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AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

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

Town of North Attleborough

is authorized to discharge from the facility located at

Cedar Road
North Attleborough, MA 02760

to the receiving water named Ten Mile River

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

This permit shall become effective 30 days after date of signature.

This permit and the authorization to discharge expire at midnight five years from the date of issuance.

This permit supersedes the permit issued September 30, 1992.

This permit consists of 11 pages in Part I including effluent limitations, monitoring requirements, etc., and 35 pages in Part II including General Conditions and Definitions.

Signed this 30 day of *September*, 1999

Linda M. Mump

Director
Office of Ecosystem Protection
Environmental Protection Agency
Region 1
Boston, Massachusetts

Stem Haus (LL)

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

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Region 1
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Commonwealth of Massachusetts,
Boston, Massachusetts

PART I

Page 2 of 11
 Permit No. MA0101036

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (May 1 through October 31)

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 001 treated wastewater.

Such discharges shall be limited and monitored by the permittee as specified below:

	<u>Discharge Limitations</u> (specify units)		<u>Monitoring Requirement</u>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency Sample Type
Flow, MGD	4.61			Daily Continuous
BOD, mg/l	5	10	15	3/Week 24-Hr. Comp.
TSS, mg/l	7	10	15	3/Week 24-Hr. Comp.
Fecal Coliform, CFU/100 ml	200	---	400	3/Week Grab
Total Chlorine Residual, ug/l	11	---	19	3/Day Grab
Total Phosphorus, mg/l	1	1.5	2	2/Week 24-Hr. Comp.
Ammonia-Nitrogen, mg/l				
(June 1 through October 31)	1	1.5	2	2/Week 24-Hr. Comp.
(May 1-May 31)	3	---	---	2/Week 24-Hr. Comp.
Total Nitrogen, mg/l (TKN and NO ₂ +NO ₃)	---	---	Report	1/Month 24-Hr. Comp.
pH, s.u.				Daily Grab
Dissolved Oxygen, mg/l				Daily Grab

See Part I.A.4.g.
 See Part I.A.4.h.

PART I

Page 3 of 11
 Permit No. MA0101036

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (November 1 through April 30)

2. During the period beginning the effective date from November 1 through April 30 each year lasting through expiration, the permittee is authorized to discharge from outfall serial number 001 treated wastewater.

Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u> (specify units)			<u>Monitoring Requirement</u>	
	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow, MGD	4.61			Daily	Continuous
BOD, mg/l	15	25	30	3/Week	24-Hr. Comp.
TSS, mg/l	15	25	30	3/Week	24-Hr. Comp.
Fecal Coliform, CFU/100 ml	200	---	400	3/Week	Grab
Total Chlorine Residual, ug/l	11	---	19	3/Day	Grab
Ammonia Nitrogen, mg/l (December 1-April 30)	10	---	---	2/Week	24-Hr. Comp.
(November 1-November 30)	7	---	---	2/Week	24-Hr. Comp.
Total Nitrogen, mg/l (TKN and NO ₃ +NO ₂)			Report	1/Month	24-Hr. Comp.
pH, s.u.	See Part I.A.4.h.			Daily	Grab
Dissolved Oxygen (mg/l)	Monitor			Daily	Grab
Total Phosphorus (mg/l)	Monitor			1/Month	24-Hr. Comp.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 001 (Treated sanitary wastewater).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics
Units

Discharge Limitations

Monitoring Requirement

	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Copper, Total, ug/l	20	20	1/Month	24-Hr. Comp.
Zinc, Total, ug/l	—	Report	1/(2 Month) ³	24-Hr. Comp.
Chromium, Total, ug/l	—	Report	1/(2 Month) ³	24-Hr. Comp.
Nickel, Total, ug/l	—	Report	1/(2 Month)	24-Hr. Comp.
Lead, Total, ug/l	—	Report	1/Year	24-Hr. Comp.
Iron, Total, ug/l	—	Report	1/Year	24-Hr. Comp.
Aluminum, Total, ug/l	140	140	1/Month	24-Hr. Comp.
Cadmium, Total, ug/l	—	Report	1/(2 Month)	24-Hr. Comp.
Cyanide, Total, ug/l	5.0	22	1/Month	Grab
Oil and Grease, mg/l	—	Report	1/Year	Grab
pH, s.u.	See Part I, A. 4. g.	—	Daily	Grab
Whole Effluent Toxicity Testing ²	IC50 ≥ 100%	—	4/Year	24 Hr. Comp.
	NOEC ≥ 94%	—	4/Year	24 Hr. Comp.

Footnotes:

1. Values of total recoverable lead, copper, and cadmium shall be measured using the Furnace Atomic Absorption (AA) method. The MLs for lead, copper, and cadmium, respectively, are 5 ug/l, 5 ug/l and 1 ug/l. Any effluent value for these three metals which is below its respective ML shall be reported as zero.

Total recoverable values of all other metals may be measured using either the Inductively Coupled Plasma ICP method or the Furnace AA method.

2. Values of cyanide shall be measured using the manual or automated spectrophotometric method (also called colorimetric method). Compliance/non-compliance determinations of cyanide will be based on the Minimum Detection Level (ML). The ML for cyanide is 20 ug/l. Any cyanide value below 20 ug/l shall be reported as zero.
3. Samples shall be taken every other month beginning in January.
4. Samples to be taken in July

PART I.A.4.

- a. Report maximum daily rates and average daily flow for the month.
- b. "LC50" is defined as the concentration of effluent that causes mortality to 50% of the organisms. "NOEC" is defined as the concentration of effluent that shows no observed concentration effect on the test organisms. The tests shall be conducted on the second Tuesday of the months of January, March, May, July, September and November using one test specie (only Ceriodaphnia). The results shall be submitted by the last day of the month following the completion of the test. See Attachment A for testing details.
- c. The limit at which compliance/non-compliance determinations will be based is the Minimum Level (ML). For this permit, the ML for Total Residual Chlorine (TRC) has been defined as 50 ug/l and this value may be reduced by permit modification as more sensitive methods are approved by EPA and state. Any value below 50 ug/l shall be reported as non-detect.
- d. TRC shall be tested using Amperometric Titration or the DPD spectrophotometric method. The approved method may be found in Standard Methods for the Examination of Water and Wastewater, 20th Edition Methods 450-CL E and 4500-CL G, or USEPA Manual of Methods of Analysis of Water and Wastes.
- e. The limitations on fecal coliform and TRC are state certification requirements. The average monthly limitation for fecal coliform is expressed as a geometric mean.
- f. Chlorination System Report

Within 3 months of the effective date of the permit, the permittee will outline the current chlorination and dechlorination operations procedures in detail. The report will include a description of the chlorination and dechlorination systems and methods of dosage control. / done

Within 18 months of the effective date of the permit, the permittee will submit a report that will further address how flow variability and chlorine demand variability affect compliance with the TRC and fecal coliform limits at all times. Sampling data shall be provided to support conclusions on how hourly and daily flow and chlorine demand variability affects permit compliance. The report will identify all changes necessary to ensure compliance with the TRC and fecal coliform limits at all times, including equipment modifications and upgrades, operational procedures (including

PART I.A.4. (Contd.)

calibration procedures and alarm/response procedures), and sampling protocols. The report will include a schedule for implementing all of the necessary changes. An annual report shall be submitted on November 30 each year summarizing all exceedances of the TRC and fecal coliform effluent limits during the previous year, the estimated or measured fecal coliform and chlorine discharge levels during the exceedance, and measures taken to fix the problem and to prevent future occurrences.

- g. The pH of the effluent shall not less than 6.5 nor greater than 8.3 at any time, unless these values are exceeded due to natural causes. The permittee shall take four (4) grab samples per sampling event and report the highest and lowest measured values.
- h. The dissolved oxygen content in the effluent shall not be less than 6.0 mg/l.
- i. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time, other time. The discharge shall not cause objectionable discolorations of the receiving waters.
- j. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
- k. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the designed flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
- l. The total chlorine residual and other toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards upon notification to the permittee.
- m. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.

PART I.A.5.

All POTW's must provide adequate notice to the Director of the following:

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

Prohibitions concerning interference and pass-through:

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
- b. The permittee shall develop and enforce specific effluent limits (local limits) for industrial user (s), and all other users as appropriate, which together with appropriate changes in the POTW's operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond.

B. INDUSTRIAL PRETREATMENT PROGRAM.

1. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR 403.

At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):

- (a). Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year, and shall maintain adequate records;
 - (b). Issue or renew necessary industrial user control mechanism within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user;
 - (c). Obtain appropriate remedies for noncompliance by any industrial user with any Pretreatment Standard and/or requirement; and
 - (d). Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
2. The permittee shall provide the EPA and the MA DEP with an annual report describing the permittee's pretreatment program activities for the twelve month period ending 60 days prior to the due date in accordance with 403.12(i) and in the report format described in the Attachment B. Annual reports shall be submitted no later than February 19th of each year.
 3. The permittee must obtain approval from the EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR 403.18(C).
 4. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR 405 et. seq.

C. 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.

If an applicable management practice or numerical limitation for pollutants in sewage sludge more stringent than existing federal and state regulations is promulgated under section 405 (d) of the Clean Water Act (CWA), this permit shall be modified or revoked and reissued to conform to such promulgated regulations.

The permittee shall comply with the limitations no later than the compliance specified in the applicable regulations as required by Section 405(d) of the Clean Water Act.

2. The permittee shall give prior notice to the Director of any change(s) planned in the permittee's sludge use or disposal practice.
3. A change in the permittee's sludge use or disposal practice is a cause for modification of the permit. It is a cause for revocation and reissuance of the permit if the permittee requests or agrees.

Phosphorus Loading Evaluation and Reduction Program.

1. The permittee shall undertake the following steps during the duration of the permit which will lead to the future reduction in phosphorus loading from the facility to the Ten Mile River. The permittee is required to undertake the following:
 - a. By July 31, 2001, the permittee shall complete an assessment of phosphorus loadings to the POTW sufficient to characterize loadings into the facility and those discharged to the Ten Mile River; the evaluation should be such that variations in loadings can be determined and estimated with a high degree of confidence; the results of this analysis should be submitted to the permit authorities by October 31, 2001.
 - b. By July 31, 2002 the permittee shall submit an optimization plan to provide maximum removal of phosphorous which shall also contain a program to minimize influent phosphorus loadings. The plan shall include an analysis of BNR and physical-chemical phosphorus removal strategies and shall contain a schedule for implementing the plan. To the maximum extent possible the schedule shall be implemented within the term of the permit.

D. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Forms postmarked no later than the 15th day of the month following the completed reporting period. The first report is due on the 15th day of the second month following the effective date of the permit.

- a. Signed copies of these, and all other reports required herein shall be submitted to the Director at the following address:

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

- b. Signed copies of all monitoring reports shall be submitted to the state at:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection
Ten Mile River Basin Team
20 Riverside Drive
Lakeville, Massachusetts 02347

- c. Signed copies of all other notifications and reports required by this permit, including DMR's and Toxicity Test Reports, shall be submitted to the state at:

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

E. 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 Commissioner of 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 this permit is declared invalid, illegal 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.

NPDES

RESPONSE TO COMMENTS
REISSUANCE OF NPDES PERMIT NO. MA0101036
TOWN OF NORTH ATTLEBOROUGH, MASSACHUSETTS

During the period, August 19, 1999, to September 17, 1999, EPA and the Massachusetts Department of Environmental Protection solicited comments on the draft National Pollutant Discharge Elimination System (NPDES) permit to be issued to Town of North Attleborough, Massachusetts, for the discharge of treated effluent of an Advanced Wastewater Treatment Plant to the Ten Mile River in the Town of North Attleborough, Massachusetts. Comments were received from the following:

1. Save the Bay (Jeffrey H. Brownell, Policy Specialist)
2. Woodard & Curran Consulting Engineers (Helen Priola, P.E., Senior project Engineer) for the Town of North Attleborough dated September 17, 1999.

Following is a response to comments received during the public comment period, including identification and explanation of those provisions of the draft permit which have changed in the final permit.

Save the Bay (Jeffrey H. Brownell, Policy Specialist)

COMMENT # 1

Page 2 of the Fact sheet states the population served as over 1000, a possible typographical error, although technically correct, it does not provide a reasonable estimate of the actual figure. Records Save the Bay obtained from EPA's 1996 Clean Water Needs Survey listed the figure as 11,322. The report also listed for the flow for that time period to be 2.79 MGD or approximately 246 gallons per day. The facility discharged approximately 3.86 MGD in 1998, which should equate to a population served of approximately 15,691 if the discharge per person is assumed to be a constant factor.

RESPONSE #. 1

The EPA and MA DEP acknowledge the above statement. The original Fact Sheet may not be altered once publicly noticed. This response document will serve to amend the administrative record relative to the Fact Sheet. All comments relative to the Fact Sheet and the EPA response contained within this document shall become part of the administrative record. EPA and the MA DEP agree with the above statement.

COMMENT # 2

TKN monitoring is an excellent addition to the renewed permit. Protection of Narragansett Bay from over enrichment of nutrients is a prime objective of our organization. In order to get a more accurate assessment of TKN being discharged, Save The Bay recommends more frequent monitoring in order to characterize average monthly discharges. We also recommend that the permittee be required to undertake a Nitrogen Loading Evaluation and Reduction Program similar to the Phosphorous Program described on page 10 of the draft permit.

RESPONSE # 2

Monthly total nitrogen monitoring is sufficient to characterize the nitrogen loading from this facility. Nitrogen monitoring is the first step in the development of a long term Nitrogen Control Strategy.

COMMENT # 3

Existing permit information obtained from the USEPA indicates that the facility currently has a fecal coliform monthly average limit and a daily maximum limit of 400 colonies per 100 milliliters. The draft permit does not contain these limits nor did the fact sheet indicate any fecal coliform limits changes from the existing permit. Relaxation of this limit is not consistent with the anti-backsliding provisions of the Clean Water act Section 402.

Fecal Coliform limits should be expanded to include the entire year. There are users of the Ten Mile River and Narragansett Bay year round and under this permit their health is being compromised for 6 months of the year.

The monitoring frequency for fecal coliform should be increased to 5 or 7 times per week. Based on EPA Discharge Monitoring Reports the facility has a history of exceedences for this parameter. In June 1998 the facility reported a weekly average of 2,196 colonies per hundred milliliters, 5 times the permitted level. The same months report included a daily maximum of 28,800 colonies per hundred milliliters, 72 times the permitted level. In July of 1998 the facility reported a daily maximum of 47,000 colonies per hundred milliliters, 117 times the permitted level. Clearly the bacteria discharges from this facility need to be more closely controlled in order to protect water quality and human health.

RESPONSE # 3

The Fecal Coliform limits reflect the Massachusetts Water Quality Standards criteria for Fecal Coliform Bacteria. The maximum daily discharge limit of 400/100 ml in the 1989 permit was replaced with a requirement that no more than 10% of the samples in a month shall exceed 400/100 ml. The limitation is therefore the same for dischargers which sample 10 times per month or fewer, and potentially slightly less restrictive for dischargers which sample more than 10 times per month. Given the relatively low dilution factor for the Attleboro effluent, and the fact that the sampling frequency is greater than 10 per month we have changed the limitation to a maximum daily discharge of 400/100ml.

We have not changed the frequency of sampling. We believe that the frequency of sampling is sufficient given that the permit also requires the permittee to perform an evaluation of its chlorination and dechlorination systems.

The final permit will be changed to reflect the year-round disinfection.

COMMENT # 4

Dilution factors based on 30Q10 stream flows are not appropriate. The usage of a 30Q10 stream flow in the dilution factor calculations is not protective enough for aquatic life. The drought experienced during the summer of 1998 provides a clear reminder of the low flow conditions which impact rivers and streams. The organisms which live in these ecosystems need to be protected from high concentrations of toxic pollutants at all times and are not tolerant of 30 day averages which can represent large variations in daily dilution conditions. Save The Bay recommends that a 3Q10 stream flow be used for determining dilution calculations for this and other NPDES permits.

RESPONSE # 4

The summer time limits are based on 7Q10 and the winter time limits are based on winter 30Q10 flow. EPA and MA DEP are of the opinion that those flows are protective of aquatic life. Those flow regimes are consistently used for Massachusetts discharge permits.

Woodard & Curran Consulting Engineers (Helen Priola, P.E., Senior project Engineer) for the Town of North Attleborough dated September 17, 1999.

COMMENT # 1

Page 1 of 11 - The authorization should be changed from Town of North Attleborough to the North Attleborough Board of Public Works.

RESPONSE # 1

The final permit has been modified to reflect the above change.

COMMENT # 2

Page 2 of 11 - The average monthly flow for the treatment facility is 4.6 mgd. The previous permit indicated an average monthly flow limit of 4.61 mgd. The average monthly limit should remain at 4.61 mgd.

RESPONSE # 2

The average monthly flow for the treatment facility will remain at 4.61 mgd. The final permit has been modified accordingly.

COMMENT # 3

Page 2 of 11 and Page 3 of 11 - The previous permit had two ammonia limits for seasonal periods of May 1-May 31st and June 1 thru Sept 30th. The new permit has limits set at May 1st thru May 31st and June 1st thru Oct 31st along with new winter limits of Nov. 1st to Nov. 30th and Dec. 1st thru April 30th. The Board requests that the original June 1st thru Sept. 30th period remain the same. Meeting the limits will be difficult due to the temperatures during October. The EPA indicates that change in the date due to low flow in the Ten Mile River during the month of October. Please provide supporting data for this requirement.

RESPONSE # 3

The U.S. Geological Survey stream flow gauge on the Wading River (#01109000) at Norton, MA is used as a reference gauge for Ten Mile River flows. In 1998 the October flows were lowest for the entire year (average 6.1 cfs), and the next lowest flow in September was 17 cfs.

COMMENT # 4

Page 4 of 11 - Lead, iron, oil and grease has not been a problem at the WWTF for over 6 years. The board sees no justifiable reason to continue limits on these discharge characteristics and recommends that if at all the testing be limited to reporting on a yearly basis only.

RESPONSE # 4

The testing of lead, iron, oil and grease will be limited to reporting only on a yearly basis. The final permit has been modified to reflect the changes.

COMMENT # 5

Page 4 of 11 - What is the actual basis for the Aluminum limit? Has recent testing of the Ten Mile River been conducted (TMDL testing). According to the permit the last studies were conducted in 1984. It is recommended these limits not be changed until further testing is conducted. In order to maintain phosphorous limits aluminum may be exceeded since current control at the WWTF is using aluminum sulfate.

RESPONSE # 5

The Aluminum limit is the same as in the existing permit.

COMMENT # 6

Page 6 of 11 Part 1.A.4f - Chlorination Report: The permit requires a report within 3 months of the permit's effective date to address the effectiveness of the chlorination and dechlorination systems. This does not provide the board sufficient time to appropriate funds and conduct the testing and prepare a report. The deadline should be moved to 1½ years after permit since first available funds would be July 1, 2000. May we offer the following verbage on this item.

"Within 3 months of the effective date of the permit, the permittee will outline the current chlorination and dechlorination operations procedures in detail. The report will include a description of the chlorination and dechlorination systems and method of dosage control.

Within 1½ years of the permit the permittee will submit a report that will further address chlorination and dechlorination. The report will specifically address how flow variability and chlorine demand variability affect compliance with the TRC and fecal coliform limits at all times. Sampling data will be provided to support conclusions on how hourly and daily flow and chlorine demand variability affects permit compliance.

The report will identify all changes necessary to ensure compliance with the TRC and fecal coliform limits at all times, including equipment modifications and upgrades, operational procedures (including calibration procedures and alarm/response procedures) and sampling protocols. The report will include a schedule for implementing all of the necessary changes. An annual report shall be submitted each year..."

RESPONSE # 6

In regards to submitting the Chlorination Report, the above proposed schedule and language proposed by the permittee are acceptable to EPA and MA DEP and will be incorporated into the permit.

COMMENT # 7

Page 10 of 11 - The sludge conditions under item No. 4 are not relevant to this plant. As indicated in our letter to you dated July 21, 1999, the sludge is currently trucked to disposal facility which takes it with liquid. There are no plans on changing this process. Therefore it is requested that this test be dropped.

RESPONSE # 7

You are correct. The final permit has been changed to eliminate item 4.

COMMENT # 8

Page 10 of 11 - Phosphorus loading Evaluation and Reduction Program. Provision a. of this permit condition requires the Town to complete a phosphorous monitoring and loading analysis within 12 months of permit issuance, with submittal of a report within 3 months.

Provision b. of the permit condition requires the Town to develop and implement a plans to minimize phosphorus loadings to the plant--and maximize removals at the plant within 24 months of permit issuance.

The proposed time frames do not provide sufficient time for the Board to appropriate necessary funds for the work or to complete a comprehensive assessment of phosphorus loadings and removal capabilities that include a field trial program. Given where the Town is in its budget cycle, funds for completion of this work cannot be made available until July 1, 2000.

Completion of an assessment of phosphorus loadings to the plant could be completed by July 31, 2001 with a report submitted by October 31, 2001. While assessment of alternate phosphorus removal strategies could begin shortly after the loadings analysis, a comprehensive analysis of BNR and physical-chemical phosphorus removal processes would take longer than the time frame suggested in the permit. The goal of the evaluation process would be to identify the most cost effective means of optimizing P removal from both capital and O&M cost perspectives. While multiple, high doses of alum to the wastewater process flow scheme would be relatively easy to accomplish, it would generate considerable sludge and use lot of chemicals. If BNR can be successfully implemented for P removal, chemical use could be greatly reduced by using it for only polishing prior to filtration. Additionally, the facility would greatly reduce its sludge production, possibly reducing operating costs and improved P removal may require some capital expenditures which must be defined and go through the funding approval process as part of a Capital Improvement Program. If this is the case, actual implementation of the P removal strategy would require more time than has been provided for in the draft permit. Reduction of P loadings of the plant would also take more time to implement as the limits are integral with the sewer use rules and regulations (i.e. local limits) which would have to be modified. A more appropriate schedule for completion of this work would be to begin it in July, 2000 and complete it in July, 2002. A schedule for full scale implementation of a strategy for P removal would then be agreed upon based on the recommendations coming out of the evaluation process. To assure all parties that progress was being made on this task, quarterly letter progress reports and a work plan could be provided.

RESPONSE # 8

EPA and MA DEP recognize the Town's budget constraints and will modify the schedule in the final permit. The scope of the phosphorus removal strategies evaluation proposed by the Town will also be incorporated in to the permit, since it includes an evaluation of BNR, which was not included in the scope of the study required in the draft permit.

Reduction in Toxicity Testing Requirement:

EPA, the MA DEP and MA EOEA mutually agree to reduce Whole Effluent Toxicity Testing Requirements from 6/year to 4/year. The final permit has been changed accordingly.

ATTACHMENT A
FRESHWATER CHRONIC
TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

Methods to follow are those recommended by EPA in:

Lewis, P.A. et al. Short Term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Third Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH. July 1994, EPA/600/4-91/002.

Any exceptions are stated herein.

III. SAMPLE COLLECTION

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

chemical analysis shall be performed on the appropriate sample(s) as well.

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

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

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

IV. DILUTION WATER

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

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

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

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

EPA NEW ENGLAND RECOMMENDED EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA, SURVIVAL AND REPRODUCTION TEST¹

1. Test type:	Static, renewal
2. Temperature (°C):	25 ± 1°C
3. Light quality:	Ambient laboratory illumination
4. Photoperiod:	16 hr. light, 8 hr. dark
5. Test chamber size:	30 mL
6. Test solution volume:	15 mL
7. Renewal of test solutions:	Daily using most recently collected sample
8. Age of test organisms:	Less than 24 hr.; and all released within an 8 hr. period of each other.
9. Number of neonates per test chamber:	1
10. Number of replicate test chambers per treatment:	10
11. Number of neonates per test concentration:	10
12. Feeding regime:	Feed 0.1 ml each of YCT and concentrated algal suspension per exposure chamber daily.
13. Aeration:	None
14. Dilution water: ²	Receiving water, other surface water, synthetic soft water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q ^R or equivalent deionized water and reagent grade chemicals according to EPA chronic toxicity test manual) or deionized water combined with mineral water to appropriate hardness.

15. Effluent concentrations:³

5 effluent concentrations and a control. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.

16. Dilution factor:

≥ 0.5

17. Test duration:

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

18. End points:

Survival and reproduction

19. Test acceptability:

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

20. Sampling requirements:

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

21. Sample volume required:

Minimum 1 liter/day

Footnotes:

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

EPA NEW ENGLAND RECOMMENDED EFFLUENT TEST CONDITIONS FOR THE
FATHEAD MINNOW (PIMEPHALES PROMELAS) LARVAL SURVIVAL
AND GROWTH TEST¹

1. Test type: Static, renewal
2. Temperature (°C): 25 ± 1°C
3. Light quality: Ambient laboratory illumination
4. Photoperiod: 16 hr. light, 8 hr. dark
5. Test chamber size: 500 mL minimum
6. Test solution volume: Minimum 250 mL/replicate
7. Renewal of test concentrations: Daily using most recently collected sample.
8. Age of test organisms: Newly hatched larvae less than 24 hr. old
9. No. larvae/test chamber and control: 15 (minimum of 10)
10. No. of replicate chambers/concentration: 4
11. No. of larvae/concentration: 60 (minimum of 40)
12. Feeding regime: Feed 0.1 g newly hatched, distilled water-rinsed Artemia nauplii at least 3 times daily at 4 hr. intervals or, as a minimum, 0.15 g twice daily, 5 hrs. between feedings (at the beginning of the work day prior to renewal, and at the end of the work day following renewal). Sufficient larvae are added to provide an excess. Larvae fish are not fed during the final 12 hr. of the test.
13. Cleaning: Siphon daily, immediately before test solution renewal.
14. Aeration: None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L. Rate should be less than 100 bubbles/min.

15. Dilution series:²

Receiving water, other surface water, synthetic soft water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^R or equivalent deionized and reagent grade chemicals according to EPA chronic toxicity test manual) or deionized water combined with mineral water to appropriate hardness.

16. Effluent concentrations:³

5 and a control. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.

17. Dilution factor:

≥ 0.5

18. Test duration:

7 days

19. End points:

Survival and growth (weight)

20. Test acceptability:

80% or greater survival in controls: average dry weight per control larvae equals or exceeds 0.25 mg.

21. Sampling requirements:

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

22. Sample volume required:

Minimum 2.5 liters/day

Footnotes:

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

VI. CHEMICAL ANALYSES

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

Parameter	Effluent	Diluent	Minimum Quantification Level (mg/l)
Hardness*1	X	X	0.5
Alkalinity	X	X	2.0
pH	X	X	--
Specific Conductance	X	X	--
Total Solids and Suspended Solids	X	X	--
Ammonia	X	X	0.1
Total Organic Carbon	X	X	0.5
Total Residual Chlorine (TRC)*2	X	X	0.05
Dissolved Oxygen	X	X	1.0
<u>Total Metals</u>			
Cd	X		0.001
Cr	X		0.005
Pb	X	X	0.005
Cu	X	X	0.0025
Zn	X	X	0.0025
Ni	X	X	0.004
Al	X	X	0.02
Mg, Ca	X	X	0.05

Superscripts:

*1 Method 2340 B (hardness by calculation) from APHA (1992) Standard Methods for the Examination of Water and Wastewater. 18th Edition.

*2 Total Residual Chlorine

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

- Method 4500-CL E Low Level Amperometric Titration (the preferred method);
- Method 4500-CL G DPD Colorimetric Method.

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

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Kärber
- Trimmed Spearman-Kärber
- Graphical

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

Chronic No Observed Effects Concentration (C-NOEC)

Methods of Estimation:

- Dunnett's Procedure
- Bonferroni's T-Test
- Steel's Many-One Rank Test
- Wilcoxin Rank Sum Test

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

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

VIII. TOXICITY TEST REPORTING

A report of results will include the following:

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

ATTACHMENT B
NPDES PERMIT REQUIREMENT
FOR
INDUSTRIAL PRETREATMENT ANNUAL REPORT

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

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

ATTACHMENT B (contd.)
NPDES PERMIT REQUIREMENT
FOR
INDUSTRIAL PRETREATMENT ANNUAL REPORT

inhibitory concentrations for North Attleborough's wastewater treatment system and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraph below or any similar sampling program described in this permit.

At a minimum, annual sampling and analysis of the influent and effluent of the North Attleborough wastewater treatment plant shall be tested for the following pollutants:

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

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

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