment plant.

The permit standard conditions for 'Proper Operation and Maintenance' are found at 40 CFR §122.41(e).

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

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

#### VIII. PRETREATMENT

CRPCD receives process discharges from 4 significant industrial users. Garelick Farms discharges 300,000 gpd; ANP Bellingham Energy Company discharges 5500 gpd; and Castronics, Inc. and SMTC Manufacturing Corporation both contribute very small process and non-process flows.

The permittee is required to administer a pretreatment program based on the authority granted under 40 CFR122.44(j), 40 CFR Part 403, and Section 307 of the Clean Water Act. The permittee's pretreatment program received EPA approval on April 24, 1995, and as a result, the appropriate pretreatment program requirements were incorporated into the previous permit with that approval and the federal pretreatment regulations in effect when the permit was issued.

The federal pretreatment regulations in 40 CFR 403 require the permittee to: (1) evaluate and enforce EPA approved specific effluent limits (technically based local limits); (2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with federal regulations; (3) develop an enforcement response plan; (4) implement a slug control evaluation program; (5) track significant noncompliance for industrial users; and (6) establish a definition of and track significant industrial users.

The permit requires the permittee to submit to EPA, within 90 days of the effective date of the permit, all required modifications of the Streamlining Rule in order to be consistent with the provisions of the newly promulgated Rule. To the extent the Permittee's legal authority is not consistent with the required changes, they must be revised and submitted to EPA for review.

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

On January 4, 2006, EPA approved a report entitled "Charles River Pollution Control District Reevaluation of Local Limits (November 2005)." The revised local limits went into effect April 1, 2006. However, if other changes to the permittee's pretreatment program are deemed necessary to assure conformity with current federal pretreatment regulations, the draft permit requires the permittee to provide EPA in writing within 180 days of the permit's effective date, a description of proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current federal regulations. These requirements may be new to this draft permit and are commensurate with current EPA New England pretreatment policy. In addition, the permittee must continue to submit by **September 1**, an annual pretreatment report detailing the activities of the program for the period from July 1 to June 30.

Based on the potential for toxicity as a result of industrial discharges to the POTW, and as discussed previously the draft permit includes effluent toxicity limitations and requires the performance of effluent toxicity tests. These tests will assist in assessing the effectiveness of the permittee's pretreatment program and also may be used as a basis for development or revision of specific numerical pretreatment limits.

#### **IX. SLUDGE CONDITIONS**

Sludge is thickened with a belt thickener to 7% solids, and stored in two 75,000 gallon sludge holding tanks. In 2007 Synagro, Inc. pumped and transported on average 15 loads of sludge per week, equivalent to 3,761,000 total dry metric tons per year, to their incinerator in Woonsocket, RI. The grit and screenings are now trucked away by BFI, now that the on-site landfill has reached full capacity. A feasibility study for closing the landfill has been completed, but no date for implementation has been set.

Section 405(d) of the Clean Water Act requires that sludge conditions be included in all POTW permits. The sludge conditions in the draft permit satisfy this requirement and are taken from EPA's standards for disposal of sewage sludge.

#### **X. MONITORING & REPORTING**

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

#### **XI. ANTI-BACKSLIDING**

A permit may not be renewed, reissued, or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the anti-backsliding requirements of the CWA. The anti-backsliding provisions found in 40 CFR 122.44 (l) restrict the relaxation of permit limits, standards and conditions. Therefore, the technology-based effluent limits in a reissued permit must be at least as stringent as those in the previous permit. Relaxation is only allowed when cause for permit modification is met (see 40 CFR 122.62). Effluent limits based on water quality and state certification requirements must also meet the anti-backsliding provisions found under Section 402(o) and 303(d)(4) of the CWA, as described in 40 CFR 122.44(l).

The effluent limits for copper have been relaxed slightly. The relaxation of these limits are permissible under the anti-backsliding provisions found in 402(o) of the Clean Water Act and 40 CFR 122.44(l). Specifically, Section 402(o) specifies that water quality based effluent limits may be relaxed only in compliance with water quality standards and anti-degradation. For specific reasons discussed earlier in the fact sheet, EPA and MassDEP believe that these less stringent limitations are allowable.

The monitoring requirement for aluminum has been eliminated from the draft permit. Although this does not constitute anti-backsliding, it is based on new information from effluent monitoring results that do not show a reasonable potential for water quality violations. Aluminum is also one of the parameters that is analyzed as part of toxicity testing.

#### **XII. ANTI-DEGRADATION REVIEW**

The Massachusetts anti-degradation regulations (314 CMR 4.04) require that all existing uses of the Charles River must be protected. MassDEP has indicated that it believes there will be no lowering of water quality and/or no loss of existing water uses for this segment of the River and that no additional anti-degradation review is warranted.

#### **XIII. ESSENTIAL FISH HABITAT DETERMINATION**

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C § 1801 *et seq.*(1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat," 16 U.S.C. §1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as "waters and substrate necessary to fish

for spawning, breeding, feeding, or growth to maturity,” 16 U.S.C. § 1802(10). “Adverse impact” means any impact which reduces the quality and/or quantity of EFH, 50 C.F.R. §600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species’ fecundity), site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

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

There is no “habitat of particular concern,” as defined under §600.815 (a)(9) of the Magnuson-Stevens Act, designated for this site.

EPA and MassDEP have determined that a formal EFH consultation with NMFS for this discharge is not required. The proposed discharge permit is developed to meet State Surface Water Quality Standards and will not adversely impact EFH.

#### **XIV. STATE PERMIT CONDITIONS**

This NPDES permit is issued jointly by the U.S. Environmental Agency and the Massachusetts Department of Environmental Protection (MassDEP) under federal and state law, respectively. As such, all the terms and conditions of the permit are incorporated into and constitute a discharge permit issued by the MassDEP Commissioner, who designates signature authority to the Director of the Division of Watershed Management pursuant to M.G.L Chap. 21, §43.

#### **XV. STATE CERTIFICATION REQUIREMENTS**

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

#### **XVI. COMMENT PERIOD, HEARING REQUESTS, and PROCEDURES FOR FINAL DECISIONS**

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Betsy Davis, U.S. EPA, Office of Ecosystem Protection, Municipal Permits Branch, 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA’s

Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

A similar request for a hearing should also be filed with the Director of the Massachusetts Division 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. The Adjudicatory hearing request should be sent to:

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

The hearing request and a valid check for \$100 payable to the Commonwealth of Massachusetts must be mailed by the end of the comment period to:

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

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

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

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator of EPA and the Director of MassDEP/DWM will issue a final permit decision and forward a copy of the decision to the applicant and each person who has submitted written comments or requested notice.

#### **XVI. EPA AND MassDEP CONTACTS**

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

Betsy Davis  
US Environmental Protection Agency  
1 Congress Street  
Suite 1100 (CMA)  
Boston, Massachusetts 02114-2023  
Telephone: (617) 918-1576  
Fax: (617) 918-0565  
Email: [davis.betsy@epamail.epa.gov](mailto:davis.betsy@epamail.epa.gov)

or

Kathleen Keohane  
MA Department of Environmental Protection  
Division of Watershed Management  
627 Main Street  
Worcester, MA 01608  
Telephone: (508) 767-2856  
Fax: (508) 791-4131  
Email: [kathleen.keohane@state.ma.us](mailto:kathleen.keohane@state.ma.us)

\_\_\_\_\_                      Stephen S. Perkins, Director\*  
Date                              Office of Ecosystem Protection  
   U.S. Environmental Protection Agency

Comments should be addressed to both Betsy Davis and Kathleen Keohane, not Stephen S. Perkins.

Attachment 3  
Charles River Pollution Control District  
Proposed Facility Upgrades

- Modification of the Parshall Flume (by removing the nested 18-inch flume) and allowing the use of the existing 36-inch flume to enable accurate flow measurement of the entire range of influent flows seen at the facility. This work will require by-pass pumping of the entire influent flow to the facility, so must be accomplished during low flow periods.
- Replacement of aging raw wastewater pump No. 1 and installation of new Pump No. 4 to improve efficiency and convey future peak flows. Maintenance of plant operation (pumping capacity) when working on the influent pumping system is critical and again should be timed to occur during low flow periods.
- Upgrades to the grit removal and handling system – this work has yet to be defined, and may be deferred, but again critical to not compromise the ability of the system to treat the influent flow.
- Enhancement of the secondary treatment system and nutrient removal via reconfiguration of the east battery tanks, replacement of the mechanical mixers with mixer aerators and modifications to the west battery tanks. This work will likely be sequenced such that the work on the east battery will be accomplished first, constructed, started-up, tested and then successfully operated for 30 or 60 days prior to shutting down the west battery and implementing improvements to those tanks. Lead time on the proposed mixers may drive this schedule. RAS and WAS pumps will be also be replaced. The work in the secondary system will likely be on the critical path for the completion of the project, and since the work on the east and west battery must be accomplished in series to maintain plant operation it is difficult to reduce the schedule too much. Note, maintaining permit compliance when only half of the aeration tank is operational will be challenging for the plant operators so relief on the phosphorus limit may be requested during construction.
- Modifications to secondary clarifiers. This work would need to be phased so the District always has 3 secondary clarifiers operational.
- Retrofit of the existing gravity sand filters with new Aqua Diamond cloth filter with 5 micron cloth. Since the existing sand filters are still used during high flow events this work should be undertaken during low flow periods, if possible. This first requires the demolition of the existing sand filters (removal of filtration media and all equipment) followed by the installation of the new equipment. A significant amount of work to ancillary facilities is required in this aging area to bring all systems up to current code and practice.
- Conversion of the disinfection system from chlorine gas to sodium hypochlorite. The intent would be to complete this construction in the off-season for disinfection (November –April) so this could drive the schedule.
- Install a new gravity belt thickener to supplement the existing GBT. Long lead time for this equipment, but installation will likely not impact current operation too dramatically.

- Other improvements include replacement of thickened sludge transfer pumps, a new polymer storage and feed system, new chemical storage and feed systems, new lime system, replacement or rehabilitation of many gates throughout the facility, installation of a new SCADA system, both interior and exterior architectural repairs, repair of structural deficiencies, replacement of the majority of the electrical equipment and motor control centers that are original to the 1970s facility (this requires significant sequencing to ensure the plant is always powered) and replacement of aging HVAC.

**EPA AND MASSDEP JOINT RESPONSE TO PUBLIC COMMENTS  
CHARLES RIVER POLLUTION CONTROL DISTRICT  
NPDES PERMIT NO. MA0102598**

From July 3, 2008 to August 1, 2008, Region 1 of the United States Environmental Protection Agency (“Region” or “EPA”) and the Massachusetts Department of Environmental Protection (“MassDEP”) (together, the “Agencies”) solicited public comments on a draft National Pollutant Discharge Elimination System (“NPDES”) Permit. The Draft Permit was developed pursuant to a re-application from the Charles River Pollution Control District (“CRPCD,” “District,” or the “permittee”) for reissuance of an NPDES permit to discharge treated wastewater effluent to the Charles River. Comments were received from:

- Charles River Pollution Control District
- Anderson & Kreiger LLP on behalf of the Charles River Pollution Control District
- Camp Dresser and McKee Inc. on behalf of the Charles River District Control District
- Town of Franklin, Massachusetts
- Town of Millis, Massachusetts
- Charles River Watershed Association
- Town of Medway, Massachusetts

Following the close of the first public comment period, EPA determined to partially revise the Draft Permit and reopen it for public comment based on the existence of “substantial new questions,” pursuant to 40 C.F.R. § 124.14(b). EPA accepted public comment on the Revised Draft Permit from August 29, 2012 through September 27, 2012. Public comment on the revised Draft Permit was limited to the “substantial new questions that caused its reopening.” *Id.* at § 124.14(c). In the Fact Sheet for the Revised Draft Permit, EPA defined the scope of the reopening to include the total phosphorus limits; the inclusion of municipalities owning/operating portions of the treatment works as co-permittees for the purposes of operation and maintenance and unauthorized discharges; the revised requirements for submitting monitoring and reporting data; and updated collection system operation and maintenance requirements, and monitoring report submissions. Comments were received from:

- Charles River Pollution Control District
- Bowditch & Dewey, LLP on behalf of the Towns of Bellingham, Franklin, Medway and Millis
- Town of Franklin, Massachusetts
- Kleinfelder, Inc. on behalf of the Towns of Bellingham, Medway and Millis
- Upper Blackstone Water Pollution Control Abatement District

Upon considering the comments received, EPA has made a final decision to re-issue the permit authorizing the discharge. This document responds to comments on the Draft Permit and describes the changes between the draft and final versions of the permit. EPA

has reproduced all comments on the Draft Permit and the Revised Draft Permit verbatim, and addresses the two sets of comments sequentially (*i.e.*, comments on the 2008 Draft Permit are presented first, followed by those on the 2012 Revised Draft Permit). A copy of the final permit may be obtained from Region 1's website ([http://www.epa.gov/region1/npdes/permits\\_listing\\_ma.html](http://www.epa.gov/region1/npdes/permits_listing_ma.html)) or the permit writer, whose contact information is as follows:

Betsy Davis  
United States Environmental Protection Agency  
5 Post Office Square - Suite 100  
Mail Code: OEP06-1  
Tel: (617) 918-1576  
Email: [davis.betsy@epa.gov](mailto:davis.betsy@epa.gov)

## **RESPONSE TO COMMENTS ON 2008 DRAFT NPDES**

**Comments submitted by Robert D. McRae, Executive Director, Charles River Pollution Control District, Medway, Massachusetts, dated August 1, 2008.**

**Comment #1:** It is distressing to have received this permit, when a total maximum daily load (TMDL) study of the Upper Charles Watershed being undertaken by the EPA, DEP and the Charles River Watershed Association is nearing completion. That study, in which the EPA and DEP have invested almost \$1 million would have gone a long way to answering many of the comments the District submit today. It would also have provided an opportunity for a dialogue on the most appropriate approach to the control of phosphorus in the Upper Charles Watershed, rather than a unilateral issuance of a permit that leaves open many questions.

To issue this permit at this time is particularly troublesome, because EPA and DEP studies clearly show that the District's effluent is but a small fraction of the total phosphorus load in the upper watershed. The TMDL study conducted for the Lower Charles (below the Watertown dam), which has already been approved by EPA, clearly shows that all the wastewater treatment plants in the Upper Charles represents only a small fraction of the total phosphorus load – only 14.8% of the total load in the summer growing season, but a higher percentage -21.8% on an annual basis. This is in stark contrast to other phosphorus management problems in the Commonwealth, where point sources dominate the seasonal and annual load. This clearly reflects the fact that the District and other treatment plants have already implemented phosphorus control strategies representing the Commonwealth's "highest and best practical treatment". Recognizing that the District is but a small part of the phosphorus loading provides all the more reason to develop solutions through a TMDL, so that control of all sources can be evaluated for effectiveness and cost.

**Response to Comment #1:** The "Draft Total Maximum Daily Load for Phosphorus in the Upper/Middle Charles River" ("Draft TMDL") referenced in the comment above was released for public notice and comment on October 7, 2009.

<http://www.mass.gov/dep/water/resources/tmdl.htm>. Information from the data collection reports was used in preparation of the Draft Permit, and EPA concluded that the data supported the limits therein. The final TMDL was subsequently approved by EPA on June 10, 2011.

Given the availability of a final TMDL and a WLA for the discharge, EPA slightly revised the phosphorus limits. EPA explained this change in the Fact Sheet for the partially revised Draft Permit. EPA's decision to reopen the public comment period and incorporate the available WLA for the discharge presumably satisfies the commenter's concerns regarding coordination between the NPDES permitting and the TMDL process.<sup>1</sup>

The commenter states that phosphorus discharged from the wastewater treatment facilities (WWTFs) is a small fraction of the upstream phosphorus load in the river, a conclusion based on data from the Lower Charles TMDL. The commenter's reliance on the Lower Charles TMDL is misplaced. It is true that when issuing an NPDES permit, the permit issuer must ensure consistency with the requirements and assumptions of any available WLA for the discharge. 40 C.F.R. §§ 122.4(d), 122.44(d)(1)(vii)(B). But the WLA applicable to the Lower Charles TMDL is not the only or final determinant of permit limits with respect to the upper Charles River. The Lower Charles TMDL did not specifically consider the impact of the POTWs on water quality in the upper Charles River watershed in establishing its wasteload allocations. As explained in the Lower Charles TMDL, the "upper Charles TMDL will evaluate the impact of nutrient loading from WWTFs on eutrophication in the upper watershed and will also include individual nutrient allocation for each facility." See Total Maximum Daily Load for Nutrients in the Upper/Middle Charles River, Massachusetts, May 2011. Total Maximum Daily Loads (TMDLs). See response to comment #3 for a detailed discussion on the water-quality based phosphorus limits in the Final Permit.

Moreover, the percentage of POTW flow at the Watertown Dam does not resolve the threshold question of whether there exists a reasonable potential for the CRPCD discharge of phosphorus to cause or contribute to an exceedance of applicable water quality standards, including but not limited to the receiving water immediately downstream of the discharge.<sup>2</sup> If such potential exists, the Region is obligated under

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<sup>1</sup> The Region did not forestall permit issuance to await completion of the TMDL, but the final TMDL happened to be approved while the Region was still in the process of preparing the permit for issuance. While EPA may exercise its discretion to await completion of a TMDL prior to issuing an NPDES permit, such delay is generally not warranted where there are ongoing receiving water quality impairments, to which continued phosphorus loadings into the river from the POTW contribute. These phosphorus loadings, in addition, have the potential to settle into the sediments and/or to be taken up by aquatic plant growth, thus recycling through the system, and possibly exacerbating impairments in the future. Moreover, once phosphorus is discharged into the environment, efforts to control it can become more difficult and complex.

<sup>2</sup> While the figures cited by the commenter are accurate, this information must be understood in its full environmental context. The Lower Charles TMDL data relied on by the commenter are based on loads at the Watertown Dam, which is located some 50 river miles downstream of the CRPCD discharge. Because of this distance, there is significantly less contributing watershed area at the CRPCD discharge than at the Watertown Dam, and therefore much lower storm water loads at the CRPCD discharge. Also, according to the Lower Charles TMDL, about 80 percent of the POTW load to the river is discharged by CRPCD and

section 301 of the Act and implementing NPDES regulations to include a limitation for the pollutant that will ensure compliance with water quality standards. *See* CWA § 301(b)(1)(C); 40 C.F.R. §§ 122.4(d), 122.44(d)(1), (5). Thus while EPA must be consistent with any available WLAs for the discharge applicable to downstream segments, it must also conduct a reasonable potential analysis for the pollutant to assess its impact on water quality in the segment to which it discharges. The resulting limit must ensure compliance with all applicable water quality requirements (*i.e.*, at the point of discharge and downstream). The analysis in the Fact Sheet clearly shows that the discharge has the reasonable potential to cause or contribute to exceedances of water quality standards, and results in an in-stream concentration above the numeric target (0.1 mg/l) that EPA has determined is necessary in this case to attain and maintain the applicable narrative water quality criteria for nutrients. Please see *In re City of Attleboro, MA Wastewater Treatment Plant*, NPDES Appeal No. 08-08, slip op. at 47-75, 14 E.A.D. \_\_\_ (EAB, September 15, 2009), which details and upholds the Region’s technical and legal justification for deriving phosphorus limits in NPDES permits utilizing an effects-based approach and the *Gold Book*. EPA carefully considered a range of information when assessing receiving water conditions, including but not limited to State regulatory finding (as well as the data and analysis underlying them) and reports. For example, as described in the Fact Sheet, MassDEP’s most recent water quality assessment (*i.e.*, the Charles River Watershed 2000–2006 Water Quality Assessment Report, August 2007) identifies the segment of the river that receives the CRPCD POTW Treatment Plant discharge as impaired for nutrients and not meeting designated uses. The MassDEP 2008 Integrated List of Waters also lists this segment as impaired due to, among other things, excess algal growth, dissolved oxygen saturation, nutrient/eutrophication biological indicators, and phosphorus (total). The 2010 and 2012 Integrated Lists also report this segment of the river as impaired for the same parameters as those in the 2008 Integrated List of Waters.

**Comment #2:** The District feels as though it should not accept responsibility for the sewer systems in the service area that the District does not own for reasons expanded upon in the legal comments

**Response to Comment #2:** EPA has outlined its rationale for including municipalities that own/operate outlying portions of the treatment works in more detail in the Revised Draft Permit and Fact Sheet, as well as in response to comments on that the Revised Draft Permit, which are presented later in this document.

As described in the Fact Sheet (Section VII. Operation and Maintenance of the Sewer System), each co-permittee is responsible for their portion of the collection system for activities required in Part I.B, Unauthorized Discharges, and Part I.C, Operation and Maintenance of the Sewer

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the Milford treatment plant, located upstream of CRPCD. The much lower storm water load just downstream of the CRPCD discharge makes the total phosphorus load at that point much less than at the Watertown Dam, and the comparable POTW load at that point (80 percent of the load at the Watertown Dam) combine to make POTW load a much higher percentage of the total phosphorus load just downstream of the CRPCD discharge than at the Watertown Dam.

System in the permit. Specifically, Part I.B of the Draft Permit requires each co-permittee to notify EPA and MassDEP of any discharge of wastewater from a point source (including sanitary sewer overflows (SSOs)) from any portion of the wastewater collection system it owns/ operates that are not authorized by the permit in accordance with Part II. Section D.1.e.1 (Standard Conditions – 24 - hour reporting).<sup>3</sup> Part I.C of the permit places responsibility for the operation and maintenance of each Town’s section of the collection system on the Town that owns and operates it. Each Town is expected to maintain their portion of the collection system to prevent overflows. If an overflow does occur, the permit establishes that it is the respective Town’s responsibility to address it.

Inclusion of the Towns of Franklin, Medway, Millis and Bellingham as co-permittees does not impose any responsibility upon the District for the implementation of the terms and conditions required by the permit that extend beyond the scope of the District’s ownership or operational authority. In other words, EPA has not assigned any responsibility to CRPCD for portions of the treatment works that are either owned/operated by another entity (*i.e.*, the municipalities). Although the language on the face of the permit appears clear that it is the co-permittees rather than the District who are subject to the subset of conditions of the permit described above relative to the portions of the sewer system that they own/operate, EPA hereby clarifies this interpretation of the permit for future purposes.

EPA recognizes that portions of the wastewater collection system that are used to transport wastewater to a POTW Treatment Plant from surrounding communities may not be owned/operated by the District. In EPA’s view, the lack of jurisdiction by the operator of the treatment plant over outlying portions of the POTW supports the approach taken by the Region here, which is to impose a limited set of conditions, notably with respect to operation and maintenance, on those municipalities that do own/operate portions the POTW beyond the jurisdiction of the District, and that do have the necessary operational experience, access and control to address, expeditiously and efficiently, impacts adversely affecting collection system performance, and ultimately affecting the quality of the final effluent discharge. EPA believes that structuring the permit to include conditions on owners/operator of all portions of the POTW is appropriate in this case to ensure proper operation and maintenance of the entire treatment works (not just a portion of it) and, consequently, to assure compliance with the Act, including through the prevention and minimization of SSOs. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 C.F.R. §§ 122.4(a) and (d); 122.41(e); 122.43; and 122.44(d) (identifying broad authority to condition a permit in order to carry out the objectives of the Act).

**Comments submitted by Douglas H. Wilkins, Anderson & Kreiger LLP on behalf of the Charles River Pollution Control District, August 1, 2008.**

**Comment #3A: PHOSPHORUS LIMITS - Legal Requirements**

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<sup>3</sup> As this information will also be available for review by the District upon request, co-permitting municipalities that own/operate portions of the collection system will provide the District with greater information regarding satellite collection systems than it might otherwise have. This information will assist the District in assessing impacts that the collections systems are having on the portion of the POTW that the District operates, including interceptor sewers and the POTW Treatment Plant.

The Massachusetts Department of Environmental Protection (“MaDEP”) has not promulgated numerical limits for phosphorus in Massachusetts waters. Instead, it has adopted narrative requirements set forth at 314 CMR 4.05(5)(c):

(c) Nutrients. Unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site - specific criteria developed in a **TMDL** or as otherwise established by the Department pursuant to 314 CMR 4.00. **Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses. Human activities that result in the nonpoint source discharge of nutrients to any surface water may be required to be provided with cost effective and reasonable best management practices for nonpoint source control.** [emphasis added].

This MADEP regulation was authoritatively interpreted by Massachusetts’ highest court in Friends and Fishers of Edgartown Great Pond v. Edgartown Wastewater Commission, 446 Mass. 830, 842-845 (2006). The Court upheld a permit allowing the discharge of nitrogen as allocated to the wastewater treatment plant by MADEP, into waters that were already stressed, because the discharge “will not contribute to a condition in violation of the” regulations, including 314 CMR 4.05(5). The regulation therefore does not look to nutrient discharge levels of a particular plant in isolation, but looks at the total context and contemplates allocation of a portion of the receiving waters’ assimilative capacity to a POTW.

There is no dispute that 314 CMR 4.05(5) is the applicable state water quality standard; the Fact Sheet cites this regulation at pp. 7-8. As quoted above, the regulation requires inquiry into the following areas:

- Status of the discharge as an “existing point source discharge”;
- Use of Highest and Best Practical Treatment for Existing Dischargers;
- Compliance with an existing TMDL;
- Causation of eutrophication.

Instead of applying the regulation, EPA has imposed its own approach, which conflicts with the regulation, applicable water quality criteria and the existing TMDL affecting the District’s Wastewater Treatment Facility (“Facility”). As shown below, the draft permit’s phosphorus limits should be stricken for several reasons.

#### 1. Existing Point Source Discharge

The Facility is and has long been an existing point source discharge, currently permitted with an average effluent limit for total phosphorus of 0.2 mg/l (April through October 31)

and a reporting requirement for the rest of the year. Fact Sheet at p. 7. As such, if it is going to discharge effluent “containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface waters [the discharge] shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs . . .” This regulation recognizes the beneficial impact of existing POTWs in treating and removing pollutants from waters that might otherwise go untreated into the River. Because POTWs are part of the solution, the Water Quality Standards (and applicable TMDLs, as argued below) expressly apply HBPT to their discharges. 314 CMR 4.05(5).

EPA was bound by the terms of this regulation, once approved, as setting forth the applicable state water quality standard for purposes of 40 CFR § 122.44(d)(1)(vi)(B).

**Response to Comment #3A:** Overall, the District’s comments reflect a flawed understanding of the Clean Water Act and the legal framework for NPDES permitting, including the regulatory standard for imposing necessary effluent limitations in a permit.<sup>4</sup> The Region is not limited to the State’s interpretation of HBPT when imposing water quality-based limitations on the discharge that are as stringent as necessary to assure compliance with applicable water quality standards (WQS).

Under CWA section 402, EPA may issue NPDES permits “for the discharge of any pollutant, or combination of pollutants” if the permit conditions assure that the discharge complies with certain requirements, including those of section 301 of the CWA. Section 301(b)(1)(C) of the Act requires that NPDES permits include effluent limits more stringent than technology-based limits whenever:

“necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations...or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to [the CWA].”

NPDES permits must contain effluent limitations necessary to attain and maintain WQS, without consideration of the cost, availability or effectiveness of treatment technologies.

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<sup>4</sup> EPA has addressed the specific comments in detail below, but as a preliminary matter, the Region observes that most if not all of the legal/regulatory objections to the permit underlying the District’s comments on the phosphorus limit have been addressed in past decisions by the United States Environmental Appeals Board and by the United States Court of Appeals for the First Circuit. *See Upper Blackstone Water Pollution Abatement Dist. v. U.S. EPA*, 690 F.3d 9, 33 (1st Cir. 2012), *cert. denied*, 133 S. Ct. 2282 (2013) (upholding the Region’s overall methodology for the imposing a phosphorus limit, including use of the *Gold Book*, among other information, to establish a site-specific TP limit applicable to that particular discharge); *In re Upper Blackstone Water Pollution Abatement Dist.*, NPDES Appeal Nos. 08-11 to 08-18 & 09-06 (EAB May 28, 2010) (same); *see also, In re City of Attleboro*, NPDES Appeal No. 8-08 (EAB Sept. 15, 2009) (same). Most recently, the EAB comprehensively addressed the Region’s approach to interpreting the State’s narrative nutrient criterion to derive an effluent limitation in *In re Town of Newmarket Treatment Plant*, NPDES Appeal No. 12-05, 16 E.A.D. \_\_ (EAB December 2, 2013).

*See Upper Blackstone Water Pollution Abatement Dist. v. U.S. EPA*, 690 F.3d 9, 33 (1st Cir. 2012), *cert. denied*, 133 S. Ct. 2282 (2013). Section 301(b)(1)(C) requires each point source to achieve effluent limitations necessary to meet water quality standards and does not make allowances for the failure of other sources to comply. *See In the Matter of: National Pollutant Discharge Elimination System Permit for Blue Plains Sewage Treatment Plant No. DC 0021199*, 1 E.A.D. 531 (EAB 1979).

EPA has implemented Sections 301(b)(1)(C) and 402 of the Act through numerous regulations that specify when the Region must include permit conditions, water quality-based effluent limitations or other requirements in NPDES permits. Specifically, 40 C.F.R. § 122.4(d) *prohibits* issuance of an NPDES permit “[w]hen the imposition of conditions cannot *ensure* [emphasis added] compliance with the applicable water quality requirements of all affected States.” Section 122.44(d)(1) is similarly broad in scope and obligates the Region to include in NPDES permits “any requirements...necessary to: (1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.”

EPA’s regulations set out the process for the Region to determine one circumstance under which permit limits are “necessary” to achieve WQS and for the formulation of these requirements. *See* 40 C.F.R. § 122.44(d). Permit writers are first required to determine whether pollutants “are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion” of the narrative or numeric criteria set forth in the WQS. *Id.* § 122.44(d)(1)(i). EPA guidance directs that this “reasonable potential” analysis be based on “worst-case” conditions. *In re Washington Aqueduct Water Supply Sys.* 11 E.A.D. 565, 584 (EAB 2004). If a discharge is found to cause, have the reasonable potential to cause, or contribute to an excursion of a state water quality criterion, then a permit *must* contain effluent limits as stringent as necessary to achieve the WQS. 40 C.F.R. § 122.44(d)(1), (5). *See also Upper Blackstone Water Pollution Abatement Dist. v. U.S. EPA*, 690 F.3d 9, 33 (1st Cir. 2012), *cert. denied*, 133 S. Ct. 2282 (2013) (discussing EPA’s reasonable potential regulations and rejecting “the notion that in order to strengthen the District’s discharge limits, EPA must show that the new limits, in and of themselves, will cure any water quality problems”).

EPA agrees that CRPCD, as an existing POTW discharging nutrients in amounts that cause or contribute to cultural eutrophication, is subject to 314 CMR 4.05(5)(c).<sup>5</sup> However, as discussed in more detail below, CRPCD is subject to the provision in its entirety, not merely a portion (*i.e.*, HBPT) of it. The provision reads:

(c) **Nutrients.** Unless naturally occurring, *all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of*

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<sup>5</sup> To acknowledge the applicability of HBPT, as CRPCD does, is to also acknowledge the discharge of “nutrients in concentrations that would cause or contribute to cultural eutrophication.” “Cultural eutrophication” is defined under Massachusetts Standards as, “The human induced increase in nutrients resulting in acceleration of primary productivity, which causes nuisance conditions, such as algal blooms or dense and extensive macrophyte growth, in a waterbody,” As described in the Fact Sheet and below, eutrophic responses such as these impair aesthetic and recreational uses, as well as aquatic life habitat.

*existing or designated uses and shall not exceed the site specific criteria developed in a TMDL [emphasis added] or as otherwise established by the Department pursuant to 314 CMR 4.00. Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses. Human activities that result in the nonpoint source discharge of nutrients to any surface water may be required to be provided with cost effective and reasonable best management practices for nonpoint source control.*

The District's interpretation cannot be reconciled with the text of the regulation, as it simply reads the first sentence of the narrative criterion out of the water quality standards. EPA does not interpret the cited regulation to establish highest and best practical treatment as the maximum level of treatment that can be imposed if EPA establishes that a more stringent limit is necessary to comply with other, independently applicable water quality standards, including the requirement in 314 CMR 4.05(5)(c) that, "Unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses...". Class B waters like the receiving waters here are designated as, among other things, a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. They must also be free of floating, suspended or settleable solids that are aesthetically objectionable or could impair uses. *Id.* at § 4.05(3)(b)(5). Changes to color or turbidity of the waters that are aesthetically objectionable or use-impairing are also prohibited. *Id.* at § 4.05(3)(b)(6). Dissolved oxygen levels in Class B waters must not be less than 5.0 mg/l. *Id.* at § 4.05(3)(b)(1).

In addition to criteria specific to Class B waters, Massachusetts imposes minimum narrative criteria applicable to all surface waters, including nutrients, as discussed above; aesthetics ("free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life"); bottom pollutants and alterations ("free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms"); and toxics ("free from pollutants in concentrations that are toxic to humans, aquatic life or wildlife"). *See* 314 CMR 4.05(5)(c), (a),(b) and (e).

Excessive nutrient loading to a water body can result in a variety of adverse impacts to designated uses and associated criteria, necessitating the imposition of a water quality-based limit more stringent than HBPT to control such effects. Under undisturbed natural conditions, nutrient concentrations are very low in most aquatic ecosystems. Typically,

elevated levels of phosphorus will cause excessive algal and/or plant growth, which may prevent waters from meeting their designated uses. Phosphorous promotes the growth of nuisance levels of macrophytes (rooted aquatic plants), phytoplankton (free floating algae), periphyton (attached algae) and filamentous algae such as moss and pond scum.

Noxious aquatic plant growth degrades aesthetic and recreational uses in a variety of ways. Unsightly algal growth is unappealing to swimmers and other stream users and reduces water clarity. Heavy growths of algae on rocks can make streambeds slippery and difficult or dangerous to walk on. Algae and macrophytes can interfere with angling by fouling fishing lures and equipment. Boat propellers and oars may also get tangled by aquatic vegetation. Excessive plant growth can also result in a loss of diversity and other changes in the aquatic plant, invertebrate, and fish community structure and habitat.

Through respiration, and the decomposition of dead plant matter, excessive algae and plant growth can reduce in-stream dissolved oxygen concentrations to levels that could negatively impact aquatic life. During the day, primary producers (*e.g.*, algae, plants) provide oxygen to the water as a by-product of photosynthesis. At night, however, when photosynthesis ceases but respiration continues, dissolved oxygen concentrations decline. Furthermore, as primary producers die, they are decomposed by bacteria that consume oxygen, and large populations of decomposers can consume large amounts of dissolved oxygen. Many aquatic insects, fish, and other organisms become stressed and may even die when dissolved oxygen levels drop below a particular threshold level.

Decomposing plant matter also produces unpleasant sights and strong noxious odors, again negatively impacting recreational and aesthetic uses. Nutrient-laden plant detritus can also settle to the bottom of a stream bed. In addition to physically altering the benthic environment and aquatic habitat, organic materials (*i.e.*, nutrients) in the sediments can become available for future uptake by aquatic plant growth, further perpetuating and potentially intensifying the eutrophic cycle.

EPA disagrees that it is “bound by the terms” of the Commonwealth’s practice in interpreting the HBPT provision in 314 CMR 4.05(5) for the purposes of interpreting a narrative water quality standard and establishing an effluent limitation under 40 C.F.R. § 122.44(d)(1)(vi) that will attain the designated uses and achieve the criteria described above. This provision describes three options available to permit writers when deriving effluent limits from narrative water quality standards, the first two of which are relevant to the Region’s decision in this case. *See* 40 C.F.R. §§ 122.44(d)(1)(vi)(A), (B). The permitting authority must, in such circumstances, establish effluent limits: (A) based on a “calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use”; or (B) on a “case-by-case basis” using recommended water quality criteria published by EPA pursuant to CWA section 304(a), supplemented as necessary by other relevant information. *Id.* Section 304(a) water quality criteria documents are to “accurately reflect[] the latest scientific knowledge” about the effects of water pollution on health and environmental welfare, “the concentration and dispersal of pollutants,” and “the effects of pollutants on biological community diversity,

productivity, and stability, including information on the factors affecting rates of eutrophication . . . .”.

The procedures outlined in 40 C.F.R. § 122.44(d)(1)(vi) on their face authorize EPA to consider a wide range of information, including “relevant information.” The permitting authority may look at any and all relevant scientific information so long as the resulting numeric criterion attains narrative standards and protects designated uses. When presented with technical data and analysis related to phosphorus, EPA’s task under section 122.44(d)(1)(vi) is to determine whether the material is relevant to the derivation of a numeric water quality-based effluent limitation to implement the narrative water quality standard and whether it is appropriate to use the information, alone or in combination with other sources of information, to establish the limit. EPA is authorized under section 122.44(d)(1)(vi)(A) to use available scientific information when deriving an appropriate numeric effluent limitation to implement a narrative criterion. The preamble to the regulation states that “[u]nder [Option A] the permitting authority should use all available scientific information on the effect of a pollutant on human health and aquatic life,” suggesting a broad construction of “relevant information.” 54 F.R. 23868 at 23876. EPA construes “relevant” to mean of or relating to the pollutant and water body and the pollutant at issue in the permit at issue. In light of all the foregoing, EPA can discern no reason why its determination of CRPCD’s phosphorus effluent limit under section 122.44(d)(1)(vi) should be arbitrarily limited to MassDEP’s historical and informal interpretation of HBPT, an approach that would be inconsistent with not only EPA permitting regulations but with MA WQS as well.

**Comment #3B:**

2. Highest and Best Practical Treatment

There is no dispute that “MassDEP construes ‘highest and best practical treatment for POTWs as treatment achieving a monthly average total phosphorus concentration of 0.2 mg/l.” Fact Sheet at p. 8. Under the express terms of 314 CMR 4.05(5), this 0.2 mg/l limit applies to the District’s discharge as an “existing point source discharge.”

Yet, EPA jumps quickly from quoting the applicable water quality standards to an entirely different analysis. It states that “[in] the absence of a numeric criterion for phosphorus, EPA looks to nationally recommended criteria, supplemented by other relevant materials . . .” Fact Sheet at 8, citing 40 CFR § 122.44(d)(1)(vi)(B). There is an applicable “numeric criterion,” however, which is the 0.2 mg/l figure plainly set forth by MADEP. EPA’s regulation, 40 CFR § 122.44(d)(1)(vi)(A) expressly refers to “an explicit state policy or regulation interpreting its narrative water quality criterion,” yet the Fact Sheet fails to consider MADEP’s explicit policy, even as “relevant information” when applying 40 CFR § 122.44(d)(1)(vi)(B). Plainly, MADEP’s policy allocating 0.2 mg/l to POTWs while requiring more stringent measures for non-POTWs is highly relevant to the question of phosphorus limits.

EPA has no authority to ignore the HBPT provision of the very same Massachusetts Water Quality Standards that it purports to be applying. Nor may it ignore “relevant materials” or “an explicit state policy” under § 122.44(d)(1)(vi)(B). At a minimum, it must evaluate whether there is a way to respect MADEP’s 0.2 mg/l summer limit for this POTW and meet water quality criteria some other way.

Equally fatal to EPA’s position is the fact that 40 CFR § 122.44(d) (1) (VI) (B) itself is triggered only when “a specific chemical pollutant . . . is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion *within an applicable State water quality standard. . .*” [emphasis added]. Here, the applicable state regulatory criterion specifically incorporates HBPT (resulting in the 0.2 mg/l limit) for POTWs. If the Facility discharges 0.2 mg/l of phosphorus, no excursion occurs, because that discharge is allowed under state water quality standards. It is therefore impossible for an excursion above the “state water quality standard to occur” unless the proposed permit limit were above 0.2 mg/l – which it is not.

Since EPA is bound by the plain language of the regulation (water quality standard) that it purports to be enforcing, it cannot use that regulation to impose a more stringent criterion than 0.2 mg/l upon this existing discharge.

**Response to Comment #3B:** Highest and Best Practical Treatment is, by definition, a technology-based concept (*i.e.*, “treatment”) in the standards and was not designed to stand in for an ambient water quality criterion that will maintain and achieve uses (*i.e.*, calling only for “practical” treatment, which may or may not be sufficiently stringent to meet the in-stream standard). The Commonwealth’s establishment of HBPT merely underscores Massachusetts’ concern with respect to these pollutants, leading it to supplement its water quality standards with minimum treatment requirements for certain sources. It was not therefore intended to per se satisfy the requirements of 40 C.F.R. § 122.44(d)(vi) (*e.g.*, requiring the permit issuer to derive “. . . a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use”) nor 301(b)(1)(C) of the Act, which requires the establishment of the water quality-based effluent limitations irrespective of cost or technological considerations that will ensure compliance with all applicable water quality standards. *See also* 40 C.F.R. § 122.44(d)(vii)(A) (“When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that: (A) The level of water quality to be achieved by limits on point sources established under this paragraph *is derived from, and complies with all applicable water quality standards[.]*”) (emphasis added).

As explained above, the Agencies disagree with the commenter’s interpretation of the state’s narrative nutrient criterion, as it effectively reads certain portions of the nutrient criterion out of the Standards. Contrary to the commenter’s view, the scope of the criterion is not confined to the application of technology-based controls. Massachusetts Surface Water Quality Standards found at 314 CMR 4.05(5)(c) sets forth a series of

independently applicable requirements, mandating that in the first instance waters be free from nutrients that cause or contribute to an impairment of uses and, in addition, not exceed any site specific criteria established for the receiving water, if any. Furthermore, the Standards call for the application of minimum technology-based controls on existing discharges that cause or contribute to cultural eutrophication. The existence of this technology-based provision does not preclude a more stringent water quality-based effluent limitation if one is necessary to implement the Standards. Where the Region determines that a water quality-based effluent limitation more stringent than HBPT is required to ensure compliance with water quality standards, then it is obligated to include that limit in the permit pursuant to section CWA § 301(b)(1)(C), which requires achievement of “any more stringent limitation, including those necessary to meet water quality standards...established pursuant to any State law or regulation...”; *see also* 40 C.F.R. § 122.4(d) (prohibiting issuance of a permit “when the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected states”); 40 C.F.R. § 122.44(d)(1),(5) (providing that a permit must contain effluent limits as necessary to protect state water quality standards). This interpretation of the nutrient criterion was the basis for EPA’s water quality standards revision approval in 2007 and shared by Massachusetts. *See* Letter from Stephen S. Perkins, EPA-Region 1, to Laurie Burt, MassDEP, dated September 19, 2007, re Review and Action on Water Quality Standards Revisions, and Letter from Glenn Haas, MassDEP, to Stephen Silva, EPA-Region 1, re Massachusetts Surface Water Quality Standards, 314 CMR 4.00, dated January 12, 2007. The permit conditions at issue in the present case are water quality-based effluent limits designed to ensure compliance with *all* applicable standards.

EPA certainly considered the HBPT provision in the Standards when determining the appropriate limits for the permit. In this case, it was determined that the State’s HBPT limit of 0.2 mg/l was not sufficiently stringent to ensure that all applicable water quality criteria (*i.e.*, “all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site specific criteria developed in a TMDL”) would be met, so a more stringent limit for achieving the State’s narrative water quality criteria was developed and proposed, consistent with the methods described in 40 C.F.R. § 122.44(d)(1)(vi)(A) and (B), and consistent with the final Upper Charles River TMDL.

**Comment #3C:**

3. Compliance with Existing TMDL

There is a “site-specific criterion” for the Facility developed in the TMDL, established on July 6, 2007, approved by EPA on October 17, 2007, for the Lower Charles River. That TMDL (excerpts attached as Exhibit B; see pp. 91-92) establishes a Waste Load Allocation (“WLA”), for the Facility of 888 kg in April through October and 3,486 kg in November through March, for an annual WLA of 4,364 kg. This translates to a summer discharge limit of something over 0.2 mg/l and therefore validates the discharge limits in the District’s previous permit, with no change.

This fully approved TMDL for a downstream portion of the very same receiving water is, at a minimum, “relevant information” that EPA must consider under 40 CFR § 122.44(d) (1) (VI) (B). Yet, the Fact Sheet completely fails to mention it. For EPA to treat the same TMDL that it approved last fall as irrelevant information is arbitrary and capricious.

More fundamentally, EPA is bound by the TMDL in several different ways.

For one thing, the TMDL study establishes the methodology for allocating waste loads among facilities. It does so on the basis of average summer values and annual loads, not 7Q10 flows. EPA cannot depart from that methodology willy-nilly to impose an arbitrarily lower limit in a particular facility’s NPDES permit, based upon 7Q10 flows, particularly where that facility was already granted a WLA based upon summer averages. Even less can it depart from its established practice utterly without explanation and without even acknowledging the TMDL.

For another, the TMDL has distributed waste loads throughout the watershed based upon the Facility’s WLA. It is arbitrary and capricious to issue a permit that makes the phosphorus WLA granted to this Facility in the TMDL impossible. If EPA can do this, then the existing TMDL is too stringent, because it presupposes at least one load that can not occur. To avoid that absurdity, EPA must be bound by the currently-effective WLA that it already approved for the Facility.

Finally, the Facility’s WLA (established in the TMDL for the Lower Charles River) is an official determination that discharges from the Facility at a concentration of 0.2 mg/l will not contribute to eutrophication downstream generally in the Charles River, even if the generic numbers used by EPA in the Fact Sheet might suggest the potential for problems in water bodies other than the Charles River. While the best approach would be to have a TMDL for the Upper Charles River, it is plain from the one specific study of the Charles River that exists that EPA’s Fact Sheet overstates the risk for this particular river when the TMDL methodology is applied.

EPA would have to argue that, for some reason, conditions in the Upper Charles River as affected by the Facility differ from the conditions that led to the TMDL for the Lower Charles River and the Facility’s WLA based on that TMDL. As shown in the next section, the Fact Sheet offers no reason to believe that the Facility contributes to eutrophication in the Upper Charles River.

**Response to Comment #3C:** The limit in the Final Permit is based on the final Upper Charles TMDL, which was approved after the District submitted this comment. The effluent limitations in the Draft Permit were calculated based on the best information reasonably available at the time of permitting to ensure, among other things, that water quality standards are met in the waters that receive the CRPCD discharge, including immediately downstream of the discharge. Limitations more stringent than those in the previous permit and in the Lower Charles TMDL were determined to be necessary.

The Lower Charles TMDL includes an allocation for phosphorus necessary to achieve water quality standards and also includes a WLA for the CRPCD discharge. The specific requirement of 314 CMR 4.05(5)(c) requires that nutrients shall not exceed the site specific criteria included in a TMDL, but does not preclude a permit limit that would result in a nutrient concentration lower than such criteria if necessary to achieve water quality standards in another portion of the waterbody. The Lower Charles TMDL assigns a wasteload allocation to the facility for purposes of attaining water quality standards in the river segment beginning at the Watertown Dam, located 50 river miles downstream of the CRPCD facility. As discussed in the response to comment #1, the Lower Charles TMDL includes language that clearly establishes that its POTW wasteload allocations were not intended to achieve water quality standards in the Upper Charles. Therefore, the commenter's assertion that the, "Facility's WLA (established in the TMDL for the Lower Charles River) is an official determination that discharges from the Facility at a concentration of 0.2 mg/l will not contribute to eutrophication downstream generally in the Charles River," is incorrect. EPA is not bound by the POTW WLAs in the Lower Charles TMDL in establishing water quality-based limits necessary to protect water quality in the Upper Charles if the limitations necessary to protect the Upper Charles are more stringent than those in the Lower Charles TMDL.

It is unclear why the commenter believes that the "methodology for allocating waste loads among facilities" in the Lower Charles TMDL must be used for establishing the phosphorus limits in the CRPCD permit necessary to protect water quality in the Upper Charles, or even exactly what is meant by the statement. First, 40 C.F.R. § 122.44(d)(1)(vii) only requires that that NPDES permit limits be consistent with the assumptions and requirements of an approved WLA. The regulation does not require that permit limits be expressed exactly as presented in a TMDL; rather, the permit writer must translate WLAs into effluent limitations in light of applicable permitting and water quality standard regulations.<sup>6</sup> By way of illustration, unlike the Lower Charles POTW WLAs, which are expressed as total annual loads, NPDES permit regulations at 40 CFR § 122.45(d)(2) require that unless impracticable POTW effluent limitations are to be stated as average weekly and average monthly limitations. (There is nothing impracticable about expressing a phosphorus limit as a monthly average; indeed, other treatment plants in Massachusetts have received and comply with such limits). The process of navigating between the NPDES permit and available WLAs is committed to the technical expertise and judgment of the permit writer.

As described in the Lower Charles TMDL, an aggregate WLA for the total phosphorus load was established at the Watertown Dam because there was "insufficient information available to apportion the total loading at Watertown Dam between NPDES regulated point sources and non-regulated stormwater and nonpoint sources." The TMDL further explains that there is "not enough information available to explicitly define at any given time, particularly during the growing season how much of the total loading from the upstream watershed at Watertown Dam is from WWTFs or any other specific source,"

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<sup>6</sup> The annual WLAs for POTWs, presented in Table 5-7 of the TMDL were, with small exceptions, calculated using the monthly average phosphorus limits in the current NPDES permits and the permitted flow.

and then articulates that because of nutrient attenuation and the hydraulic retention time in the upstream watershed it is not critical to understand the specific details of these processes.<sup>7</sup> So, while there are well documented reasons why the TMDL loads are expressed as aggregate loads, the reasons are largely based on the distance from the sources to the study area. Obviously, the affected waters of the Upper Charles are immediately downstream of the discharges, and there is no attenuation or long hydraulic detention time that will mitigate the impact of the discharge, so it is important to limit the variability of the discharge.

In Massachusetts, NPDES permit limits for discharges to rivers and streams are calculated such that applicable criteria are achieved under the “7Q10” flow conditions, or “the lowest mean flow for seven consecutive days to be expected once in ten years.” See 314 CMR 4.03(3). EPA has simply written the permit in a manner that complies with applicable water quality standards as required by the CWA. Use of the 7Q10 flow is reasonable from a water quality perspective, as it ensures that water quality standards are met even in periods of critical low flow when the flow of the receiving water provides relatively little dilution to buffer impacts of pollutant loadings from the facility. Use of critical low flows is also consistent with the reasonably conservative approach the Region has adopted in nutrient permitting in general and that it has determined is necessary in this case in particular to break the ongoing cycle of eutrophication in the receiving waters. Please also see *In re City of Attleboro, MA Wastewater Treatment Plant*, NPDES Appeal No. 08-08, 14 E.A.D. \_\_ (EAB, September 15, 2009) (discussing use of 7Q10 flow regimes in permit that vary from other TMDLs approved by the state and upholding the Region’s determination to use 7Q10 as opposed to seasonal or annual average flows).

EPA does not fully understand the relevance of the concern that the phosphorus limits in the Draft Permit make the “the phosphorus WLA granted to this Facility in the TMDL impossible.” While it may be impossible for the facility to discharge the maximum load allocated to it under the Lower Charles TMDL and also achieve the limitation in the Draft Permit, EPA does not believe that this rationale should be determinative in establishing water quality-based limits. TMDLs are by definition maximum limits; permit-specific limits like those at hand, which are more conservative than the TMDL maxima as a result of ensuring compliance with all applicable water quality standards pursuant to section 301(b)(1)(C), are not inconsistent with those maxima. As described previously, EPA’s permit is based on attaining water quality standards immediately downstream of the facility and the Lower Charles TMDL WLA is based on attaining water quality 50 miles downstream. Attaining the limits in the Draft Permit will also attain the WLA in the TMDL. To presuppose that EPA is bound to the Lower Charles TMDL WLA despite a showing that this load would have the reasonable potential to cause or contribute to exceedances of water quality standards immediately downstream of the discharge would require EPA to issue permits with effluent limits less stringent than necessary to achieve water quality standards.

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<sup>7</sup> See *Final Nutrient TMDL Development for the Lower Charles River Basin, Massachusetts*, pages 89 and 90.

Similarly, EPA does not fully understand the concern that if it issues the phosphorus limits in the Draft Permit “the existing TMDL is too stringent, because it presupposes at least one load that can not occur.” If the CRPCD treatment plant is discharging less than the load allocated to it in the Lower Charles TMDL then the actual total load at the Watertown Dam might be slightly less than projected in the TMDL, but there is nothing unusual about a situation where a load calculated to achieve water quality requirements at a distant location might prove to be inadequate to achieve local water quality requirements. Here, the fact is that the WLA allocated to this facility to achieve water quality standards in the Lower Charles must be made more stringent to comply with standards applicable to the Upper Charles. There is nothing to prevent EPA from imposing more stringent controls than contemplated by a WLA to the extent required by section 301(b)(1)(C). To the contrary, EPA is obligated to do so. In this case the applicable Lower Charles River WLA is only one aspect of the analysis from a permitting perspective.

### **Comment #3D:**

#### 4. No Impairment of Use or Causation of Eutrophication

Even accepting EPA’s desire to venture beyond the 0.2 mg/l HBPT criterion and its decision to ignore the existing TMDL allocating more phosphorus discharge than the proposed permit allows, the Fact Sheet addresses the wrong issue.

The Fact Sheet states that the “current limit is not sufficiently stringent to achieve the Gold Book criteria under 7Q10 conditions, or the Ecoregion Criteria under average summer conditions” and goes on to apply the **phosphorus** criteria from those publications. Fact Sheet at p. 12. The applicable state water quality standard does not turn upon phosphorus concentrations, nor are concentrations of phosphorus, without more, water quality violations. The applicable water quality standard protects only against a particular effect: “impairment of use” or, with respect to HBPT, “cultural eutrophication.” 314 CMR 4.05(5). For many reasons, EPA’s citation to general publications about phosphorus concentrations in water bodies generally does not justify the conclusion that this facility would cause or contribute to water quality violations in this river.

In the first place, the existing WLA established under the only applicable TMDL (Lower Charles River) is excellent evidence that a 0.2 mg/l phosphorus discharge from the Plant will **not** cause or contribute to cultural eutrophication downstream. Only if there were some reason to believe that the Upper Charles River is somehow more susceptible to eutrophication from a 0.2 mg/l discharge would there need to be further inquiry. Here, the available evidence strongly suggests that the established WLA for the Facility is sufficiently protective of the entire river. If EPA questions this, it should await actual evidence in the form of the soon-anticipated TMDL study for the Upper Charles River.

There is ample evidence that, whatever concentrations of phosphorus exist in the Facility’s effluent, the Facility’s allocated discharge is not a cause or potential cause of

eutrophication, let alone impairment of use. CDM's Comments (attached) address this question extensively. Where the Fact Sheet concentrates upon concentrations of Phosphorus, CDM points out that eutrophication is not occurring due to effluent from the Facility. Using chlorophyll *a* as a measure of eutrophication (instead of phosphorus, which is not itself proof of eutrophication), concentrations drop significantly from .034 mg/l to .025 mg/l one-half mile downstream from the Facility's outfall to .0008 mg/l two miles below the Facility.<sup>8</sup> Dissolved oxygen never drops below the applicable specific criterion of 5 mg/l. Lyngbya, observed upstream of the outfall, ceases to exist below the outfall. See Upper Charles River TMDL studies, 3-6 and 3-12. CDM discusses the other data as well, concluding that there is no evidence of eutrophication (or loss of use) caused by the Facility within the meaning of any applicable water quality standard.

The fact that the Charles River exhibits eutrophication at certain times and places does not warrant reduction in otherwise appropriate limits for a POTW discharge, since POTWs must be allocated a certain degree of nutrient discharge if they are to perform their function of improving the environment. The POTW cannot be faulted unless it actually will contribute to water quality violations. See also Friends & Fishers, 446 Mass. at 844 (while plant will discharge nutrients into a stressed water body, it will not contribute to violations "if it remains within its **allocated** [nutrient] discharge limit") (emphasis added).

EPA also errs in using 7Q10 flows to establish the permit limits. It has already approved the use of average flows and concentrations (not the extreme low level flows represented by 7Q10 conditions) for the Lower Charles River TMDL. See EPA New England's TMDL Review (October 15, 2007), pp. 9 ("seasonal average target chlorophyll *a* concentration will be sufficient"), 10 (same), 14 (annual load for phosphorus), ed as Exhibit C. Indeed, the summer average flows were the basis for the criteria cited in the Fact Sheet, pp. 8-10 and therefore cannot be applied to 7Q10 conditions without violating basic laws of mathematics – that like units should be compared to like units. EPA's own "Nutrient Criteria Technical Guidance Manual: Rivers and Streams (EPA 2000) "does not recommend identifying nutrient concentrations that must be met at all times; rather a seasonal or annual averaging period . . . is considered appropriate." Moreover, it would be arbitrary and capricious to use average flows for the TMDLs and then use different data to establish NPDES permit limits, which are supposed to implement the very same TMDL.

Stating the same point in a different way: a 7Q10 flow is, by definition, the lowest 7-day flow in a decade; it is not the lowest monthly flow. Yet, EPA proposes to use the 7Q10 as the basis for a **monthly** permit limit. To do so, it effectively treats the 7Q10 flow data as a 30Q10 flow, contrary to all logic and contrary to the data actually collected. The District can not lawfully be required to restrict its effluent as though the river's flow consisted of 4+ consecutive weeks of 7Q10 flows every summer month.

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<sup>8</sup> The crux of the Fact Sheet's treatment of phosphorus is to look at phosphorus concentrations generally, and at chlorophyll *a* and DO levels miles down stream.

Using the 7Q10 flow levels is in significant tension with controlling law. The dilution factor calculated on page 5 of the Fact Sheet is based upon “the 7Q10 flow.” Yet, over the course of the month, average flows will be higher. To ignore the higher monthly flows violates 40 CFR § 122.44(d)(1)(ii), which requires consideration of the “dilution of the effluent in the receiving water.” This does not mean consideration of only some (the lowest 7 days) of the dilution that will occur over the relevant period (i.e. a month). In addition, EPA’s approach violates the holding of Friends & Fishers, 446 Mass. at 840: that DEP regulations do not require the permitting agency to “adopt the most pessimistic scenario” to comply with the requirement that it “insure” protection against water quality violations.<sup>9</sup> Assuming that the river flows every summer month at averages equal to the 7Q10 level is wildly pessimistic for nutrients.

In short, the new phosphorus limits are unwarranted and unnecessary as a scientific matter. Under 40 CFR § 122.44(d)(1), EPA is directed only to impose “requirements . . . **necessary** to . . . [a]chieve water quality standards . . . including State narrative criteria for water quality.” [emphasis added]. A “necessary” limit, like a “requisite” one, is one that is neither too lax nor too stringent. Whitman v. Am. Trucking Ass’n, 531 U.S. 457, 476 (2001) (construing “requisite”). By proposing unnecessary criteria, EPA has exceeded its authority.

In the Alternative, EPA Should Await the Results of the Upper Charles River TMDL Study and Reopen the Comment Project, Rather Than Impose Excessively Stringent Limits Now.

According to MaDEP, the Upper Charles River TMDL, originally due in 2007, is now anticipated later this year. Cf. Fact Sheet, p. 4. The District recognizes that the Fact Sheet, p. 12, states that a different limit may be imposed when an approved TMDL is adopted. It makes little sense to impose a new number now, only to revisit it in the very near future. No real water quality purpose would be served by imposing an unnecessary limit at or near the end of the summer season, with attendant costs, wasted planning effort and potential liability, only to find out shortly that the limit needs revision. Rather than issue a permit without benefit of the TMDL, EPA should await the results of the TMDL, which will provide a more long-term vision of what the District’s discharge should look like, and allow rational planning to meet a limit that has the solid support of a TMDL.

To allow comment on the implications of the new TDML on the Permit, EPA should reopen the comment period after the Upper Charles River TMDL is approved.

The Clean Water Act contemplated solid scientific support for imposing site-specific effluent limits upon publicly owned treatment works, with corresponding burdens upon ratepayers and taxpayers. Section 303(d) (33 U.S.C. § 1313(d)); 40 CFR 130.7. Where a TMDL is imminent, it would conflict with this mandate, as well as common sense, to

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<sup>9</sup> To be sure, this portion of Friends & Fishers was discussing the groundwater regulations and projections about development and pond capacity, but the same language in the surface water regulations must be interpreted in the same fashion.

impose a limit in an NPDES permit that may be contradicted by a more extensive and comprehensive TMDL study within months.

Should EPA issue a final permit without awaiting the Upper Charles River TMDL, the District reserves its rights to introduce and rely upon the Upper Charles River TMDL on appeal and otherwise.

If EPA Neither Awaits The TMDL Study Nor Retains The Existing Phosphorus Limits, It Should Focus Upon Achieving Results By Reducing Winter Limits, Rather Than Summer Limits.

As a last resort, if it issues a permit now, EPA should focus upon achieving its goals by evaluating reduced winter limits, instead of changing the summer phosphorus limit. EPA must investigate this approach, to respect MADEP's 0.2 mg/l limit and still attain water quality standards.

As the District's cover letter states, the Lower Charles River TMDL demonstrates that phosphorus is stored during winter months and becomes part of the overall phosphorus loading during the growing season. See EPA New England's TMDL Review (October 15, 2007), p. 12 (seasonal Chlorophyll *a* target will be met by focusing on the annual loading from the upper watershed). Reducing the winter load somewhat would reduce the stored phosphorus contribution to a degree that can be studied during the term of the new permit. The results could then be evaluated for the next permit cycle. That way, unnecessarily low and burdensome summer limits can be avoided, with the same result in water quality contemplated by the Fact Sheet.

EPA should consider the learning of the Lower Charles River TMDL:

EPA agrees with MassDEP's assessment that because of the variability in receiving water conditions and the fact that water quality is more sensitive to longer term[] loads rather than single day loads, it is appropriate to express the daily phosphorus loads as a load duration curve that reflects the distribution of allowable daily loads and reductions that are needed throughout the year . . . EPA further agrees that for purposes of implementation, it is appropriate to rely on the annual loading capacity. This is because the daily load distribution curve is not really capable of being applied on a daily basis. As MassDEP notes in the TMDL document, while there is a "total maximum daily load applicable to each day of the year . . . [p]recisely which days fall into each category is not relevant, so long as the appropriate TMDL is achieved for the appropriate number of days."

EPA New England's TMDL Review (October 15, 2007), p 14. The Fact Sheet presents no reason to believe that the Upper Charles TMDL will reach a materially different conclusion for purposes of allocating loads throughout the year, instead of imposing unnecessarily strict summer limits.

## **Response to Comment #3D:**

### 4. No Impairment Use or Causation of Eutrophication

Consistent with the comment, EPA reopened the Draft Permit following completion of the Final TMDL for the Upper Charles River and imposed a phosphorus limit consistent with that TMDL.

The Fact Sheet issued with the Draft Permit in July 2008 provides the basis for the phosphorus limits in the permit and discussed both causal (phosphorus) factors of eutrophication as well as adverse water quality responses that would be expected to occur when phosphorus concentrations exceed certain threshold levels identified by the EPA. The concentration of phosphorus in the District's discharge has the potential to contribute to impairment of this segment of the river and thus effluent limits must be included in the permit that will ensure compliance with state water quality standards.

The facility discharges to Segment MA72-05 of the river and is listed on the Massachusetts Year 2008 Integrated List of Waters (which incorporates the CWA 303(d) list) as a water that is impaired and not meeting Class B water quality standards for nutrients. The subsequent 2010 and 2012 Integrated Lists also show this segment as impaired for the same parameters.

The Charles River 2002-2006 Water Quality Report issued in April 2008 (p.37) states that this segment of the river is a *Water Requiring a TMDL* because of unknown toxicity, nutrients, organic enrichment/low DO, noxious aquatic plants, turbidity and other habitat alterations. The report states designated uses for this segment of the river are impaired for aquatic life, fish consumption, primary and secondary contact and aesthetics. Suspected causes are listed as occasionally low dissolved oxygen, excess algal growth with one of the sources listed as municipal NPDES discharges. The report specifically recommends the CRPCD should conduct benthic macroinvertebrate sampling in the River downstream from CRPCD to document conditions in the River downstream of the discharge.

Table 1 summarizes the assessment results relating to phosphorus, as provided by MassDEP's assessment report, for all of the Charles River segments. As indicated, almost all segments of the Charles River, with the single exception of the uppermost, headwater segment, are impaired, at least in part, because of elevated phosphorus, excessive aquatic plant growth and/or algae. In addition to these river segment assessments, MassDEP has assessed Populatic Pond as impaired due to excessive algal growth. This pond is an impoundment in the mainstream of the Charles River located just upstream of the CRPCD discharge.

As indicated in Table 1 phosphorus related water quality impairments exist in numerous areas along the length of the Charles River. For all waterbody segments starting with segment MA72-03 and moving downstream, the report identifies discharges from municipal WWTFs as sources of phosphorus related water quality impairments. Figure 1

depicts the Charles River watershed and shows photographs of examples of water quality conditions in areas located along the length of the Charles River where dense aquatic plant and algal growth has been observed. As indicated, only the headwaters at Echo Lake show no evidence of nutrient enrichment.

In the absence of a numeric criterion for phosphorus, EPA looks to nationally recommended criteria, supplemented by other relevant materials, such as EPA technical guidance and information published under Section 304(a) of the CWA, peer-reviewed scientific literature and site-specific surveys and data. *See* 40 CFR 122.44(d)(1)(vi)(B). EPA also relies on 40 CFR 122.44(d)(1)(vi)(A) when interpreting a state narrative criterion and deriving a limit that will achieve designated uses.

EPA explained in the Fact Sheet that it used a variety of Section 304(a) information and recommended criteria as *guidance* to interpret the States' narrative criterion for nutrients and not as a substitute for state water quality criteria.

Regarding the comments on the interpretation of the TMDL water quality monitoring data in the fact sheet, please see the response to CDM comment #8. The Region does not agree with the commenter's assertion that the data show that there is no evidence of eutrophication caused or contributed to by the facility.

Regarding the use of 7Q10 receiving water flows to establish the effluent limits, 314 CMR 4.03(3)(a) establishes that for rivers and streams, the 7Q10 flow is the hydrologic condition for which water quality criteria are applied. As explained above, use of the 7Q10 flow is reasonable from a water quality perspective, as it ensures that water quality standards are met even in periods of critical low flow when the flow of the receiving water provides relatively little dilution to buffer impacts of pollutant loadings from the facility. Use of critical low flows is also consistent with the reasonably conservative approach the Region has adopted in nutrient permitting in general and that it has determined is necessary in this case in particular to break the ongoing cycle of eutrophication in the receiving waters. *In re City of Attleboro, MA Wastewater Treatment Plant*, NPDES Appeal No. 08-08, 14 E.A.D. \_\_\_ (EAB, September 15, 2009) (discussing use of 7Q10 flow regimes in permit that vary from other TMDLs approved by the state, upholding the Region's determination to use 7Q10 as opposed to seasonal or annual average flows and concluding that 40 C.F.R. § 122.44(d)(1) does not mandate consideration of dilution at all times when establishing permit limits). Further, there are no "basic laws of mathematics" that preclude the establishment of a monthly average limit using the 7Q10 flow. As described above, Massachusetts water quality standards require the use of 7Q10 receiving water flow to establish water quality-based limitations for rivers and streams and EPA's permit regulations at 40 CFR § 122.45(d)(2) require that unless impracticable POTW limits be expressed as average weekly and average monthly discharge limitations. *In re City of Attleboro, MA Wastewater Treatment Plant*, NPDES Appeal No. 08-08, slip op. at 47-75, 14 E.A.D. \_\_\_ (EAB, September 15, 2009), which details and upholds the Region's technical and legal justification for deriving phosphorus limits in NPDES permits, including the use of the *Gold Book* value of 0.1

mg/l to control the effects of cultural eutrophication and the rationale behind expressing the limits as a monthly average limit assuming 7Q10 dilution flow.)

The Agencies do not follow why *Friends & Fishers of the Edgartown Great Pond, Inc. v. Department of Environmental Protection*, 446 Mass. 830 (2006) would lead to different limits in this instance. That case involved the appeal of a permit for an increased groundwater discharge that had been issued pursuant to the Massachusetts Clean Waters Act and the State's groundwater discharge regulations. MassDEP concluded that the permit's nitrogen limitation could ensure compliance with applicable state water quality regulations, and that the permit could therefore be issued, based on a study which assessed Edgartown Great Pond's assimilative loading capacity for nitrogen. The court in *Friends and Fishers* merely held that it was reasonable for MassDEP to interpret its regulations to allow issuance of a permit for a groundwater discharge impacting a stressed water body by allocating a portion of the Pond's site-specific nitrogen limitation to the treatment plant based on the loading study. The import of the study was that it allowed MassDEP to conclude that its groundwater discharge permit *was stringent enough* to ensure compliance with water quality regulations. Here, EPA has concluded that a phosphorus effluent limit of 0.1 mg/l expressed as a monthly average and based on the 7Q10 flow would both be consistent with the available WLA for the Lower Charles River and would also ensure compliance with applicable Massachusetts Standards for the Upper Charles River (where no WLA is yet available). Conceptually, there is nothing discordant in this result when assessed in light of *Friends & Fishers*. In any event, this state case does not establish any requirement, standard or procedure for apportioning pollutant loads or establishing flow that would be applicable to EPA when it issues a federal NPDES permit under the Clean Water Act for the surface water discharge at issue here.

Regarding the proposal to address water quality impairments by adjusting only the winter limit, the Agencies have concluded that this would be inadequate to ensure attainment of water quality standards during the growing season, in addition to being inconsistent with the final Upper Charles TMDL. The monthly average growing season limit (0.12 mg/l) was calculated to ensure that the receiving water concentration did not exceed 0.1 mg/l during the growing season. The growing season limit was updated to reflect the final Upper Charles TMDL. See response to comment #1.

The Region believes that more stringent limits are necessary for the growing and non-growing seasons to achieve water quality standards in the receiving waters immediately downstream of the discharge and the more stringent non-growing season limit is also necessary to meet the Lower Charles TMDL.

With respect to the commenter's concern over the averaging period used for the phosphorus wasteloads in the Lower Charles TMDL compared to the effluent limitation averaging period in the permit (*i.e.*, annual total versus monthly average), the Agencies reiterate that all of the POTWs discharging to the Charles River are far upstream of the upstream boundary of the segment covered by the Lower Charles TMDL, and as described in that TMDL, the phosphorus discharged by the POTWs is attenuated as it

travels downriver through the processes of nutrient cycling in plants and sediments and sedimentation. Because of this attenuation, a total annual wasteload was considered protective. There is no attenuation of the CRPCD discharge at the point it discharges into the river, so the impact of that discharge is much more immediate on this segment of the river compared with the segment of the river addressed in the Lower Charles TMDL.

**Comment #4:** Co-permittee provision - The draft permit authorizes discharge from the District's Facility at 66 Village Street, Medway into the Charles River. That is the District's outfall and the District's facility. The Permit should therefore not name the towns of Franklin, Medway, Millis and Bellingham as co-permittees even for the purposes of proposed Sections 1.B (Unauthorized discharges) and 1.C (Operation and Maintenance of the Sewer System). To do so complicates the District's management of its program and undermines the chain of responsibility for the discharge. The District asks EPA to delete the co-permittee provisions as a matter of good policy.

The District also submits that the co-permittee provisions exceed the authority granted by the Federal Clean Water Act, applicable regulations and the case law. The Fact Sheet concedes that "[t]he Towns of Franklin, Medway, Millis and Bellingham own and operate their portions of the sewer collection system that transports sewage to the treatment plant." Fact Sheet, p. 23. In other words, they do not propose to discharge to waters of the United States for purposes relevant to this permit. Nevertheless, the draft permit seeks to include requirements for the co-permittees to control infiltration and inflow – a matter that likewise involves influent to the plant, rather than municipal discharges to federal waters. These facts involve local authority and fall well short of triggering federal NPDES jurisdiction over the towns.

The Clean Water Act's NPDES program provides permits "for the discharge of any pollutant or combination of pollutants" into waters of the United States. 33 U.S.C. § 1311. See 40 C.F.R. 122.2 (defining "discharge of a pollutant."). The scope of the NPDES permit requirement extends to "the discharge of 'pollutants' from any 'point source' into 'waters of the United States.'" 40 C.F.R. 122.1. The regulations only require a "person who discharges or proposes to discharge pollutants or who owns or operates a 'sludge-only facility'" to apply for an NPDES permit. 40 C.F.R. 122.21.

There is no such requirement for a municipality whose sewage does not flow directly into waters of the United States and who adds flow to a facility authorized to discharge under the NPDES program. In fact, an entity that does not discharge into the waters of the United States is not covered by the NPDES program. By regulation, the term "discharge of a pollutant" "does not include an addition of pollutants by any 'indirect discharger'" (i.e. a nondomestic discharger introducing pollutants to a POTW). 40 C.F.R. 122.2. To reinforce this notion, EPA has expressly excluded from the NPDES permit program "the introduction of sewage, industrial wastes or other pollutants into publicly owned treatment works by indirect dischargers." 40 C.F.R. § 122.3 (c) (such discharges "do not require NPDES permits"). The NPDES permit process therefore does not regulate those who introduce flow into a POTW. When Congress wanted to impose liability on such persons (indirect dischargers) it did so directly by statute, and not through the NPDES

permit program. See 33 U.S.C. § 1317 (b)(1) (pretreatment standards for introduction of pollutants into a POTW); Chemical Manufacturers Ass’n. v. Natural Resources Defense Council, 470 U.S. 116, 118-120 (1985).

It follows that a municipality that is at most an indirect discharger is not a proper NPDES permittee, because it does not “discharge” pollutants into federal waters and is expressly excluded from the requirement to be covered by an NPDES permit. To add a non-discharging municipality as a co-permittee (particularly without an application or consent from the municipality) exceeds statutory and regulatory authority according to the plain meaning of the applicable provisions.

EPA gains no support from the regulations it cites at 40 C.F.R. § 122.41 (d) and (e). Those regulations apply only to the “permittee” and cannot be used to justify making municipalities “permittees” without becoming hopelessly circular. A permittee can logically only be an entity required to obtain a permit, i.e. one that discharges into federal waters.

In addition to the infiltration and inflow requirements discussed above, Section 1.B of the proposed permit purports to turn unauthorized discharges by the Towns into a NPDES issue under the District’s permit (even though the District is not the discharger). Congress has already addressed this issue by making such discharges illegal under 33 U.S.C. § 1311 (“Except as in compliance with [provisions of the Clean Water Act], the discharge of any pollutant by any person shall be unlawful.”). Using the issue of illegal discharges to make municipalities co-permittees to the District’s NPDES permit is a non-sequitur. Not only would this theory make every potential discharger within the District’s catchment area a potential co-permittee of the District’s permit, but it would substitute permit enforcement proceedings for the direct prohibition against the discharger, contrary to Congress’ intention.

The law in fact contemplates that unauthorized discharges must be addressed in a different manner. For one thing, 314 CMR 12.00 requires reporting of local municipal wastewater systems and discharges therefrom. For another, EPA has no authority or ability to impose a permit upon towns that have not applied for one, or to impose permit conditions upon an entity that refuses to sign the permit. As always, the consequence of not signing the permit is that the particular entity has no authority to discharge into federal waters – but the towns seek no such authority in the first place. The co-permittee provisions are not imposed as a condition upon the District’s permit, nor could they be. Not only would that be illegal for the reasons stated above, but the District is an independent “body politic and corporate” (Mass. Gen. Laws c. 21, § 29), which simply lacks the state law authority to speak for towns that discharge into its Facility. See Mass. Gen. Laws. c. 21, § 30 (listing powers of sewage abatement commission, which do not include authority to bind member communities). Finally, requiring towns to be co-permittees would be unwieldy and has not been required even in situations that have been litigated extensively, such as the MWRA permit covering the entire metropolitan Boston area. See NPDES permit MA0103284 (MWRA is the permittee). See United States v. Metropolitan District Commission, 23 Env’tl. Law Cases (BNA) 1350, 16 Env’tl. Law

Rep. (Environ. L. Inst.) 20621, 1985 Westlaw 9071 (D. Mass. 1991) (finding liability by the permittee, which served as the basis for a metropolitan-region-wide cleanup over the past 17 years). Enforcement against towns has been done directly against the Towns for direct or indirect discharges under the state clean waters act, not through the NPDES or state permit program. Mass. Gen. Laws, §§ 42, 46. See, e.g. United States v. South Essex Sewage District, No. 83-2814-Y (D. Mass.).

The case law supports the District's opposition to the co-permittee provisions.

... unless there is a "discharge of any pollutant," there is no violation of the [Clean Water] Act, and point sources are, accordingly, neither statutorily obligated to comply with EPA regulations for point source discharges, nor are they statutorily obligated to seek or obtain an NPDES permit.

[T]he Clean Water Act gives the EPA jurisdiction to regulate and control only actual discharges-not potential discharges, and certainly not point sources themselves. See Natural Resources Defense Council v. EPA, 859 F.2d 156, 170 (D.C.Cir.1988) (noting that "the [Act] does not empower the agency to regulate point sources themselves; rather, EPA's jurisdiction under the operative statute is limited to regulating the discharge of pollutants"). To the extent that policy considerations do warrant changing the statutory scheme, "such considerations address themselves to Congress, not to the courts." MCI Telecommunications Corp. v. AT & T, Co., 512 U.S. 218, 234 (1994) (citation omitted).

For all these reasons, we believe that the Clean Water Act, on its face, prevents the EPA from imposing, upon [non-dischargers], the obligation to seek an NPDES permit or otherwise demonstrate that they have no potential to discharge. See Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 842-43 (1984) (where Congress has "directly spoken to the precise question at issue" and "the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.") (footnote omitted).

Waterkeeper Alliance v. EPA, 399 F.3d 486, 504-505 (2d Cir. 2005).

For all these reasons, EPA should strike the co-permittee provisions and issue the permit to the District as sole permittee.

**Response to Comment #4:** See Partially Revised 2012 Fact Sheet Attachment 1, EPA Region 1 NPDES Approach for Publicly Owned Treatment Works That Include Municipal Satellite Sewage Collection Systems, Attachment A, Analysis Supporting EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works That Include Municipal Satellite Sewage Collection Systems (the "Analysis") and the response to comments on the 2012 Partially Revised Draft Permit, which address each of the issues raised in the comment above.

**Comment #5:** The Fact Sheet, p. 7, notes that average phosphorus concentrations in the summer have “ranged from 0.07 to 2.9 mg/l in the summer.” Accordingly, the Facility would not be in compliance with the proposed 0.12 mg/l summer limit and will require some time to come into compliance. In these circumstances, a compliance schedule is appropriate.

**Response to Comment #5:** The permittee has already submitted data on recent discharge monitoring reports between May and October, which show the more stringent limit can be met. In October 2012 and June 2013 the permittee reported a total phosphorus concentration of 0.1 mg/l. As shown by the data range, the discharge has sometimes met the limit in the Draft Permit (and has also violated the less stringent limit in the previous permit).

The Massachusetts water quality standards at 314 CMR 4.03(1)(b) allow compliance schedules in permits when appropriate, “generally to afford a permittee adequate time to comply with one or more permit requirements or limitations that are based on new, newly interpreted or revised water quality standard....” *See also* 40 C.F.R. § 122.47 (authorizing compliance schedules “when appropriate” and requiring compliance with the limit to occur “as soon as possible.”).

Accordingly, the compliance schedule in the Final Permit has changed from the one in the Draft Permit<sup>10</sup>. The change is based on the District’s Capital Improvement Plan Summary (the Summary) that was sent to EPA in May 20, 2014. The Summary identifies completed and projected capital improvements projects scheduled at the treatment plant from August 2011 through September 2016. The projected dates for upgrades to the Treatment Plant to achieve more stringent phosphorus removal requirements are March 2014 through September 2016. The upgrades include enhancements of secondary treatment system to accommodate anoxic/oxic biological nutrient removal and installation of a cloth filter with a 5 micron cloth in one of the existing gravity sand filters and the replacement of the 10 micron cloth with a 5 micron cloth in the existing disk filter. Based on the construction schedule, EPA has changed the compliance schedule in the Final Permit to 2.5 years. If, however, the permittee determines that capital improvements to the treatment plant have not been completed by the projected date, the District may request a modification of the permit schedule.

**Comments submitted by John Gall, Vice-President, Camp Dresser and McKee Inc., on behalf of the Charles River Pollution Control District on August 1, 2008.**

**Comment #6:** The Agency has no authority to establish a limit for phosphorus under 314 CMR 4.05(5)(c).

The plain language of the regulation says:

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<sup>10</sup> The Draft Permit issued in 2012 included a compliance schedule of four years from the effective date of the permit.

Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment **as determined by the Department**, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses. Emphasis supplied.

The regulation clearly reserves the determination of the appropriate level of treatment to the Department of Environmental Protection. The regulation does not authorize the EPA to make this determination for the Department. The Agency has provided no determination by the Department that the phosphorus limit proposed in this permit is the most appropriate treatment for the District's effluent.

**Response to Comment #6:** As described in the response to comments #3A and #3B, the commenter has misconstrued the meaning of the cited regulation. EPA is not making a determination in this permit proceeding of what limit reflects highest and best practical treatment, but has simply referenced the state's historical practice on this point (i.e., 0.2 mg/l). The regulation establishes a technology-based level of control for discharges to eutrophic waters but does not preclude the establishment of more stringent limits where necessary to meet the applicable narrative water criterion for nutrients, i.e., "Unless naturally occurring, *all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses* [emphasis added] and shall not exceed the site specific criteria developed in a TMDL, or as otherwise established by the Department pursuant to 314 CMR 4.00." EPA has an independent obligation under Section 301(b)(1)(C) of the Act to impose any more stringent limitations necessary to comply with water quality standards. EPA has determined that the more stringent phosphorus limit is necessary to achieve water quality standards, and the state has certified the permit with no comment or objection on the phosphorus limit.

**Comment #7:** The Agency has failed to provide the documentation required by Massachusetts regulations that could justify the limits proposed in this permit.

Other provisions of Massachusetts' regulations could be used to justify the permit limits. Massachusetts Water Quality Standards require that waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses. See 314 CMR 4.05(5)(c).

In its fact sheet, EPA presents a discussion of phosphorus levels, levels of chlorophyll a and levels of dissolved oxygen in the river. However, there is no discussion as to how these specific levels constrain existing or designated uses, or how the effluent limits proposed in the permit will serve to achieve these designated uses. Moreover, as discussed further below, the Agency's characterizations of the receiving water glosses over clearly apparent trends that indicate that water quality below the District's discharge is improved compared with that above the discharge.

While the Agency presents an extended discussion of its criteria, and its guidance on the development of limits, including effects-based and reference-based approaches, the only approach that is relevant is the one authorized under Massachusetts regulations – one that is developed based impairment of uses. The Agency’s analysis must be expanded to show how the limits proposed will serve to achieve the uses designated for the receiving waters. This use-based approach is exactly the approach taken in the Lower Charles River TMDL, which should be followed here.

**Response to Comment #7:** Water quality standards consist of uses, and criteria to protect those uses. If the criteria are not met, then it follows that the uses are also not being consistently attained. The cited regulation, which is a narrative water quality criterion, requires that waters of Massachusetts be free from nutrients that would cause or contribute to impairment of existing or designated uses. In its analysis in the fact sheet, the Region used the method described in 40 C.F.R. § 122.44(d)(1)(vi)(A) and (B) for developing a water quality-based effluent limit where state water quality standards do not include a water quality criterion for a specific chemical, and this limit is in addition consistent with the final Upper Charles River TMDL. The limit is designed to attain and maintain the applicable water quality criterion and protect the designated use. *See In re City of Attleboro, MA Wastewater Treatment Plant*, NPDES Appeal No. 08-08, slip op. at 47-75, 14 E.A.D. \_\_\_ (EAB, September 15, 2009), which details and upholds the Region’s technical and legal justification for deriving phosphorus limits in NPDES permits, including the use of the *Gold Book* value of 0.1 mg/l to control the effects of cultural eutrophication. *See also* the response to comments #3A, #3B and #6 above for additional information regarding the Region’s interpretation of the requirements of 314 CMR 4.05(5)(c).

The Region disagrees with the commenter’s conclusion that water quality downstream of the discharge is improved compared to upstream conditions. As noted in the Fact Sheet on page 9 of 29, the table provides data upstream of the outfall for total phosphorus and orthophosphate that are lower than the concentration of total phosphorus at the discharge and a half of mile downstream of the discharge. Even if it were, this would not preclude the need for more stringent limitations if the discharge was found to cause or contribute to the impairments downstream of the discharge. The Region would also note the comment submitted by the Charles River Watershed Association (see comment # 15) that it believes there is an algae gradient upriver from the treatment plant towards Populatic Pond that they believe indicates a backflow of the CRPCD discharge. See the response to comment #8 for a more complete discussion of the water quality data.

**Comment #8:** Available data contradict the Agency’s assumption the current CRPCD discharge causes or contributes to cultural eutrophication.

In its fact sheet, EPA makes reference to several available data sets as evidence that the District’s discharge causes or contributes to cultural eutrophication, and concludes with the following general observation:

In summary, the available data shows extremely high productivity in the receiving water upstream and downstream of the discharge as evidenced by high chlorophyll a, large diurnal variations in dissolved oxygen concentrations and visible algae mats as noted in field observations.

What is lost in this broad generalization is that the River is actually of better quality downstream of the District discharge than it is upstream.

Chlorophyll a concentrations presented in the table in the fact sheet drop from an average of 0.038 mg/l in Populatic Pond upstream of the District discharge, to 0.025 mg/l one half a mile downstream of the discharge to 0.008 mg/l two miles downstream of the discharge<sup>11</sup>.

The dissolved oxygen values presented in the table on page 9 never fall below the state water quality standard of 5 mg/l, and the incidence of highest supersaturation exists in Populatic Pond, upstream of the District's discharge. Below the District's discharge, the values are less extreme, and not within a range that one would call excessive.

The continuous dissolved oxygen data from the Upper Charles River TMDL data reports are visually misleading; Although it appears that the station down stream of the District's discharge exhibits significantly greater fluctuations in dissolved oxygen, the two datasets are actually plotted on different scales that magnify the differences in the downstream dataset, and suppress the differences in the upstream data set. If they had been plotted on the same scale, it appears that the upstream and downstream meters experienced about the same fluctuations.

Finally, it is true that cyanobacteria algal blooms were shown to exist in this segment in 2004, and large mats of filamentous algae were downstream of Populatic pond in 2002. However, the Upper Charles River Total Maximum Daily Load Project studies, Volume 1: Phase II Final Report and Phase III Data Report presented an extensive survey of the plant community of the river system from the headwaters to the Cochrane Dam in Needham/Wellesley. That survey showed that the floating and submerged filamentous cyanobacteria *Lyngbya* existed throughout most of the river system above the District's discharge (see table 3-3). Specific mapping of the *Lyngbya* near the District's discharge shows it to dominate the northern part of Populatic Pond, and to exist in the river for a short distance downstream of the pond. Below the District's discharge it ceases to exist at all. See figures 3-6 and 3-12 of the referenced document.

A more appropriate reading of the data presented in EPA's fact sheet suggests that the waters above the District's discharge are significantly impaired, but that downstream of the discharge, those impairments are reduced in severity and extent. Nothing in the record

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<sup>11</sup> The table included in page 9 of the Fact Sheet contains errors. In several place, it confuses milligrams per liter and micrograms per liter when reporting chlorophyll a. The values shown for station 207 as 38 and 12 mg/l are actually .038 and .012 mg/l. All other values that are above 1 mg/l in the table are similarly incorrect. The values for Chlorophyll a for the District's discharge are incorrect. They should be ND and <0.002, respectively

indicates that the District's discharge is causing, or even contributing to the observed impairments or cultural eutrophication claimed to exist by the Agency.

**Response to Comment #8:** EPA notes that the commenter appears to concede that there is some level of nutrient impairment immediately downstream of the discharge (*i.e.*, "impairments are reduced in severity and extent"). The data collected on August 13 and August 24, 2002 shows that water quality is impaired both upstream and downstream of the discharge. The orthophosphorus and total phosphorus data shows higher concentrations downstream of the CRPCD discharge than upstream of the discharge. The chlorophyll and dissolved oxygen data shows slightly better, but still impaired effluent quality downstream of the discharge.

The increased in-stream concentration of phosphorus is predictable given that the concentration in the CRPCD discharge was greater than the upstream concentration on both days. Interestingly, the magnitude of the measured increase in phosphorus concentration downstream is less than predicted by the calculation in the Fact Sheet in large part because the CRPCD discharge concentration was much less than the current permit limit of 0.2 mg/l. The measured concentrations of 0.106 mg/l and 0.0992 mg/l were actually less than the limit proposed in the Draft Permit.

Notwithstanding that the water quality measurements downstream of the facility might reflect the better than required effluent phosphorus concentration being achieved at the time by the CRPCD treatment plant, there are other reasons not to draw the conclusion that the immediate downstream water quality is improved. First, the downstream station is roughly ½ mile downstream of the discharge. While this may seem to be a short distance, it is an adequate distance for attached plant growth such as periphyton or macrophytes to uptake significant amounts of phosphorus. This type of growth would not be measured as chlorophyll a, which was used to measure unattached water column algae, but is a sign of cultural eutrophication, and would also impact the composition of the benthos, which would violate the state water quality standards at 314CMR 4.05(5)(b).

Phosphorus released in a stream is largely conservative, that is, it is not destroyed or removed from the stream system. Instead it is either utilized by plants and recycled back into the system when the plants decay, settles into sediments where it is available for rooted plant growth and/or recycling back into the water column or is transported in the water column downstream. Therefore, progressively lower water column concentrations at sampling stations downstream of a phosphorus source do not somehow reflect a "disappearance" of phosphorus but rather shows that the phosphorus is being utilized to promote plant growth, is being otherwise stored in the stream system, or is being diluted by the addition of flow from sources with lower phosphorus concentrations.

Also, any comparison of upstream and downstream data must also make clear that the water quality indicators show that the water quality at both stations are failing to meet standards.

Regarding the dissolved oxygen data, the percent saturation of dissolved oxygen values downstream of the CRPCD on August 24 was 106.5 %, which is considered excessive for a flowing water Volume I: Phase II Final Report and Phase III Data Report, July 2006. Regarding the scales of the DO concentration figures in the Upper Charles TMDL data reports, in the scale in Figure 2-27 (Populatic Pond) is 0 - 16 mg/l, and the scale for Figure 2-28 is 0 -14 mg/l. While the scale varies 2 mg/l, Table 2-10 lists the average diurnal range. The range is 3.87 mg/l at Populatic Pond and 3.19 mg/l downstream of CRPCD. The report goes on to say that “in a natural, clean river system, the dissolved oxygen concentrations should not fluctuate more than 2.0 mg/l, which shows a balance between sources and sinks of oxygen in the system. A range of concentrations greater than 2.0 mg/l may indicate high algal productivity in the system and depletion of dissolved oxygen” So, while the DO range is greater in the pond than downstream, both ranges indicate supersaturation and large diurnal swings, which is less common in free flowing water bodies than in ponds, given that free flowing water bodies tend to have higher re-aeration rates and are more shaded (less plant growth).

Chlorophyll *a* measurements during dry weather above and below the CRPCD outfall were about 20 to 40 µg/L, some of the highest values measured in the Upper Charles River during the TMDL monitoring period. The in-stream chlorophyll *a* criterion for this ecoregion is 3.75 ug/L, far below these measurements. At concentrations above 10 µg/L phytoplankton algae become visible and may impede light penetration and water clarity.

The table in the fact sheet, referred to in the comment, has been corrected and is below.

***Charles River TMDL Water Quality Monitoring Data (mg/l)***

Dry Sampling Date	Total Phosphorus	Orthophosphate	Chlorophyll <i>a</i>	DO	Percent Saturation
Station 184S: USGS Gage Station, upstream of Populatic Pond, Medway					
8/13/2002	0.0472	0.0141	0.00492 <sup>1</sup>	9.54 - 9.63 <sup>2</sup>	----
8/24/2005	0.0259	0.016	ND	8.84	99.7
Station 201S <sup>3</sup> : Outlet of Populatic Pond, Medway					
8/13/2002	0.0632	0.0201	0.0416	9.2	----
8/24/2005	0.0562	0.0134	0.022	10.10	119
Station 202W : CRPCD Discharge					
8/13/2002	0.106	0.116	<0.002	----	----
8/24/2005	0.0992	0.0897	ND	7.7	----
Station 207S: One-half mile downstream of CRPCD outfall, Norfolk					

Dry Sampling Date	Total Phosphorus	Orthophosphate	Chlorophyll <i>a</i>	DO	Percent Saturation
8/13/2002	0.0717	0.0312	0.038 <sup>1</sup>	9.85	----
8/24/2005	0.0536	0.0233	0.012	8.8	106.5
Station 229S: Two miles downstream of CRPCD, Millis					
8/13/2002	0.0230	0.0219	0.00804 <sup>1</sup>	7.9	----
8/24/2005	0.0375	0.0188	0.007	7.1	83.5
Station 290S: Nine miles downstream of CRPCD, Medfield (above Medfield WWTP)					
8/13/2002	0.0395/0.0378 <sup>4</sup>	0.00928/0.00943 <sup>4</sup>	0.00946/0.00928 <sup>4</sup>	7.9	----
8/24/2005	0.0415	0.011	0.015	7.2	90
Station 294S: Immediately below Medfield WWTP					
8/13/2002	0.100	0.0622	0.0124	8.2	----
8/24/2005	0.041	0.0122	0.015	7.5	90
Station 318S: Route 27 Bridge, Medfield/Sherborn town line					
8/13/2002	0.0616	0.0187	0.0193 <sup>1</sup>	8.83	----
8/24/2005	0.0377	0.0115	0.009	5.7	68.3
Station 387S: Cheney Bridge, Wellesley, downstream of South Natick					
8/13/2002	0.0307	0.182	0.00748 <sup>1</sup>	5.37	----
8/24/2005	0.0462/0.0504 <sup>4</sup>	0.0137/0.0141 <sup>4</sup>	0.009/0.0009 <sup>4</sup>	5.3	64.2
Station 407S: Claybrook Road, Dover					
8/13/2002	0.0384/0.0346 <sup>4</sup>	0.00614/0.00384 <sup>4,5</sup>	0.0308/0.0274 <sup>1,4</sup>	8.26	----
8/24/2005	0.043	0.0118	0.013	5.9	75
Station 447S: USGS Gage, Dover					
8/13/2002	0.0372	0.00476	0.0107	6.42	----
8/24/2005	0.0572	0.00996	0.021	6.8	----

<sup>1</sup>Chlorophyll *a* equipment blanks for 8/13/02 are 0.00215 and 0.00301 mg/l.

<sup>2</sup> Unstable.

<sup>3</sup> Station 201S is located at the outlet of Populatic Pond upstream of the discharge

<sup>4</sup> Field Duplicate.

<sup>5</sup> Field Duplicate Relative Percent Difference is greater than acceptable range.

**Comment# 9:** The Agency incorrectly uses an extreme flow to establish the permit limit. As presented in the fact sheet, the Agency has relied upon flow conditions associated with the 7 day, ten year low flow (7Q10 flow) to develop the permit limit for phosphorus. Nothing in the Massachusetts water quality standards compels the use of 7Q10 flow in developing nutrient limitations. Indeed, in developing phosphorus limitations for the Lower Charles River TMDL, the State used summer average conditions to establish a phosphorus limit that would be protective of uses of that portion of the river. This TMDL has been subsequently been approved by EPA.

Not only is the use of 7Q10 inappropriate under Massachusetts regulations, it is inappropriate under EPA guidance. In its “Ambient Water Quality Criteria Recommendations; Information Supporting the Development of State and Tribal Nutrient Criteria Rivers and Streams in Nutrient Ecoregion XIV” EPA encourages States to

“Identify appropriate periods of duration (how long) and frequency (how often) of occurrence in addition to magnitude (how much). EPA does not recommend identifying nutrient concentrations that must be met at all times; rather a seasonal or annual averaging period (e.g., based on weekly or biweekly measurements) is considered appropriate. However, these central tendency measures should apply each season or each year, except under the most extraordinary conditions (e.g., a 100-year flood).”

The use of seasonal averages would provide additional dilution, and would thus serve to lower the treatment requirements required of the District.

**Response to Comment #9:** Massachusetts Water Quality Standards at 314 CMR 4.03(3) requires that effluent dilution for rivers and streams be calculated based on the receiving water 7Q10.

*“ Hydrologic Conditions. The Department will determine the most severe hydrologic condition at which water quality criteria must be applied. The Department may further stipulate the magnitude, duration and frequency of allowable excursions from the magnitude component of criteria and may determine that criteria should be applied at flows lower than those specified in order to prevent adverse impacts of discharges on existing and designated uses.*

*(a) For rivers and streams, the lowest flow condition at and above which aquatic life criteria must be applied is the lowest mean flow for seven consecutive days to be expected once in ten years. When records are not sufficient to determine this condition, the flow may be estimated using methods approved by the Department.”*

As stated above, the CWA and EPA’s regulations require EPA to issue an NPDES permit to ensure compliance with applicable water quality standards of the State where the

discharge originates and water quality-based limitations are established with the use of a calculated available dilution.

With respect to the TMDL, the governing regulations require *consistency*, but do not require that the permit limitations adopted in a final NPDES permit be *identical* to any of the WLAs that may be provided in a TMDL. TMDLs are by definition maximum limits. Permit limits may be more stringent than available WLAs to the extent required to comply with section 301(b)(1)(C) of the Act and still be consistent with such maxima.

Regarding the appropriate averaging periods for nutrient limits, EPA has imposed the limit as a monthly average. Not only is imposition of a 30-day average limit consistent with federal regulations governing the NPDES program, such an averaging period will again minimize (when compared to a seasonal average limit) the amount of time that phosphorus effluent concentrations from the facility can exceed 0.1 mg/l and still comply with the limit. This approach maintains consistently low phosphorus effluent concentrations, as well as minimizes overall phosphorus loading, into the system, which is important in impaired waters, like the Charles River, which are already suffering from severe existing cultural eutrophication and where there may be some potential for the existing sediment phosphorus deposits to recycle in the water column. As mentioned above, a relatively conservative approach is warranted in order for the eutrophic cycle to be brought to a halt, which is achieved by consistently maintaining low phosphorus concentrations and loads into the system. EPA believes a conservative approach is appropriate consistent with its obligation to ensure compliance with water quality standards. It should be noted that EPA does not foreclose the imposition of seasonally-based limits in all instances so long as such limits are *sufficiently low* to ensure compliance with water quality standards. Based on EPA's review of seasonally based ambient phosphorus values that were available in EPA's nutrient technical guidance and the peer-reviewed literature, it is clear that 0.1 mg/l imposed on a seasonal average basis would not be sufficiently stringent to meet this test. On the other hand, the 0.1 mg/l limit as expressed in the permit will fall within the range of the seasonally-based ambient phosphorus values in the record when accounting for the fact that seasonal average receiving water flows are higher than 7Q10.

Please see *In re City of Attleboro, MA Wastewater Treatment Plant*, NPDES Appeal No. 08-08, 14 E.A.D. \_\_ (EAB, September 15, 2009), which details and upholds the Region's technical and legal justification for expressing the phosphorus limit as a monthly (as opposed to seasonal) average and for using 7Q10 flows to calculate available dilution.

**Comment #10:** The Permit Improperly Applies EPA Guidance

The permit references The 1986 Quality Criteria for Water as the source document for its recommended instream concentration. The 1986 document is clear that there is no national criteria for control of phosphorus. It begins by saying "Although a total phosphorus criterion to control nuisance aquatic growths is not presented, it is believed that the following rationale to support such a criterion, which currently is evolving, should be considered." (Gold Book, page 240 of 477). It goes on to describe various

recommendations and observations of Mackenthun and Hitchinson concerning tolerable levels of phosphorus in receiving waters. It also suggests that:

The majority of the Nation's eutrophication problems are associated with lakes or reservoirs and currently there are more data to support the establishment of a limiting phosphorus level in those waters than in streams or rivers that do not directly impact such water. There are natural conditions, also, that would dictate the consideration of either a more or less stringent phosphorus level. Eutrophication problems may occur in waters where the phosphorus concentration is less than that indicated above and, obviously, such waters would need more stringent nutrient limits. Likewise there are those waters within the Nation where phosphorus is not now a limiting nutrient and where the need for phosphorus limit is substantially diminished. Such conditions are described in the last paragraph of this rationale. (Gold Book, page 241 of 477). Emphasis supplied.

The last paragraph contains a number of caveats that need to somehow be taken into account in the development of the criterion. The factors include the following

1. Naturally occurring phenomena may limit the development of plant nuisances.
2. Technological or cost effective limitations may help control introduced pollutants.
3. Waters may be highly laden with natural silts or colors which reduce the penetration of sunlight needed for plant photosynthesis.
4. Some waters morphometric features of steep banks, great depth, and substantial flows contribute to a history of no plant problems.
5. Waters may be managed primarily for waterfowl or other wildlife.
6. In some waters nutrient other than phosphorus is limiting to plant growth: the level and nature of such limiting nutrient would not be expected to increase to an extent that would influence eutrophication.
7. In some waters phosphorus control cannot be sufficiently effective under present technology to make phosphorus the limiting nutrient. (Gold Book, page 243 of 477)

Thus, although there was no criterion established in the 1986 document, and the rationale was only evolving and proposed for consideration, the EPA elected to ignore the caveats about its use. The limitations and caveats of the Gold Book should be sufficient reason to await the completion of the TMDL before adopting a new permit limit for the District.

**Response to Comment #10:** In the course of determining the trophic status of the receiving water and deriving a protective phosphorus effluent limit that would meet the narrative phosphorus criterion, the Region looked to a variety of sources, including the *Gold Book*, Ecoregional Nutrient Criteria (*Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, December 2000*) and Nutrient Criteria Guidance (*Nutrient Criteria Technical Guidance Manual: Rivers and Streams, July 2000*). These constitute information published under the CWA Section 304(a) and were used as *guidance* to interpret the State's narrative criterion for nutrients and not as substitutes for state water quality criteria. The Region's use of the *Gold Book* and other relevant materials published under

Section 304(a) to develop a numeric phosphorus limit sufficiently stringent to achieve the narrative nutrient criterion is consistent with applicable NPDES regulations. When deriving a numeric limit to implement a narrative water quality criterion, EPA is authorized (40 CFR §122.44(d)(1)(vi)(B)) to: “Establish effluent limits on a case-by-case basis, using EPA’s water quality criteria, published under Section 304(a) of the CWA, supplemented where necessary by other relevant information.” (EPA also relied on 40 CFR §122.44(d)(1)(vi)(A) in establishing the limit.) EPA recognizes that the *Gold Book* does not contain a phosphorus criterion *per se*, but instead presents a “rationale to support such a criterion.” See *Gold Book* on page 240. The guidance document goes on to recommend in-stream phosphorus concentrations of 0.05 mg/l in any stream entering a lake or reservoir, 0.1 mg/l for any stream not discharging directly to lakes or impoundments, and 0.025 mg/l within the lake or reservoir.

The commenter references a statement in the *Gold Book* that indicates that, at the time of the *Gold Book’s* publication, there was more data to support the establishment of a limiting phosphorus level in lakes than in streams or rivers. Much more recent data and criteria guidance published under Section 304(a) of the CWA reinforces the *Gold Book* recommendations related to streams and rivers.

The more recent Nutrient Criteria Technical Guidance Manual – Rivers and Streams EPA-822-B-00-002. U.S.EPA. July, 2000 as well as the Ecoregional Nutrient Criteria recommend that in-stream phosphorus concentrations need to be less than 100 ug/l (0.1 mg/l) in order to control cultural eutrophication. The Nutrient Criteria Technical Guidance document cites a range between 10 ug/l and 90 ug/l to control periphyton and between 35 ug/l and 70 ug/l to control plankton (see Table 1). The Ecoregional Nutrient Criteria document outlines so-called “reference” conditions in waters within specific ecoregions across the country that are minimally impacted by human activities, and thus are representative of waters without cultural eutrophication. The Charles River is in Ecoregion XIV, *Eastern Coastal Plain*. The recommended total phosphorus criterion for this ecoregion is 24 ug/l.

<b>Table 1</b>						
<b>Nutrient (ug/l) and algal biomass criteria limits recommended to prevent nuisance conditions and water quality degradation in streams based either on nutrient-chlorophyll <i>a</i> relationships or preventing risks to stream impairment as indicated.</b>						
<b>PERIPHYTON Maximum in mg/m<sup>3</sup></b>						
<b>TN</b>	<b>TP</b>	<b>DIN</b>	<b>SRP</b>	<b>Chlorophyll <i>a</i></b>	<b>Impairment Risk</b>	<b>Source</b>
				100 – 200	nuisance growth	Welch et al. 1988, 1989
275 – 650	38 – 90			100 – 200	nuisance growth	Dodds et al. 1997
1500	75			200	eutrophy	Dodds et al. 1998
300	20			150	nuisance growth	Clark Fork River Tri-State Council, MT
	20				<i>Cladophora</i> nuisance growth	Chetelat et al. 1999
	10 – 20				<i>Cladophora</i> nuisance growth	Stevenson unpubl. data
		430	60		eutrophy	UK Environ. Agency 1988
		100 <sup>1</sup>	10 <sup>1</sup>	200	nuisance growth	Biggs 2000
		25	3	100	reduced invertebrate diversity	Nordin 1985
			15	100	nuisance growth	Quinn 1991
		1000	10 <sup>2</sup>	~ 100	eutrophy	Sosiak pers. comm.
<b>PLANKTON Mean in ug/l</b>						
<b>TN</b>	<b>TP</b>	<b>DIN</b>	<b>SRP</b>	<b>Chlorophyll <i>a</i></b>	<b>Impairment Risk</b>	<b>Source</b>
300 <sup>3</sup>	42			8	eutrophy	Van Nieuwenhuyse and Jones 1996
	70			15	chlorophyll action level	OAR 2000
250 <sup>3</sup>	35			8	eutrophy	OECD 1992 (for lakes)
1 30-day biomass accrual time						
2 Total Dissolved P						

3 Based on Redfield ratio of 7.2N:1P (Smith et al. 1997)

Source: *Nutrient Criteria Technical Guidance Manual – Rivers and Streams*. EPA-822-B-00-002. U.S.EPA. July, 2000.

<b>Table 2</b>		
<b>Examples of Numeric Criteria and Guidelines for Total Phosphorus in the U.S.</b>		
<b>State and Waters</b>	<b>Phosphorus Criteria Values</b>	<b>Reference</b>
<b>Arizona</b> River Specific	Annual Mean 0.05 – 0.20 mg/l 90 Percentile: 0.10 – 0.33 mg/l Single Sample Maximum: 0.20 - 1.0 mg/l	AAC R18-11-109
<b>Arkansas</b> All Waters	Maximum limit: 0.100 mg/l (guideline)	2 AAC 2.509
<b>Hawaii</b> Inland Streams	Geometric Mean, not to exceed 0.05 mg/l – Wet Season (Nov.1 – Apr.30) 0.030 mg/l – Dry Season (May 1 – Oct. 31)	HAR 11-54-5.2
<b>Illinois</b> Streams at entrance to reservoir or lake with surface area of 8.1 hectares or more	Maximum limit: 0.05 mg/l	35 IAC 302.205
<b>Nevada*</b> River Specific	Mostly, average: 0.1 mg/l	NAC 445A
<b>New Jersey</b> Streams	Maximum limit: 0.1 mg/l, unless demonstrate TP is not a limiting nutrient and will not render the waters unsuitable for designated uses.	NJAC 7:9B-1.14(c)
<b>New Mexico</b> Perennial reaches of specific waters in Rio Grande, Pecos River, and San Juan River basins	Maximum limit (single sample): 0.1 mg/l	20 NMAC 6.4.109 20 NMAC 6.4.208 20 NMAC 6.4.404 20 NMAC 6.4.407
<b>North Dakota</b> Class I, IA, II and III streams	Maximum limit: 0.1 mg/l (interim guideline limit)	NDAC 33-16-02-09
<b>Oregon</b> Yamhill River and its tributaries	Monthly median: 0.070 mg/l as measured during summer low flow	OAR 340-041-0350
<b>Utah</b> Streams and rivers to protect aquatic life; 3B, 3C waters	Maximum limit: 0.05 mg/l (used as pollution indicator; when exceeded, further investigations are conducted)	UAC R317-2 (Table 2.14.2)
<b>Vermont</b> Upland streams (> 2,500 ft.)	Maximum limit: 0.010 mg/l at low median monthly flow	VWQS 3-01-B2
<b>Washington</b> Spokane River (river mile 34 – 58)	Average euphotic zone: 0.025 mg/l (during June 1 to October 1)	WAC 173-201A-130
* Different requirements may exist to maintain existing higher quality streams.		

Source: *A Literature Review for use in Nutrient Criteria Development for Freshwater Streams and Rivers in Virginia*. Virginia Polytechnic Institute and State University – Virginia Water Resources Research Center. 2006.

The commenter also recites verbatim seven site-specific considerations that the *Gold Book* indicates can reduce the threat of phosphorus as a contributor to eutrophication in lakes. The commenter does not indicate which, if any, of the site-specific considerations is determinative in this case and how it would specifically alter the permit limits for phosphorus. For instance, the commenter does not cite and EPA is not aware of any evidence that “naturally occurring phenomena;” “steep banks, great depth and substantial flows;” “natural silts or colors;” or a “nutrient other than phosphorus” are inhibiting plant growth in this case. To the contrary, certain characteristics of the Charles River exacerbate impacts associated with phosphorus. For instance, the river is characterized by numerous shallow impoundments and low velocity. Further, management of waters “primarily for waterfowl or other wildlife” would conflict with the designated use of contact recreation. In addition, consideration of cost or technological feasibility in the establishment of the water-quality based phosphorus limit is inappropriate. The conditions referred to in the above comment are listed in the *Gold Book*. Page 241 of the *Gold Book* refers to the list as “...those waters within the Nation where phosphorus is not now a limiting nutrient and where the need for phosphorus limits is substantially diminished. Such conditions are described in the last paragraph of this rationale.” The seven exceptions listed are in reference to lake eutrophy as noted, “It should be recognized that a number of specific exceptions can occur to reduce the threat of phosphorus as a contributor to lake eutrophy.” The conditions listed do not pertain to the Upper Charles River.

The MassDEP has listed the river segment downstream of the treatment plant as impaired for nutrients in the Massachusetts Year 2008 Integrated Lists of Waters approved on May 4, 2009 by EPA. The 2010 and 2012 Integrated Lists also have this segment of the river listed as impaired for the same parameters.

Please see *In re City of Attleboro, MA Wastewater Treatment Plant*, NPDES Appeal No. 08-08, 14 E.A.D. \_\_\_ (EAB, September 15, 2009), which details and upholds the Region’s interpretation of the *Gold Book* in connection with the phosphorus limit.

**Comment #11:** The Recommended In-Stream Value Used In Developing the Permit Limit Is Unsubstantiated

The 1986 Quality Criteria for Water suggests a level of 0.1 mg/l as “a desired goal for the prevention of plant nuisances in streams or other flowing waters” and references a 1973 publication of Kenneth Mackenthun. However, that document does not present information concerning the development of the 0.1 mg/l “desired goal”, but rather makes reference to a 1968 paper published in the Journal of the American Waterworks Association by the same author. The 1968 document indicates that “... A considered judgment suggests that to prevent biological nuisances, total phosphorus should not exceed 100 ug/l P at any point within the flowing stream, nor should 50 ug/l be

exceeded where waters enter a lake, reservoir or other standing water body ..." (Mackenthun, 1968 p 1053). A careful reading of this document suggests that it is referencing streams which are tributary to water supply reservoirs and lakes and standing waters that serve as sources of water supply. This would explain why it was published in what would otherwise be thought to be a publication about water supply, and not water pollution. Moreover, the 1968 document presents no information concerning the development of the recommendation – and so it presents no guidance on how it should be applied – seasonally, monthly, or over the growing season? Based on the lack of such information, it is unclear to us how the Agency decided that this value needed to be applied at 7Q10 flows.

**Response to Comment #11:** EPA has an obligation under the Clean Water Act to establish permit limits necessary to meet water quality standards and is required to use available information to establish water quality-based effluent limits when issuing a permit for a discharge which is shown to have a reasonable potential to cause or contribute to a violation of water quality standards. *See* 40 CFR § 122.44(d)(1)(i).

The *Gold Book* recommendation regarding in-stream phosphorus concentrations is not limited to sources of water supply and can be used as guidance, along with other relevant sources of information, to establish a protective in-stream numeric water quality target to satisfy the narrative nutrient water quality criterion.

The 1973 paper by Kenneth Mackenthun referenced by the *Gold Book* includes no such restrictions. The commenter does not explain how a “careful reading” of a 1968 publication by the same author supports the suggested restrictions on the recommendations. To the contrary, the 1968 article twice states “total phosphorus concentrations should not exceed 100 ug/l at any point within a flowing stream” with no reference that this recommendation is limited to tributaries to drinking water supplies. Indeed, if Mr. Mackenthun intended such a restriction, he presumably would have explicitly included it in his 1968 or 1973 publications. Regarding application of the recommendations, the *Gold Book* values are expressed as values not to be exceeded at any time and are not seasonal or annual averages.

EPA has elsewhere explained its rationale for applying the 0.1 mg/l phosphorus effluent limit as an average monthly limit that is imposed during the growing season and that assumes a dilution flow equal to the 7Q10.

The literature values cited previously from the Nutrient Technical Guidance Manual are based on seasonal averages and are nominally more stringent than the 0.1 mg/l applied here. With respect to the appropriate averaging periods for the Ecoregion guidance values for rivers and streams, the reference value was developed based on the 25th percentile of all seasons of data. It does not follow, however, that the criteria should necessarily be applied as an annual average if the data do not vary significantly over the course of the year. The data used to calculate the reference conditions is shown in Appendix B of the Ecoregion Guidance Document and is sorted by season. For subregion 59, in which the discharge is located, the 25<sup>th</sup> percentile (P25) for each season is presented on page 11 of

the Appendix. It shows that the P25 for the seasons range from 20-28 ug/l with a summer value of 25 ug/l.

EPA is not required to wait for development of numeric criteria for phosphorus prior to establishing an effluent limit that will ensure compliance with all applicable standards. EPA must impose limits on pollutants that have a reasonable potential to cause or contribute to violations of water quality standards, including narrative criteria. 40 C.F.R. § 122.44(d)(1)(i). As discussed earlier in this response, EPA reliance on the ecoregional criteria, guidance and other relevant information is expressly contemplated by 40 C.F.R. § 122.44(d)(1)(vi), and EPA believes reliance on such technical materials is reasonable when interpreting a narrative criterion.

Please see *In re City of Attleboro, MA Wastewater Treatment Plant*, NPDES Appeal No. 08-08, 14 E.A.D. \_\_ (EAB, September 15, 2009), which details and upholds the Region's interpretation of the *Gold Book* in connection with the phosphorus limit.

**Comments submitted by Jeffrey D. Nutting, Town Administrator for the Town of Franklin, Massachusetts on July 25, 2008.**

**Comment #12:** The Town of Franklin is adamantly opposed to being a co-permittee on the Charles River Pollution Control District's discharge permit #NPDES MA 0102598. The operation of the plant and sewer interceptors are the sole responsibility of the District and the Town of Franklin should not be named in the permit.

**Response to Comment #12:** See response to comment #2 and response to comment #4.

As a co-permittee, the Town of Franklin, is not expected to take on responsibilities of operation of the treatment plant or the sewer interceptors. The intent of adding co-permittees to the permit is to ensure that the towns' collection systems are adequately operated and maintained, including the removal of infiltration and inflow that cause or contribute to overflows or effluent limit violations at the treatment facility.

**Comment #13:** We object to any attempt to make the District have any responsibility or oversight, nor do we wish to participate in any activity listed in Section C, Part 3 with the District as part of the permit.

**Response to Comment #13:** The Final Permit does not place any responsibility or grant oversight responsibilities to the District for the Town's collection system. Under Part 1. Sections B. and C. of the Final Permit, the operation and maintenance of the Town's collection system will continue to be managed by the Town of Franklin. See response to comment #2 and response to comment #4.

**Comments submitted by, Town Administrator for the Town of Millis, Massachusetts on July 25, 2008.**

**Comment #14:** The Town of Millis objects to becoming a co-permittee under the permit. None of the affected municipalities signed the permit application and we

did not intend to become permit applicants. The permit undermines municipal authority over its own sewer system and the CRPCD does not have the legal authority to bind Millis to certain requirements as proposed in the permit. Moreover, Millis does not have a seat on the board of the CRPCD so we are mindful of the authority of the district over the town of Millis.

We are concerned that the permit's language limits the CRPCD's authority to determine which entities may be a Member of the district and which may discharge to the district. We are concerned that this may complicate Millis' efforts to become a voting Member of the district.

The permit proposes to regulate the town of Millis' collection system through a sanitary sewer overflow rule regardless of whether overflows reach waters of the United States. The proposed addition of our collection system to the permit circumvents procedural rulemaking requirements that regulation not be rewritten through policy.

The CRPCD accepts sludge and septage and generates revenue from other towns that are not listed as co-permittees. Millis is concerned that the CRPCD's inability to accept wastewater and sludge or septage from non-member communities will have a financial impact on its capital and operational assessment.

The Town of Millis is concerned with the added responsibilities and costs that sections 1.B. and 1.C. of the Draft Permit impart upon the town. In particular, the language of paragraph 1.B.1-4, Operation and Maintenance of the Sewer System, are sufficiently vague such that the Town cannot understand what it is required to do or is responsible for. Further, the identification and prioritization of areas that will provide increased aquifer recharge through Infiltration and Inflow elimination is beyond the scope of identifying and removing Infiltration and Inflow which affects the operation of the CRPCD plant or eliminates overflows into the river.

**Response to Comment #14:** Please see response to comment #2 and response to comment #4, for a more detailed discussion of the co-permittee issues raised by the Town as well as the revised draft permit Fact Sheet and response to comments on this issue.

Please see response to comment #19 with respect to the commenter's concern regarding CRPCD's purported inability to accept wastewater or sludge. The inclusion of co-permittee provisions does not impact the ability of the District to accept sludge or septage. The commenter does not explain why it believes this to be the case.

With respect to membership in the District, EPA fails to see (and the Town does not specifically explain) how the addition of the community as a co-permittee will impact or is relevant to this decision, and cannot provide a meaningful response based on the information provided by the commenter. To the extent that EPA has used the term member community rather than satellite community, EPA would like to clarify that it has in the past used these terms interchangeably and generically (as well as in the future), and does not invest them with any particular regulatory import.

EPA disagrees that the conditions referred to above are vague and, in any event, the comment does not explain why this is so, making it difficult for the Region to respond. Federal regulations require each NPDES permittee to “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 comply with permit limits (40 C.F.R. § 122.41(e)) (Conditions applicable to all permits; Proper operation and maintenance). Based on the provisions in statute and regulation, EPA has authority to require proper operation and maintenance of collection systems in order to achieve compliance with the NPDES permit, and has fashioned a set of permit conditions to carry out this aim. See CWA § 402(a)(2); CWA § 301(b)(1)(C); 40 C.F.R. §§ 122.4, .43. This is a standard condition contained in NPDES regulations and required by law to be included in all permits. Since the District does not own or operate sections of the collection system that conveys flow to the treatment works, it is appropriate to apply these conditions to the owners/operators of those systems as co-permittees. The permit clearly prescribes conduct on the part of the co-permittee and a standard for evaluating the successful completion of the conduct. The condition is sufficiently clear to apprise persons managing the collection systems of required conduct, and accordingly does not encourage arbitrary or discriminatory enforcement by the Agency.

The permit outlines the minimum requirements for an I/I Control Plan and provides guidance for prioritizing sources. The plan must be adequate to prevent overflows from the collection system owned and operated by the permittee or co-permittee and also adequate to prevent flow-related violations at the POTW Treatment Plant. EPA recommends that the permittees also consult the MassDEP guidance document, Guidelines for Performing Infiltration/Inflow Analyses and Sewer System Evaluation Survey, January 1993, which can be found at <http://www.mass.gov/eea/docs/dep/water/laws/iiguidln.pdf>; the New England Interstate Water Pollution Control Commission publication, Optimizing Operation, Maintenance, and Rehabilitation of Sanitary Sewer Collection Systems, December 2003, which can be found at <http://www.mass.gov/eea/docs/dep/water/laws/omrguide.pdf> and the EPA document, Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems, which can be found at [http://www.epa.gov/npdes/pubs/cmom\\_guide\\_for\\_collection\\_systems.pdf](http://www.epa.gov/npdes/pubs/cmom_guide_for_collection_systems.pdf). The Agencies believe that this flexible approach, which is less prescriptive than the commenter would prefer, is reasonable, because it will allow the co-permittee to adapt based on local conditions and because the co-permittee is better positioned to determine how to deploy resources to address I/I problems efficiently based on their knowledge of collection systems. It is worth noting that prioritizing areas of the sewer system to eliminate I/I which may contribute to aquifer recharge is a beneficial practice and may reduce extraneous flow; however, it is not a requirement in the Final Permit.

**Comment received by Nigel Pickering, Senior Engineer, Charles River Watershed Association, July 31, 2008.**

**Comment #15:** We focus on the total phosphorus (TP) limits since this the most significant change in the draft permit and the limit of most concern to us. The current permit has 0.2/none while the proposed permit 0.12/1.0 mg/L for summer/winter TP limits.

Phosphorus is a real threat to the health and beauty of the Charles River. Although CRWA has worked hard to improve water quality in the Charles River through monitoring and advocacy, the most persistent water quality problems that remain are associated with excessive nutrients, especially phosphorus.

Excessive phosphorus exacerbates the growth of aquatic plant species. Phytoplankton, benthic algae, and macrophytes proliferate, especially in slow-flowing waters like ponds or impoundments. The Charles River has 20 impoundments along its length and many are impacted by excessive aquatic plant growth. Removal of these weeds from the Charles has cost the state hundreds of thousands of dollars since 1995. When the plants die, they decay and deposit particulate phosphorus on the river bottom, creating an additional long-term and difficult-to-remove benthic source of phosphorus.

Although both nonpoint and point sources contribute to the phosphorus loads to the river, the phosphorus load from wastewater treatment plants (WWTFs) have a particularly negative effect because the phosphorus is primarily in the form of orthophosphate, the impact is worst in the dry summer periods when river flows are low and aquatic growth is accelerated, and the point discharge impact on local water bodies are extreme.

Much of the Upper Charles River is classified as a 303(d) "impaired water body" under the Federal Clean Water Act, with excessive nutrients designated as the pollutant. In 2007, a nutrient TMDL for the Lower Charles Basin was issued. CRWA is assisting in developing a nutrient TMDL for the Upper/Middle Charles, which will be completed in late 2008. This Upper/Middle TMDL must respect the phosphorus load specified in the Lower Basin TMDL for the Watertown Dam of 15,000 kg/yr.

The Upper/Middle Charles TMDL (CRWA, 2004; 2006) monitored the river reaches upstream and downstream of the CRPCD outfall (sites 201S and 207S) and also surveyed Populatic Pond, just upstream of the CRPCD outfall. Under low flow conditions, an algae gradient was observed from the outfall upstream into the pond, indicating some backflow or diffusion back into the pond.

Total phosphorus (TP) measurements during dry weather above and below the CRPCD outfall were about 0.06 to 0.07 mg/L. EPA's "Quality Criteria for Water" or "Gold Book" (1986) suggests that total phosphorus to limit aquatic growth should be less than 0.10 mg/L in flowing reaches, less than 0.05 mg/L entering a impoundment/pond, and less than 0.025 mg/L leaving an impoundment/pond. Both Populatic Pond and its downstream reach are impounded until the river reaches the vertical constriction point below Myrtle Street, therefore the levels 0.025/0.05 mg/L are applicable. EPA's

“Ambient Water Quality Criteria Recommendations for Rivers and Streams in Nutrient Ecoregion XIV” has a stricter instream total phosphorus criteria of 0.02375 mg/L for our ecoregion (XIV, 59). The TP measurements exceed both these criteria.

Chlorophyll *a* measurements during dry weather above and below the CRPCD outfall were about 20 to 40 µg/L, some of the highest values measured in the Upper Charles River during the TMDL monitoring period. The instream chlorophyll *a* criterion for our ecoregion is 3.75 mg/L, far below these measurements. At concentrations above 10 µg/L phytoplankton algae become visible and may impede light penetration and water clarity.

Populatic Pond was also surveyed for water depth, sediment depth, aquatic plant coverage, and sediment nutrient release. The pond has an average water depth of 5.7 ft and a significant sediment depth of 5.4 ft, the thickest sediments of all the Upper Charles impoundments. Predominant plant species were submerged and floating algae along with some yellow water lilies. Most of the plant species are concentrated in the north end of the pond near the pond outlet and the CRPCD outfall. Although the plant biovolume is only 2.2%, it has the highest concentration of algae of any pond, causing the oxygen concentrations to supersaturate during the day and fluctuate diurnally by about 4 mg/L, the highest in the river. In addition, the river reach downstream of the CRPCD outlet (207S) also had similar but lower levels of algae and had slightly less DO fluctuation, about 3 mg/L. In this downstream reach, one DO measurement near the river bottom was almost zero (1.0 mg/L). The inorganic phosphorus release rate from Populatic Pond and its downstream reach was 1.8 mg/m<sup>2</sup>/day, about average compared to other Upper Charles ponds.

Populatic Pond and its downstream reach are considered critical reaches in the Upper/Middle TMDL. These reaches have suffered from years of nutrient overloading from the CRPCD outfall and upstream stormwater. Recent results from scenarios in the Upper/Middle Charles TMDL indicate that it will be very difficult to meet the Lower TMDL load at the Watertown Dam of 15,000 kg/yr unless all WWTF discharge limits for phosphorus are set at 0.1 /0.5 mg/L for summer/winter. The Upper Charles nutrient TMDL has not been finalized, and there is still some uncertainty about the local benefits from low winter TP levels; however, this is not the case for the summer TP level.

CRWA strongly recommends that the TP limits for summer/winter be set at 0.1/1.0 mg/L to help alleviate the issues of chlorophyll *a*, benthic algae, and DO supersaturation.

Given that the Upper/Middle TMDL should be finalized late this year, it does not make sense to issue a permit to CRPCD that could conflict with loadings in the TMDL and its implementation. Because this permit is being issued very close in time to the Upper/Middle TMDL, the permit should contain a strong reopener provision that explicitly provides for revision based on the TMDL in addition to other circumstances.

The residents along Populatic Pond and its downstream reaches have lived for many years with an unswimmable river that fails to meet water quality standards, and impedes

recreation and enjoyment of the water body. Imposing tighter phosphorus discharge limits for CRPCD will be one step towards cleaning it up.

According to the EPA's public reporting site (ECHO), CRPCD has been in violation of the current 0.2 mg/L summer TP limit about 50% of the time in 2006 and 2007. We trust that EPA will work closely with CRPCD to ensure that the new tighter TP limits be consistently met in the future.

**Response to Comment #15:** EPA has reopened the permit to account for the approved final Upper Charles TMDL, in addition to the Region's co-permittee analysis. The comment generally supports the Draft Permit and does not request any changes except for the TMDL-based reopener provision.

**Comment received from Suzanne Kennedy, Town Administrator, Town of Medway on August 11, 2008.**

**Comment #16:** The Town of Medway is not a co-permittee under this permit. The Town did not sign the permit application. Furthermore, through legislation that created the District, the Town does not own or operate the facility and has no legal jurisdiction over plant discharges.

**Response to Comment #16:** See response to comment #2, response to comment #4 and, the Fact Sheet for the revised Draft Permit.

**Comment #17:** The permit attempts to place restrictions on the operation of the Town's sewer system with enforcement by the District. The District does not own or operate the Town's sewer collection system and has no legal jurisdiction in this area. The permit, therefore, illegally grants the District authority over the Town's sewer system.

**Response to Comment #17:** See response to comment #2 and response to comment #4.

**Comment #18:** The permit proposes to regulate the Town's collection system through sanitary sewer overflow rule regardless of whether overflows reach waters of the United States. This action would circumvent procedural rulemaking requirements that regulation not be rewritten through policy.

**Response to Comment #18:** The permit requires a co-permittee to properly operate and maintain its collection system and to properly manage the infiltration/inflow component of its discharge into the treatment works. This permit is not regulating the co-permittee through a "sanitary sewer overflow rule" and the requisite rulemaking requirements do not apply. Sanitary sewer overflows are unpermitted discharges and are not authorized under this permit (although sanitary sewer overflows flows may be indicative of poor O&M of the collection system). The State of Massachusetts requires the reporting of sanitary sewer overflows on their form (Sanitary Sewer Overflow (SSO)/Bypass Notification Form). The permit does not circumvent rulemaking requirements. Please see Fact Sheet for the revised Draft Permit and responses to comments on the Revised Draft Permit.

**Comment #19:** The District accepts waste streams from communities not listed on the permit. Such communities should have to also be listed as co-permittees or the District will need to revise policy and stop accepting such streams from these communities. This would have a negative financial impact on the operation of the plant, as well as non-members communities it serves.

**Response to Comment #19:** The District receives wastewater from Franklin, Medway, Millis, Bellingham, Norfolk, Dover, Sherborn, and Wrentham. Franklin, Millis, Medway and Bellingham each has a separate collection system that transport wastewater to the treatment facility. Norfolk, Dover, Sherborn and Wrentham do not have collection systems that are part of the POTW. These Towns send septage from septic systems, which is transported by truck to the CRPCD facility. These communities are not part of the POTW within the definition in 40 CFR § 403.3(q) and have not been included as co-permittees. There is nothing in the permit that would prohibit CRPCD from accepting wastewater from these communities, provided appropriate pretreatment requirements are met and effluent limitations are achieved.

**Comment #20:** As noted above, sections 1.B and 1.C of the draft permit should be deleted. As noted section 1.B, “Discharges of wastewater from any other point sources...are not authorized by this permit.” These issues, although important, should be addressed directly with the individual municipalities who own and operate their respective sanitary sewer systems. Language added in the draft permit to address these issues is too broad and vague to be actionable.

**Response to Comment #20:** It is unclear why this condition should be removed based on the rationale provided by the commenter. The CRPCD permit, with its co-permittee structure, allows EPA to address issues relating to the operation of the entire POTW (satellite collection systems included) in a comprehensive and administratively efficient manner. SSOs, which are not authorized discharges in any event, are a component of this issue, especially to the extent they are potential indicators of poor collection system performance. From the perspective of improving overall water quality and addressing these environmentally significant discharges, EPA perceives no drawback in underscoring what is and is not authorized to be discharges under the permit and to incorporate reporting mechanisms for authorized discharges so that they might be addressed in an effective manner. See response to comments #2, response to comment #4 and, response to comment #18.

**Comment #21:** The requirement that the Town identifies and prioritizes areas that will provide increased aquifer recharge through infiltration and inflow elimination is beyond the fundamental scope of the permit. Only those areas directly affecting operation of the CRPCD plant could even be considered under the permit.

**Response to Comment #21:** See response to comment #14.

**Comment #22:** The Town of Medway agrees with the district's position regarding the reduction of the phosphorus limit of 0.2 mg/L to 0.12 mg/L. The District does not feel the reduction is justified and the EPA does not have the authority to reduce it in this manner. Without justification based on documented evidence of improving water quality to the Charles River, the Town does not wish to burden its residents with the additional cost associated with treatment to attain these levels.

**Response to Comment #22:** See response to comment #1.

## **RESPONSE TO COMMENTS ON 2012 PARTIALLY REVISED DRAFT NPDES PERMIT**

**Comments submitted by Cheri Cousens, P.E., Executive Director, Charles River Pollution Control District (CRPCD), Medway, Massachusetts on September 27, 2012.**

### **Comment #23: Co-Permittees**

We understand that the Towns of Bellingham, Franklin, Medway and Millis (the “Towns”) have submitted separate comments regarding being added as co-permittees to the Draft Permit. We have had an opportunity to review the comments submitted by Robert D. Cox, Jr. of Bowditch & Dewey, LLP on behalf of the Towns, and we agree with and endorse the position of the Towns that this is an impermissible expansion of EPA’s jurisdiction. As you are aware, representatives of the Towns comprise the Board of the District, and the Towns are well aware of the importance of maintaining strong operational controls both within the various elements of the collection system and the District treatment works, to maintain cost-effective compliance with our regulatory obligations. Our cooperative relationship assures that the Towns are responsive to the District’s responsibilities, including those which the EPA seeks to regulate under sections I.B and I.C of the Draft Permit.

In addition, we would note that the District believes the Towns are implementing all reasonable controls to address and reduce infiltration and inflow (“I/I”) into the collection system, and have been active partners in our efforts to maintain compliance with the District’s operating requirements. Please see Appendix 1 prepared by the District’s consultants, CDM Smith, which describes many of the positive steps taken by the Towns, in cooperation with the District, to reduce I/I, prohibit unauthorized discharges, and develop and maintain the GIS data base covering the entire collection system.

**Response to Comment #23:** EPA commends the District and Towns for their cooperative management of the treatment works to reduce I/I and unauthorized discharges from the collection system. However, the cooperative management approach that currently exists between the Towns and the District has been insufficient to ensure that the treatment works is being properly maintained in order to assure compliance with the Act. Moreover, the existence of such a voluntary arrangement to address collection systems O&M does not preclude the inclusion of the Towns as co-permittees on the Final Permit. EPA refers the commenter to the response to comments submitted by Bowditch & Dewey, LLP (Nos. 34-50 below), for a more detailed discussion of the Region’s co-permittee approach and the rationales underlying it.

EPA supports the steps noted in Appendix 1 of the comment regarding I/I, but generally disagrees with the District’s assessment regarding the adequacy of implementation efforts. EPA also notes that there was a requirement in 2001 for the District to address I/I in member communities, although system mapping efforts were not initiated until very recently. See MassDEP Bureau of Resource Protection, Interim Infiltration and Inflow

Policy, September 6, 2001. Additionally, Appendix 1 indicates that although a significant amount of I/I work associated with monitoring and planning, relatively little remediation has occurred. Where information is presented on the quantity of I/I removed from individual projects, the amount represents a very small portion of the total I/I in the system. The I/I report submitted by the District on February 24, 2014 states, “the CRCPD I/I flow increased from 2012 to 2013 by approximately 63 million gallons.” EPA acknowledges that the Towns have initiated work to control and eliminate I/I; however, EPA has concluded that additional, enforceable requirements are warranted given the high flow issues that continue to be a problem system wide.

**Comment #24:** I/I and Flow Violations

In the memorandum attached hereto as Appendix 2, which was prepared by the District’s consultants, CDM Smith, the District responds to EPA’s assertions regarding I/I and the past violations by the District. First, our analysis suggests that the EPA’s analysis of the District and the South Essex Sewerage District (“SESD”) in the Draft Permit is flawed because EPA improperly characterizes I/I in the two systems as excessive. In addition, the EPA improperly suggests that the District and SESD’s NPDES permit violations are related to excessive I/I. With respect to the District, our analysis suggests that I/I is not responsible for prior permit violations or sanitary sewer overflows. Finally, our analysis suggests that there is no support for EPA’s conclusion that there is a trend of increasing daily flow over time in the District and SESD facilities or for EPA’s further interpretation that this means that I/I have not been reduced in the systems.

**Response to Comment #24:** EPA disagrees with the arguments in the comment and supporting Appendix 2 document regarding EPA’s analysis of I/I and past violations by the District. The claim that “EPA improperly characterizes I/I in the two systems as excessive” mischaracterizes EPA’s analysis. EPA did not simply use the identified thresholds for “nonexcessive” infiltration and inflow as if they were synonymous with “excessive” I/I as suggested in the Appendix. Rather, as demonstrated in EPA’s analysis the District experiences levels of inflow and infiltration on a system-wide basis that are “far exceeding” the relevant thresholds, and therefore are properly considered indicative of “these facilities...receiving high levels of inflow and wet weather infiltration.” While a thorough analysis of the extent of excessive I/I and the locations within the various systems where excessive I/I occurs would of course require extensive analysis, as noted in Appendix 2 this is an expensive, time-consuming and complex process. EPA disagrees with the commenter’s suggestion that anything short of such detailed analysis is insufficient to justify the operation and maintenance requirements in the Draft Permit that EPA has included to assure compliance with the Act.

Furthermore, the site-specific information provided by the District does not contradict EPA’s analysis. The overview in Appendix 1 describes planned activities the District and Towns have scheduled to reduce I/I and maintain the collection system. All but one of the member communities have apparently determined that there is significant inflow and infiltration in their systems based on the I/I projects noted in Appendix 1.

In addition, EPA disagrees that the information in Appendix 2 contradicts EPA's conclusion that there likely have been I/I related permit violations. The facts as set forth in Appendix 2 clearly indicate that the noted permit violations are related to high flow and thus I/I and, additionally, that the impact of high flows was exacerbated by operational decisions made by the District.<sup>12</sup> EPA did not speculate on the causes of SSOs in the CRPCD system. As noted in EPA's discussion of the technical basis for operation and maintenance requirements, excessive I/I is a major, but not the only, concern relative to satellite system function and performance. As EPA stated, "Sanitary sewer systems can also overflow during periods of normal dry weather flows. Many sewer system failures are attributable to natural aging processes or poor operation and maintenance." *"EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works That Include Municipal Satellite Sewage Collection Systems"* ("Analysis") at 4. The failure described in the comment, while not I/I related, are related to operation and maintenance of the system.

Finally, EPA disagrees with the commenter's characterization of EPA's interpretation of data and its conclusions regarding flow trends. Despite the suggestion in the comment, EPA did not suggest that there had been increases in flow, even given the small positive trend of the regression line. Rather, recognizing the low significant (r-squared) of the regression, EPA simply concluded that the data indicate that I/I had not been reduced in either system. EPA does agree that a basic trend analysis is simplistic in the context of maximum flow, where any time dependence is likely to be far outweighed by precipitation variation. However, the solution suggested in the Comment Appendix 2 - stopping the regression in a dry year (2009) and excluding the recent wet year (2010) - is not a valid resolution to this issue. Instead, an appropriate approach to investigate long-term trends where there is substantial short term variation is to use an averaging approach - charting longer term rolling averages of the relevant variable.

To address the concern raised in the Appendix regarding the influence of the high rainfall in 2010 on the regression results, Figures A and B show the trends of one year rolling averages of monthly maximum flow for CRPCD and SESD, extended through 2012 so as to eliminate any residual impact from the high 2010 flows (or from the 2009 low flows that unduly influence CDM's proposed regression line). As in EPA's original analysis, the linear regression indicates a weak trend over this period of increasing maximum daily flow; while most of the variability from year to year is due to changes in precipitation, the trends are generally inconsistent with reductions in maximum flow over this time period and this indicates that I/I has not been reduced in either system.

Figure A. CRPCD Daily Maximum Flow Trends - One Year Rolling Average of Daily Maximum Flows

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<sup>12</sup> Regarding SESD, EPA agrees that the failure to meet the 85% removal standard was not a permit violation under SESD's current permit; however, EPA believes that failure of the SESD facility to meet technology based minimum standards of 85% removal from secondary treatment is indicative of the high impact of I/I on treatment performance that warrants permit conditions aimed at reducing I/I.

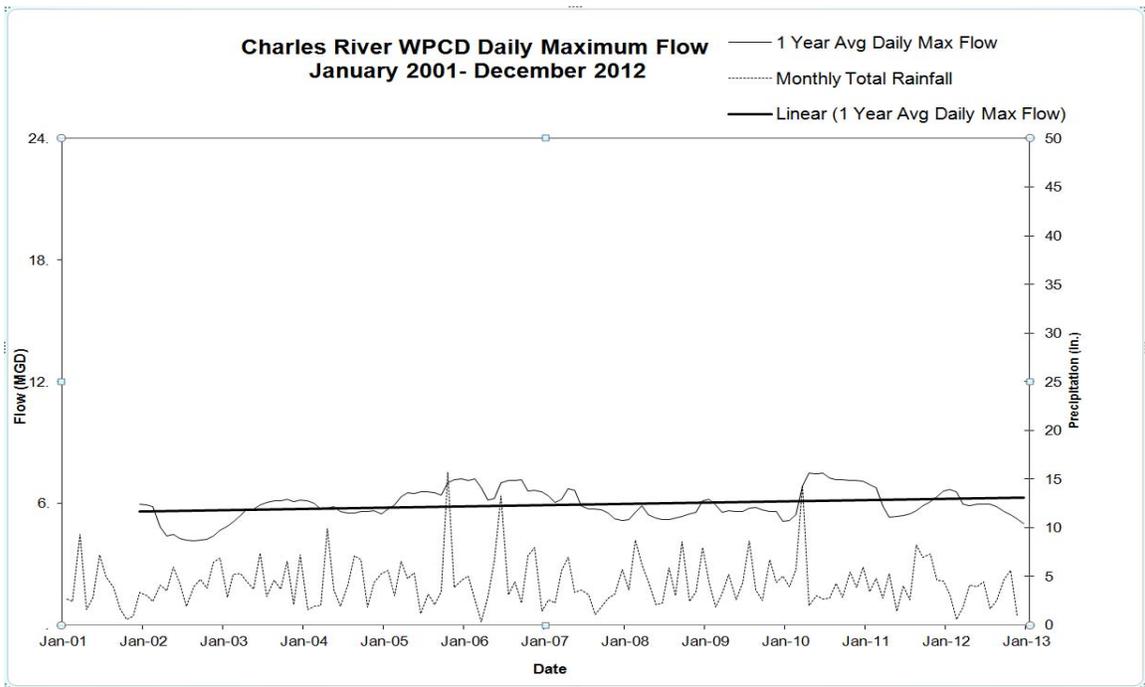
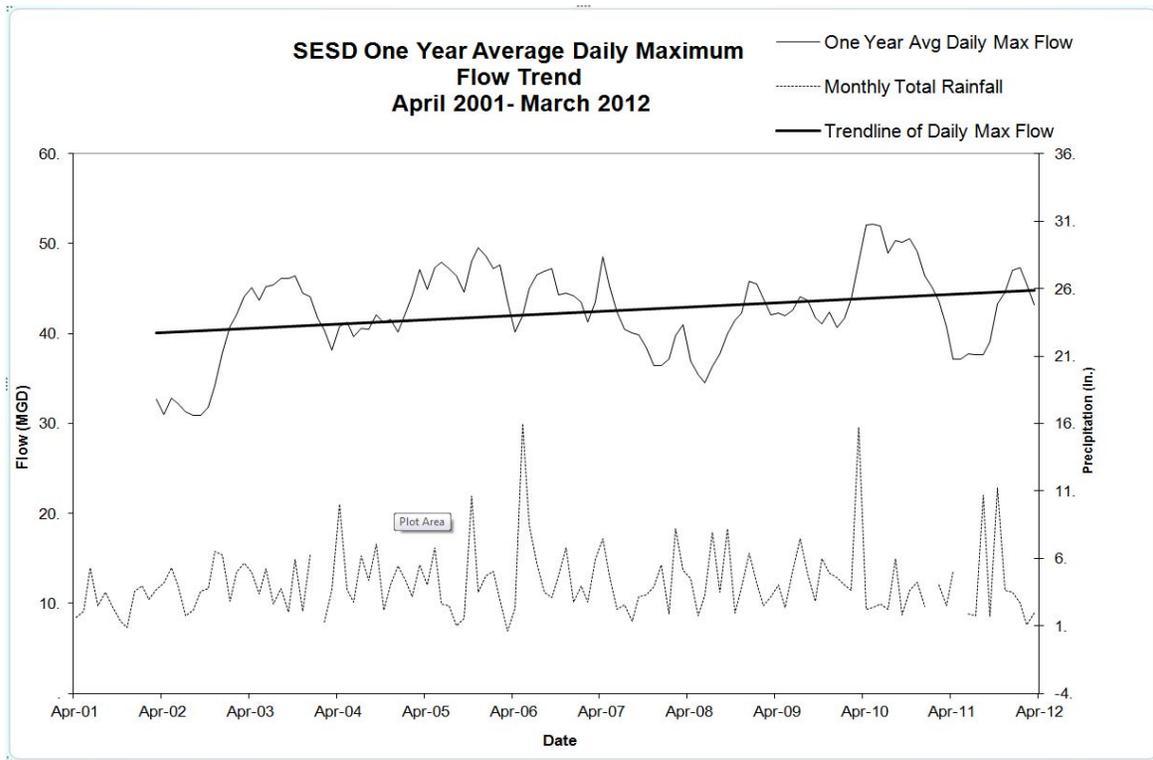


Figure B. SESD Daily Maximum Flow Trends - One Year Rolling Average of Daily Maximum Flows



**Comment #25:** Phosphorus Trading and Credits in the Charles River Basin

The Upper Charles River TMDL estimates that approximately 43,200 kilograms/year of phosphorus are discharged into the Upper Charles basin, of which 22% comes from municipal treatment plants, and the remaining 78 % from stormwater discharges, overland flow, atmospheric deposition and other diffuse sources. The TMDL estimates that in order to meet water quality objectives in the Upper Charles River, the phosphorus loads need to be reduced by about 52%, to 20,593 kg/yr. The Draft Permit requires the District (and other publicly owned treatment works (“POTWs”)) to remove proportionately more phosphorus than other sources such as stormwater, by imposing limits of 0.3 mg/l in the winter and 0.1 mg/l in the summer, which is expected to yield a reduction in the District’s phosphorus discharge of 65.3%. While these limits may be achievable from a technical standpoint, there is little doubt that the load allocation excessively burdens the District’s members with the responsibility of reducing nutrients discharged in other communities in the basin outside the District.

A trading or credit program could rectify this, where the District or its constituent members would receive a credit for the difference between the 0.1 mg/l summer limit for phosphorus and the 0.3 mg/l for the winter months set forth in the Draft Permit and the limits that would be necessary to meet the overall 52 % reduction imposed by the Upper and Lower Charles TMDL’s. In addition, the District or its members should receive a credit to the extent it reduces phosphorus below the load limits contained in the Draft Permit. Each of these credits could be applied by the member Towns against the obligations that may be imposed in any stormwater regulatory program intended to remove phosphorus under the Upper Charles TMDLs. The District recognizes that the details of such a program cannot be developed solely in the context of the District’s pending Draft Permit. However, the District requests that EPA and MassDEP advance the credit and trading system within the next year, and include language in the Permit to accommodate the transfer of “excess” phosphorus reductions to our member Towns.

**Response to Comment #25:** The Upper Charles River TMDL provides an analysis and planning framework intended to restore and maintain water quality in all reaches of the upper and middle Charles River and achieve the total phosphorus load at the Watertown Dam designated in the Lower Charles River TMDL. Both objectives are contingent upon the treatment plants achieving the summer and winter limits designated in the Upper Charles River TMDL. This is important during the warm weather months when instream flow is low and particulate forms of phosphorus from non-point sources are also low. The phosphorus discharged from the POTWs during the summer and fall months are more bioavailable for plant and bacteria uptake. The total phosphorus winter limits are necessary to achieve the loading requirement established in the Lower Charles River TMDL. EPA does not agree with the District’s assertion that their limits, which were consistent with the available WLA for the discharge, are somehow excessively burdensome relative to other communities. In addition to being consistent with the TMDL, the effluent limits in the Final Permit, 0.10 mg/l, were based on achieving the *Gold Book* guideline of 0.10 mg/l during low flow conditions in the summer and early autumn months, and were required under section 301(b)(1)(C) of the Act to assure

compliance with applicable water quality standards in the receiving waters.<sup>13</sup> The limits were not in other words excessive but necessary under the Act, and EPA accordingly rejects the premise that the District has “credits” to trade resulting from overly restrictive permit limits. With respect to water quality trading in general, EPA concurs with MassDEP’s position as stated on page 153 of the TMDL:

“Point and non-point source trades are not a 1 to 1 proposition as the impact from the point sources is greater than the non-point sources during the summer months when instream flows and runoff are low. The TMDL, however, does not exclude the potential for future trading options or focus on the most cost effective solutions for achieving water quality improvements in the watershed, but since no program or structure is in place today, the TMDL established reductions are based on what was considered to be technologically achievable and still meet water quality standards. Regardless of the approach chosen communities still need to move forward with developing a decision matrix for selection and implementing watershed improvements. Reductions at point sources, as well as non-point sources, need to move forward concurrently and therefore there would be no need to delay approval or implementation of the TMDL. Development and implementation of a trading program, although possible, would take considerable time and effort possibly delaying implementation of the TMDL.”

In addition to reducing total phosphorus from the POTWs to meet the low flow in-stream phosphorus target, substantial reduction in phosphorus from stormwater sources are needed to address eutrophication issues in the lower Charles River and in impoundments throughout the watershed. As an example, for a town that needs to reduce its annual stormwater phosphorus load by approximately 57% implementing a trade between stormwater and wastewater would mean that a town would need to reduce their phosphorus load by more than 57%. Offsetting the POTW load with stormwater reductions would further delay the POTW reductions particularly when the reductions from stormwater have very little to do with achieving the in-stream total phosphorus target used in developing the wasteload allocations for the POTWs. Finally, the 52% reduction is also needed to meet the chlorophyll a target in the lower Charles River and to reduce seasonal chlorophyll a levels in the numerous eutrophic impoundments along the mainstem of the Charles River.

For all these reasons, EPA has determined that including language in the Permit to accommodate the transfer of “excess” phosphorus reductions to member Towns would not be justified as EPA disagrees with the premise that the limit is overly stringent; given the status of trading program development, or lack thereof, it would also be premature.

**Comment #26:** Phosphorus Significant Figures - Page 3 of 15 of the Draft Permit: The current phosphorus limit contains two significant digits. The existing permit had one significant digit for the phosphorus permit limit (0.2 mg/L) and the District would like the new limits to also have one significant digit (0.1 and 0.3 mg/L)

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<sup>13</sup> Actual flow data from 1998 -2002 was used in the HSPF model for the river.

**Response to Comment #26:** The total phosphorus limits in the Final Permit are 0.10 mg/l (100 ug/l) for the months of April through October and 0.30 mg/l (300 ug/l) from November through March for demonstrating compliance with the Permit; the zero at the end of each number is significant. The Agencies did not intend for the total phosphorus concentration in the effluent to exceed these limits as these limits are consistent with the Upper Charles River TMDL.

When the current permit was issued as discussed in the Fact Sheet for that permit, the phosphorus limit was based on the State's highest and best practical treatment provision which is technology based. See response to comments # 3A and # 3B.

A total phosphorus monthly average concentration of 0.24 mg/l, could be reported on the DMR as 0.2 mg/l and be considered to meet the permit limit. The total phosphorus limits in the Final Permit are set to two significant digits to eliminate any misperception that a monthly average limit of 0.14 mg/l that is recorded on the DMR as 0.1 mg/l is achieving the permit limit. Additionally, use of two significant digits is prudent from the standpoint of restoring water quality; in light of the impaired condition of the water body, EPA believes it is reasonable to opt for an approach that reduces rather than increases the amount of phosphorus loading into the receiving water. This decision is, furthermore, consistent with the Region's conservative approach to permitting nutrient discharges, which is explicated more fully above. The permittee should therefore report total phosphorus on the monthly DMR to 2 significant decimal places.

**Comment #27:** Aquatic Toxicity - Page 5 of 15 of the Draft Permit: Part I.A.1. (footnote 8) states that "if the results of any acute or chronic tests fail to comply with the LC<sub>50</sub> and Chronic NOEC limits, the permittee must perform an additional test on an effluent sample obtained within fourteen days of the date on which the failed test sample was collected." The District typically does not receive the results of the testing within 14 days and thus cannot resample within that time period if one or more of the tests result in a noncompliance. The District requests that the Draft Permit state that the District has 14 days after receiving the laboratory results to perform the retest.

**Response to Comment #27:** The District had an opportunity to make this comment during the original public comment period in July 2008, but did not. EPA and MassDEP partially reopened the Draft Permit for public comment on August 29, 2012 only with respect to certain limited conditions. See the Fact Sheet for the partially revised Draft Permit for the specific conditions that caused the Draft Permit to be reopened and in accordance with 40 C.F.R. § 124.14(c), comments during the reopened comment period were limited to "substantial new questions that caused its reopening" only. This comment is beyond the scope of comments EPA requested during the public comment period.

**Comment #28:** Toxic Controls – Page 7 of 15 of the Draft Permit: Part I.A.4.b states that "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." The District requests the elimination of the phrase "may be promulgated" because the District does not believe that it should be held to those standards that are not yet in effect. The

District does agree with the next sentence that “upon promulgation of any such standard, this permit may be revised or amended...”

**Response to Comment #28:** See response to comment #27.

**Comment #29:** Streamlining Changes - Page 11 of 15 of the Draft Permit. Part I. F.6 requires the District to submit all required modifications to the Streamlining Rule. The District has already made these changes, submitted them to the EPA, and adopted them in September of 2010. The District would like this paragraph and the requirements removed from the Draft Permit.

**Response to Comment #29:** The Streamlining Rule pertains to requirements for the Pretreatment Program and are beyond the scope of comments being addressed for this public comment period.

**Comment #30:** NetDMR - Page 13 of 15 of the Draft Permit. Part I.I.1.a requires the District, within one year of the effective date of the Draft Permit, to submit the DMR reports electronically to the EPA. The District already reports the DMRs electronically to the EPA and would like the paragraph to be eliminated from the Draft Permit.

**Response to Comment #30:** See response to comment # 27.

**Comment #31:** Legend in Figure 2 – Attachment 1 Exhibit B.II. Figure 2: The legend should read nonexcessive I/I flow instead of nonexcessive infiltration flow.

**Response to Comment #31:** EPA is exercising its discretion to consider this non-substantive comment. The legend to Figure 2 has been changed to read nonexcessive I/I flow to correct this typographical error.

**Comment #32:** Disinfection Upgrade Time Period - Attachment 3, Page 1: The off-season for disinfection is December – February, not November – April. This should be changed to reflect the actual off-season period.

**Response to Comment #32:** EPA is exercising its discretion to consider this non-substantive comment. EPA does not change language in a fact sheet however, the correction is noted here for the administrative record.

**Comment #33:** Phosphorus Interim Limits in Fact Sheet – Partially Revised Fact Sheet Page 4 of 8: The fact sheet incorrectly states that “these are the total phosphorus limits in the existing permits.” The District would like to correct this to say that the existing winter limit is report only.

**Response to Comment #33:** The fact sheet briefly sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the partially revised Draft Permit and is not changed once it is issued. The fact sheet incorrectly states that the total phosphorus limit in the existing permit is 1.0 mg/l. The

existing permit as noted by the commenter is a “report only” requirement. The correction is noted for the record.

**Comments submitted on behalf of the Towns of Bellingham, Franklin, Medway and Millis from Robert D. Cox, Jr. Bowditch & Dewey, on September 27, 2012.**

**Comment #34: Satellite Collection Systems are not “Point Sources”**

Missing from EPA’s Analysis is any acknowledgement of or reference to the operative terms of the CWA that trigger NPDES permitting: “discharge of any pollutant by any person” from a point source. CWA § 301(a). It is the act of discharging a pollutant from a point source that gives rise to NPDES permitting. The ownership of a collection system, as part of a greater POTW, does not require a NPDES permit under the CWA. The Towns’ collection systems have no point source. Nor do the Towns own, operate or control any point source. Instead, the Towns send waste water to a separately owned treatment plant for treatment and discharge at a point source. CRPCD, not any Town, is a person who discharges from a point source. Consequently, the reach of EPA’s authority to regulate “dischargers” is limited to CRPCD.

**Response to Comment #34:** The Towns’ objection relies on an overly narrow interpretation of “point source” that would restrict Region 1’s permitting authority only to Outfall 001. However, a point source is “*any* discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit...” 40 C.F.R § 122.2. “The definition of a point source is to be broadly interpreted.” *See Dague v. City of Burlington*, 935 F.2d 1343, 1354 (2d. Cir. 1991) (*rev’d on other grounds, see City of Burlington v. Dague*, 505 U.S. 557 (1992)). The pipes and other conveyances comprising the satellite collection systems operated by the Towns fall within this broad definition of point source,<sup>14</sup> and the satellite collection systems that comprise a portion of the POTW discharge pollutants into the waters of the United States.<sup>15</sup> Under EPA’s regulations, a POTW “means a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act).” 40 C.F.R. § 403.3(q).

The Towns may be subjected to NPDES permitting requirements because they operate portions of the POTW that discharge to U.S. waters. Section 212(2)(A) of the Act defines treatment works to mean, *inter alia*, “intercepting sewers, outfall sewers, sewage collection systems, pumping, power and other equipment, and their appurtenances.” POTW also “includes *any* devices and systems used in the *storage*, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW

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<sup>14</sup> See 40 C.F.R. § 403.3(q) (“POTW . . . includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant[.]”).

<sup>15</sup> *United States v. City of Monominee*, 727 F. Supp. 1110, 1114 (W.D. Mich. 1989) (“The CWA recognizes two classes of direct dischargers: publicly owned treatment works (POTW), and point sources other than POTW’s”).

Treatment Plant.” 40 C.F.R. § 403.3(q) (emphasis added). Courts have upheld this broad interpretation of POTW:

Section 1292 . . . gives a broad definition to the term ‘treatment works’ to include various appurtenances to a municipal sewage treatment plant . . . the EPA has defined the term ‘publicly-owned treatment works’ consistently with the statute. Specifically, the term ‘means a treatment works as defined by section 212 of the Act, which is owned by a state or municipality. . . .’ That definition goes on to provide that the term ‘includes sewers, pipes and other conveyances only if they convey waste water to a POTW treatment plant,’ . . . Here, for example, the City of Burlington’s sewer is included in the definition because it conveys waste water to the Massachusetts Water Resource Authority’s treatment works.

*United States v. Borowski*, 977 F.2d 27, 30 n.5 (Oct. 7, 1992). The fact that the pollutants discharged pass through further portions of the POTW operated by others is immaterial to the status of the satellite collection facilities as point sources. *See Id.* at 1354-55; *infra* Response #35; Analysis at 11. Dischargers do not need to own, operate or control the actual discharge point (outfall) to be subject to Clean Water Act jurisdiction. EPA has authority to require permits even when the discharge goes through a conveyance owned or operated by another discharger. *See, e.g.*, 40 C.F.R. § 122.44(m) (contributors to privately owned treatment works) and 122.26(a)(4)–(6)(stormwater associated with industrial activity that is discharged through a municipal or non-municipal separate storm sewers). Therefore, the Towns may be regulated as co-permittees because the satellite collection facilities constitute point sources that discharge pollutants under the CWA.<sup>16</sup>

### **Comment #35: Satellite Collection Systems do not “Discharge”**

The CWA at Section 301(a) provides that “except in compliance [with a NPDES Permit] the discharge of any pollutant by any person shall be unlawful.” The term “discharge of a pollutant” means “any addition of any pollutant to navigable waters from any point source.” CWA § 502(12). The CWA authorizes EPA to “issue a permit for the discharge of any pollutant.” CWA § 402(a)(1). Thus, under the CWA it is only those persons who discharge a pollutant from any point source to navigable waters who are subject to NPDES permitting requirements. CWA § 502(14) (defining point source as “any discernable, confined and discreet conveyance . . . from which pollutants are . . . discharged”).

EPA incorrectly states that the “NPDES regulations . . . identify the ‘POTW’ as *the entity subject to regulation*,” citing to 40 CFR § 122.21(a). Analysis, p. 8. The “entity” subject

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<sup>16</sup> This has been EPA’s consistent position, applied in contexts other than co-permitting, *see, e.g.*, *EPA 2008 Construction General Permit*, and is essential to the effectiveness of the Clean Water Act. If dischargers were able to sidestep the requirements of the CWA by virtue of, for instance, transferring ownership of the outfall to another entity, the CWA would be rendered ineffective. Indeed under the argument presented in the comment, it does not matter whether the co-permitted town’s sewage even receives treatment – they would be outside CWA jurisdiction so long as they do not own the last section of pipe where the raw sewage entered the water body.

to regulation is the “*person* who discharges or proposes to discharge.” 40 CFR §122.21(a)(1). Such persons are required to make application for a permit and “[a]pplicants for new or existing POTWs must submit information required” by 40 CFR §122.21(j), using Form 2A. 40 CFR §122.21(a)(2)(B).

While the definition of “discharge of a pollutant” includes discharges that do *not* lead to treatment works, see 40 CFR 122.2. (emphasis supplied), EPA states at footnote 12 of the Analysis that it is erroneous to argue the converse: that pollutants to waters of the United States via pipes *to a* treatment plant are not a “discharge of a pollutant.” In support of this position, EPA says that there is “[o]nly one category of such discharges excluded: indirect discharges.” While it is true that the definition of “discharge of a pollutant” at 40 CFR 122.2 excludes pollutants from “indirect discharges,” that does not mean that only “indirect dischargers” fall outside the scope of “discharge of a pollutant” or that an interpretation of the definition of “discharge of a pollutant” which excludes waste water from separately owned collection systems is not reasonable in light of the definition of other terms, described above, that require permitting from point sources. The use of the term “treatment works” as it appears in the regulatory definition of “discharge of a pollutant” does not preclude this rational interpretation.

EPA seeks to conflate the term “discharge” used in “discharge of a pollutant” with the “transfer of flow” or “conveyance” from a municipal conveyance system to the POTW treatment plant or works that has a point source “from which pollutants are discharged.” The word “discharge” is a defined term: “When used without qualification [it] means the ‘discharge of a pollutant.’” 40 C.F.R. 122.2. There is no “discharge from a municipal conveyance system. And in this case there is but discharge point from a POTW. See draft permit Part I. A. I. and B. It is that point source “from which pollutants are discharged” that triggers NPDES permitting and only those persons who own or operate that point source are subject to such permitting. That point source is not owned by the Towns. In short, the jurisdictional reach under the CWA does not include persons, such as the Towns that own, operate and maintain sewer lines that provide a conveyance for waste waters for treatment and discharge by another person from its point source.

**Response to Comment #35:** The Towns are “persons” who “discharge” within the meaning of the Act and implementing regulations because they own or operate portions of the POTW and add pollutants to the waters of the United States. As discussed *supra* at Response #34, the satellite collection systems constitute portions of a point source (the POTW) that discharges to U.S. waters; this interpretation is consistent with the definitions of “point source,” “treatment works,” “POTW” and “discharge” in the CWA and its regulations.<sup>17</sup> The Towns argue that they merely “provide a conveyance for waste waters for treatment and discharge by another person from its point source.” According to the Towns, only the POTW Treatment Plant, and not other portions of the integrated treatment works, discharges pollutants from a point source. However, this claim relies on an overly narrow definition of point source that would exclude large portions of the

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<sup>17</sup> The Towns plainly fall within the definition of “municipality,” as public bodies with jurisdiction over disposal of sewage and other wastes, and as such also fall within the express definition of “person,” under 40 C.F.R. § 122.2.

POTW without any principled basis, as well as an overly restrictive definition of discharge. The Towns' collection and "conveyance" via connecting pipes and sewers of "waste waters" from one portion of the treatment works (the collection system) to another (the POTW Treatment Plant) before its ultimate discharge into the Charles River is an addition of a pollutant or combination of pollutants to water of the US from a point source. See 40 C.F.R. § 122.2 (defining "Discharge" and "Discharge of a pollutant"); *Id.* at 403.3(r) (defining the POTW treatment plant as a subset of the POTW). See *supra* at Response #34.

Under the Act, a party does not cease to discharge pollutants merely because the pollutants pass through a third-party conveyance before reaching the waters of the United States. See, e.g., *Dague* 935 F.2d at 1355 (holding that leachate from a landfill constituted a discharge from a pollutant even though it passed through railroad culvert owned by a third party to reach the waters of the United States); *Puerto Rico Campers' Association v. Puerto Rico Aqueduct and Sewer Authority*, 219 F. Supp. 2d 201, 217 (D. Puerto Rico 2002) (holding that conveyance of pollutants from one waste water treatment plant to another constituted a "discharge" under the CWA); *United States v. Velsicol Chemical Corp.*, 483 F. Supp. 945, 947 (D.C. Tenn. 1976) (holding that discharges into a municipal sewer system are covered under the CWA because "[d]efendant knows or should have known that the city sewers lead directly into the Mississippi River and this is sufficient to satisfy the requirements of discharging into 'water of the United States,')." See generally *Pepperell Assocs. v. United States EPA*, 246 F.3d 15 (1st Cir. 2001) (factory owner fined for oil that spilled from a boiler gasket, into an industrial drain, through a conduit, and eventually into a creek). EPA thus rejects the Towns' attempt to impose an arbitrary limitation on the reach of the Act and NPDES permitting, *i.e.*, that the permitted entity must own the actual outfall pipe. The municipal satellite collection systems are themselves operators of point sources that discharge pollutants to U.S. waters, even if their contribution to the combination of pollutants in the final discharge from the outfall at the POTW treatment plant operated by the District cannot be easily distinguished.

Region 1 retains the option to treat a POTW comprised of a treatment plant and municipal satellite collection systems as a single, integrated discharger and imposes protective permit conditions on the several operators of satellite collection facilities, as appropriate to assure compliance with the Act, including but not limited through the prevention or minimization of SSOs, as explained more fully in the Analysis. The Region's decision to condition the permit for the discharge in this manner falls within its authority under the Act and implementing regulations. See CWA §§ 402(a)(2) ("The Administrator shall prescribe conditions for such permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate."); 301(b)(1)(C) (requiring "any more stringent limitation, including those necessary to meet water quality standards ...or required to implement any applicable water quality standard established pursuant to this Act"); 40 C.F.R. §§ 122.4(a) (no permit may be issued, "When the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under CWA");

122.43 (“In addition to conditions required in all permits (122.41 and 122.42), the Director shall establish conditions, as required on a case by case basis, to provide for and assure compliance with all applicable requirements of the CWA and regulations.”); 122.44(d)(5) (requiring inclusion of “any more stringent limitations...in accordance with section 301(b)(1)(C) of the Act.”)<sup>18</sup>

The Towns’ comment appears to imply that they should be treated as indirect dischargers. However, an indirect discharge is “the introduction of pollutants into a POTW from any *non-domestic* source” that is regulated by EPA’s pretreatment regulations. 40 C.F.R. § 403.3(i). Non-domestic discharges are regulated separately because “Congress recognized that the pollutants which some indirect dischargers release into POTWs could interfere with the operation of the POTWs.” *Environmental Protection Agency v. City of Green Forest*, 921 F.2d 1394, 1398 (8th Cir. 1990). Because of this, indirect dischargers are subject to separate pretreatment standards in order to avoid interfering with the operation of POTWs. *See Natural Resources Defense Council, Inc. v. Environmental Protection Agency*, 790 F.2d 289, 293 (Apr. 30, 1986). This exception cannot reasonably be construed to include the Towns because they discharge domestic sewage and would not be subject to the pretreatment program.

**Comment #36: The Towns are not Operators of the POTW**

The Region’s rationale for seeking to impose co-permittee requirements upon the Towns is not consistent with the references to “municipality” in the definition of POTW found at 40 C.F.R. § 403.3(q), and the definition’s statement that “[t]he term also means the municipality which has jurisdiction over the Indirect discharges to and the discharges from such a treatment works.” The final sentence of the regulatory definition of POTW in the pretreatment Regulations from such a treatment works. “The term municipality” as defined in CWA § 502(4) “means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to state law and having *jurisdiction over disposal of sewage, industrial wastes, or other wastes . . .*” (emphasis supplied). The Towns have jurisdiction over only their collection systems. They have no jurisdiction over the treatment plant or point source of discharge. Thus, the Region’s view that a satellite collection system is part of a POTW is inconsistent with the final sentence of the regulatory definition of POTW in the pretreatment regulations. That that sentence provides that “POTW” may “also” mean a municipality has no bearing on this limitation.

**Response to Comment #36:** Here the Towns rely on an overly restrictive interpretation of POTW. As stated *supra* at Response #34, these collection systems are point sources and constitute a portion of the POTW. Therefore, the Towns meet the CWA’s definition

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<sup>18</sup> This approach is analogous to EPA practice with respect to stormwater permits where multiple entities are treated as co-permittees when operating different portions of a storm sewer system. *See* National Pollutant Discharge Elimination system Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990, 48,044 (Nov. 16, 1990).

of municipality because they have jurisdiction over a portion of the system for disposal of sewage.<sup>19</sup> *See also* Analysis at 12-13.<sup>20</sup>

The Region, in addition, does not interpret the word “also” to be a statement of limitation or exclusion.<sup>21</sup> It is immaterial to the question at hand that the Towns have no jurisdiction over the POTW treatment plant if they fall within other portions of the definition of POTW; as one example, the POTW “includes sewers, pipes and other conveyances . . . if they convey wastewater to a POTW Treatment Plant.” 40 C.F.R. § 403.3(q). As another, the Towns agree that they operate their own collection systems, which expressly fall within the definition of “treatment works,” *see* CWA § 212(2)(A), and are moreover encompassed by CWA § 212(2)(B) (“any other method or system for preventing, abating reducing, storing . . . separating, or disposing of municipal waste”).

**Comment #37: The Towns have no duty to apply for NPDES permits**

The absence of EPA authority to make the Towns co-permittees is borne out by the permitting process and EPA’s regulations at 40 CFR § 122.21, Subpart B, Permit Application Requirements. 40 CFR § 122.21(a), entitled “*Duty to Apply*,” provides that “[a]ny person who discharges or proposes to discharge pollutants . . . must submit a complete application . . . in accordance with the section [122.21] and part 124 of this chapter.” 40 CFR § 122.21(a)(i). (Emphasis supplied). Consistent with the CWA, EPA

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<sup>19</sup> “Disposal of sewage” is not limited to final discharge from of the Treatment Plant outfall. “Disposal” is defined as the “the act or process of disposing” and an “orderly placement or distribution.” *Webster’s Ninth New Collegiate Dictionary* (1983). The Towns’ collection system, or “the common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive waste waters directly from facilities which convey waste water from individual structures or from private property,” *see* 40 C.F.R. § 35.905, clearly fall within this definition. They are part of method, process or system designed to receive sewage (“orderly placement”) and convey it (“distribution”) to the Treatment Plant.

<sup>20</sup> The Region’s co-permitting rationale is consistent with the first part of the pretreatment program’s regulatory definition of POTW, because the Region is only asserting NPDES jurisdiction over satellite collection systems that are owned by a “State or municipality (as defined by section 502(4) of the Act).” Again, the term “municipality” as defined in CWA § 502(4) “means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes...” Thus, in order to qualify under this definition, a wastewater collection system need only be “owned by a State or municipality.” There is no requirement that the constituent components of a regionally integrated POTW, *i.e.*, the collection system and regional centralized POTW treatment plant, be owned by the same State or municipal entity. EPA does not believe that the commenter intends to argue that the copermitttee Towns are not “municipalities” within the meaning of CWA § 502(4). To the extent that is the commenter’s argument, it is not reasonable to suggest that Towns with sewer commissions and sewer departments running sewage collection systems under local sewer bylaws somehow do not have “jurisdiction over disposal of sewage” simply because they do not own the outfall. This is consistent with EPA’s interpretation of the term “municipality” in other CWA contexts; for example, “grants for the construction of treatment works” under CWA § 201(g)(1) were available only to a “State, municipality, or intermunicipal or interstate agency.”

<sup>21</sup> This sentence ensures that the municipality that owns the outfall, or has jurisdiction over the indirect discharges, shall be considered within the definition of POTW even if it is not responsible for the “devices and systems . . . or . . . sewers, pipes and other conveyances” referenced in the rest of the definition. This is the clear meaning of the word “also” (contrast this with the “only if” language in the preceding sentence of the regulatory definition), and the comment’s argument that the use of the word also “has no bearing” is unpersuasive.

regulations require *persons* “who discharge pollutants” to have a NPDES Permit. See CWA § 301(a)(“except in compliance with this section and [other sections] of this title, the discharge of any pollutant by any person shall be unlawful”), and CWA § 402(a)(authorizing EPA to issue a permit “for the discharge of any pollutant”). Throughout, the permit application regulations at 40 CFR § 122.21 contemplate that it is the “person” who discharges pollutants who must obtain a NPDES permit. No where [sic] in 40 CFR §122.21 is there any reference to “co-permittee” or any suggestion that separately owned and operated conveyance systems are subject to NPDES permitting. Consistent with CWA, it is the person who discharges a pollutant from a point source who is subject to NPDES permitting requirements[.]

While 40 CFR § 122.21(a)(1) requires an application only from those persons who discharge from a point source, the regulations anticipate circumstance when a facility may be owned or operated by separate entities. The permit application regulations provide that “[w]hen a facility or activity is owned by one person but is operated by another person, it is the operator’s duty to obtain a permit.” 40 CFR § 122.21(b). Thus, it is operator [sic] of the “point source” that must have the permit. “Owner or operator” means “the owner or operator of any “facility or activity” subject to regulation under the NPDES program.” 40 CFR § 122.2. “Facility or activity” means “*any NPDES ‘point source’* or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.” 40 CFR § 122.2. (emphasis supplied).

Nothing in 40 CFR § 122.21 requires or suggests that “satellite collection systems” need to make application [sic] for a NPDES permit. While the regulations contemplate that “[m]ore than one application form may be required from a facility,” multiple applications are only required where there may be multiple point sources, not multiple owned parts of a POTW. See, 40 CFR § 122.21(a)(2)(i) (“More than one application form may be required from a facility depending on the number and types of discharges or outfalls found there.”). Again, the regulations require persons who discharge from point sources to have the NPDES permit.

**Response to Comment #37:** The Towns are owners and operators of the collection systems, which as portions of the POTW are facilities or activities subject to regulation under the NPDES program within the meaning of 40 CFR § 122.2. As municipalities (*i.e.*, public bodies with jurisdiction over disposal of sewage and other wastes), they are also “persons” within the meaning of that regulation. The Region’s decision to impose NPDES conditions on these point source dischargers relies on statutory authorities underlying the NPDES permitting program—Section 301(b)(1)(C), 402(a)(1)-(2) and implementing NPDES regulations, *e.g.*, §§ 122.4, .44 and .43—and is in keeping with overall objectives of the Act to restore and maintain the integrity of the Nation’s waters, including through the prevention and minimization of SSOs. EPA does not view the lack of any explicit reference to “co-permittees” or similar label in 40 C.F.R. § 122.21, or to “satellite collection systems,” to preclude it from framing an NPDES permit based on these authorities to encompass owners and operators of portions of the POTW that are “up system” of the ultimate outfall point but that nevertheless are point sources that add

pollutants to U.S. waters.<sup>22</sup> It is sufficient that the Act and implementing regulations make reference to discharges of pollutants from point sources to U.S. waters, terms that encompass discharges from the POTW's collection systems. Accordingly, the permit application requirements are not dispositive of the question of whether the Region is legally authorized to impose NPDES permit requirements on portions of the treatment works beyond the POTW treatment plant.

Federal regulations implementing the NPDES program require that any person who discharges pollutants must submit a complete permit application to the NPDES permitting Director. Specifically, 40 C.F.R. § 122.21(a) applies to the Towns because they are a point source dischargers discharging pollutants through portions of the POTW operated by them. *See supra* at Response #34, Response #35. The Towns claim that "multiple applications are only required where there may be multiple point sources. However, regulations only state that "[m]ore than one application form may be required from a facility depending on the number and types of discharges or outfalls found there;" there is nothing to indicate that EPA is barred from issuing a permit that covers each of the several operators of an regionally integrated POTW, where the combined discharge flows through a single outfall. *See* 40 C.F.R. § 122.21(a)(2)(i).

EPA regulations do not specifically address how NPDES permit coverage is to be obtained by satellite collection system components of POTWs. As explained in the Analysis, ordinarily the treatment plant operator applies for the POTW's NPDES permit, and discharges from the POTW, including those from the collection systems operated by others, are covered by the permit issued to the treatment plant. Satellite collection system operators have generally not submitted separate permit applications for coverage under the POTW permit, because the treatment plant operator generally submits the information necessary for the permit writer to write terms and conditions in the permit applicable to all components of the POTW on the basis of the treatment plant's application. Whether or not to require additional information from a satellite collection system by way of an application is separate and apart from whether the collection system should be named as a co-permittee on the POTW permit. Both are case-by-case decisions, one based on the information available to the permit writer; the second based on whether the permit writer determines that specifying co-permittees on the POTW permit is necessary for all terms and conditions of the permit to be implemented. Here, with respect to information, the Region determined that there was no need for any information from the satellite systems because it anticipated receiving substantially identical information from the District as it would from the Towns. *See* Exhibit C at 26. As a separate matter, the Region determined that naming the Towns as co-permittees was necessary for implementation of the POTW permit.<sup>23</sup>

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<sup>22</sup> The fact that standard forms do not precisely address the specific circumstances of one type of potential permittee is not indicative of the scope of CWA requirements, particularly where EPA has indicated its intent not to require separate permit applications from satellite collection systems. EPA notes that specifically tailored applications are not provided for other small subsets of facilities that do not have treatment plants, for example, the CSO discharges from the Cities of Cambridge, Somerville and Worcester.

<sup>23</sup> This comment as a whole reflects a flawed understanding of the Act. The commenter uses the permit application requirements as the basis for deeming satellite collection systems point source dischargers. The

Similarly, 40 C.F.R. § 122.21(b) has no bearing on whether satellite collection systems are subject to NPDES permitting requirements. That provision specifically addresses “a facility or activity [that] is owned by one person but is operated by another person.” *Id.* Here, the District does not own *or* operate the satellite collection systems. Instead, like the satellite communities, the District operates a component of the POTW. Contrary to the commenter’s assertion, as operators of components of the POTW, the satellite collection systems—as well as the District—are “a facility or activity” subject to NPDES permitting requirements.

This approach is similar to the approach applicable to contributors to privately owned treatment works. *See* 40 C.F.R. §122.3 and §122.44(m). As with outlying jurisdictions contributing to a POTW, the NPDES regulations do not describe the process by which the contributors to the privately owned treatment works must apply for a permit or how to issue a permit to the treatment works if contributors do not apply.<sup>24</sup> Nothing in EPA regulations bars EPA from issuing a permit or requiring application information from more than one owner or operator of a point source. For example, in the case of the general permit that covers discharges of stormwater from certain construction sites, EPA requires both the owner and the operator of the site to be covered by the permit. While this situation is not expressly addressed in the regulation, EPA determined that both the operator and owner needed permit coverage to control discharges from construction sites where different entities have control over different aspects of the operations necessary to comply with the NPDES permit.

The Towns have had an opportunity to express their views during the public comment process on whether they should be co-permittees on this permit. EPA has not changed its conclusion that permit coverage is necessary in order to implement the NPDES permit requirements related to the collection system and ultimately to achieve the effluent limitations applicable to the integrated POTW system. *See* response to comments #2 and #4.

**Comment #38: The Region’s Approach is inconsistent with Form 2A**

Nowhere in Application Form 2A is there any reference to a “co-permittee” or suggestion that a person may make application, with a treatment works applicant, as co-permittee. *See* <http://www.epa.gov/npdes/pubs/final2a.pdf>. At page 1 of 21 of Form 2A, applicants “must complete questions A.8. [sic] through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9. through A.12.” Part A.1 through A.8. of Form 2A asks for information about the facility and applicant, and asks “is the applicant the owner or operator (or both) of the treatment works?” (A.1., A.2.). Form 2A asks for collection system information; specifically,

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satellite collection systems are subject to permit application requirements because they are point source dischargers, not vice versa.

<sup>24</sup> But the regulations are clear that, as a point source that is discharging through a treatment system that they do not own or operate, the contributor’s discharge may be addressed either in a permit issued to the Privately Owned Treatment System or in a permit issued to the contributor.

“information on municipalities and areas served by the facility . . . type of collection system (combined vs. separate) and its ownership (municipal, private, etc.)” (A.4.). Form 2A asks for information about the “collection system(s) used by the treatment plant.” (A.7.). If the NPDES regulations contemplated permitting of collection systems, one would expect to see in each of these parts of the NPDES Application Form 2A some reference to the owners or operators of collection systems as “co-permittees.” There is none. Form 2A also requires information on discharges. At Part A.8.a., Form 2A asks “Does the treatment works discharge effluent to waters of the U.S.?  Yes  No.” Form 2A obviously contemplates “discharges” from a “treatment works,” not a POTW. Finally, at Part A. 1.8.a.(i)-(v), Form 2A seeks information on the “types of discharge points the treatment works uses.” No “collection system” or “satellite collection system” is listed here. This should be no surprise; collection systems and satellite collection systems do not have “discharge points” under the NPDES regulations.

**Response to Comment #38:** The Towns’ comment here erroneously presumes that Form 2A defines the scope of EPA’s authority to require an operator of a point source to submit information and determines all situations for which a permit is necessary. The Towns’ comments 39 and 40 further elaborate on this same theme. Form 2A is intended for gathering the requisite information, on a routine basis, in order to effectively issue NPDES permits; it is not designed to determine the scope of the NPDES program or to limit the information EPA is authorized to collect. *See* NPDES Application Requirements for POTWs and other TWTDSs [Other Treatment Works Treating Domestic Sewage], 64 Fed. Reg 42,434, 42,434 (Aug. 4, 1999) (“EPA is revising these regulations to ensure that permitting authorities obtain the information necessary to issue permits which protect the environment in the most efficient manner,”). As noted in response to the previous comment, requiring a satellite collection system to be a co-permittee is not the routine or usual situation. Therefore, the Towns’ reliance on Form 2A to define the scope of Region 1’s authority in implementing the NPDES program is misplaced.

The Towns claim Form 2A “obviously contemplates ‘discharges’ from a ‘treatment [plant],’ not a POTW.” This is unpersuasive. Form 2A requires information on the collection system beyond the POTW treatment plant. *See* Form 2A at A.4, A.7. This implies that a permitting interest more extensive than merely the POTW treatment plant. Furthermore, the regulations creating Form 2A state that it is applicable to POTWs instead of using the more restrictive term “POTW treatment plant.” NPDES Application Requirements for POTWs and other TWTDSs, 64 Fed. Reg. at 42,434; *see also* 40 C.F.R. 403.3(r) (“[t]he term POTW Treatment Plant means that portion of the POTW which is designed to provide treatment,”).<sup>25</sup>

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<sup>25</sup> *See also* NPDES Application Requirements for POTWs and other TWTDSs, 64 Fed. Reg. at 42,443:

“The permit writer needs to know what areas are served and the actual population served in order to calculate the potential domestic sewage loading to the treatment plant. The information on the community served by the NPDES permittee is also useful for providing notice and public comment for permit reissuance and for public education. One commenter requested clarification of the term “population served.” By this term, EPA means the number of users of the system. EPA has expanded this requirement from the proposal in order to obtain a more complete picture of the area served by the POTW. The

The Towns next claim that the failure of Form 2A to discuss the potential status of satellite collection systems as co-permittees implies that the NPDES program is not intended to cover satellite collection systems as co-permittees. Again, Form 2A is not intended to define the scope of the NPDES permitting program, or to deal with all possible permitting variations or configurations that may be necessitated by site-specific information or circumstances relative to a discharge in order to address compliance with the Act. Here, the Region has determined that it is important to frame the permit to include requirements on the POTW's collection systems in order to address, *inter alia*, SSOs resulting in part from poorly maintained and operated collection systems and in so doing to assure compliance with the requirements of Section 301 of the Act and applicable water quality standards.

The Towns finally claim that Form 2A's inquiries into the discharge points of a POTW treatment plant imply that it is not intended to cover operators of satellite collection facilities as co-permittees. Such an inference is misplaced. Form 2A requires information regarding many portions of the POTW including both the treatment plant and the satellite collection facilities.

**Comment #39: EPA may not waive application requirements without an application**

In its Analysis, EPA would "waive the Towns' permit applications and all requirements of 40 CFR § 122.21. In its effort to justify including the Towns as co-permittees, EPA both misapplies and takes 40 CFR § 122.21(j) entirely out of context. First, waivers can only be granted to those persons who have submitted applications. The Towns have neither applied for nor seek any NPDES permit. § 122.21(j) provides that:

Permit applicants *must submit* all information available at the time of permit application. . . . The director may waive any requirement *of this paragraph* if he or she has access to substantially identical information. (emphasis supplied).

40 CFR § 122.21(j) does not support the EPA's proposed waiver of any applications by the Towns; it allows only for the waiver of certain information in a permit application submitted by the applicant.

**Response to Comment #39:** The Region has not waived the application requirement relative to the POTW in its entirety (a facility or activity, or "point source" that is subject to regulation under the NPDES program") under 40 C.F.R. § 122.21, from which the combined effluent from the treatment works is discharged, only as to the operators of the satellite collection systems. The Region still required and received an application for the POTW discharge by the District. Receiving a single application from the operator of a

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additional information on the satellite systems will be used by the permit writer to identify areas where there is a potential for unpermitted discharges in the collection system prior to the treatment plant. The identified areas may necessitate further investigation."

portion of the discharging POTW is a reasonable way to structure the permit application process, particularly in the case of a regionally integrated treatment works where there is a centralized administrative entity responsible for operating the POTW Treatment Plant and coordinating wastewater flows from the multiple satellite collection system operators. The Region has determined that “requiring a single permit application executed by the regional POTW treatment plant owner/operator will deliver ‘substantially identical information’” to any application submitted by the Towns. Exhibit C at 26. Therefore, Region 1 decided to “waiv[e] NPDES permit application and signatory requirements applicable to the . . . municipal satellite collection systems.” *Id.* These requirements—including signatory requirements—are present at 40 C.F.R. § 122.21(j); therefore, the Region may waive any or all of these requirements as to the municipal satellites. *See* NPDES Application Requirements for POTWs and other TWTDSs, 64 Fed. Reg. at 42440. The purpose of the waiver provision is to “allow the Director to waive *any requirement in paragraph (j)* if the Director has access to substantially identical information.” NPDES Application Requirements for POTWs and other TWTDSs, 64 Fed. Reg. at 42440 (emphasis added). This broad waiver authority is intended to reduce the inefficiency of redundant information submissions by regulated entities. *Id.* at 42,435. The Towns’ interpretation of the waiver process would undermine this goal by requiring that the Region receive either an incomplete or redundant application before stating that the application is unnecessary. See response to comment #40.

**Comment #40: EPA may not unilaterally waive application requirements**

Second, EPA cannot unilaterally waive requirements of an application without a request to do so; the person must seek a waiver and that waiver must be approved by EPA. 40 CFR § 122.21(e) requires a complete [sic] application before EPA may issue a permit “([EPA] shall not issue a permit before receiving a complete application for a permit”), and a “waiver application” must be made, and approved, or not acted upon by EPA 40 CFR § 122.21(e)(2) provides:

A Permit application shall not be considered complete if a permitting authority has waived application requirements under paragraphs (j) or (q) of this section and EPA has disapproved the waiver application. If a waiver request has been submitted to EPA more than 210 days prior to permit expiration and EPA has not disapproved the waiver application 181 days prior to permit expiration, the permit application lacking the information subject to the waiver application shall be considered complete.

The Towns have not only made no applications for any NPDES permit, they have made no application for a waiver from the application requirements. 40 CFR § 122.21(j) says only that the “Director may waive any requirement of this paragraph if he or she has access to substantially identical information.” This provision, in context, is obviously designed to allow waiver of some of the detailed and often duplicate information required under Section 122.21 and in EPA’s permit application forms. As noted above, Form 2A consists of 21 pages and requires detailed information about the “treatment works.” See Form 2A at <http://www.epa.gov/npdes/pubs/final2a.pdf>. Nothing in Section 122.21(j) suggests EPA may waive the requirement for application signatures and certifications and

authorizations required by 40 CFR § 122.22, none of which the Towns have provided. EPA seeks to ignore its own regulations and to issue a permit the Towns who have not applied for and do not consent to being subject to EPA's NPDES permitting authority.

**Response to Comment #40:** “The goal of the application requirements is to provide the permit writer with the information necessary to develop appropriate NPDES permits consistent with requirements of the CWA.” *See* NPDES Application Requirements for POTWs and other TWTDSs, 64 Fed. Reg. at 42440. In this case, a timely re-application for an NPDES permit for the discharge from the POTW has been received, signed and certified by the operator of the POTW Treatment Plant. As the recipient of contributing discharges from outlying portions of the POTW for final, combined discharge into the receiving water as well as the primary coordinator of the member communities, the District is uniquely positioned to provide information regarding the wider treatment works. EPA has the necessary information relative to the POTW's collection system and system-wide I/I from the District's application and the District's Annual I/I Report (a summary of all actions taken to minimize I/I and includes flow data, I/I trend analysis and unauthorized discharges from the collection system) to process the permit.

The Towns claim that Region 1 may only waive permit application requirements after receiving a waiver application from the permit applicant. EPA disagrees, as 40 C.F.R. § 122.22(j) states, “The director may waive *any requirement of this paragraph* if he or she has access to substantially identical information.” The phrase “any requirement of this paragraph” includes the requirement to submit a waiver application in the first place. The Towns further argue that the waiver provisions of section 122.21(j) are “obviously designed to allow waiver of some of the information required” but may not be used to waive the signatory and certification requirements. However, the signatory requirement is intended to certify that the information provided is—to the best of the signatory's knowledge—complete and accurate. 40 C.F.R. § 122.22(d). Such a certification and signature have been received from the operator POTW Treatment Plant. The information receiving certification adequately characterizes data and operations relative the wider treatment works, and EPA has deemed this sufficient to process the permit, and the permit application complete. In the case of permitting municipal satellite collection systems where the Region is not requesting any information from a contributing discharger, the Region has determined that certification and signature of the POTW Treatment Plant operator is sufficient. The signatory and certification requirement serves no purpose if the preceding information has been waived.

As a general matter, EPA does not foresee the need to require individual permit applications from each municipal satellite collection system operator, and anticipates that information in the POTW Treatment Plant operator's permit application and other information in the administrative record will be sufficient to establish permit terms for the entire treatment works. As EPA moves forward with its practice of co-permitting, as appropriate, municipal satellite collection facilities, it will indicate whether it requires additional material from those entities operating the outlying portions of the treatment works to render the permit application “complete” under 40 C.F.R. § 124.3(c) after

receiving and reviewing the re-application for the permit from the primary permittee, typically the operator of the POTW Treatment Plant.

**Comment #41: EPA may not use its § 308 authority.**

EPA would further seek to cause the Towns to “consult and coordinate with the regional POTW treatment plant operators to ensure that any information provided to EPA about their respective entities is accurate and complete.” Exhibit C to Analysis. EPA would then use its authority, under CWA § 308, to compel information from the Towns, should EPA deem information provided by the permit applicant incomplete. CWA § 308, however, applies to “the owner or operator of any point source.” CWA § 308(a) (A). Information may be obtained only from such owner or operator of the “point source,” the “effluent source” or “the owner or operator of such source.” CWA § 308(a)(B)(i) and (ii). Again, because the Towns do not own or operate any point source, CWA § 308 would not apply to them. Under EPA’s Analysis, it would read out of the regulations the entire section 122.21. EPA’s cobbled approach and legal analysis toward finding authority where there is none is not supported by its own regulations.

**Response to Comment #41:** The Towns are operators of a point source because the POTW itself is a point source and the Towns operate portions of that point source. *See* response to comments #34 and #35. Therefore, the Region may use its § 308 authority to request information.

**Comment #42: The Region’s Approach is inconsistent with the Permit Writer’s Manual**

Nothing in EPA’s permit writers’ manual evidences any authority to permit satellite collection systems as part of a greater POTW. Indeed, EPA’s permit writers’ manual make no reference to permitting of satellite collection systems or to the owner of such systems being subject to a NPDES permit as a co-permittee. *See* EPA NPDES Permit Writers’ Manual September 2010 [http://www.epa.gov/npdes/pubs/pwm\\_2010.pdf](http://www.epa.gov/npdes/pubs/pwm_2010.pdf). Instead, the Permit Writers’ manual supports the analysis provided above. It says: Under the national program, *NPDES permits are issued only to direct dischargers.*” Permit Writers’ Manual Section 1.3.4. (emphasis supplied). As noted above, a “direct discharge” means the “discharge of a pollutant” and “discharge of a pollutant” means “any addition of any pollutant to navigable waters from *any point source.*” CWA § 502(12). 40 CFR 122.2.

Section 4.1 of Permit Writers’ Manual addresses “Who Applies for a NPDES Permit?” No mention is made in this section to satellite collection systems or to the owners of such systems. Instead, the Permit Writers’ Manual states:

The NPDES regulations at Title 40 of the Code of Federal Regulations (CFR) 122.21(a) require that any person, except persons covered by general permits under § 122.28, who discharges pollutants or proposes to discharge pollutants to waters of the United States must apply for a permit. Further, § 122.21(e) prohibits the permitting authority from issuing an individual permit until and unless a prospective discharger provided a

complete application. This regulation is broadly inclusive and ties back to the Clean Water Act (CWA) section 301(a) provision that, except as in compliance with the act, "...the discharge of any pollutant by any person shall be unlawful." In most instances, the permit applicant will be the owner (e.g., corporate officer) of the facility. However, the regulations at § 122.21(b) require that when a facility or activity is owned by one person but is operated by another person, it is the operator's duty to obtain a permit. The regulations also require the application to be signed and certified by a high-ranking official of the business or activity. The signatory and certification requirements are at § 122.22. Permits (and applications) are required for most discharges or proposed discharges to waters of the United States; however, NPDES permits are not required for some activities as specified under the *Exclusions* provision in § 122.3.

Section 4.3. of the Permit Writers' Manual addresses what forms must be submitted and at Exhibit 4-3 describes "the types of dischargers required to submit NPDES application forms, identifies the Forms that must be submitted, and reference the corresponding NPDES regulatory citation." Again, in Section 4.3 there is no mention of satellite collection systems or need for the owners of such systems to have a NPDES permit.

**Response to Comment #42:** The Towns' attempt to read the quoted language from the Manual as some sort of limitation on permit coverage, or the extent of EPA's legal authority under Section 301 and 402, is unconvincing. The Permit Writers Manual does not address every permitting scenario. For example, it does not address the procedures by which dischargers into privately owned treatment systems may be designated as needing permits. Nor does it discuss the permitting of industrial discharges into a separately permitted municipal storm system. Moreover, the Permit Writers' Manual (the "Manual") is a guidance and does not contain legally binding standards concerning the issuance of NPDES permits:

CWA provisions and regulations contain legally binding requirements. This document does not substitute for those provisions or regulations. Recommendations in this guidance are not binding; the permitting authority may consider other approaches consistent with the CWA and EPA regulations. When EPA makes a permitting decision, it will make each decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the situation. This guidance incorporates, and does not modify, existing EPA policy and guidance on developing NPDES permits. EPA may change this guidance in the future.

NPDES Permit Writers' Manual, U.S. Environmental Protection Agency at inside cover page (Sept. 2010) (*available at* <http://cfpub.epa.gov/npdes/writermanual.cfm>). Therefore, the discussion of EPA regulations at response to comments #34 and #35 takes precedence

over any inferences drawn from the Manual. Furthermore, the Manual’s discussion of POTWs makes clear that it intends to cover the entirety of the POTW and not merely the treatment plant:

The federal regulations at § 403.3 define a POTW as a treatment works . . . that is owned by a state or municipality [as defined in CWA section 502(4)]. The definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It *also includes sewers, pipes, and other conveyances* only if they convey wastewater to a POTW.

NPDES Permit Writers’ Manual at § 2.3.1. The Permit Writers Manual’s discussion of the definition of “point source” also demonstrates that the term has a broad reach and includes the POTW:

Pollutants can enter water via a variety of pathways including agricultural, domestic and industrial sources. For regulatory purposes, these sources generally are categorized as either point sources or nonpoint sources. The term point source is defined in CWA section 502(14) and § 122.2 to include *any* discernible, confined, and discrete conveyance from which pollutants are or may be discharged. *Point source discharges include discharges from publicly owned treatment works (POTWs), industrial process wastewater discharges, runoff conveyed through a storm sewer system, and discharges from concentrated animal feeding operations (CAFOs), among others (see Exhibit 1-2).* Return flows from irrigated agriculture and agricultural stormwater runoff specifically are excluded from the definition of a point source.

NPDES Permit Writers’ Manual at § 1.3.4 (emphasis added). The preceding passages demonstrate that, to the extent that inferences may be drawn from the Permit Writer’s Manual, any inferences support the Region’s approach.

**Comment #43: The Towns do not Operate the POTW’s Point Source**

EPA’s position that the collection system is part of the POTW does not advance its argument that “satellite collection systems” should be deemed “co-permittees” in NPDES permits. If the collection system is part of the POTW, it should matter not who owns what part or portions as it is the “person” who owns or operates that portion of the POTW that “discharges a pollutant” from a point source who is required to have a permit for that discharge. EPA acknowledges that the Towns do not own or operate the entire POTW. While EPA seeks “to refashion permits issued to regionally integrated POTWs to include all owners/operators of treatment works (*i.e.*, the regional centralized POTW treatment plant and the municipal satellite collection systems),” permit conditions “pertain only to the portions of the POTW collection system that the satellites own.” Analysis, p. 7. See Permit I.1.C. Because the Towns do not own or operate the point source – Outfall 001 – they are not a person who may be subject to a NPDES permit.

**Response to Comment #43:** The Towns here rely on an overly restrictive definition of point source. The point source in question here is not merely Outfall 001, it is the entire POTW. See response to comments #34 and #35.

**Comment #44: The Region's Approach should be subject to national comment**

The Analysis, providing legal authority for the co-permittee provisions of this permit, was prepared by the Region and sets forth the Region's analysis and interpretation of its permitting authority under the NPDES program. As the Region notes, the analysis is responsive to questions raised by the EAB in the *Upper Blackstone* EAB matter. See, Analysis, p. 2 (“[T]his regional interpretative statement is, in part, a response to the [EAB’s] decision”). In its determination on Remand issued on July 7, 2010 in the *Upper Blackstone* EAB matter, the Region indicated it would “coordinate broadly within EPA in developing a response.” Nothing in the Analysis indicates this was done. Because EPA’s authority to permit satellite collection systems impacts not only the Region, but is of national significance, and because the issues raised by the EAB were limited to those raised in the *Upper Blackstone* matter, EPA’s intention to permit satellite collection systems as co-permittees or otherwise through the issuance of a separate permit and EPA’s legal authority to do so should be presented for review and comment on a national level.

In June 2010, EPA did seek through “listening sessions” information from the public concerning permitting of satellite collection systems. See 75 Fed. Reg. 30395 (June 1, 2010) (“EPA is considering whether to propose modifying the [NPDES] regulations as they apply to municipal sanitary waste collection systems”). In contemplating a potential regulatory change, EPA asked specifically for input on the question: *Should EPA propose to require permit coverage for municipal satellite collection systems?* Because EPA was “considering clarification of the framework for regulating municipal satellite collection systems under the NPDES program,” and do so via a regulatory change, the Region should not include at this time, and based on unsupported legal authority outlined above, the Towns as co-permittees in this permit. Until such time as EPA addresses this issue on a national level and gives the public the opportunity review [sic] and comment on the legal Analysis set forth by the Region, it should not include co-permittee provisions in this permit.

**Response to Comment #44:** The Analysis does not signify a binding change in EPA national policy and does not require comment on the national level. First, the Analysis merely interprets existing legal authority; it neither changes nor purports to change EPA’s power with respect to NPDES permitting. See Analysis at 1 (“This interpretative statement provides an explanation to the public of *EPA Region 1’s* interpretation of the Clean Water Act,” (emphasis added)). Second, the Analysis does not establish binding changes to EPA’s permitting practice in the future. The Analysis explicitly provides that “Region 1’s decision will be made by applying the law and regulations to the specific facts” and not by automatically regulating operators of satellite collection systems through the co-permittee system. *Id.* Third, the Analysis is distinguishable from EPA’s previous inquiries into permitting satellite collection facilities. In 2010, EPA inquired into whether it should “propose to *require* permit coverage for municipal satellite

collection systems.” National Pollutant Discharge Elimination System (NPDES) Permit Requirements for Municipal Sanitary Sewer Collection Systems, Municipal Satellite Collection Systems, Sanitary Sewer Overflows, and Peak Wet Weather Discharges From Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems, 75 Fed. Reg. 30, 395, 30,401 (June 1, 2010). The Analysis, however, makes no binding changes to national NPDES regulations. Finally, even if Region 1’s analysis of its legal authority is of national significance, the Towns cite no authority for the proposition that this significance alone should subject Region 1’s analysis to national commentary if such commentary is not required by the Administrative Procedure Act. *See infra* response to comment #47 for discussion of the APA.

The Region coordinated within EPA, including with EPA Headquarters, in developing a response to the remand. EPA did not at any time state that it would defer this issue to a national rulemaking. New England states are unusual nationwide for the strong level of local control exercised by relatively numerous cities and towns (351 in Massachusetts), leading to at times to extensive collection systems controlled by local authorities but discharging via a regional treatment plant such as the District. EPA Region 1 also has extensive experience in permitting of these facilities as the direct permitting authority in two states. In this context this issue is both distinctive and a high priority for the Region, apart from any national rulemaking.

**Comment #45: The Region may not change its position**

At footnote 10 of the Analysis, EPA states that it’s “position differs from that taken by the Region in the *Upper Blackstone* litigation. There, the Region stated that the treatment plant was the discharging entity for regulatory purposes.” Now, according to the Region, it “has clarified this view upon further consideration of the statute, EPA’s own regulations and case law and determined that a municipal satellite collection system in a POTW is a discharging entity for regulatory purposes.” The Region makes this change with no basis to justify it. In the *Upper Blackstone* matter, and before the EAB, the satellite collection systems were not “discharging,” but the Region could nonetheless regulate them. In the face of EAB’s rejection of this argument, and in light of the Region’s “clarified view,” the Region now says satellite collection systems are “dischargers.”

The Region’s explanation for its change in position is insufficient and contrary to law. “[A]n agency changing its course must supply a reasoned analysis.” *Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co.*, 463 U.S. 29, 57 (1983). In the Region’s Analysis, it says only that it has “clarified [its] view.” The Region, however, must “explain the evidence which is available” supporting that change and “must offer a ‘rationale [sic] connection between the facts found and the choice made,’” *Id.* 52. The Region does not, and cannot, identify new evidence or facts. The discharge point, at Outfall 001, has not changed. The owners or operators of the POTW and satellite collection systems have not changed.

**Response to Comment #45:** The Analysis provided is in response to the remand order of the EAB. *See* Upper Blackstone 18-20. This fact is a sufficient basis for the Region’s

clarification of the legal basis for its permitting practice. Furthermore, any changes in the Region's position are only changes to the legal basis for its action, not a change to the action itself. *Motor Vehicle Manufacturers Association* deals with multiple changes to agency regulations instead of merely clarifications of the legal basis for action; therefore, the case is inapplicable here. 463 U.S. at 37-38.

It is not clear why the commenter considers the EAB's rejection of one of the Region's previous arguments as an "insufficient" basis for EPA to reconsider and clarify the legal basis for its policy. In light of the EAB's remand, the Region reexamined its policy and performed a thorough and reasoned analysis of the legal and policy basis for its determination that co-permitting is an appropriate and necessary approach to the issues raised by satellite collection systems. That Analysis has been documented in the 16 page explanation with supporting exhibits that was included at Attachment C to the Fact Sheet.

EPA agrees that the facts have remained the same, and that indeed that is why its determination that satellite collection systems should be regulated as co-permittees has also remained the same. EPA has simply proffered an alternative legal theory in light of the EAB remand. This is not an agency "changing its course" as suggested in the comment, but a revised legal analysis. That legal analysis demonstrates that EPA has legal authority to include the Towns as "co-permittees." This policy regarding Region 1's permitting practice is not a legislative rule and did not require formal notice and comment. There is no change in substantive law or policy. Since it started imposing specific collection system requirements EPA has consistently expressed its view that satellite collection systems were in the scope of NPDES jurisdiction and that permit coverage could be required. EPA's national rulemaking starts from the same premise, asking whether EPA should, in all NPDES programs delegated or otherwise, *require* permit coverage for satellite systems. This question clearly assumes that such coverage is within the scope of the CWA's NPDES program. The salient point was not that there was a change in the definition of discharge or the scope of EPA's authority, but that EPA would have required that all permitting authorities exercise their authority in this specific way.

**Comment #46: The Region has not adequately defined the POTW**

Moreover, before the EAB, the Region argued, in response to the question of how far up the collection systems the Region's legal reasoning would allow the Region to impose co-permittee requirements, that it " 'would regulate it in the same way' as a single-entity POTW. EAB Oral Argument Transcript ("Tr.") at 70. 'We can regulate that which is legally part of the POTW that falls within the definition of POTW.' " *Upper Blackstone* EAB Matter, p. 14.

EPA makes the same argument here. "[A] satellite collection system owned by one municipality that transports municipal sewage to another portion of the POTW owned by another municipality can be classified as part of a single integrated POTW system discharging to waters of the U.S." analysis, pp. 10 – 11. It was that analysis that EAB found troubling, and which EPA still does not answer here; EPA does not explain in the Fact Sheet or Analysis what EAB asked the region to explain: "the extent to which

collection systems not owned by the entity owning or operating the treatment works are subject to NPDES permitting.” *Upper Blackstone EAB Matter*, p. 17.

**Response to Comment #46:** In its analysis, the Region has clarified its test for determining where the POTW ends and users begin. Specifically, the Region relies on the definition of “sewage collection system” at 40 C.F.R. § 35.905:

each, and all, of the common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive waste waters directly from facilities which convey waste water from individual structures or from private property, and which include service connection “Y” fittings designed for connection with those facilities. The facilities which convey waste water from individual structures, from private property to the public lateral sewer, or its equivalent, are specifically excluded from the definition.

Under this interpretation, more than mere property lines affect the determination of where the POTW ends and users begin. As stated in Region 1’s Analysis:

This test (i.e., common sewer installed to receive and carry waste water from others) allows Region 1 to draw a principled, predictable and readily ascertainable boundary between the POTW’s collection system and the users. This test would exclude, for example, single user branch drainpipes that collect and transport wastewater from plumbing fixtures in a commercial building or public school to the common lateral sewer, just as service connections from private residential structures to lateral sewers are excluded. This type of infrastructure would not be considered part of the collection system, because it is not designed to receive and carry wastewaters from other users. Rather, it is designed to transport its users’ wastewater to such a common collection system at a point further down the sanitary sewer system.

Analysis at 11.

**Comment #47: The Region’s Approach is a Legislative Rule that must be subject to Notice and Comment**

EPA’s attempt to change the legal requirements applicable to satellite systems is a legislative rule that EPA is issuing without formal notice and comment rulemaking in violation of the Administrative Procedure Act (“APA”). In trying to distinguish between legislative rules and policy statements, courts have found that “if a document expresses a change in substantive law or policy the agency intends to make binding, or administers with binding effect, the agency may not rely upon the statutory exemption for policy statements, but must observe the APA’s legislative rulemaking procedures.” *Gen. Elec. Co. v. E.P.A.*, 290 F.3d 377, 383-84 (D.C. Cir. 2002). *See also Appalachian Power Co. v. EPA*, 208 F.3d 1015 (D.C. Cir. 2000) (finding that an EPA guidance document that imposed new monitoring requirements relating to the operation of permit programs under

the clean Air act was a legislative rule because it was treated as binding), *Nat'l Mining ass'n v. Jackson*, 816 F. Supp. 2d. 1272, 1283-84 (S.D. Fla. 2010) (striking Corps guidance purporting to amend the prior converted croplands exclusion because it amounted to new legislative rules that created a binding norm and the corps failed to comply with the APA).

In the case of the revised draft CRPCD permit, there is no question that EPA intends its new position regarding satellite collection systems to have binding effect. Moreover, it is telling that in 2001, EPA began a rulemaking that purported to give the agency direct authority over satellite systems, in the context of a proposed rule pertaining to sanitary sewer systems. *See* National Pollutant Discharge Elimination System (NPDES) Permit Requirements for Municipal Sanitary Sewer Collection systems, Municipal Satellite Collection Systems, and sanitary Sewer Overflows (proposal signed Jan. 3, 2001) (formerly available at [http://cfpub.epa.gov/npdes/regresult.cfm?program\\_id=4&view=all&type=3](http://cfpub.epa.gov/npdes/regresult.cfm?program_id=4&view=all&type=3), but now withdrawn from EPA's website). EPA later withdrew that proposed rule.

**Response to Comment #47:** The Towns claim that the Region's Analysis is a legislative rule that ought to be subject to notice and comment under the Administrative Procedure Act ("APA"). Under the APA, there are no procedural requirements when an agency promulgates "interpretative rules, general statements of policy, or rules of agency organization, procedure, or practice." 5 U.S.C. § 553(b). The Analysis here is an interpretative statement utilized by the Region in the context of NPDES permit proceedings. The decision of whether to include co-permittees in any given NPDES permit is adjudicated on a case-by-case basis in light of the facts and circumstances surrounding the discharge and receiving waters. Therefore, it is not subject to the "notice and comment" requirements of the APA. *See* Approach at 1.

The D.C. Circuit has identified four factors that that may render an ostensibly interpretive rule legislative: "(1) whether in the absence of the rule there would not be an adequate legislative basis for enforcement action or other agency action to confer benefits or ensure the performance of duties, (2) whether the agency has published the rule in the Code of Federal Regulations, (3) whether the agency has explicitly invoked its general legislative authority, or (4) whether the rule effectively amends a prior legislative rule." *Syncor International Corp. v. Shalala*, 127 F.3d 90, 96 n. 8 (D.C. Cir. 1997) (citing *American Mining Congress v. Mine Safety & Health Admin.*, 995 F.2d 1106, 1112 (D.C. Cir. 1993)). However, "[t]he critical distinction between legislative and interpretative rules is that, whereas interpretative rules 'simply state what the administrative agency thinks the statute means, and only 'remind' affected parties of existing duties,' a legislative rule 'imposes new rights or duties.'" *Iowa League of Cities v. Environmental Protection Agency*, 711 F.3d 844, 873 (8th Cir. Mar. 25, 2013).

Determining whether a document is binding depends on the specific language used and tends to be a highly fact-specific inquiry. *See Iowa League of Cities*, 711 F.3d at 863-64; *South Dakota v. Ubbelohde*, 330 F.3d 1014, 1028 (8th Cir. 2003). In *Iowa League of Cities*, the Eighth Circuit found that a letter to Senator Grassley constituted a binding rule

because it purported to state “the EPA’s position” and spoke in mandatory terms that certain actions “should not be permitted.” 711 F.3d at 864. Similarly, in *South Dakota v. Ubbelohde*, the Eighth Circuit found that the Corps’ manual for implementing the Flood Control Act was binding because it “speaks of what ‘is’ done or ‘will’ be done.” 330 F.3d at 1028. However, in *Catawba County v. Environmental Protection Agency*, the D.C. Circuit found that an EPA memorandum was non-binding because it left the Agency free to exercise discretion; the memorandum spoke of the Agency’s “current views,” but left those views open to revision. 571 F.3d 20, 33-34 (D.C. Cir. 2009).

Based on its language, the Analysis constitutes an interpretative statement and not a legislative rule. The Analysis describes the process of listing municipalities as “EPA Region 1’s practice” and not as an immutable, binding rule for all permitting authorities. Analysis at 1. This statement is similar to the memo at issue in *Catawba County* because it describes only the Region’s current practices and views of the law; it is not a change to the Agency’s underlying regulatory/statutory structure. See 571 F.3d at 33-34. Furthermore, the Analysis does not signify a change in the Region’s regulatory practices, it merely “details the legal and policy bases” for prior practices. Analysis at 2; see also Exhibit A (showing 25 permits since September 25, 2000 where the municipality operating a satellite collection facility was made a co-permittee on a NPDES permit).

While the key factor in whether a rule is interpretative or legislative is whether the rule is binding, the four *Syncor* factors are still informative on this question. See *Syncor*, 127 F.3d at 961. Factor one asks whether the absence of a rule would take away the legal basis for agency action. Here, the absence of the analysis would not affect Region 1’s authority to regulate municipal operators of satellite collection systems because the rule merely interprets existing statutes and regulations. See e.g., Analysis at 7 (“Region 1 has decided to supply a clearer, more detailed explanation regarding its use of a co-permittee structure when issuing NPDES permits,”). Furthermore, the Analysis explicates the legal basis for a permitting practice that Region 1 has generally employed since 2005. Analysis at 7. Factor two, whether the rule has been published in the CFR, does not apply to the Analysis. Factor three, whether Region 1 has invoked its legislative rulemaking authority, also does not apply here. Finally, factor four, whether the rule amends a prior legislative rule, does not apply because the Agency has never fully promulgated any rules on permitting practices for separately owned satellite collection facilities. Furthermore, response to comment # 44 provides further discussion of proposed rules on satellite collection facilities by the Agency. In sum, the practice of including municipal satellite collection system owners/operators as co-permittees on the NPDES permit issued to the POTW Treatment Plant is simply one way that a permit can be framed to assure compliance with the Act. The Analysis merely outlines the legal and technical bases for this approach, which the Region undertakes at its discretion on a case-by-case basis, and does not mandate either Region 1 (or other Regions) to follow it.

**Comment #48: The Region fails to show that Inflow and Infiltration (“I/I”) is a problem in the Towns**

Finally, while the Analysis addresses generic problems associated with municipal sanitary sewer collection systems, including SSO’s and I/I, nothing in the fact Sheet or

Analysis indicates that SSO's or I/I is not being appropriately addressed by some or all of the towns or is a problem that requires or calls for one or more of the Towns to be identified as a co-permittee in this permit, or that co-permittee status may advance any I/I or SSO problem. In Exhibit B of the Analysis, entitled "Analysis of extraneous flows trends and SSO reporting for representative systems," EPA improperly suggests that I/I is excessive in the Towns' collection systems, that permit violations and SSOs in Franklin and Bellingham are related to excessive I/I, and that I/I reduction programs to date have been unsuccessful. EPA improperly uses information to justify imposition of co-permittee requirements. As demonstrated by an analysis of this information prepared by CDM Smith appended as Attachment A to the CRPCD's written comments, EPA's conclusions are wholly unsupported, and improperly suggest that I/I is trending upward, when it is not.

**Response to Comment #48:** EPA disagrees. Exhibit B demonstrates the basis for EPA's permitting decision here. EPA's analysis shows that the trends of wet-weather flows are inconsistent with a successful I/I reduction program:

Successful I/I reduction program should result in decreases in wet weather flows to the treatment plant over the long term. Figures 5 and 6 show the trend in maximum daily flows since 2001. The maximum daily flow reflects the highest wet weather flow for each month. Charts are shown for both the reported maximum daily flow and for a one year rolling average of the maximum daily flow (provided to reduce the impact of seasonality on the regression results). The linear regressions indicates a weak trend over this time period of increasing maximum daily flow; while most of the variability from year to year is due to changes in precipitation, the trends are generally inconsistent with reduction in maximum daily flow over this time period. This indicates that I/I has not been reduced in either system.

Analysis at 21. This conclusion is also supported by the fact that SESD has failed to maintain its secondary treatment requirement during numerous wet weather events. Analysis at 24. Although this is not a permit violation, it does imply a failure of I/I prevention programs. *Id.*

Furthermore, EPA need not show that the specific Towns cited above have failed to adequately reduce I/I. Rather, in the Analysis, EPA identified as its objective the need for a comprehensive and preventative POTW-wide approach to a POTW operated by multiple persons that does not necessarily turn on the performance of any particular Town:

Because ownership/operation of a regionally integrated POTW is sometimes divided among multiple parties, the owner/operator of the treatment plant many times lacks the means to implement comprehensive, system-wide operation and maintenance ("O&M") procedures. Failure to properly implement O&M measures in a POTW can cause, among other things, excessive extraneous flow (*i.e.*, inflow and infiltration) to enter,

strain and occasionally overload treatment system capacity. This failure not only impedes EPA's national policy goal concerning preservation of the nation's wastewater infrastructure assets, but also frustrates achievement of the water quality—and technology-based requirements of CWA § 301 to the extent it results in sanitary sewer overflows and degraded treatment plant performance, with adverse impacts on human health and the environment.

Analysis at 1. Given that the sewer system is interconnected, and in order to address I/I issues before they worsen and result in adverse impacts on the receiving waters, EPA has determined that this protective, comprehensive approach makes sense.

**Comment #49: The Region has not shown that Massachusetts regulations are insufficient**

Nor does the fact Sheet or Analysis explain why operation and maintenance of the Towns' sewer systems are not being adequately regulated by under State regulations at 310 CMR 12.00. 312 CMR 12.02 defines "Sewer Systems" to mean "pipelines or conduits, pumping stations, force mains, and all other structures, devices, appurtenances, and facilities used for collecting and conveying wastes to a site or works for treatment or disposal." The purpose of 314 CMR 12.00 is to insure "proper operation and maintenance of . . . sewer systems within the Commonwealth," and sets forth numerous requirements for the proper operations and maintenance of such systems. See 314 CMR 12.03(4), (10), and (11); 12.04(4); 12.05(5), (6) and (12); and 12.07(7).

**Response to Comment #49:** EPA's Analysis does not depend on the sufficiency or insufficiency of State regulations. See response to comment #48.

EPA's experience with other collection systems and satellite collection systems in the state are material to its assessment of the relative strength of alternative approaches to operation and maintenance requirements for satellite collection systems. EPA notes that the District itself is not arguing that operation and maintenance of satellite systems is or can be adequately addressed through requirements placed on it as owner of the treatment plant.

EPA notes that its treatment of satellite collection systems is a subpart of a much larger effort to ensure adequate operation and maintenance of collection systems in general through permit requirements. The importance of the collection systems components has been the subject of a great deal of attention, and progressively more stringent standard permit requirements, over the last decade. The majority of collection systems are owned by the treatment plant owner and are subject to the same operation and maintenance requirements that EPA seeks to impose here, due to the importance of these systems in overall treatment works performance. The pertinent question therefore is not whether there is a specific reason that Towns are subject to these requirements, but why a simple division of ownership should excuse important portions of the treatment works from these requirements. State regulations, while welcome, are not subject to EPA enforcement and are not a substitute for permit requirements.

**Comment #50: The Region’s Approach is a legislative rule that should be subject to Notice and Comment**

In fact, EPA’s attempt to change the legal requirements applicable to satellite systems is a legislative rule that EPA is issuing without formal notice and comment rulemaking in violation of the Administrative Procedure Act. In trying to distinguish between legislative rules and policy statements, courts have found that “if a document expresses a change in substantive law or policy the agency intends to make binding, or administers with binding effect, the agency may not rely upon the statutory exemption for policy statements, but must observe the APA’s legislative rulemaking procedures.” *Gen. Elec. Co. v. E.P.A.*, 290 F.3d 377, 383-84 (D.C. Cir. 2002). *See also Appalachian Power Co. v. EPA*, 208 F.3d 1015 (D.C. Cir. 2000) (finding that an EPA guidance document that imposed new monitoring requirements relating to the operation of permit programs under the Clean air Act was a legislative rule because it was treated as binding), *Nat’l Mining Ass’n v. Jackson*, 816 F. Supp. 2d 37 42-49 (D.D.C. 2011) (finding a violation of the Administrative Procedure Act where EPA sought to impose a new process for obtaining section 404 permits without notice and comment rulemaking), *New Hope Power Co. v. U.S. Army Corps of Eng’rs*, 746 F. Supp. 2d. 1272, 1283-84 (S.D. Fla. 2010) (striking Corps guidance purporting to amend the prior converted croplands exclusion because it amounted to new legislative rules that created a binding norm and the Corps failed to comply with the APA).

In the case of the revised draft CRPCD permit, there is no question that EPA intends its new position regarding satellite system to have binding effect. Moreover, it is telling that in 2001, EPA began a rulemaking that purported to give the agency direct authority over satellite systems, in the context of a proposed rule pertaining to sanitary sewer systems. *See* National Pollutant Discharge Elimination System (NPDES) Permit Requirements for Municipal Sanitary Sewer Collection Systems, Municipal Satellite Collection Systems, and Sanitary Sewer Overflows (proposal signed Jan. 4, 2001) (formerly available at [http://cfpub.epa.gov/npdes/regresult.cfm?program\\_id=4&view=all&type=3](http://cfpub.epa.gov/npdes/regresult.cfm?program_id=4&view=all&type=3), but now withdrawn from EPA’s website). EPA later withdrew that proposed rule.

Until such time as EPA addresses this issue on a national level and gives the public the opportunity review and, the Region should not include co-permittee provisions in any NPDES permit.

**Response to Comment #50:** See response to comment #47.

**Comments submitted from Mr. Robert Cantoreggi, Director of Public Works, Franklin, Massachusetts, on September 27, 2012.**

**Comment #51:** The Comment(s) below refer to *Section H. “Compliance Schedule”*

As the majority “Owner / Stake Holder / Member of the District””, the Town of Franklin is concerned about the time table for implementation of the 20 months for design and 48 months for complete construction as outlined in Section H on Page 12.

There are factors that may affect the timetable that the District, member Towns or EPA has no control over, specifically:

- The member Towns ability to appropriate funds through Selectmen Votes, Council Votes or Town Meeting Votes in a timely manner for EPA's proposed upgrades.
- That the District is required to follow all of the Commonwealth of Massachusetts's Procurement Laws, regarding bidding, awarding, protesting, etc, etc. and all the conditions and timetable that go along with those procurement laws.
- The Contractor(s) who is awarded the work and their construction schedule and completion schedule may be limited and non-conforming to EPA's schedule due to unforeseen circumstances such as the award date, weather conditions, availability of materials/parts/resources, labor strikes, etc.

The Town of Franklin requests that the EPA provide language in the permit procedures that will be followed if there is an unforeseen delay in implementation and how the limits would be extended (particularly for issues that that may arise that the District has no control over). The Town of Franklin would expect at a minimum that the EPA would not implement any fines for delays that the District has no control over.

Additionally, The Town of Franklin would like to comment on all the limits EPA has proposed during the construction period for the District upgrades and violations that may occur. The Town of Franklin feels that the EPA should recognize in the permit that the regulatory agencies understand that permit compliance can be difficult during construction. EPA should also recognize that historically they have not issued fines if permit limits are missed during construction particularly if they and their contractor are providing due diligence during construction project and the District is keeping, the EPA and MassDEP abreast of the situation.

**Response to Comment # 51:** The compliance schedule in the Final Permit has changed to reflect the Capital Plan Summary provided to EPA from the District. See response to comment #5.

EPA recognizes that construction projects may be delayed for unforeseen reasons. The Town should note that adjustment of interim compliance deadlines up to 120 days is possible through the minor modification provision at 40 C.F.R. § 122.63(c), which should allay its concerns (the Town may also pursue a major modification). Rather than attempting to capture all possible future contingencies by including permit language along the lines proposed by the Town particularly much of the work has been completed, EPA believes it is more prudent to confront individual circumstances that impact the compliance schedule as (and if) they arise, and make decisions based on the facts presented. If the District's proposed date for completion of capital improvements are delayed, the District may request a permit modification.

**Comments submitted from Mark Thompson, P.E, Project Manager, Kleinfelder, Inc., on behalf of the Towns of Bellingham, Medway and Millis on September 27, 2012.**

**Comment # 52:** Co-Permittees

The draft NPDES permit proposes to impose specific activities and conditions upon the Towns as required by Sections 1.B – Unauthorized Discharges and I.C – Operations and Maintenance of the Sewer System. The Towns have made significant and voluntary progress toward reducing infiltration and inflow (I/I), collection system O&M, collection system mapping and development of other good practices for wastewater collection system management. Additional support of this work has been included by the CRPCD letter to the EPA. As this progress has been both effective and voluntary, inclusion of the co-permittee provisions as stated in the draft NPDES permit is not necessary.

As stated above, Robert D. Cox, Jr. of Bowditch & Dewey, LLP is specifically addressing the co-permittee provision under a separate letter. We agree with and endorse the findings presented by Bowditch & Dewey, LLP fully.

**Response to Comment #52:** See response to comments #34-50.

**Comment #53:** Technical Comments and Recommendations

It is our understanding that the CRPCD is preparing to meet the proposed numerical pollutant discharge limits as stated in the draft NPDES permit. However, to be consistent with the existing NPDES permit, we request that the number of significant digits identified in the total phosphorous (TP) winter and summer limits be changed from two to one, such that the limits shall be presented as 0.3 mg/L (winter) and 0.1 mg/L (summer). By eliminating one significant digit, there will be more operational flexibility afforded to CRPCD without actually changing the ultimate numerical limit.

**Response to Comment #53:** See response to comment #26.

**Comment #54:** We request that the summer flow limit stated in the draft NPDES permit (4.5 MGD) be a rolling monthly average, which shall be calculated as the arithmetic mean of the monthly average flow from the reporting month averaged with the monthly average flow from the previous 11 *summer months* (July through September). Because there are different summer and winter flow limits, averaging flows across these two time periods may introduce unintended and inaccurate permit violations. See 2008 Fact Sheet

**Response to Comment #54:** The summer flow limit (4.5 MGD) in the Draft Permit incorrectly references footnote #2. This is a typographical error that has been corrected in the Final Permit. The 4.5 MGD flow limit should be reported as a monthly average applicable from July through September, consistent with the previous permit and as discussed in the 2008 fact sheet.

The Draft Permit specifies the flow limit of 5.7 MGD in the Draft Permit is required to be reported as an annual average that is applicable during October through June. This is also a typographical error that has been corrected in the Final Permit. The flow limit should be reported as an annual average that is calculated as the arithmetic mean of the monthly average flow from the reporting month and the monthly average flow from the previous 11 months according to footnote #2 in the Final Permit.

**Comments submitted by Karla Sangrey, P.E. Engineer Director/Treasurer, Upper Blackstone Water Pollution Abatement District, on September 27, 2012.**

**Comment #55: The Region may not change its position**

In the partially revised draft permit issued to CRPCD, the Region again fails to identify a legal basis for its position that it has authority to regulate the Towns as co-permittees. While the revised draft CRPCD permit fact sheet and document entitled *Analysis Supporting EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works that include Municipal Satellite Sewage Collection Systems* (“Region 1’s Analysis”) respond to questions raised by the EAB in the Remand Order concerning EPA’s legal authority to regulate separately owned municipal collection systems, the Region simply sets forth a series of new arguments to justify the regulatory position it footnote 10 of Region 1’s Analysis, the Region acknowledges that its “position differs from that taken by the Region in the *Upper Blackstone* litigation. There, the Region stated that the treatment plant was the discharging entity for regulatory purposes.” Now, according to the Region, it “has clarified this view upon further consideration of the statute, EPA’s own regulations and case law and determined that a municipal satellite collection system in a POTW is a discharging entity for regulatory purposes.”

The Region makes this change with no basis to justify it. In the *Upper Blackstone* matter, and before the EAB, the satellite collection systems were not “discharging,” but the Region could nonetheless regulate them. In the face of EAB’s rejection of this argument, and in light of the Region’s “clarified view,” the Region now says satellite collection systems are “dischargers.”

The Region’s explanation for its change in position is insufficient and contrary to law. “[A]n agency changing its course must supply a reasoned analysis.” Moto Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co., 463 U.S. 29, 57 (1983). In Region 1’s Analysis, it says only that it has “clarified [its] view.” The Region, however, must “explain the evidence which is available” supporting that change and “must offer a ‘rationale connection between the facts found and the choice made.’” Id. 52. The Region does not, and cannot, identify new evidence or facts. The discharge point, at Outfall 001, has not changed. The owners or operators of the POTW and satellite collection systems have not changed.

**Response to Comment #55:** See response to comment #45.

**Comment #56: The Region’s Approach should be subject to national comment**

In addition, in its Determination on Remand issued to the District on July 7, 2010, the Region indicated it would “coordinate broadly within EPA in developing a response” to the *Upper Blackstone* EAB Remand Order. Nothing in Region 1’s Analysis indicates this was done. Because EPA’s authority to permit satellite collection systems impacts not only the Region, but is of national significance, and because the issues raised by the EAB Region’s effort to permit satellite collection systems as co-permittees or otherwise through separate permits should be presented to the public for review and comment on a national level.

**Response #56:** See response to comment #44.

**Comment #57: The Region’s Approach is a legislative rule that should be subject to Notice and Comment**

In fact, EPA’s attempt to change the legal requirements applicable to satellite systems is a legislative rule that EPA is issuing without formal notice and comment rulemaking in violation of the Administrative Procedure Act. In trying to distinguish between legislative rules and policy statements, courts have found that “if a document expresses a change in substantive law or policy the agency intends to make binding, or administers with binding effect, the agency may not rely upon the statutory exemption for policy statements, but must observe the APA’s legislative rulemaking procedures.” *Gen. Elec. Co. v. E.P.A.*, 290 F.3d 377, 383-84 (D.C. Cir. 2002). *See also Appalachian Power Co. v. EPA*, 208 F.3d 1015 (D.C. Cir. 2000) (finding that an EPA guidance document that imposed new monitoring requirements relating to the operation of permit programs under the Clean air Act was a legislative rule because it was treated as binding), *Nat’l Mining Ass’n v. Jackson*, 816 F. Supp. 2d 37 42-49 (D.D.C. 2011) (finding a violation of the Administrative Procedure Act where EPA sought to impose a new process for obtaining section 404 permits without notice and comment rulemaking), *New Hope Power Co. v. U.S. Army Corps of Eng’rs*, 746 F. Supp. 2d. 1272, 1283-84 (S.D. Fla. 2010) (striking Corps guidance purporting to amend the prior converted croplands exclusion because it amounted to new legislative rules that created a binding norm and the Corps failed to comply with the APA).

In the case of the revised draft CRPCD permit, there is no question that EPA intends its new position regarding satellite system to have binding effect. Moreover, it is telling that in 2001, EPA began a rulemaking that purported to give the agency direct authority over satellite systems, in the context of a proposed rule pertaining to sanitary sewer systems. *See* National Pollutant Discharge Elimination System (NPDES) Permit Requirements for Municipal Sanitary Sewer Collection Systems, Municipal Satellite Collection Systems, and Sanitary Sewer Overflows (proposal signed Jan. 4, 2001) (formerly available at [http://cfpub.epa.gov/npdes/regresult.cfm?program\\_id=4&view=all&type=3](http://cfpub.epa.gov/npdes/regresult.cfm?program_id=4&view=all&type=3), but now withdrawn from EPA’s website). EPA later withdrew that proposed rule.

Until such time as EPA addresses this issue on a national level and gives the public the opportunity review and, the Region should not include co-permittee provisions in any NPDES permit.

**Response to Comment #57:** See response to comment #47.