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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"),

The Town of Newmarket, New Hampshire

is authorized to discharge from the facility located at

Young Lane Newmarket, NH 03857

to receiving waters named

Lamprey River (Hydrologic Unit Code 01060003)

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

This permit shall become effective 45 days after date of signature.

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

This permit supersedes the permit issued on February 23, 1995.

This permit consists of 11 pages in Part I including effluent limitations, monitoring requirements, etc., Attachments A, B, C, EPA Region I NPDES Permit Sludge Compliance Guidance (November 4,1999), and 35 pages in Part II including General Conditions and Definitions.

Signed this 27 day of April, 2000

Office of Ecosystem Protection

U.S. Environmental Protection Agency (EPA)

Region I

Boston, Massachusetts

PART I

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS A.

EX	iport waten	(AR A	.12)															
of 11	lasting through the date the outfall extension with a multipost to discharge from outfall serial number 001 treated wastewated be limited and monitored by the permittee as specified belowers specified below shall be taken at a location that provides	sment Sample <u>Type</u>	Recorder 1	24-Hour Composite	24-Hour Composite	Grab	Grab	Grab	24-Hour Composite	24-Hour Composito				24-Hour Composite	24-Hour Composite			24-Hour Composite
Page 2	ough the date the outfall of from outfall serial numb and monitored by the perm fied below shall be taken a	Monitoring Requirement Measurement Frequency	Continuous	2/Week 2	2/Week 2	1/Day	1/Day	2/Day	2/Month	/Week	2/Week		4/Year	4/Year	4/Year	4/Year	4/Year	4/Year
	lasting through the date to discharge from outfall be limited and monitored ments specified below shal	tions Maximum <u>Daily</u>	Report	50 (354)	50 (354)		7.0	0.013	0.0058	9	15.6		100	LUU	Report	Report	Report	Report
	te and lasti orized to di shall be l requirements	Discharge Limitations e Average Max Y Weekly <u>Dai</u>	1	45 (319)	45 (319)	I.D.1.a)	70	I	1	-1	i i		1		1	1	1	1
EQUIREMENTS	the effective date and rmittee is authorized Such discharges shall the monitoring require effluent.	<u>Disc</u> Average <u>Monthly</u>	0.85	30 (213)	30 (213)	(See	70	0.0075	0.0037	0.68	2.38		1	! ! ! !	I	!	1	1
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	1. During the period beginning on the effective date and lasting through the date the outfall extension with a multipost diffuser is operational, the permittee is authorized to discharge from outfall serial number 001 treated wastewater effluent to the Lamprey River. 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.	Effluent Characteristic	Flow; MGD	BOD ₅ ; mg/L(lbs/day)	TSS; mg/L(lbs/day)	pH Range 3; Standard Units	Total Coliform 3,4; Colonies per 100 ml	TRC 5,6 ; mg/L	Total Recoverable Copper 7; mg/L	Ammonia Nitrogen as N 8; mg/L May through October	November through April	Whole Effluent Toxicity	LC50 9,10,11; Percent	Total Recoverable Cadminm 13: mg/I.	Recoverable	Recoverable	Recoverable	Total Recoverable Zinc 13; mg/L

See pages 4 to 6 for explanation of superscripts.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Α.

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through the expiration date, the permittee is authorized to discharge from outfall serial number 001 treated wastewater through the expiration date, the permittee is authorized to discharge from outfall serial number 001 treated wastewater through the expiration date, the permittee is authorized to discharge shall be limited and monitored by the permittee as specified below shall be taken at a location that provided a representative analysis of the effluent. Complement Characteristic Average Limitations Measurement Sample Sampl	date the or rmittee is an h discharge: monitoring ffluent.	outiall exten authorized to Jes shall be l ng requirement:	extension with a multiport ed to discharge from outfall be limited and monitored kements specified below shall	multiport diffuser om outfall serial nonitored by the p below shall be take	diffuser is operational and lasting serial number 001 treated wastewater by the permittee as specified belaw be taken at a location that provides
istic					
istic					
	Disc	Discharge Limitations	ations	Monitoring Reguirement	irement
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
	0.85	1	Report	Continuous	Recorder 1
	30 (213)	45 (319)	50 (354)	2/Week 2	24-Hour Composite
	30(213)	45(319)	50 (354)	2/Week 2	24-Hour Composite
pH Range 3; Standard Units	(See	e I.D.1.a)		1/Day	Grab
Total Coliform 3,4; Colonies per 100 ml	70	70	70	1/Day	Grab
	0.0075	1	0.013	2/Day	Grab
Whole Effluent Toxicity					
LC50 zvzvz, Percent	1	1	100	4/Year	24-Hour Composite
Total Recoverable Cadmium 13; mg/L	1	i	Report	4/Year	24-Hour Composite
	!	!	Report	4/Year	24-Hour Composite
Recoverable Chromium 13; mg/L	!	1	Report	4/Year	24-Hour Composite
Nickel 15; mg/L	I	1	Report	4/Year	24-Hour Composite
Recoverable Lead 15; mg/L	1	!	Report	4/Year	24-Hour Composite
Total Recoverable Zinc 13; mg/L	!	1	Report	4/Year	24-Hour Composite
Ammonia Nitrogen as N "; mg/L	1 1	!	Report	4/Year	24-Hour Composite

See pages 4 to 6 for explanation of superscripts

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EXPLANATION OF SUPERSCRIPTS TO PARTS I.A.1 and I.A.2 on pages 2 and 3:

- (1) The effluent flow shall be continuously measured and recorded using a flow meter and totalizer.
- (2) Influent concentrations of both BOD_5 and TSS shall be monitored 2 days/Month and reported as average monthly values. Samples taken in compliance with this monitoring requirement shall be taken at a location that provides a representative analysis of the influent.
- (3) State certification requirement.
- (4) Total Coliform shall be tested using the Most Probable Number (MPN) method (5 tube, 3 dilutions). The permittee may use the Membrane Filtration (MF) method with enrichment in lieu of the MPN method after it has been demonstrated to the satisfaction of the NHDES-WD that the MF method generates comparable results. The permittee must use methods approved in 40 CFR Part 136, for the analysis of bacteria.

The Average Monthly and Average Weekly values for Total Coliform shall be determined by calculating the geometric mean values. Not more than 10 percent of the collected samples shall exceed a MPN of 230 per 100 ml for a 5-tube decimal dilution test. Furthermore, all Total Coliform data collected must be submitted with the Monthly Discharge Monitoring Reports (DMRs).

- (5) Total Residual Chlorine shall be measured using any one of the following two methods listed below: in a. through b.:
 - a. Low level amperometric titration, using a chart recorder if possible. $\underline{Standard\ Methods}$ [18th or subsequent Edition(s), as approved in 40 CFR Part 136], no. 4500-Cl E.
 - b. DPD spectrophotometric (colorimetric), using a longer cell (e.g. 5 cm. to 10 cm.) if possible. EPA no. 330.5 or $\frac{\text{Standard Methods}}{\text{Part 136}}$, no. 4500-Cl G.
- (6) The limit at which compliance/noncompliance determinations for Total Residual Chlorine (TRC) will be based is the Minimum Level (ML) which is defined as 0.050 mg/L for TRC. Any TRC value below 0.050 mg/L shall be reported as non-detect.
- (7) The analytical method for Total Recoverable Copper shall be the Furnace AA method. The limit at which compliance/noncompliance determinations for Total Recoverable Copper will be based is the Minimum Level (ML) which is defined as 0.0025 mg/L for Total Recoverable Copper. Any Total Recoverable Copper value below 0.0025 mg/L shall be reported as non-detect.

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- (8) The analytical method for the Ammonia analysis may exclude the preliminary distillation step. This change may be rescinded by a letter from EPA if any the resulting ammonia analysis and the data indicate the ammonia in the effluent is under estimated or additional information becomes available indicate this test change is not acceptable.
- (9) The permittee shall conduct acute and chronic toxicity tests on effluent samples using three species, Mysid Shrimp (Mysidopsis bahia), Inland Silverside (Menidia beryllina), and Sea Urchin (Arbacia punctulata),
 - following the protocols in Attachment A (Marine Acute Toxicity Test Procedure and Protocol dated September 1996) and in Attachment B (Marine Chronic Toxicity Test Procedure dated September 1996. This test protocol includes the procedure to calculate an LC50 at the end of 48 hours for the Menidia beryllina acute test.) Toxicity test samples shall be collected and tests completed during the 3 month periods ending March 31th, June 30th, September30th, and December 31th, respectively, each year. Toxicity test results are to be submitted by the 15th day of the month following the end of the quarter sampled.
- (10) This permit shall be modified, or alternatively, revoked and reissued to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of these 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 Code of Federal Regulations (CFR) \$122.62(a)(2).
- (11) LC50 is defined as the percent of effluent (wastewater) that causes mortality to 50 percent of the test organisms. The "100 percent" limit is defined as a sample which is composed of 100 percent effluent (See A.1 on Page 2 of Part I and Attachment A and C of Part I). The limit is considered to be a maximum daily limit.
- (12) C-NOEC is defined as the chronic no observed effect concentration which is the highest concentration of effluent to which organisms are exposed in a life cycle test which causes no adverse effect on growth, survival, or reproduction. The "100% or greater limit" is defined as a sample which is composed of 100 percent effluent. (See on Page 2 of Part I and Attachments B of Part I). The limit is considered to be a maximum daily limit. If the test results do not exhibit a linear dose-response relationship, report the lowest effluent concentration where there is no observable effect.
- (13) For each Whole Effluent Toxicity test the permittee shall report on the appropriate Discharge Monitoring Report, (DMR), the concentrations of the Total Recoverable Cadmium, Chromium, Lead, Nickel, and Zinc found in the 100 percent effluent sample. All these aforementioned chemical parameters shall be determined to have at least the Minimum Quantification Level shown in Attachment A on page A-5, or as amended. Also, the permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report.
- (14) The permittee shall conduct acute toxicity tests on effluent samples using two species, Mysid Shrimp (Mysidopsis bahia), Inland Silverside and (Menidia beryllina) following the protocols in Attachment C (Marine Acute

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Toxicity Test Procedure and Protocol dated September 1996). Toxicity test samples shall be collected and tests completed during the 3 month periods ending March $31^{\rm th}$, June $30^{\rm th}$, September $30^{\rm th}$, and December $31^{\rm th}$, respectively, each year. Toxicity test results are to be submitted by the 15th day of the month following the end of the quarter sampled.

(15) For each Whole Effluent Toxicity test the permittee shall report on the appropriate Discharge Monitoring Report, (DMR), the concentrations of the Total Recoverable Cadmium, Copper, Chromium, Lead, Nickel, Zinc, and Ammonia Nitrogen as N found in the 100 percent effluent sample. All these aforementioned chemical parameters shall be determined to have at least the Minimum Quantification Level shown in Attachment C on page C-7, 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)

- The discharge shall not cause a violation of the water quality standards of the receiving water.
- 4. 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.
- 5. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both BOD_5 and TSS. The percent removal shall be based on a comparison of average monthly influent versus effluent concentrations.
- 6. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the 0.85 MGD design flow or 0.68 MGD, 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.
- 7. A User may not introduce into any Publicly Owned Treatment Works (POTWs) any pollutant(s) which cause Pass Through or Interference. The terms User, Pass Through and Interference are defined in 40 CFR §403.3
- 8. All POTWs must provide adequate notice to both EPA and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) of the following:
 - a. Any new introduction of pollutants into the POTW from an indirect discharger in a primary industry category (see 40 CFR \$122 Appendix A as amended) 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.

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- 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.
- 9. The permittee shall submit to EPA and NHDES-WD the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 CFR \$403.6 and Chapter I, Subchapter N who commences discharge to the POTW after the effective date of this permit. This reporting requirement also applies to any other IU that discharges an average of 25,000 gallons per day or more of process wastewater into the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater) or contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW; or is designated as such by the Control Authority as defined in 40 CFR \$403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR \$403.8(f)(6)).
- 10. In the event that the permittee receives reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from Users subject to Categorical Pretreatment Standards under 40 CFR \$403.6 and 40 CFR Chapter I, Subchapter N, the permittee shall forward all copies of these reports within ninety (90) days of their receipt to EPA and NHDES-WD.
- 11. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.
- 12. Prior to the construction of the proposed outfall configuration including the multiport diffuser, the permittee shall receive approval of the final structural and hydraulic design plans of this outfall from the NHDES-WD. Prior to any discharge from this outfall, the permittee shall obtain all necessary state and federal permits. The permittee shall notify the EPA and NHDES-WD in writing at least 30 days before commencing discharge from this outfall.

B. 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.
- The permittee shall comply with the more stringent of either the state or federal requirements.
- 3. The technical standards (Part 503 regulations) 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.

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- c. Placement of sludge in a municipal solid waste landfill.
- 4. These conditions do not apply to facilities which transport sewage sludge to another facility for use or disposal. Also, 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 503.6.
- 5. The permittee shall use and comply with the attached EPA Region I, NPDES Permit, Sludge Compliance Guidance (November 4,1999) 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.

- 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 EPA Region I, NPDES Permit, Sludge Compliance Guidance(November 4,1999). Reports are due annually by February 19th. Reports shall be submitted to the addresses (EPA and NHDES-WD) contained in the reporting section of the permit.

C. MONITORING AND REPORTING

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 <u>all</u> 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

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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

D. STATE PERMIT CONDITIONS

- 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. Pursuant to State Law NH RSA 485-A:13 and the New Hampshire Code of Administrative Rules, Env-Ws405.04(b), submission shall be made to the NHDES-WD, of a Discharge Permit Request form by a municipality proposing to accept into its POTW (including sewers and interceptors):
 - (1) any increase in industrial wastewater flow, pollutant characteristics or pollutant concentration; or
 - (2) any increase in sanitary wastewater flow of 5,000 gallons per day, or more.
 - c. 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).
 - d. Any modifications of the Permittee's Sewer Use Ordinance, including local limitations on pollutant concentrations, shall be submitted to the NHDES-WD for approval prior to adoption by the permittee.
 - e. Within 90 days of the effective date of this permit, the permittee shall submit to NHDES-WD a copy of its current sewer use ordinance and a copy of any other document granting legal authority to issue permits to industries discharging industrial waste to the municipal wastewater treatment plant.

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- f. Within 120 days of the effective date of this permit, the permittee shall submit to NHDES-WD a current list of all industries discharging industrial waste to the municipal wastewater treatment plant. At a minimum, the list shall indicate the name and address of each industry, along with the following information: production quantity, products manufactured, industrial processes used, chemicals used in processes, existing level of pretreatment, and list of existing discharge permits.
- g. Within 270 days of the effective date of this permit, the permittee shall submit to NHDES-WD a copy of discharge permit(s) issued to each industry discharging industrial waste to the municipal wastewater treatment plant. At a minimum, each permit shall contain the following: effective dates; flow and applicable pollutant limits: self-monitoring, reporting, compliance monitoring and inspection provisions; and enforcement criteria. If industrial permitting authority does not exist as of the effective date of this permit, the permittee is requested to submit to the NHDES-WD a proposed plan and implementation schedule for adopting such authority and implementing an industrial permitting system.
- 2. This NPDES Discharge Permit is issued by the EPA under Federal and State law. Upon final issuance by the EPA, 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.
- 3. If chlorine is used for disinfection, a recorder which shall continuously record the chlorine residual prior to dechlorination shall also be provided. The minimum, maximum and average daily residual chlorine values, measured prior to dechlorination, shall be submitted with monthly Discharge Monitoring Reports. Charts from the recorder, showing the continuous chlorine residual shall be maintained by the permittee for a period no less than (5) years.
- 4. The permittee shall provide immediate notification to the New Hampshire Department of Environmental Services, Watershed Management Bureau in the event of a discharge of raw sewage or bypass of disinfection system.

E. SPECIAL CONDITIONS

Whole Effluent Toxicity Test Frequency Adjustment

The permittee may submit a written request to the EPA 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

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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 indicating that the Whole Effluent 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 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 letter containing an original signature (no copies). The State's approval 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 indicating the pH limit range has been changed, the permittee is required to meet the permitted pH limit range in the respective permit.

Requirements for Outfall Improvements

The permittee shall:

- a. By November 15, 2000, begin construction of the Outfall 001 extension and multiport diffuser project to achieve a minimum calculated dilution of 45:1 in the Lamprey River in accordance with the design approved by NHDES-WD;
- b. By March 1, 2001, complete construction and attain operational status of the Outfall 001 extension and multiport diffuser in accordance with the design approved by the NHDES-WD; and
- c. By December 15, 2000, January 15, 2001, February 15, 2001, and March 15, 2001 submit progress reports on the Outfall 001 extension and multiport diffuser project to EPA and the NHDES-WD at the addresses shown in PART I.C. MONITORING AND REPORTING requirements section of the permit. The reports shall describe the work performed during the previous calendar month.

EXHIBIT 5 (AR A.12)