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),

Town of Marion

is authorized to discharge from the facility located at

Benson Brook Road
Marion, MA 02738

to unnamed brook which discharges to Aucoot Cove (Buzzards Bay Watershed - 95)

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

This permit shall become effective on December 1, 2006.

This permit and the authorization to discharge expire at midnight on November 30, 2011.

This permit supersedes the permit issued on September 30, 1998.

This permit consists of 12 pages in Part I including effluent limitations, monitoring requirements, etc., and 27 pages in Part II including General Conditions and Definitions and Attachments A and B.

Signed this 29th day of September, 2006

/s/ SIGNATURE ON FILE

Linda M. Murphy, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, Massachusetts

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

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[3]
Flow[2]	MGD	0.5 88	----	Report	Continuous	Recorder
Flow[2]	MGD	Report	----	Report	Continuous	Recorder
BOD[4]	mg/l lbs/day	9 42	13 63	Report	1/Week	24-Hour Composite[5]
TSS[4]	mg/l lbs/day	9 42	13 63	Report	1/Week	24-Hour Composite[5]
pH[1]		(See Condition I.A.1.b. on Page 6)			Daily	Grab
Fecal Coliform Bacteria[1,6]	cfu/100 ml	14	----	43	2/Week	Grab
Total Ammonia Nitrogen, as N (May 1- May 31)	mg/l	2.6	----	Report	1/Week	24-Hour Composite[5]
Total Ammonia Nitrogen, as N (June 1 - October 31)	mg/l	1.74	----	Report	1/Week	24-Hour Composite[5]

(Part A.1 continued)

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Total Ammonia Nitrogen, as N (November 1 - April 30)	mg/l	Report	----	Report	1/Month	24-Hour Composite[5]
Total Nitrogen (Total of TKN + Nitrate + Nitrite)	mg/l	Report	----	Report	1/Month	24-Hour Composite[5]
Total Phosphorus	mg/l	Report	----	Report	2/Month	24-Hour Composite[5]
Copper, Total, Recoverable[7]	ug/l	7.7	----	11.3	1/Month	24-Hour Composite[5]
LC-50[8,9,11]	%	----	----	>/= 100	4/Year	24-Hour Composite[5]
Chronic NOEC [8, 10,11]	%	----	----	100	4/Year	24-Hour Composite[5]
Dissolved Oxygen (June 1-October 31]	mg/l	----	----	>/= 5.0	1/Week	Grab

Effluent samples are required to be collected following disinfection by the UV unit; dissolved oxygen samples may be taken at the point of entering the unnamed receiving stream

Footnotes:

1. Required for State Certification.

2. Report annual average, monthly average, and the maximum daily flow. The limit is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the eleven previous months.

3. All required effluent samples shall be collected at the point specified on page 3. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

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

   All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. All samples shall be 24 hour composites unless specified as a grab sample in 40 CFR §136.

4. Sampling required for influent and effluent.

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

6. Fecal coliform limitations and monitoring requirements are in effect year-round. The monthly average limit for fecal coliform is expressed as a geometric mean. The limits will become effective one year from the effective date of the permit. Interim limits will be a geometric monthly mean of 200 cfu/100 ml and a maximum daily discharge of 400 cfu/100 ml.

7. The minimum level (ML) for copper is defined as 3 ug/l. This value is the minimum level for copper using the Furnace Atomic Absorption analytical method (EPA Method 220.2). For effluent limitations of less than 3 ug/l, compliance/non-compliance will be determined based on the ML from this method, or another approved method that has an equivalent or lower ML, one of which must be used. Sample results of 3 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 LC_{50} at the 48 hour exposure interval.

The permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas.* Toxicity test samples shall be collected during the second week of the months of March, June, September and December. The test results shall be submitted by the last day of the month following the completion of the test. The results are due April 30, July 31, October 31 and January 31, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit.

Test Dates Second Week in	**Submit Results By:**	**Test Species**	**Acute Limit LC_{50}**	**Chronic Limit C-NOEC**
March June September December	April 30 July 31 October 31 January 31	*Ceriodaphnia dubia*- (daphnid) *Pimephales promelas*- [fathead minnow] See Attachment A	≥ 100%	≥ 100%

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

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

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 "100%" limit is defined as a sample which is composed of 100% effluent.

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 (Toxicity Test Procedure and Protocol**) **Section IV., DILUTION WATER** in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which may be used to obtain

automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs) which is sent to all permittees with their annual set of DMRs and may also be found on the EPA, Region I web site at http://www.epa.gov/region1/enforcementandassistance/dmr2005.pdf. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in **Attachment A**. 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**.

Part I.A 1. Continued

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

b. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.

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 minium of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.

f. Samples taken in compliance with the monitoring requirements specified in the permit shall be taken at a representative point prior to mixing with other streams.

g. The permittee shall operate the upgraded treatment system to achieve total nitrogen removal consistent with the design total nitrogen projections in the report titled "Town of Marion, Wastewater Treatment Plant Upgrade, Conceptual Design Package" [CDM, March 2002]. The "target effluent quality" projected is 7 -10 mg/l. The permittee shall operate the treatment plant to achieve the "target effluent quality" whenever possible. The "target effluent quality" is not considered a numerical effluent limit.

   In addition, the permittee shall evaluate the upgraded treatment plant's ability to remove phosphorus, and evaluate necessary changes/additions to the process to achieve a monthly average effluent limitation of 0.2 mg/l. The evaluation shall be completed and submitted to EPA and MassDEP within **one year from the effective date of the permit**. The evaluation is needed to determine removal capabilities, if a future Total Daily Maximum Load [TMDL] indicates the need for phosphorus removal.

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. Development of Limitations for Industrial Users:

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

4. This permit may be modified, or revoked and reissued, on the basis of new information in accordance with 40 C.F.R. 122.62.

B. UNAUTHORIZED DISCHARGES

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

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 Part II and the following terms and conditions:

1. Maintenance Staff

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

2. Infiltration/Inflow

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

The plan shall include:

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

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

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

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

Reporting Requirements:

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

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

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

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

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

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

3. Alternative Power Source

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

D. SLUDGE CONDITIONS

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

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

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

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

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

   c. Sewage sludge incineration in a sludge-only incinerator

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

5. The permittee shall use and comply with the attached (see Attachment - B) compliance guidance document to determine appropriate conditions. Appropriate conditions contain the following elements:

   - General requirements
   - Pollutant limitations
   - Operational Standards (pathogen reduction requirements and vector attraction

reduction requirements)
- Management practices
- Record keeping
- Monitoring
- Reporting

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

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

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

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

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

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

E. SPECIAL REQUIREMENT

The permittee is required to develop and submit to the Massachusetts Department of Environmental Protection a monitoring plan to address: 1.) The level of impact on the receiving stream from the wastewater treatment plant discharge. The permittee is required to submit the plan within six months from the effective date of the permit. This requirement is a condition of state certification as outlined in Section G. of this permit.

F. MONITORING AND REPORTING

1. Reporting

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

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

EPA- New England
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection
20 Riverside Drive
Lakeville, Massachusetts 02347

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

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

G. STATE PERMIT CONDITIONS

This discharge permit is issued jointly by the U. S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under federal and state law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Massachusetts Department of Environmental Protection pursuant to M.G.L. Chap. 21, §43. Each agency shall have the independent right to enforce the terms and conditions of this permit.

Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification,

suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.

The Massachusetts Department of Environmental Protection is requiring the permittee to develop a monitoring program of the freshwater receiving stream which has been shown to have biological impairments downstream of the discharge. The monitoring requirement is established pursuant to 314 CMR 3.11(2)(a) which allows the Department to require monitoring to verify compliance of the discharge with the permit and with the state water quality standards 314 CMR 4.00. The permittee should develop and submit to this Department, within six months of the effective date of this permit, a monitoring plan to address the items noted above.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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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.

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.

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.

(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. <u>Upset</u>

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

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

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

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.

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.

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.

(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

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

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).

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.

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.

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.

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.

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,

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.

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

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

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

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

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

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

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

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

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

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

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

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

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

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

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

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 or organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

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

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

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

Range land is open land with indigenous vegetation.

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

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.

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

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

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

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

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

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

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

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

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

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

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

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

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

FACT SHEET

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

NPDES PERMIT NO.: **MA0100030**

NAME AND ADDRESS OF APPLICANT:

Town of Marion
Town Hall Building
2 Spring Street
Marion, MA 02738

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Marion Water Pollution Control Facility
Benson Brook Road
Marion, MA 02738

RECEIVING WATER: **Unnamed Brook to Aucoot Cove (Buzzards Bay Watershed - 95)**

CLASSIFICATION: **Unnamed Brook - B**
Aucoot Cove - SA

I. Proposed Action, Type of Facility, and Discharge Location.

The above named applicant has requested that the U.S. Environmental Protection Agency (EPA) reissue its NPDES permit to discharge into the designated receiving water (see Attachment B). The facility is engaged in the collection and treatment of domestic wastewater. The discharge is from outfall 001 of the Marion Water Pollution Control Facility.

This permit was issued on August 2, 2004, but was appealed by the Town, and withdrawn by EPA and the Massachusetts Department of Environmental Protection (MADEP). This fact sheet supports a new draft permit with slightly changed conditions from the withdrawn permit. Until a new permit is issued, the September 30, 1998 permit remains in effect.

II. Description of Discharge.

A quantitative description of the discharge in terms of significant effluent parameters based on recent monitoring data from August 2002 to May 2004 is shown on Attachment A.

III. Limitations and Conditions.

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

IV. Permit Basis and Explanation of Effluent Limitation Derivation.

A. Description

The Town of Marion has a 0.5 million gallon per day (mgd) advanced secondary wastewater treatment facility. Treatment is provided by three facultative lagoons in series followed by disc filters. The disc filters were brought on line in October 2002, replacing sand filters. Treated wastewater is disinfected by an ultraviolet (U/V) system before it is discharged to an unnamed brook which discharges to Aucoot Cove. The lagoons produce minimal sludge.

Marion is upgrading the wastewater treatment facility to an average design flow of 0.588 mgd. The new upgraded facility is scheduled to begin operation in 2006.

B. POTW Discharges

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. For publicly owned treatment works (POTWs), technology based requirements are effluent limitations based on the secondary treatment requirements of Section 301 (b) (1) (B) of the Clean Water Act (CWA) as defined in 40 CFR 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 limitations based on water quality standards. The Massachusetts Surface Water Quality Standards (314 CMR 4.00) 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 discharges of pollutants to surface waters

to assure that surface water quality standards 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) may not be discharged at a level that caused, has reasonable potential to cause, or contributes to an excursion above any water quality criterion. An excursion occurs if the projected or actual in-stream 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.

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. EPA's anti-backsliding provisions found in Section 402 (o) of the CWA and at 40 CFR 122.44(1) restrict the relaxation of permit limits, standards, and conditions. Therefore, the technology-based effluent limits in the reissued permit must be at least as stringent as those of the previous permit except under specific conditions. Effluent limits based on BPJ, water quality, and state certification requirements must also meet the anti-backsliding provisions.

B.1. Conventional Pollutants:

BOD, TSS and Flow :

The current permit has monthly average and weekly average BOD and TSS limits of 10 mg/l and 15 mg/l respectively with an annual average flow of 0.5 mgd. The permittee has requested an increase in the annual average flow limit from 0.5 to 0.588 mgd due to the upgrade of the plant's capacity to 0.588 mgd. This flow increase is consistent with the DEP- approved Comprehensive Wastewater Management Plan (CWMP) and has been approved through the MEPA process. EPA and MADEP have increased the annual average flow from 0.5 to 0.588 mgd in the draft permit. However, due to State's antidegradation requirement (314 CMR 4.04), total loading for BOD and TSS will remain the same as the loading authorized by the current permit (based on the existing flow limit of 0.5 mgd). Accordingly, the concentration limits for BOD and TSS in the draft permit have been reduced from 10 mg/l to 9 mg/l for monthly average and from 15 mg/l to 13 mg/l for weekly average.

pH :

The limitations of pH are based on state certification requirements under Section 401 (a) (1) of the CWA, as described in 40 CFR 124.53 and 124.55.

Fecal coliform :

Because of the short distance from the outfall to the SA waters of Aucoot Cove [approximately 0.5 miles in a freshwater stream], and the close proximity to shell fishing areas [outside the mandated shell fishing closure zone], the effluent fecal coliform bacteria levels and the in-stream levels need to be closely monitored. The Massachusetts Department of Environmental Protection [MADEP] has set the limits based upon the Class B fresh water criteria [200 cfu/100ml and 400 cfu/100ml] which reflects the near field receiving water classification. In addition, MADEP is requiring the development of a monitoring program to determine the impact, if any, from the discharge on the status of the shell fishing in Aucoot Cove and Marion [Sippican Harbor]. If it is demonstrated that the effluent levels have a deleterious effect on the status of shell fishing, the permit limits will be modified. In addition, the permit requires monitoring of *Enterococci* which EPA has adopted as criteria for marine waters in a recent rule promulgation ["Water Quality Standards for Coastal and Great Lakes Recreation Waters: Final Rule" November 16, 2004]. Effluent limits for *Enterococci* will be incorporated into the permit at a later date.

B.2. Non-Conventional Pollutants:

Ammonia is a toxic pollutant which may be harmful to the aquatic organisms, and nitrogen is a nutrient which can contribute to excessive plant growth in receiving water, thus depleting dissolved oxygen in the water-body necessary for aquatic life. The ammonia limitations in the permit are water quality-based effluent limitations necessary to prevent toxicity in the receiving water.

The current permit contains monthly average ammonia limits of 1.74 mg/l from June 15 to October 15 and 2.6 mg/l from May 1 to June 14. The current limits were calculated using recommended 1994 water quality for ammonia at a pH of 6.75 and 25 degrees C for the period from June 15 to October 15, and at a pH of 6.75 and 15 degrees C for the period May 1 to June 14 respectively.

The most current recommended ammonia criteria are found in the 1999 Update of Ambient Water Quality Criteria for Ammonia (EPA-822-R-99-014). The recommended chronic criteria for total ammonia, at a pH of 6.75 and 25 degrees C is 3.24 mg/l, and at a pH of 6.75 and 15 degrees C is 6.15 mg/l.

However, because there is essentially no dilution of the discharge, EPA and MADEP believe that an increase in the ammonia limits would cause degradation relative to dissolved oxygen and toxicity in the receiving water. Therefore, the ammonia limits from the current permit have been retained. In order to facilitate reporting of ammonia data, the periods in which the ammonia limits apply have been changed to correspond to the end of a calendar month, so the 1.74 mg/l limit will be in effect from June 1 to October 31 and the 2.6 mg/l limit will be in effect from May 1 to May 31. Sampling frequency will be once per month.

During 1992, the Town's consultant conducted a study of the discharge to determine the fate of nitrogen and its impact on Buzzards Bay. Based on this analysis, the nitrogen from the WWTP is mostly taken up by the salt marsh, located at the mouth of the unnamed brook. Concentrations of nitrogen discharging from the salt marsh are lower than concentrations in Buzzards Bay, suggesting that the ambient concentrations in Buzzards Bay are higher than Aucoot Cove. During February 1994, the Buzzards Bay Project published a draft report named "A Buzzards Bay Embayment Sub-water Evaluation : Establishing Priorities for Nitrogen Management Action". This report concludes that the principal source of nitrogen to Aucoot Cove is the Marion WWTP and estimates that the current nitrogen load is 24% of the sub- basin's assimilative capacity.

Due to concerns regarding the impact of nitrogen loadings to Buzzards Bay, ammonia-nitrogen limitations of 2.6 mg/l from May to May 31, and 1.74 mg/l from June 1 to October 31 will continue as stated above. Effluent monitoring requirements from November 1 to April 30 with a frequency of one per month will continue as per current permit. The current permit requires total kjeldahl nitrogen (TKN) and nitrate (NO3) monitoring with a frequency of one per month. The draft permit requires the permittee to monitor total nitrogen (total of TKN + nitrate + nitrite) at a frequency of one per month.

In addition, the permittee requires operating the treatment facility within 7-10 mg/l range as stated in the draft permit.

Phosphorus :

The Massachusetts Surface Water Quality Standards (314 CMR 4.00) do not contain numerical criteria for total phosphorus. The criteria for nutrients is found at 314 CMR 4.05(5)(c), which states that nutrients "shall not exceed the site specific limits necessary to control accelerated or cultural eutrophication". The Water Quality Standards also require that "any existing point source discharges containing nutrients in concentrations which encourage eutrophication or growth of weeds or algae shall be provided with the highest and best practicable treatment to remove such nutrients (314 CMR 4.04). MADEP has established that a monthly average total phosphorus limit of 0.2 mg/l represents highest and best practical treatment for POTWs.

EPA has produced several guidance documents which contain recommended total phosphorus criteria for receiving waters. The 1986 Quality Criteria of Water (the Gold Book) recommends 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 impounds, and 0.025 mg/l within the lake or reservoir.

More recently, EPA has released "Eco-regional 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 eco-region minimally impacted by human activities, and thus representative of water without cultural eutrophication.

Marion is within Eco-region XIV, Eastern Coastal Plains. The total phosphorus criteria for this eco-region, found in Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Eco-region XIV, published in the December, 2000 is 24 ug/l (0.024 mg/l).

The permittee showed a value of 2.6 mg/l for total phosphorus in the permit application. No other phosphorus effluent data are available at this time. Based on the above discussions, EPA is requiring the permittee to monitor total phosphorus at a frequency of once per month. No limit is established at this time. EPA will evaluate the data and in the future, if necessary, limits may be imposed either by modifying the permit or during next renewal time.

In addition, the draft permit requires the permittee to perform an evaluation of operational procedures to minimize total phosphorus in the effluent as stated in the draft permit.

B.3. Toxic Pollutants:

Metals:

Certain metals in water can be toxic to aquatic life. There is a need to limit toxic metal concentrations in the effluent where aquatic life may be impacted. The present permit contains water quality based limits for copper. An evaluation (see below) of the reasonable potential of toxicity on the concentration of metals in the effluent shows that there is reasonable potential of toxicity for copper.

Calculation of reasonable potential for copper, lead, zinc and nickel :

Allowable Receiving Water Concentration, C = Criteria (Total Recoverable) x Dilution Factor

7Q10 = 0 for the unnamed brook. Hence, the Dilution Factor = 1

From Federal Register, December 10, 1998, National Recommended Water Quality Criteria is used with a hardness of 80 mg/l. A review of the toxicity test reports from June 2002 to August 2004 indicates that the hardness in the receiving water (unnamed Brook to Aucoot Cove) varies from 60 mg/l to 139 mg/l with an average value of 82 mg/l as $CaCO_3$. An average value of 80 mg/l is used in the draft permit. The previous permit used a hardness of 50 mg/l. Data for metals are from the chemical analysis performed in conjunction with whole effluent toxicity testing for the period from June 2002 to August 2004.

Copper :	Chronic	C = 7.7 x 1 = 7.7 ug/l which is less than the monthly average effluent concentration range of 11 to 45 ug/l. So, reasonable potential exists.

	Acute	C = 11.3 x 1 = 11.3 ug/l which is less than the maximum effluent concentration of 45 ug/l. So, reasonable potential exists.
Lead :	Chronic	C = 2.4 x 1 = 2.4 ug/l which is less than the monthly average effluent concentration of < 2.5 ug/l (dl = 5 ug/l). So, reasonable potential may or may not exist.
	Acute	C = 61.5 x 1 = 61.5 ug/l which is greater than the maximum effluent concentration of < 5 ug/l. So, reasonable potential does not exist.
Zinc :	Chronic	C = 99.2 x 1 = 99.2 ug/l which is greater than the average of the monthly average effluent concentration of 75 ug/l . So, reasonable potential does not exist.
	Acute	C = 99.2 x 1 = 99.2 ug/l which is less than the average of the maximum effluent concentration of 150 ug/l. So, reasonable potential exists.
Nickel :	Chronic	C = 43.2 x 1 = 43.2 ug/l which is greater than the monthly average effluent concentration of < 20 ug/l (dl = 40 ug/l). So, reasonable potential does not exist.
	Acute	C = 388.5 x 1 = 388.5 ug/l which is greater than the maximum effluent concentration < 40 ug/l. So, reasonable potential does not exist.

Based on the above evaluation, monthly average and daily maximum copper limits are included in the draft permit with a monitoring requirement of one per month.

Test data for lead is < 5 ug/l with an average value of 2.5 ug/l (assuming it varies between 0 to 5 ug/l). No limit has been established in the draft permit at this time. The draft permit requires monthly average lead monitoring, one per month, with a detection limit of 3 ug/l. EPA will evaluate the data and if necessary, a limit may be imposed in the future.

Out of twelve samples for zinc, six are recorded below detection limit of <100 ug/l and other six are measured below detection limit of < 200 ug/l with an average value of 75 ug./l and maximum value of 150 ug/l. The monthly average and daily maximum allowable receiving water concentrations are 99.2 ug/l. No limit has been established in the draft permit at this time. The draft permit requires once per month daily maximum zinc monitoring, with a detection limit of 10 ug/l. EPA will evaluate the data and if necessary, a limit may be imposed in the future.

Derivation of Permit Limits :

The limits for copper is calculated based on criteria in National Recommended Water Quality Criteria:2002 at a hardness of 80 mg/l and a dilution factor of 1.0.

Water Quality Criteria for hardness-dependent metals, see equations below :

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 = 80 mg/l as $CaCO_3$
ln = natural logarithm
CF = pollutant-specific conversion factor (CF is used to convert total recoverable to dissolved metal)

Chronic Criteria (dissolved) = $\exp\{m_c[\ln(\text{hardness})] + b_c\}$ (CF)

Where:
m_c = pollutant-specific coefficient
b_c = pollutant-specific coefficient
h = Hardness = 80 mg/l as $CaCO_3$
ln = natural logarithm
CF = pollutant-specific conversion factor (CF is used to convert total recoverable to dissolved metal)

Calculation of acute limit for copper :

$m_a = 0.9422$ $b_a = -1.7$ CF = 0.96

Acute criteria (dissolved) = $\exp\{0.9422[\ln(80)] - 1.7\}$ (.96) = 10.89 ug/l

Dilution Factor = 1

Effluent Limitation: = 1 x 10.89 ug/l) = 10.89 ug/l (dissolved)
Total Recoverable = 10.89 / CF = 10.89 / 0.96 = 11.3 ug/l *

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

Therefore the acute (maximum daily), water quality based limitation for Total Recoverable Copper is 11.3 ug/l. Previous permit used a maximum daily limit of 9.22 ug/l. Antibacksliding does not apply due to changed condition of hardness.

Calculation of chronic limit for copper :

$m_c = 0.8545$ $b_c = -1.7$ $CF = 0.96$

Chronic criteria (dissolved) = exp{0.8545[ln(80)] - 1.7} (.96) = 7.4 ug/l

Dilution Factor = 1

<u>Effluent Limitation:</u> = 1 x 7.4 ug/l) = 7.4 ug/l (dissolved)
Total Recoverable = 7.4 / CF = 7.4 / 0.96 = 7.7 ug/l *

Therefore the chronic (monthly average), water quality based limitation for Total Recoverable Copper is 7.7 ug/l.

C. Pretreatment Program

The permitted facility does not have any major industries contributing industrial wastewater to the WWTF. The draft permit contains the following provision :

"Pollutants introduced into POTWs by a non-domestic source shall not pass through the POTW or interfere with the operation or performance of the treatment."

D. Toxicity

The receiving water has been classified as a Class B waterway by the state. The designated uses for a Class B water are (1) the protection and propagation of fish, other aquatic life and wildlife and (2) for primary and secondary contact recreation.

40 CFR 122.44 (d) requires whole effluent toxicity limits in NPDES permits when the permittee has a "reasonable potential" to cause toxicity.

National studies conducted by the EPA have demonstrated that domestic sources contribute both metal and organic toxic constituents to POTW. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and other constituents. Additionally, as previously discussed, the POTW receives industrial waste which may also contain toxic constituents.

Therefore, based on the potential for toxicity from domestic contributions, the available dilution at the discharge location, water quality standards and in accordance with EPA regulation and

policy, the draft permit includes chronic and acute effluent toxicity limitations and monitoring requirements. (See EPA's Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-01). The No Observed Chronic Effect Concentration (C-NOEC) limitation in the draft permit prohibits chronic adverse effects (e.g. on survival, growth, and reproduction), when aquatic organisms are exposed to the POTW discharges at the available dilution. The dilution is zero. Therefore, C-NOEC is set at 100% of the effluent. The LC50 limitation of 100% prohibits acute effects (lethality to more that 50% of the test organisms) when exposed undiluted to POTW effluent for a period of time.

E. Sludge

The permit prohibits any discharge of sludge. Section 405 (d) of the Clean Water Act requires that sludge conditions be included in all NPDES permits. The lagoons produce minimal sludge. The Marion WWTF has not yet removed or disposed of any sludge from its treatment process. However, the permit requires that any sludge disposal be done in accordance with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices.

F. Essential Fish Habitat Determination (EFH):

Under the 1996 Amendments (PL 104-267) to the Magunson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat as: waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. § 1802 (10)).

Adversely impact means any impact which reduces the quality and/or quantity of EFH (50 C.F.R. § 600.910 (a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Essential fish habitat is only designated for 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.

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

G. Antidegradation

Although the annual average flow limit has been increased from 0.5 mgd to 0.588 mgd, this draft permit is being reissued with an allowable waste-load identical to the current permit for BOD and

TSS, reducing monthly average and weekly average concentrations from 10 mg/l to 9 mg/l and from 15 mg/l to 13 mg/l, respectively. There is no change in outfall location. The State of Massachusetts has indicated that there will be no lowering of water quality and no loss of existing water uses and that no additional antidegradation review is warranted.

V. State Certification Requirements.

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

VI. Comment Period, 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 the U.S. EPA, Massachusetts Office of Ecosystem Protection , One Congress Street-Suite 1100 (CMP), 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 hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest.

In reaching a final decision on the draft permit the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office. Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

VII. EPA Contact.

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

Suprokash Sarker P.E.
Municipal NPDES Branch
US Environmental Protection Agency
1 Congress Street, Suite 1100 (CMP)
Boston, MA 02114-2023
Tele: (617) 918-1693

Date

Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

RESPONSE TO PUBLIC COMMENTS
NPDES PERMIT MA0100030
Town of Marion Wastewater Treatment Plant
Marion, MA

On July 27, 2005, the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) released for public notice and comment a draft National Pollutant Discharge Elimination System (NPDES) permit pursuant to an application from the Town of Marion, Massachusetts for the reissuance of its permit to discharge treated wastewater to the designated receiving water, an unnamed freshwater stream tributary to Aucoot Cove. The public comment period for this draft permit expired on August 26, 2005.

Comments were submitted by the following organizations:

1. The Town of Marion
2. The Coalition for Buzzards Bay
3. The Massachusetts Division of Marine Fisheries
4. The Massachusetts Department of Fish and Game- Riverways Program

After review of the comments received, EPA has made a final decision to issue the permit authorizing the discharge. The following are the comments and EPA's response to those comments, including changes that have been made to the permit as a result of the comments. The changes to the permit are listed at the end of this document. The comment letters are part of the administrative record and are paraphrased herein. A copy of the final permit may be obtained by writing or calling Suprokash Sarker, EPA NPDES Permits Program [CMP], 1 Congress Street, Suite 1100, Boston, MA 02114-2023; telephone: [617] 918-1693.

A. The following comments were received from the Town of Marion :

<u>Comment A.1.</u>

Paragraph f on Page 6 of 12 includes standard language that is not applicable to Marion, considering our ongoing plant upgrade and approved Comprehensive Wastewater Management Plan (CWMP). As we understand this clause, and as our consultant has clarified such with MADEP in the past, plant planning or upgrade is not required at 80 percent of design if the existing plant is in compliance and has the capacity to treat to 100 percent of projected flow. MADEP has been indicating for sometime that revised wording has been prepared to clarify this point. We request that such wording be included in lieu of the current Paragraph f.

Response A.1.

The requirement in Part I.A.1.f., on page 6 of the draft permit has been removed from the final permit. The facility planning which the Town undertook in developing its plan for the recently completed expansion and upgrade sufficiently satisfies the planning requirement. The "80%, 90 consecutive days" clause is being modified in future municipal NPDES permits as the agencies seek to clarify the proper planning requirements. It is not necessary for this facility as the planning process has recently been completed.

Comment A.2.

The Town requests that metal toxicity and proposed metals limits be based on a Biotic Ligand Model (BLM). BLM-based criteria have been incorporated into the 2003 Draft Update of Ambient Water Quality Criteria for Copper (US EPA 2003). We believe it is likely that BLM-based LC50s for our receiving water may yield very different site-specific water quality standards than those currently in existence.

Response A.2.

In accordance with Massachusetts Water Quality Standards (MA WQS), the copper limits were established using the current EPA-recommended criteria established pursuant to Section 304(a) of the Clean Water Act [see MA WQS at 314 CMR 4.05 (5)(e)]. BLM-based criteria were published in draft form by EPA in 2003 but have not been finalized. Therefore, the BLM-based criteria cannot be used for establishing effluent limitations unless the state adopts these criteria as site-specific limits, which it has not done. The permittee may undertake a BLM evaluation and submit those results to MassDEP as part of a request for site-specific limits. If adopted by MassDEP and approved by EPA they may be used as the basis for a permit modification or during subsequent reissuance of the permit.

Comment A.3.

The Fact Sheet to the draft permit states that DEP will not increase the ammonia limits as calculated by the current criteria because EPA and MADEP are concerned that an increase in ammonia limits would cause degradation to dissolved oxygen and toxicity in the receiving water (page 4) and due to concerns regarding the impact of nitrogen loadings to Buzzards Bay (page 5).

According to the Fact Sheet, the limits in the current permit were calculated using 1994 recommendations for water quality criteria for ammonia in freshwater. Since 1994, EPA has changed the recommendations on ammonia criteria twice (in 1998 and in 1999), which clearly denotes the uncertainty in the scientific method to best protect aquatic life. The Fact Sheet that accompanied the 1999 Update of the Ambient Water Quality Criteria for Ammonia states these criteria reflect the latest scientific knowledge on the effects of water pollutants on aquatic life and supersedes all previous freshwater aquatic life criteria. The permit should not be based on the out-of-date criteria.

The Town contends that EPA and DEP have not provided any evidence to substantiate their concerns that an increase the ammonia limits to match those calculated using the latest scientific knowledge would degrade the receiving water. EPA should use the superseding ammonia aquatic life criteria to set the permit limits of 3.24 mg/l from June 1 to October 31 and 6.15 from May 1 to May 31 (as provided on page 4 of the Fact Sheet).

The Town is particularly concerned that DEP and EPA would mention nitrogen loadings to Buzzards Bay as a reason to retain the current ammonia limits and request that this be stricken from the Fact Sheet. Much study has been done about nitrogen loading to Aucoot Cove and all of it indicates that nitrogen loads there are not currently causing a problem, nor that future loads will cause a problem (see attachment for details on this point).

Response A.3.

The Massachusetts Integrated List shows that Aucoot Cove does not attain water quality standards for pathogens. Neither the unnamed stream receiving the Marion discharge or Aucoot Cove is listed for any other pollutants.

EPA may backslide on water quality-based effluent limits where the receiving water is in attainment of water quality standards and where the increase in the discharge of the pollutant is consistent with antidegradation (see Sections 402(o) and 303(d)(4) of the Clean Water Act; also see pages 178 – 182 of the U.S. EPA NPDES Permit Writers' Manual).

EPA and MassDEP have reviewed the data included in the Buzzards Bay Watershed Assessment Report and noted that a macroinvetebrate analyses conducted in the unnamed stream downstream of the treatment plant discharge indicated an abrupt change in community composition and trophic structure downstream of the treatment plant discharge, indicative of organic enrichment and possibly low levels of dissolved oxygen (see the Buzzards Bay Watershed 2000 Water Quality Assessment Report , published in November 2003). An increase in the ammonia limit would tend to exacerbate any dissolved oxygen deficiencies in the receiving water. Based on these water quality concerns EPA and MassDEP have decided that an increase in the discharge limits for ammonia will not be allowed.

Regarding your concerns that the discharge limits for ammonia were linked to the discharge of total nitrogen, we were establishing that nitrification is a necessary step in the biological denitrification of wastewater. While there are no total nitrogen limits in the permit, nitrification from ammonia to nitrates is a critical step in achieving biological denitrification and thus meeting the total nitrogen effluent goal of the permit. As you note, there has been a significant amount of effort to assess the effects of nitrogen on Aucoot Cove. A final determination regarding a limit for total nitrogen has not yet been made. This issue is further discussed in response B.1 below.

Regarding your request to modify the fact sheet, a fact sheet is required to explain the basis for the limits and condition in the draft permit and is therefore not subsequently modified. However, your comment is part of the administrative record for the permit pursuant to 40 CFR Part 124.18 (a)(1).

The following comments were received from the Coalition for Buzzards Bay:

Comment B.1.

The Coalition is concerned that the draft permit fails to set a limit for total nitrogen discharge from the Marion WWTP and merely requires average monthly reporting. The Coalition commends the Town of Marion's commitment to upgrade the WWTP to address nitrogen loading issues and feels that it is an ideal time for the permit to include a limit on total nitrogen discharge, much like the recently re-issued permit for the nearby Wareham WWTP (Permit No. MA0101893) which sets an average monthly total nitrogen limit of 4 mg/l for the period April 1 through October 31.

The narrative included in Part I.A 1(h) of the Marion WWTP draft permit is insufficient to achieve the necessary nitrogen removal to protect Aucoot Creek and Aucoot Cove. A reasonable numerical effluent limit must be set and monitored weekly to achieve optimal and enforceable nitrogen reductions. Allowing the Marion WWTP to achieve a target effluent quality of 7-10mg/l whenever possible is inadequate to protect this important Marion marsh system.

Response B.1.

The University of Massachusetts- Dartmouth, School for Marine Science and Technology is conducting overall assessments of many estuaries in the Buzzards Bay watershed, including Sippican Harbor and Aucoot Cove. In addition, they are conducting a specific analysis of the nitrogen loadings from the unnamed tributary into which the Marion WWTP discharges. Their observations to date have not indicated a substantial impact from the Marion WWTP. Their full analysis will be completed during the term of this permit. If the results indicate that total nitrogen from the Marion WWTP is causing or contributing to exceedances of water quality standards, the permit will be modified to include appropriate nitrogen limits. However, until such an analysis is completed, the agencies believe that it is the proper course of action to include the requirement to operate the WWTP to achieve its design goal of 7-10 mg/l total nitrogen. To date, the upgraded WWTP has met that goal and in fact has regularly achieved total nitrogen levels even less than 7.0 mg/l. [also see Response C.2.]

Comment B.2.

The Coalition disapproves of the draft permit's increase in the maximum discharge limit for ammonia nitrogen to 2.6 mg/l for the May 1 to May 31 period, an increase over the 1.74 mg/l limit in the current permit. While the fact sheet attempts to justify the modified

limit based on seasonal water temperature (and related dissolved oxygen) differentials, the Coalition fails to find this compelling and views this change as contrary to the anti-backsliding requirements of the Clean Water Act which prohibits any permit containing effluent limitations which are less stringent than the comparable effluent limitation in the previous permit.1 The draft permit also fails to set a discharge limitation for ammonia nitrogen for the November 1- April 30 period requiring only the report of the level once a month.

In addition, the draft permit's monitoring requirements associated with ammonia nitrogen are inadequate. The WWTP is currently required to sample once a month and report a monthly average based on that single sample. This can hardly be considered an average. The Coalition requests that monitoring occur at least twice a week in order to gain a true monthly average.

Response B.2.

The May ammonia limit in the draft permit is the same limit that was in the previous (1998) permit. We believe that the May limit is protective of water quality standards given the lower temperatures and higher receiving water flows during this time period (also see Response A.2.).

Similarly, we do not believe that a winter ammonia limit is necessary, but we will review data submitted during the winter months to ensure that the discharge does not have the reasonable potential to cause or contribute to violation of water quality standards.

The agencies agree that once per month ammonia sampling is not adequate and have increased the sampling frequency to once per week for the period of May 1- October 31.

Comment B.3.

The draft permit only sets a monthly reporting requirement, rather than a discharge limitation, for phosphorous. An evaluation of the upgraded plant is due one year from completion to assess removal capabilities of phosphorus for a future TMDL. However, the Coalition encourages the establishment of effluent limits. In the alternative, a bi-weekly reporting requirement must be established in order to set a future effluent limit based on a sufficient amount of data.

Response B.3.

Phosphorus is not typically the limiting nutrient in salt water systems, so a phosphorus limit is not necessary to protect water quality in Aucoot Cove, and as noted previously, the unnamed stream receiving the discharge from the wastewater treatment plant is not listed as a water requiring a TMDL. However, a macroinvertebrate analyses done in 2000 documented an abrupt change in community composition and trophic structure

1 40 CFR 122.44(1).

downstream of the treatment plant discharge, indicative of organic enrichment and possibly low levels of dissolved oxygen (see the Buzzards Bay Watershed 2000 Water Quality Assessment Report , published in November 2003). This information may indicate the need for control of phosphorus in the discharge. For that reason we have included a requirement that the Town assess the treatment plant's ability to remove phosphorus [including necessary changes/additions to the process which would be necessary to remove phosphorus to level of 0.2 mg/l]. The assessment is due within one year of the effective date of the permit (not within one year of the completion of the upgrade as stated in the draft permit; the upgrade was completed in September 2005). If future water quality data should show that a phosphorus limit is necessary, the permit may be modified based on this new information.

Also the agencies concur with your comment that more frequent monitoring of phosphorus is necessary and have increased the monitoring frequency to twice per month.

Comment B.4.

The draft permit may be in violation of the Commonwealth's antidegradation policy. The Commonwealth's policy clearly states that there shall be no new or increased point source discharge of nutrients, including nitrogen, into lakes or ponds or the tributaries thereof. The highest and best practical treatment shall be applied to reduce the effects of eutrophication and the growth of weeds and algae. The draft permit fails to reflect the highest and best practical treatment for nitrogen by not setting limits, while at the same time increasing the capacity and thus the amount of nitrogen discharged from the WWTP. The fact sheet associated with the draft permit asserts that the current nitrogen load is only 24% of the sub-basin's assimilative capacity assuming that more nitrogen can by discharged without adverse effect. The Coalition believes this is counter to the antidegradation policy and must be remedied.

Response B.4.

The amount of total nitrogen discharged to the unnamed tributary and Aucoot Cove has, in fact, been reduced following the upgrade of the WWTP in 2005. This reduction will clearly offset the amount of nitrogen associated with the allowable increase in flow. In addition, the receiving water has not been designated in non-attainment due to nutrients in the State's 303d listing [Massachusetts Year 2004 Integrated List of Waters]. Aucoot Cove is listed in the 303d report only for pathogens.

The following comments were received from the Massachusetts Riverways Program:

Comment C.1.

The draft permit requires monitoring and assessment of the impacts the facility's discharge may have on the shellfish bed in Aucoot Cove and other adjacent areas. This monitoring and assessment of bacterial impacts is a sound and important addition to the permit. Determining the sources of pathogens and bacteria impacting the status of the shellfish beds will help regulators and managers develop remedial strategies with the goal of opening the shellfish beds unconditionally. We would like to suggest the assessment include looking at the salt marsh as a source of pathogens since the marsh may possibly be inoculated by the effluent and subsequently serve as an incubator for bacteria and other pathogens.

We also support the requirement to look at the impacts the discharge may be having to the unnamed stream serving as the receiving water. Consideration should be given to expanding this requirement to include Aucoot Cove and its sensitive receptors including eelgrass beds, salt marsh, estuarine ecosystem, salt marshes, fish populations and habitat. Given the dominance of this effluent flow on the system, this expansion of the investigation to the Cove would again help managers and regulators work to restore and protect the sensitive receptors of this Class SA waterbody.

Response C.1.

The final permit has set the fecal coliform bacteria limit equivalent to the SA standards, thus there is no need for an assessment of the WWTP's impact on Aucoot Cove. The requirement for a monitoring program to address bacteria, which was included in the draft permit, has been removed from the final permit [note: the biological impact study will remain a requirement, see Part E. of the permit]. The overall assessment referenced in Response B.1 above may lead to the conclusion that non-point sources of bacterial input are impacting the receiving waters.

Comment C.2.

This facility is being granted an increase in flow associated with a plant upgrade and increase in design capacity. The increase in capacity is a material change but it is one manufactured by the Permittee and not a change in receiving water or influent characteristics, new information that informed the permit or a change in State standards or requirements. It is these sorts of material changes which are more appropriately characterized as material changes under anti degradation. Simply increasing the size or capacity of a facility should not be the basis for an increase in effluent discharged into a waterway and an impaired system. The NPDES system is tasked with eliminating discharges to waterways under the federal Clean Water Act and protecting water quality and these should be the driving tenets when considering anti degradation just as it would be counter to the efforts of the Department of Transportation to keep drivers safe by

increasing the speed limit on highways because cars are designed to go at much higher rates of speed.

It should also be noted the facility is currently having compliance issues with existing permit limitations. If the facility is having trouble meeting TSS, WET, copper and BOD standards under the higher limitations of the current permit it may not be able to meet the more stringent limitations proposed in this draft permit. Since the upgraded plant is not completed and its effectiveness is untested, it is not judicious to assume existing issues will all be satisfactorily addressed.

The Fact Sheet does not discuss the need for increased flow, the status of conservation efforts, the current per capita wastewater generation, or the water quality of the unnamed stream serving as the receiving water for the discharge. Has a comprehensive water resources plan been completed for the community and future wastewater central and decentralized needs been assessed and a diligent and thorough assessment concluded centralized sewer expansion is the best alternative? What is the current per capita wastewater use both annually and seasonally? Is the community meeting or approaching target usage? How necessary is a flow increase for this community given the information provided on monthly average flows show the current 0.5 mgd flow has been adequate. It is possible additional flow capacity at the facility could be gained through I&I elimination and conservation efforts? Granting an increase in flow simply because the facility has increased capacity runs counter to the intent of the NPDES program to reduce and eliminate discharges into US waterways, especially when there does not appear to be a pressing need for the increase and I&I reductions could potential realize increased capacity at the facility without an increase in discharge volume. It seems prudent and in keeping with the intent of the NPDES program to explore and exercise all options before allowing an increase in discharge volume and pollutants.

While the permit is crafted to maintain existing pollutant loads despite an increase in effluent volume, the pollutant load limitations are only for BOD and TSS. Unfortunately BOD and TSS are not the only pollutant s of concern. It is pertinent that this facility discharges to a receiving water with minimal to no flow and to the sensitive Aucoot Cove system. The facility's increased discharge would lead to an increase in nutrient loads above existing levels if only because there are no existing permit limitations to serve as a benchmark. While the existing permit may not have numerical nutrient limits, it is still necessary to keep nutrient loads on par, at a minimum, with existing loads associated with the 0.5 mgd discharge. The Fact Sheet notes the downstream salt marshes fringing Aucoot Cove may be able to assimilate most nutrients but there has been no actual study and assessment to indicate the salt marshes are not impacted by increased nutrient loads or increased fresh water input and the loss of assimilative capacity to treat other nutrient sources, such as atmospheric or nonpoint sources, does not negatively impact the entire estuarine system. Additionally these downstream marshes cannot provide nutrient uptake for the unnamed stream receiving the effluent discharge directly.

The discharge monitoring data shows the facility has serious issues meeting the existing permit limits. An increase in flow would add additional copper loads to the receiving

water and to Aucoot Cove and Buzzards Bay which has the potential to be highly toxic to aquatic and marine organisms. The facility's whole effluent toxicity testing data also gives rise to concerns. The facility has problems meeting chronic toxicity limitations. The data provided in the fact sheet shows two consecutive NOEL toxicity tests, (11/03 and 2/04) with results of 6.25% or less concentration of effluent showing no observable effect; seriously lower than the 100% limitation. If some other pollutant(s) beside copper is the root cause of the observed toxicity than an increase in flow could potentially add an increased load of a chronically toxic pollutant(s) to the system. At a minimum, should a flow increase be unavoidable, ascertaining and remediating the cause(s) of this documented toxicity should be undertaken before allowing a flow increase. This undertaking would support a recommendation in the most recent 305(b) assessment for this segment which suggests a toxic inventory be done. Adding more frequent copper sampling would provide some additional information on the variability and daily copper loads being release by the treatment facility especially if the increase in flow occurs. Since copper limitations are at least partially based on available dilution and the dilution is currently >1 then an increase in flow will not result in an adjustment of the copper concentration.

Response C.2.

The first paragraph of the comment reflects a misunderstanding of the NPDES permitting program. The commenter would have the permitting authority deny an increase in the authorized flow from the treatment plant on the basis that the state's antidegradation policy prohibits any such increase. Notwithstanding that the commenter's parent state agency approved the increase in design flow, the state's antidegradation policy does not prohibit increases in permitted flow, nor does it prohibit any increase in the authorized discharge of pollutants. Its fundamental principal is that any increase in the discharge shall not degrade receiving water quality (see 40 CFR 131.12 for the federal requirements for a state antidegradation policy).

The facility upgrade to provide a higher degree of treatment and an increase in flow capacity to 0.588 million gallons per day [MGD] was based upon a Comprehensive Wastewater Management Plan [CWMP] and was associated with an Administrative Consent Order between MassDEP and the Town. The project was required to be reviewed by the Executive Office of Environmental Affairs [EOEA] under the Massachusetts Environmental Policy Act [MEPA] program regulations. An "Environmental Notification Form [ENF] was submitted and reviewed by MEPA. The project was required to undergo review by MEPA due to the expansion of an existing WWTF by greater than 10% as well as the alteration of greater than 5,000 square feet of vegetated wetlands. The expansion of the WWTP also included construction of new sewer mains to serve areas of need, which were identified in the CWMP process. The Secretary issued a finding on November 8, 2002 indicating that "...the potential impacts of this project do not warrant the preparation of an EIR". Thus, the project was found to be acceptable by the EOEA Secretary.

Prior to the upgrade, the facility periodically violated its effluent limitations. The facility upgrade has provided substantially greater levels of treatment. For example, the March and April 2006 Discharge monitoring Reports [DMRs] showed BOD monthly averages of 2.0 mg/l and 3.0 mg/l respectively. For total suspended solids [TSS], the results were 0.6 mg/l and 0.0 mg/l respectively. The combined Kjeldahl-nitrogen and nitrate-nitrogen levels were 5.2 mg/l and 4.9 mg/l during March and April, respectively. Total recoverable copper levels were 0.0 mg/l for both months.

The requirement to identify and reduce infiltration and inflow [I/I] have been expanded and increased in this permit [see Section I.C.2] and should result in the decrease of I/I in the future, thus not requiring the WWTP to treat extraneous flow not associated with the town's collected wastewater.

Comment C.3.

The previously released draft permit had a sampling requirement for TSS of twice weekly but this newest draft permit has reduced the sampling to once weekly for both TSS and BOD. We would like to advocate for a minimum of twice weekly testing of both BOD and TSS. We believe this more frequent testing is in the best interest of the receiving water which affords little to no dilution of the effluent. Past monitoring data shows the facility experiences a great deal of variability in its BOD and TSS concentrations, there is a proposed flow increase and changes at the facility whose effect are not yet known, and recent data shows the facility has had compliance issues. Given the past history, the upcoming changes and the preponderance of wastewater to receiving water, it seems best to have more frequent monitoring of BOD and TSS to have adequate information to assess the effectiveness of the treatment process, have a more thorough understanding of the daily loads and fluctuations and to contribute more comprehensive data to the assessment of the effect of the effluent on the receiving waters.

Response C.3.

The agencies have reviewed the operational data since the upgraded WWTP has been in operation and continue to feel that 1/week monitoring for BOD and TSS is adequate. The performance of the upgraded WWTP is far superior to the previous facility and the removals for BOD and TSS are extremely high. The 1/week testing requirement for BOD and TSS will remain in the final permit.

Comment C.4.

We agree the circumstances at this facility warrant maintaining current ammonia limits. We support the lower ammonia levels and hope EPA will consider expanding the cold weather report only requirement for daily maximum for ammonia to a year-round requirement. We would also like to recommend adding a dissolved oxygen limitation for this outfall given the negligible dilution available in the receiving waters. The DO would reflect the 5 mg/l Class B Water Quality minimum with daily sampling required for at least the warm weather months when the ammonia limitation is in effect. We are pleased

to see a requirement to monitor phosphorus and for the facility to perform an evaluation of operational procedures to arrive at optimal phosphorus removal. Since this effluent receives little or no dilution the existing measured concentration is several orders of magnitude above EPA Eco-region criteria and this high concentration poses a real threat to the viability of the unnamed stream.

Response C.4.

The agencies agree with the request to report the daily maximum ammonia value during the period of May- October. Such a reporting requirement has been added to the final permit. The ammonia-nitrogen monitoring requirement has been increased from 1 per month to 1 per week for the period of May 1- October 31.

The agencies agree with the need for a minimum dissolved oxygen limit during the low flow months. The permit will require a minimum dissolved oxygen concentration of 5.0 mg/l during the period of June 1- October 31. EPA and MassDEP believe that during these months the facility has the reasonable potential to cause or contribute to an exceedance of water quality criteria for dissolved oxygen given the low dilution and high temperatures in the receiving water. (also see Responses A.3. and B.3 regarding studies indicating low in-stream dissolved oxygen)

The agencies acknowledge the commenter's agreement with the monitoring requirements for total phosphorus and the requirement to conduct an assessment of plant's ability to remove total phosphorus should removal of phosphorus be deemed necessary in the future.

The following comments were received by the Massachusetts Division of Marine Fisheries:

Comment D.1.

The draft permit indicates effluent is discharged to an unnamed brook of classification B water that flows into Aucoot Cove. The effluent remains undiluted for the short distance it travels within the unnamed brook before reaching Aucoot Cove with little if any flow from other sources within the brook. The unnamed brook is functionally equivalent to an extension of the discharge pipe, and the discharge prevents the harvest of shellfish in the precautionary Prohibited Area at the head of Aucoot Cove due to high fecal coliform levels. The remainder of Aucoot Cove is designated SA approved for shellfish resources.

Marine Fisheries recommends the draft permit effluent limitation for fecal coliform be revised according to the State SA standard for receiving waters open for shellfishing that provides for a geometric mean most probable number of 14 organisms per 100 ml and not more than ten percent of the samples exceeding a geometric mean most probable number of 43 per 100 ml.

The Fact Sheet indicates the facility will increase discharge flow from 0.5 to 0.588 mgd. The fecal coliform standard recommended above will provide the necessary protection of shellfish without expansion of the administrative Prohibited Area because of increased flow and/or further degraded water quality in the approved area.

Response D.1.

The agencies have carefully evaluated the necessary fecal bacteria limits for this permit. In the original draft permit [which was eventually withdrawn] the proposed permit had limits equivalent to the SA standard [14 MPN/100 ml geometric monthly mean and 43 MPN/100 ml maximum daily]. The latest draft permit which was public noticed on July 27, 2005 had limits equivalent to the freshwater Class B standards [200 cfu/100 ml geometric monthly mean and 400 cfu/100 ml maximum daily. Note that the permit in both cases included a maximum daily limit rather than a "10% exceedance" limit.

The agencies have reviewed the comments submitted on the latest draft permit and believe that there is merit in setting the effluent limits equivalent to the Class SA standard. The discharge does first flow into a freshwater stream, which has little dilution flow at low flow periods. The distance to Aucoot Cove [Class SA water] is approximately 0.5 miles. The die-off rate for bacteria has been demonstrated to be several days, thus it has been determined that there is reasonable potential for the discharge to cause a violation of the Class SA standard if the discharge contained fecal coliform counts equal to limits based on the Class B criteria (geometric mean of 200 cfu/100 ml, maximum daily discharge of 400/100ml).

Therefore, the limits in the permit have been established at a monthly average geometric mean of 14 cfu/100ml and a maximum daily discharge of 43 cfu/100ml, consistent with the SA criteria. The permit allows the use of the membrane filter method [cfu] rather than the multiple tube fermentation method [MPN]. This testing method has been deemed protective by MassDEP.

The WWTP has demonstrated that it can meet the limits based on the SA criteria, based on data submitted since completion of the plant upgrade in 2005. In 2006, the Town completed the installation of a new ultraviolet [UV] disinfection system, replacing its old UV disinfection system. The new system should be equivalent in treatment to the older one, but the agencies acknowledge the possible need for possible operational adjustments to meet the new limits on a long-term basis. As such, the final permit will provide a one year compliance schedule [from the effective date of the permit] for the WWTP to meet the updated limits.

In the interim period, the permittee will be required to achieve the effluent limitations included in the previous permit (monthly average geometric mean of 200 cfu/100ml and a maximum daily discharge of 400 cfu/100 ml).

The lower bacteria level in the final permit should provide for a reduced closure zone for shell fishing and should enhance the uses of the designated SA receiving water.

Changes made in the final permit:

Pg. 2: a second flow reporting line was added to the table; this requires the reporting of monthly average flow and maximum daily flow for the reporting month.

Pg. 2 fecal coliform bacteria limits were changed to reflect SA standards.

Pg. 2: Enterococci monitoring requirements were deleted from the permit.

Pg. 2: the monitoring requirement for ammonia-nitrogen for the period of May 1- October 31 has been changed from 1/month to 1/week; the requirement for the period November 1- April 30 remains 1/month.

Pg. 3: monitoring for total recoverable zinc and total recoverable lead have been removed from the permit; these analytes will be tested as part of the Whole Effluent Toxicity [WET] testing requirements.

Pg. 3: a minimum dissolved oxygen level of 5.0 mg/l for the period June 1- October 31 has been added to the permit.

Pg. 4-6: the footnotes have been updated to reflect EPA's generic footnote language used in all NPDES permits.

Pg. 4- footnote 5: a composite sample has been defined as a flow composite sample.

Pg. 4- footnote 6: the provision relating to possible future limits revision for fecal coliform has been deleted; the interim limits for one year time period were added to this footnote.

Pg. 6: Part I.A.1.b. The requirement for four (4) pH grab samples per sampling event has been removed. The final permit requires one (1) sample per day.

Pg. 6: Part I.A.1.f.has been deleted from the permit; the subsequent sections have been re-numbered to provide for proper sequencing.

Pg. 7: in Section B "Unauthorized Discharges" a reporting link to MassDEP for SSOs has been added.

Pg. 10: in Section E, element 2 [determine the impact of the discharge on the receiving water shellfish beds] has been removed as the fecal coliform limits have been changed negating the need for the study.

Pg. 12: in Section G, the requirement for evaluating the impact from bacteria has been removed as a state permit condition; the other aspect of the study requirement [assess the biological impacts] remain.