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),

Southworth Company

is authorized to discharge from the facility located at

Southworth Company
Turners Falls Mill
36 Canal Road
Turners Falls, MA 01376

to receiving water named

Connecticut River and Turners Falls Power Canal (Connecticut River Basin, MA-34)

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

This permit shall become effective December 1, 2007

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

This permit supersedes the permit issued on December 8, 2000, and modified on May 17, 2001.

This permit consists of 9 pages in Part I including effluent limitations, monitoring requirements, and state permit conditions; 25 pages in Part II, Standard Conditions; and Attachment A – Freshwater Acute Toxicity Test Procedure and Protocol.

Signed this 29th day of September, 2007.

/S/ SIGNATURE ON FILE

Stephen S. Perkins, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

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

PART I
A. EFFLUENT LIMITS AND MONITORING REQUIREMENTS

1. a. **Outfall 001**: During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated process wastewater to the Turners Falls Power Canal from outfall serial number **001**. Such discharge 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 prior to mixing with other wastewaters and prior to discharge to the Power Canal. [9]

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow	MGD	Report	----	Report	Continuous [1]	Recorder
BOD_5	lbs/day	577	----	1104	2/Week	24 Hr. Composite [2]
TSS	lbs/day	500	----	1000	2/Week	24 Hr Composite [2]
pH	std units	(See Condition I.A.13 of this permit)			1/Week	Grab
Total Nitrogen, as N [8]	mg/L	----	----	Report	Quarterly [10]	24 Hr. Composite [2]
Total Phosphorus, as P	mg/L	----	----	Report	Quarterly [10]	24 Hr. Composite [2]
Acute Whole Effluent Toxicity Testing [3, 4, 5]	%	Acute $LC_{50} \geq 50$			Quarterly [4]	24 Hr. Composite [2]

1. b. Outfall 002: During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge power generation water (pass-through from the Turners Falls Power Canal) and non-contact cooling water to the Connecticut River from outfall serial number 002. The non-contact cooling water component of this discharge shall be limited and monitored by the permittee as specified below. [7]

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow	MGD	Report [1]	----	Report	1/Day [1]	Estimate
pH	std units	(See Condition I.A.13 of this permit)			1/Week, when discharging	Grab
Temperature [6]	^{o}F	----	----	83	1/Day, when discharging	Grab

Footnotes:

1. Report estimated maximum and minimum flow rates and total flow for each operating date. Monthly average shall be calculated for the days of discharge only.

2. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one working day at approximately equal intervals.

3. The acute Whole Effluent Toxicity test limit is the LC_{50} equal to or greater than 50%. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, the 50% limit means that a sample of 50% effluent shall cause no more than 50% mortality.

4. The permittee is required to conduct Whole Effluent Toxicity (WET) testing following EPA Region I Protocols. The permittee shall conduct acute toxicity tests four times per year. The permittee shall test the daphnid, *Ceriodaphnia dubia*, only. Toxicity test samples shall be collected in the months of March, June, October, and December. Results are to be submitted by the 30th day of the following month (i.e., April 30th, July 30th, November 30th, and January 30th). The required Toxicity Test Procedure and Protocol is contained in **Attachment A**.

5. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A (Toxicity Test Procedure and Protocol**) **Section IV., DILUTION WATER** in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs) which is sent to all permittees with their annual set of DMRs and may also be found on the EPA, Region I web site at http://www.epa.gov/region1/enforcementandassistance/dmr.html. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in **Attachment A**. Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A**.

6. For Outfall 002, the temperature of the discharge shall not exceed 83°F.

7. Storm Water discharged via Outfall 002 is regulated separately by NPDES General Permit.

8. Total Nitrogen shall be determined by performing the "Total Kjeldahl Nitrogen (as N)" test and the "Nitrate-Nitrite (as N)" test and adding the two test results together to produce a value for mg/l of Total Nitrogen.

9. There shall be no discharge into the Turners Falls Power Canal during periods when it is drained for maintenance.

10. Quarterly nutrient sampling will be synchronized with quarterly WET testing during the months of March, June, October, and December.

I.A. (Continued)

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

3. Outfall 001: The pH of the effluent shall not be less than 6.0 or greater that 8.3 standard units at any time.

   Outfall 002: The pH of the effluent shall not be less than 6.5 or greater that 8.3 standard units at any time.

4. The discharge shall not cause aesthetically objectionable discoloration or turbidity in the receiving waters, consistent with Massachusetts Water Quality Standards.

5. The effluent shall not contain visible oil sheen, foam, floating solids, or settleable solids at any time.

6. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.

7. The permittee shall not use fungicides and slimicides which contain trichlorophenol or pentachlorophenols.

8. The results of sampling for any parameter done more often than its required frequency in accordance with EPA approved methods must also be reported.

9. The permittee shall notify the Director as soon as it knows or has reason to believe:

   a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

      (1) One hundred micrograms per liter (100 ug/L);

      (2) Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

      (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or

      (4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.

   b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) Five hundred micrograms per liter (500 ug/L);

(2) One milligram per liter (1 mg/L) for antimony;

(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or

(4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.

c. That it has begun or expects to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

10. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (d), 304(b)(2), and 307(a)(2) of the Clean Water Act (CWA), if the effluent standard or limitation so issued or approved:

a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

b. Controls any pollutants not limited in the permit.

11. No components of the effluent shall 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, with the permittee being so notified.

12. EPA or MassDEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed under Section 304(a)(1) of the CWA, state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

13. The discharge shall not cause the receiving waters to be more than 0.5 units outside of the background pH range. There shall be no change from background pH conditions in the receiving waters that would impair any designated use.

I.B. SPECIAL CONDITIONS AND OPERATIONAL REQUIREMENTS

I.B.1. Emergency Notification of US Fish and Wildlife Service Laboratory

In the event of accidental chemical spills or discharges to the Power Canal that exceed permit limits, the permittee shall carry out the procedures for emergency notification of the Silvio O. Conte Anadromous Fish Research Laboratory set forth in the letter from Southworth Company to the Conte Laboratory on January

17, 2007. These procedures shall be updated from time to time as appropriate.

I.B.2 Best Technology Available For Cooling Water Intake Structure

The cooling water intake structure (CWIS) shall continue to be located, designed, maintained, and operated by the permittee to meet requirements which reflect the Best Technology Available (BTA) for minimizing adverse environmental effects. For the purpose of this provision, the CWIS is considered all bar racks, screens, overflows, filters or other structures located between the trash racks along the Power Canal and the chillers, inclusive. In order to ensure the use of BTA the permittee shall do the following:

1. The permittee shall ensure that the current CWIS location, design, construction, capacity, and operations are maintained. Any changes in the location, design, or capacity of the intake structures must be approved in advance in writing by EPA and MassDEP. Any change in CWIS BTA that requires a modification to this permit shall be done in accordance with 40 CFR 122.62 and 124.5. The permittee shall report any significant change in these CWIS parameters to EPA prior to implementation of the change.

2. All live adult and juvenile fish and other aquatic organisms impinged, entrained or trapped on or in the CWIS shall be returned to the Power Canal or Connecticut River by means designed to maximize their survival.

3. The permittee shall implement a *CWIS Monitoring Program* to determine the number of adult and juvenile fish of all species entrained or impinged on or within the CWIS at the sand filters throughout the portions of the year when the CWIS is in use. Locations along the route of intake water where fish are most likely to be found shall be included as sampling sites. These sites shall include, but are not limited to, the bar rack, the sand filter beds, the sand filter backwash water, the screening basket in the piping feeding the pump for the chiller's non-contact cooling water, overflows, and any other constriction potentially in the pathway of fish that have entered the CWIS. The frequency of regular observations may be tailored based on the accessibility of these structures. Monitoring of the sand bed filters shall be done preceding backwash events to the extent practicable, to maximize the change of observing any fish in the sand filter or backwash. Monitoring shall be for all fish species. Monitoring logs shall include the following: date; time; time since last backwash event (for sand filters); observer/operator; location; CWIS intake flow on the day of the observation; number of fish; and for each fish observed, the fish length, species, condition (whether the fish was alive when collected), and whether the fish was returned to the river.

4. After 12 months of the effective date of this permit and on each anniversary thereafter, the permittee shall submit to EPA the *Annual CWIS Biological Monitoring Report.* This *Annual CWIS Biological Monitoring Report* shall include all the monitoring logs and data collected in the previous year's *CWIS Monitoring Program* described in paragraph 3 above, as well as a summary of the data. Monitoring and sampling results shall be recorded and summarized for each month. The report shall include the locations that were monitored, the specific monitoring methods used, the monitoring duration during each event, the date and time of sampling, the number of hours since the previous backwash event (for sand filters), the length of any fish observed, and the species of any fish observed. Daily flows for the CWIS on each date monitored, as well as any excursions from the sampling plan or plant operations shall be reported. The *Annual CWIS Biological Monitoring*

Report also shall describe the measures taken to ensure that those involved in planning and conducting the sampling have the necessary knowledge and ability to ensure sampling accuracy and effectiveness, including the ability to identify all fish found in this area to the species level. At each sampling location, the following data shall be recorded for each species collected: total number of fish collected, length (in centimeters) of each fish, date collected, and whether the fish was alive when collected. If for a given annual period, no impinged, live or dead fish were observed, no *Annual CWIS Biological Monitoring Report* is required; however, this shall be reported to EPA at each anniversary. Whether or not fish were observed, a summary of all monitoring shall be submitted to EPA within 54 months of the effective date of the permit, along with the facility's permit re-application.

5. The permittee shall submit a copy of all the reports required in this Part to EPA and MassDEP at the addresses listed in Part I.D.

I.C. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfalls listed in Part I A.1.of this permit. Discharges of wastewater from any other point sources are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the Part II Standard Conditions of this permit (Twenty-four hour reporting).

I.D. MONITORING AND REPORTING

Monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Form(s) postmarked no later that the 15th day of the following month.

Signed and dated originals of the DMRs, and all other reports required herein, shall be submitted to EPA and the MassDEP at the following addresses:

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

Massachusetts Department of Environmental Protection
Western Regional Office
Bureau of Waste Prevention
436 Dwight Street-4th Floor
Springfield, MA 01103

Signed and dated Discharge Monitoring Report Forms and toxicity tests reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

Additional monitoring and recordkeeping requirements are contained in Section C of the Part II Standard Conditions of this permit. Section C includes, but is not limited to, the requirements to record: the date, exact place, and time of sampling, measurements, and analyses; the individual(s) who performed the sampling, measurements, and analyses; the analytical techniques or methods used; and the results of such analyses. Section C of Part II also includes the requirements to retain records of all monitoring information, including all data, for a period of at least 3 years from the date of the sample, measurement, report or application.

Additional reporting requirements are contained in Section D of the Part II Standard Conditions of this permit. Section D requires reporting of monitoring results on a Discharge Monitoring Report (DMR), as well as reporting within 24 hours of any noncompliance which may endanger health or the environment. Section D also requires reporting to EPA if a variety of conditions exist, including planned changes to the facility and anticipated or unanticipated noncompliance. This section also sets the signatory and public availability requirements of reports sent to EPA.

I.E. STATE PERMIT CONDITIONS

This discharge permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) 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 MassDEP pursuant to M.G.L. Chap. 21, §43.

Each Agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.