

**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”),

Franklin Pierce College

is authorized to discharge from the Wastewater Treatment Plant located at

**College Road
Rindge, New Hampshire**

to receiving water named

Unnamed Wetland Tributary to Pearly Pond (Hydrologic Basin Code: 01080202)

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

This permit shall become effective on March 1, 2003.

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

This permit supersedes the permit issued on February 16, 1996.

This permit consists of **12** pages in Part I including effluent limitations, monitoring requirements, etc., **Attachment A, Interim Alternative Test Procedure** (24 pages and not available electronically); **Attachment B, Freshwater Chronic Toxicity Test Procedure and Protocol** (9 pages); **Sludge Compliance Guidance** dated November 4, 1999 (72 pages); and **35** pages in Part II including General Conditions and Definitions.

Signed this 23rd day of December, 2002

Signature on File
Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency (EPA)
EPA-New England
Boston, Massachusetts

PART I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from outfall serial number 001 treated domestic (sanitary) wastewater effluent into Unnamed Wetland Tributary to Pearly Pond. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>						<u>Monitoring Requirements</u>		
	<u>Average Monthly</u>	<u>Average Weekly</u> (lbs/day)	<u>Maximum Daily</u>	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>	
Flow; MGD	----	----	----		Report	----	Report	Continuous	Recorder ¹
BOD ₅	27	41	46	30 mg/l	45 mg/l	50 mg/l	2/Week ²	24-Hr. Composite	
TSS	27	41	46	30 mg/l	45 mg/l	50 mg/l	2/Week ²	24-Hr. Composite	
Total Phosphorus as P ³	0.29	----	----		----	----	0.5 mg/l	2/Week	24-Hr. Composite
Total Ammonia Nitrogen as N ^{4a}	3.96	----	----		3.39 mg/l	----	Report mg/l	2/Week	24-Hr. Composite
Total Ammonia Nitrogen as N ^{4b}	7.79	----	----		6.67 mg/l	----	Report mg/l	2/Week	24-Hr. Composite
pH Range ⁵			6.5 to 8.0	Standard Units (See PART I.G.1.a.)			1/Day	Grab	
<i>Escherichia coli</i> ^{5,6} ; Colonies/100 ml	----	----	----	126	----	406	3/Week	Grab	
Total Recoverable Aluminum ³ ; mg/l	0.10	----	----		0.087	----	Report	2/Week	24-Hr. Composite
Total Recoverable Copper ^{7,8} ; mg/l	----	----	----		Report	----	Report	2/Month	24-Hr. Composite
Total Recoverable Zinc ^{7,8} ; mg/l	----	----	----		Report	----	Report	2/Month	24-Hr. Composite
Whole Effluent Toxicity LC50 ^{9,10,11} ; Percent Effluent				----	----	100	1/Quarter	24-Hr. Composite	

C-NOEC ^{10,11,12} ; Percent Effluent	----	----	100	1/Quarter	24-Hr. Composite
Hardness ¹³ ; mg/l	----	----	Report	1/Quarter	24-Hr. Composite
Total Recoverable Cadmium ¹³ ; mg/l	----	----	Report	1/Quarter	24-Hr. Composite
Total Recoverable Chromium ¹³ ; mg/l	----	----	Report	1/Quarter	24-Hr. Composite
Total Recoverable Lead ¹³ ; mg/l	----	----	Report	1/Quarter	24-Hr. Composite
Total Recoverable Nickel ¹³ ; mg/l	----	----	Report	1/Quarter	24-Hr. Composite

NOTE: See pages 3 through 5 for explanation of footnotes.

EXPLANATION OF FOOTNOTES APPLICABLE TO PART I.A.1. on page 2.

- (1) The effluent flow shall be continuously measured and recorded using a flow meter and totalizer.
- (2) The influent concentrations of both BOD₅ and TSS shall be monitored twice per month (2/Month) using a 24-Hour Composite sample and the results reported as average monthly values.
- (3) Samples collected for monitoring of Total Phosphorus and Total Recoverable Aluminum shall be conducted concurrently from the same parcel of effluent.
- (4a) Limited seasonally from May 1st through October 31st each year. The permittee has the option of using the Ammonia results from the WET tests (See Superscript 10) in partial fulfillment of this requirement.
- (4b) Limited seasonally from November 1st through April 30th each year. The permittee has the option of using the Ammonia results from the WET tests (See Superscript 10) in partial fulfillment of this requirement.
- (5) Limit is a State Certification Requirement.
- (6) The average monthly value for *Escherichia coli* shall be determined by calculating the geometric mean and the result reported. *Escherichia coli* shall be tested using test method 1103.1 found in Test Methods for *Escherichia coli* and *Enterococci* in Water by the Membrane Filter Procedure, EPA-600/4-85/076 as amended by test method 9213 D.3. found in Standard Methods for the Examination of Water and Wastewater, 19th or subsequent Edition(s) as approved in 40 Code of Federal Regulations (CFR) Part 136.
- (7) Samples for monitoring of Total Recoverable Copper and Zinc shall be conducted concurrently from the same parcel of effluent.
- (8) The following set of conditions are applicable to the metals analyses for Total Recoverable Copper and Zinc. Total Recoverable Copper and Zinc results from the WET tests (See Superscript 10) may be used in partial fulfillment of this requirement as long as those analyses are performed in accordance with this footnote.
 - a. For each sample analyzed, the permittee must determine the Total Recoverable concentration of each metal and report those results on the appropriate Discharge Monitoring Report (DMR).
 - b. For purposes of analysis and reporting, the permittee shall use the minimum quantification level (ML). In general, the ML is defined as “the level at which the entire

analytical system shall give recognizable signal and acceptable calibration points.” Specifically, it’s defined as the concentration in a sample equivalent to the concentration of the lowest calibration standard analyzed in a specific analytical procedure assuming that all the method-specific sample weights, volumes, and processing steps have been followed. These ML values may be reduced by permit modification as more sensitive test methods are approved by EPA-New England. The permittee must conduct analyses in accordance with any of the three (3) methods specified below and must utilize the specified standard equivalent to the concentration of the ML specified below:

<u>Parameter</u>	<u>Analytical Methods</u>	<u>ML (µg/l)</u>
Copper	Furnace AA; Method 200.7 (ICP); Method 200.8 (ICP/MS)*	2.5
Zinc	Furnace AA; Method 200.7 (ICP); Method 200.8 (ICP/MS)*	2.5

***Attachment A**--EPA-New England’s “Interim Alternate Test Procedure (ATP) Approval under 40 CFR Part 136.5 for NPDES Compliance Samples dated July 5, 2000” Compliance/noncompliance determination will be based for Total Recoverable Copper and Zinc are equal to the ML listed above and may be reduced by permit modification as more sensitive test methods are approved by EPA. Any value below the ML shall be reported as zero until written notice is received by certified mail from EPA-New England indicating some value other than zero is to be reported for specified ML (i.e., between zero and the ML).

- c. Alternate analytical method(s) shall be approved by EPA-New England at the permittee’s written request as long as the permittee utilizes method(s) that obtain MLs that are equal to or less than those referenced in (8)b. above. Such a request will be considered a minor modification to the permit.
 - d. If clean sampling techniques are deemed necessary by either the permittee or EPA-New England, then sampling shall be performed in accordance with U.S. E.P.A. Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, EPA 821-R-95-034, April 1995, as amended or approved by EPA-New England.
- (9) LC50 (lethal concentration 50 percent) is the concentration of wastewater (effluent) causing mortality to 50 percent (%) of the test organisms. The LC50 limit of “**100 %**” is defined as a sample which is composed of **100 %** effluent (See A.1 on Page 2 of Part I and **Attachment B** of Part I). Therefore, a 100 % limit means that a sample of 100 % effluent (no dilution) shall cause no greater than a 50 % mortality rate in that effluent sample. The limit is considered to be a maximum daily limit.
- (10) The permittee shall conduct chronic (and modified acute) survival and reproduction toxicity tests using the Daphnid (*Ceriodaphnia dubia*) and chronic (and modified acute) survival and growth toxicity tests using the Fathead Minnow (*Pimephales promelas*) on effluent samples

following the protocol in **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol dated December 1995). Toxicity test samples shall be collected and tests completed during the calendar quarters ending March 31st, June 30th, September 30th and December 31st each year. Toxicity test results are to be submitted by the 15th day of the month following the end of the quarter sampled. For example, test results for the calendar quarter January through March are due April 15th.

The permittee's authorization to use synthetic dilution water in its toxicity tests granted by EPA letter dated May 10, 1999, is continued in this permit as amended below. Accordingly, the permittee is authorized to use an alternate standard dilution water as diluent for the receiving (Unnamed Wetland Tributary to Pearly Pond) water for both Chronic Toxicity Test species. Furthermore, each Chronic Toxicity Test shall use three (3) separate controls composed of: (1) alternate standard dilution water; (2) laboratory water; and (3) site (receiving) water. If a receiving water sample cannot be collected, a written statement must be included with WET test results documenting, in detail, why a sample could not be collected. Please note that the alternate standard dilution water must be of known quality with water quality characteristics such as hardness, pH, specific electrical conductivity, alkalinity, organic carbon and total suspended solids similar to those of the receiving water and not elicit a toxic response. Based on a review of the site (receiving) water data, the permittee shall use an alternative dilution water that is categorized no harder than "**SOFT WATER**" (Ca and Mg Hardness range between 40 to 48 mg equivalent CaCO₃/L). Therefore, it is recommended that the permittee screen the alternate dilution water for suitability prior to toxicity testing.

- (11) This permit shall be modified, or alternatively, revoked and reissued to incorporate additional toxicity testing requirements, including chemical specific limits such as for metals, if the results of the toxicity tests indicate the discharge causes an exceedance of any State water quality criterion. Results from these toxicity tests are considered "New Information" and the permit may be modified as provided in 40 CFR Section 122.62(a)(2).
- (12) 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 (growth, survival, and/or reproduction) exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, report the **lowest** concentration where there is no observable effect. See **Attachment B (VII. Toxicity Test Data Analysis)** on page B-9 for additional clarification. The C-NOEC limit of "**100 %**" is defined as a sample which is composed of **100 %** effluent. This is the minimum percentage of effluent at which no chronic effects will be observed. The limit is considered to be a maximum daily limit.
- (13) For each Whole Effluent Toxicity (WET) test the permittee shall report on the appropriate

Discharge Monitoring Report (DMR), the concentrations of Hardness and Total Recoverable Cadmium, Chromium, Lead and Nickel found in the 100 % effluent sample. All these aforementioned chemical parameters shall be determined to at least the MLs shown in **Attachment B** on page B-8, or as amended. Also the permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be adequately treated to insure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants. It shall be adequately treated to insure that the surface waters remain free from pollutants which produce odor, color, taste or turbidity in the receiving waters which is not naturally occurring and would render it unsuitable for its designated uses.
4. The permittee's treatment facility shall maintain a minimum of 85 % removal of both BOD₅ and TSS. The percent removal shall be based on a comparison of average monthly influent versus effluent concentrations.
5. When the effluent discharged for a period of 90 consecutive days exceeds 0.112 MGD (80 % of the upgraded 0.14 MGD design 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. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the permittee may be required to submit plans for facility improvements.
6. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to both EPA-New England and the NHDES-WD of the following:
 - a. 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; and
 - b. 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.

7. Any introduction of pollutants into the treatment works from either a non-domestic source (user) or a primary industrial category (See 40 CFR Part 122, Appendix A as amended) is prohibited. The term (user) is defined in 40 CFR Section 403.3.
8. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.

B. UNAUTHORIZED RELEASES TO THE HEADWORKS

The following list of discharges to the treatment works's collection system and/or directly to the treatment works itself are strictly prohibited. They are:

1. Any gasoline, MBTE, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas;
2. Any liquids, solids, or gases which by reason of their nature or quantity are, or may be sufficient either alone or by interaction with other substances to cause fire or explosion. Prohibited materials include, but are not limited to gasoline, fuel oil, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides and sulfides;
3. Any waters or waste containing fats, wax, grease, or oils, whether emulsified or not, except grey water discharges from cafeteria operations (food preparation/serving/clean-up) may contain minimal quantities of oil and grease. Drains servicing any cafeteria operation must have properly installed, operated and maintained grease traps;
4. Any waters or wastes containing strong acids or bases, except small quantities of common acids and bases discharged by the chemistry and biology departments that were neutralized to between pH 5 and 9 Standard Units prior to discharge;
5. Any waters or wastes containing iron, chromium, copper, zinc, and similar objectionable or toxic substances;
6. Any waters or wastes containing phenols or other taste or odor producing substances;
7. Any radioactive wastes or isotopes;
8. Any materials, which exert or cause:
 - a. Unusual concentrations of inert suspended solids, such as, but not limited to, fuller's earth, lime slurries and residues; or of dissolved solids, such as, but not limited to, sodium chloride and sodium sulfate;

- b. Excessive discoloration, such as, but not limited to, dye wastes and vegetable tanning solutions;
 - c. Unusual BOD or chemical oxygen demand; and
 - d. Unusual volume of flow or concentration of wastes constituting slugs;
9. Any hazardous material stored within satellite containers including, but not limited to, instrument waste reservoirs and acidic aqueous solutions;
 10. Any material considered or defined as hazardous waste in RCRA subtitle C;
 11. Any water samples including, but not limited to, stream, river, pond, lake, ground water or drinking water sample that have detectable amounts of hazardous contaminants present; and
 12. Any floor cleaning materials and/or house keeping cleaners.

C. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal & 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 (Env-Ws 800) 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. Placement of sludge in a municipal solid waste landfill (See 40 CFR Section 503.4).
 - d. 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 do not apply to facilities which do not dispose of sewage sludge during the life of the permit, but rather treat the sludge (lagoons-reed beds), or are otherwise excluded under 40 CFR Section 503.6.
5. The permittee shall use and comply with the attached Sludge 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 for the permittee's chosen sewage sludge use or disposal practices at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.

less than 290	1/Year
290 to less than 1,500	1/Quarter
1,500 to less than 15,000	6/Year
15,000 plus	1/Month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR Section 503.8.
8. The permittee shall submit an annual report containing the information specified in the attached Sludge Compliance Guidance document. Reports are **due annually by February 19th**. Reports shall be submitted to both addresses (EPA-New England and NHDES-WD) contained in the reporting section of the permit.

D. SPECIAL CONDITIONS

WET Test Frequency Adjustment

The permittee may submit a written request to the EPA-New England requesting a reduction in the frequency (to not less than once per year) of required toxicity testing, after completion of a minimum of the most recent four (4) successive toxicity tests of effluent, all of which must be valid tests and demonstrate compliance with the permit limits for whole effluent toxicity. Until written notice is received by certified mail from the EPA-New England indicating that the WET testing requirement has been changed, the permittee is required to continue testing at the frequency specified in the respective permit.

pH Limit Adjustment

The permittee may submit a written request to the EPA-New England requesting a change in the permitted pH limit range to be not less restrictive than 6.0 to 9.0 Standard Units found in the applicable National Effluent Limitation Guideline (Secondary Treatment Regulations in 40 CFR Part 133) for this facility. The permittee's written request must include the State's approval letter containing an original signature (no copies). The State's letter shall state that the permittee has demonstrated to the State's satisfaction that as long as discharges to the receiving water from a specific outfall are within a specific numeric pH range the naturally occurring receiving water pH will be unaltered. That letter must specify for each outfall the associated numeric pH limit range. Until written notice is received by certified mail from the EPA-New England indicating the pH limit range has been changed, the permittee is required to meet the permitted pH limit range in the respective permit.

Notification Requirements to Public and Private Water Systems Drawing Water From the Unnamed Wetland Tributary to Pearly Pond, Pearly Pond and Tarbell Brook in the Event of a Bypass or Upset at the Treatment Works

The notification requirement shown below in italics was taken verbatim from the New Hampshire Statutes RSA Title 50 Chapter 485-A:13,I.(c) and interpreted as described below.

“Any person responsible for a bypass or upset at a wastewater facility shall give immediate notice of the bypass or upset to all public or privately owned water systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge. The permittee shall maintain a list of persons, and their telephone numbers, who are to be notified immediately by telephone. In addition, written notification, which shall be postmarked within 3 days of the bypass or upset, shall be sent to such persons.”

For the purpose of this permit, EPA-New England is interpreting the italicized phrase “water systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge” to mean “located within 20 **river** miles downstream of the point of discharge regardless of whether or not it is on the same receiving water or on the stream to which the receiving water discharges” which for this permittee means any intake structure on the three (3) surface-water bodies specified in the UNDERLINED HEADING above.

E. REOPENER CLAUSE

This permit may be modified, or alternatively, revoked and reissued if, in the future: (1) New Hampshire's Surface Water Quality Regulations adopt nutrient (nitrogen and phosphorus) criteria; and/or (2) an analysis of a Total Maximum Daily Load (TMDL) or any other water-quality study of Unnamed Wetland Tributary to Pearly Pond or the Pond itself performed by NHDES-WD and/or EPA-New England demonstrates the need for more stringent pollutant limits. Such modifications

could include new and/or more permit limit(s) for phosphorus, various components of the nitrogen series, such as ammonia, nitrate, etc., dissolved oxygen, CBOD₅/BOD₅ and TSS. Any of these additional limits could be expressed in terms of concentration and/or mass where appropriate. Section 301(b)(1)(C) requires that a permit include limits that are necessary to protect Federal and State water quality standards. Therefore, if in the future, the State's Surface Water Quality Regulations are changed to include new criteria, such as nutrient (nitrogen and phosphorus) criteria, this permit may be modified and/or reissued to bring it into compliance with that Section of the CWA. In addition, results from a TMDL or any other water-quality study, not available at permit reissuance, are considered "New Information" and the permit may be modified as provided in 40 CFR Section 122.62 (a)(2).

F. MONITORING AND REPORTING CONDITIONS

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

Signed and Dated original DMRs and all other reports required herein, shall be submitted to the Director at the following address:

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

Duplicate signed copies of all reports required herein shall be submitted to the State at:

New Hampshire Department of Environmental Services
Water Division
Wastewater Engineering Bureau
6 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

G. STATE PERMIT CONDITIONS

1. The permittee shall comply with the following conditions which are included as State Certification requirements.
 - a. The pH range of 6.5-8.0 Standard Units (S.U.) must be achieved in the final effluent unless the permittee can demonstrate to NHDES-WD: (1) that the range should be widened due to naturally occurring conditions in the receiving water or (2) that the naturally occurring receiving water pH is not significantly altered by the permittee's discharge. The scope of any demonstration project must receive prior approval from

NHDES-WD. In no case, shall the above procedure result in pH limits outside of the range of 6.0 to 9.0 S.U., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 CFR §133.102(c).

- b. The permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).
2. This NPDES Discharge Permit is issued by the EPA-New England under Federal and State law. Upon final issuance by the EPA-New England, the NHDES-WD may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13.

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 the Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation.