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

FACT SHEET

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

NPDES PERMIT NO. MA0001716

DATE OF PUBLIC NOTICE:

NAME AND ADDRESS OF APPLICANT:

MW Custom Papers, LLC
Specialty Paper Division
Laurel Mill
40 Willow Street
South Lee, MA 01260

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

MW Custom Papers, LLC
Specialty Paper Division
Laurel Mill
Pleasant Street
South Lee, MA 02160

RECEIVING WATER: Housatonic River (Segment MA21-19)

CLASSIFICATION: Class B (Warm Water Fishery)

LATITUDE: 42° 16' 40" N **LONGITUDE**: 73° 16' 00" W

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

MW Custom Papers, LLC - Laurel Mill (the permittee) is engaged in the manufacture of decorative and overlay papers for laminates used in furniture, flooring, countertops, and cabinets. The products are produced from purchased pulp with a 12 month average production rate of approximately 55 tons per day. Located along the banks of the Housatonic River in South Lee, Massachusetts, MW Custom Papers, LLC, also owns and operates an adjacent facility, Willow Mill, just downstream of Laurel Mill.

River water used in the manufacturing process is obtained from the Housatonic River and is regulated under a State Water Withdrawal Permit (9p-1-02-150.01). The daily maximum volume allowed by the permit is 2.55 million gallons per day (MGD). The water is pre-treated by use of four sand filters prior to use in the manufacturing process. Potable water purchased from the Town is used for sanitary systems and limited manufacturing purposes. The discharge to the river consists of treated process wastewaters from a variety of sources within the manufacturing and operational processes including: whitewater recirculation, grade change water, wash-up water, pump and equipment seal discharges, boiler blowdown, water softener backwater, condensate from air compressor and storm water from roof drains. In the winter, the Mill recycles a portion of its wastewater in order to lower energy costs. The discharge volume is, for all practical purposes, equal to the volume withdrawn from the Housatonic River

The permittee has applied to the U.S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection (MA DEP) for the reissuance of its NPDES permit to discharge treated wastewater to the Housatonic River via Outfall 001. The facility location is shown on Figure 1.

II. Description of Discharge

All sanitary wastewater is discharged to the Town of Lee sewer system and treated at the Town of Lee Wastewater Treatment Facility. Process wastewater from the paper manufacturing operations is collected and treated by the Company-owned and operated wastewater treatment facility. The treatment facility includes chemical addition, primary clarifiers, rotating biological contactors, secondary clarifiers and cooling towers. Sludge is thickened with a belt filter press and composted.

Quantitative descriptions of the discharge in terms of significant effluent parameters based upon recent effluent monitoring data is shown in Attachment 1.

III. Limitations and Conditions

The effluent limitations and all other requirements described herein may be found in the draft permit. The basis for the limits and other permit requirements are described below.

IV. Permit Basis and Explanation of Effluent Limitation Derivation

Formed from three tributaries near the City of Pittsfield in western Massachusetts the Housatonic River flows in a southerly direction through the State of Connecticut into Long Island Sound. The Laurel Mill discharges into a segment of the River that is classified as a Class B - warm water fishery waterbody by the MA DEP in the Massachusets Surface Water Quality Standards (314 CMR 4.00). The Massachusetts Surface Water Quality Standards (314 CMR 4.05(3)(b)) state that Class B waters shall have the following designated uses:

> *"These waters are designated as habitat for fish, other aquatic life and wildlife, and for primary and secondary contact recreation. Where designated they shall be suitable as a source of public water supply with appropriate treatment. They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value."*

The *Housatonic River Basin 1997/1998 Water Quality Assessment Report* indicates that the river segment receiving the MW Custom Papers, LLC - Laurel Mill's discharge is not attaining its uses for aquatic life and fish consumption with other uses not assessed. The report indicates that lack of attainment is due, in part, to elevated PCB levels. The *2002 Integrated List of Waters* [Clean Water Act, Section '303(d) list'] identifies priority organics, thermal modifications, pathogens and turbidity as pollutants.

The CWA requires that the effluents of point source discharges satisfy both minimum treatment technology and receiving stream water quality requirements. The minimum technology requirements which are presently available are Best Practicable Control Technology Currently Available (BPT), Section 301 (b)(1)A; Best Available Technology Economically Achievable (BAT) for toxic pollutants, Section 301(b)(2)A; and Best Conventional Pollution Control Technology (BCT), Section 301(b)(2)E which applies to conventional pollutants. In the absence of technology based guidelines EPA is authorized to use Best Professional Judgement (BPJ) in accordance with Section 402(a)(l) of the CWA. Section 301 (b)(l)(c) of the CWA requires that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. In accordance with regulations found at 40 CFR Section 131.12, MA DEP has developed and adopted a statewide antidegradation policy to maintain and protect existing in-stream water quality. The Massachusetts Antidegradation Policy is found at Title 314 CMR 4.04. No lowering of water quality is allowed, except in accordance with the antidegradation policy. In addition, the anti-backsliding provisions of Section 402(o) of the Clean Water Act (CWA) and 40 CFR §122.44(l) require existing permit limits be retained unless specific exception criteria are met.

EPA established minimum control technology requirements for the paper industry in the form of effluent guidelines promulgated under *40 CFR 430 - Pulp, Paper, and Paperboard Point Source Category*. The Laurel Mill facility is most closely categorized by 40 CFR 403, Subpart K - "Fine and Lightweight Papers from Purchased Pulp Subcategory".

The MA DEP established waste load allocations for BOD and TSS in the Housatonic River 1981 Water Quality Management Plan.

The pollutants listed in the effluent guidelines and all other pollutants presented in the priority pollutant reporting section of the permit application were also considered on a water quality basis. The limitations derived from the water quality criteria were compared with the effluent guidelines and also with the existing permit limits.

Permit Limitations

The following explains the rationale for the permit limits and takes into account any changes in permit application , applicable industrial category, results of past effluent monitoring, and any industrial process change.

Flow and Dilution Factor:

For the purposes of evaluating flow and dilution calculations, a monthly average flow of 1.6 MGD based upon the attached data is used. This is slightly higher than the 1.5 MGD from the application and the previous Fact Sheet. This will result in a lower dilution factor and, consequently, more stringent limits where applicable. The maximum flow rate of 2.5 MGD from the permittee's application and the data is also used.

The proportion of the 7Q10 flow at the point of discharge to the 7Q10 flow at the USGS Gage Station (#01197500), Great Barrington, is in the same proportion as the respective drainage areas. The calculated 7Q10 and dilution factor for the facility are as follows:

Drainage Area (Station #01197500)	282 square miles
Drainage Area (below outfall to Station)	- 52 square miles
Net Drainage Area (@ outfall)	230 square miles

7Q10@ Gage Station = 69 cfs
7Q10@ discharge = 230/282 x 69 = 56 cfs
Average effluent flow = 1.6 mgd = 2.46 cfs
Daily maximum flow = 2.5 mgd = 3.85 cfs

Because the Laurel Mill facility draws its process water from and returns the same volume to the Housatonic River, the dilution factor is simply the river flow divided by the discharge flow.

Dilution Factor = River 7Q10 ÷ Discharge
Average Flow Dilution Factor = 56 cfs ÷ 2.46 cfs = 22.8 = 23
Daily maximum Dilution Factor = 56 ÷ 3.85 = 14.5 = 15

The data used in these calculations is from the previous Fact Sheet which was based upon historical records of the U.S. Geological Survey gage station (#01197500) in Great Barrington, Massachusetts. The dilution factor is 23 for the average effluent discharge of 1.6 MGD and 15 for the maximum daily effluent discharge of 2.5 MGD.

Because certain permit requirements as discussed in this Fact Sheet are dependent on the flows and dilution factors above and to be consistent with other permits issued by EPA, the draft permit contains a monthly average flow limit of 1.6 MGD and a maximum daily flow of 2.5 MGD.

BOD and TSS: The mill is using purchased pulp that is 99% wood fiber and1% cotton fiber. The effluent categorical limits in 40 CFR 430, Subpart K - "Fine and Lightweight Papers from Purchased Pulp Subcategory" provide technology-based limits for wood fiber pulp and for cotton fiber pulp.

BOD: The calculated technology-based limits for BOD shall be in proportion to the percent of wood and cotton fibers in the purchased pulp and are shown below. The average daily production for the past two years is almost 55 tons/day. The technology-based limits are calculated below and the results are compared to the water quality and existing permit limits.

Average Monthly

wood fiber	99% * 4.25 lbs/1000 lbs. * 55 tons/day * 2000 lbs/ton =	463 lbs/days
cotton fiber	1% * 9.1 lbs/1000 lbs. * 55 tons/day * 2000 lbs/ton =	10 lbs/day.
Total		473 lbs/day

The existing limit of 400 lbs/day is a technology-based limit based upon the previous, lower production rate of 47 tons/day and is more stringent than the wasteload allocation of 434 lbs/day established by the MA DEP. As shown above, the technology-based limit based upon the current production rate of 55 tons/day is 473 lbs/day. Because the existing permit limit of 400 lbs/day is more stringent and the effluent data shows that the facility consistently meets that limit, the current limit of 400 lbs/day is maintained in the draft permit in accordance with the antidegradation policy.

Maximum Daily

wood fiber	99% * 8.2 lbs/1000 lbs* 55 tons/day*2000 lbs/ton =	893 lbs/day
cotton fiber	1% * 17.4 lbs/1000 lbs * 55 tons/day*2000 lbs/ton =	19 lbs/day
Total		912 lbs/day

The existing maximum daily limit of 651 lbs/day had been established at 150% of the average monthly wasteload allocation (1.5 * 434 = 651 lbs/day). Since this is the more stringent limit and antidegradation applies, the existing maximum daily BOD limit will remain in effect.

TSS: The calculated technology-based limits for TSS shall be in proportion to the percent of wood and cotton fibers in the purchased pulp and are shown below. The average daily production for the past two years is almost 55 tons/day. The technology-based limits are calculated below and the results are compared to the water quality and existing permit limits.

Average Monthly

Wood fiber	99% * 5.9 lbs/1000 lbs * 55 tons/day * 2000 lbs/ton =	643 lbs/day
cotton fiber	1% * 13.1 lbs/1000 lbs * 55 tons/day * 2000 lbs/ton =	14 lbs/day
Total		657 lbs/day

The existing monthly average limits have their basis in a previously established BPJ limit and are production-based step limits up to a production rate of 50 tons/day. At that point, the limitation of 250 lbs/day based upon the wasteload allocation performed by the MA DEP is in effect. Because the existing limits are more stringent and antidegradation and antibacksliding apply, the existing TSS limits are retained in the draft permit.

Maximum Daily

Wood fiber	99% * 11.0 lbs/1000 lbs *	55 tons/day *	2000 lbs/ton =	1198 lbs/day
cotton fiber	1% * 24.3 lbs/1000 lbs *	55 tons/day *	2000 lbs/ton =	27 lbs/day
Total				1225 lbs/day

The existing maximum daily limit of 384 lbs/day is set at 1.5 times the monthly average wasteload allocation in order to assure attainment of water quality standards and is retained in the draft permit.

A comparison of the above existing permit, water quality, and technology-based limits is shown in Attachment 2.

Temperature: The State Water Quality Criteria stipulates that the temperature for Class B warm water fishery shall not exceed 83° F and that the rise in temperature due to a discharge shall not exceed 5° F. The *1997/1998 Housatonic River Assessment Report* indicates that the mill occasionally violated its permit temperature limit of 90° F. Documents in the permit file accredited those violations to the high intake (i.e. river) temperature. The more recent DMR data which represents a period after the construction of the cooling towers shows no violations of the discharge temperature limit. Data provided by the permittee for the last two years showed a maximum river intake temperature of 81° F. If the maximum daily discharge has a temperature equal to the permit limit, then the effect of the discharge on the receiving stream is calculated as follows, where T is the resulting river temperature:

$$\{(3.85 \text{ cfs} * 90°) + ((56 \text{ cfs} - 3.85 \text{ cfs}) * 81°)\} \div 56 \text{ cfs} = T$$
$$\{347 + 4224\} \div 56 = 81.6° \text{ F}$$

Because under this scenario the calculated rise in temperature is 0.6° F, it is evident that the discharge only has the potential to exceed the water quality criteria when the instream temperature itself approaches the criteria of 83°F. Consequently, until reliable, instream temperature data is available, the temperature limit of 90° F is maintained as in the current permit.

The rise in temperature criteria is more relevant as the difference between the discharge and receiving water temperatures increases, i.e. at lower receiving water temperatures. The following calculation demonstrates the effect of the discharge on the 7Q10 at an instream temperature of 35° F where T is the resulting instream temperature.

$$\{(3.85 \text{ cfs} * 90°) + ((56 \text{ cfs} - 3.85 \text{ cfs}) * 35°)\} \div 56 \text{ cfs} = T$$
$$\{347 + 1825\} \div 56 = 38.8° \text{ F}$$

This calculated rise in temperature meets the water quality criteria. In addition, the effect will be further moderated by the increased river flows expected when colder temperatures occur. Consequently, a permit limitation for the rise in temperature is not necessary.

Color: The existing permit includes a color monitoring requirement because of historical problems and public concern. However, the construction of addition treatment facilities has significantly reduced the discharge of color. Therefore, the color reporting requirement has been eliminated from the permit.

Total Phosphorus: EPA has published national guidance documents which contain recommended total phosphorus criteria and other indicators of euthrophication. EPA's *Quality Criteria for Water 1986* (the Gold Book) recommends, in order to control eutrophication, that in-stream phosphorus concentrations should be less than 100 ug/l (0.100 mg/l) in streams or other flowing waters not discharging directly to lakes or impoundments. More recently, EPA released Ecoregional Nutrient Criteria, established as part of an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country. The published ecoregion-specific criteria represent conditions in waters minimally impacted by human activities, and thus representative of water without cultural eutrophication. The Laurel Mill is within Ecoregion VIII, Nutrient Poor Largely Glaciated Upper Midwest and Northeast. Recommended criteria for this ecoregion is found in *Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion VIII* , published in December, 2001, and include a monthly average total phosphorus criteria of 10 ug/l (0.010 mg/l).

Because effluent data indicated relatively low phosphorus levels, the current permit required monthly reporting only for phosphorus. The more recent effluent data in Attachment 1 indicates phosphorus levels generally well below 1.0 mg/l. However, in order to better assess the phosphorus loading to the Housatonic River, this draft permit is increasing the monitoring frequency to weekly. In addition, the draft permit is requiring the permittee to minimize the addition of nutrients in order to control the discharge of phosphorus. If there is a need to further control phosphorus, future permits may include phosphorus limits

Nitrogen: The Long Island Sound Comprehensive Conservation and Management Plan (CCMP) identifies excessive discharges of nitrogen from sewage treatment plants as the primary cause of low dissolved oxygen levels in the Sound. This condition is the most serious water quality impairment in the Sound and reduces the viable habitat to support fish. Because the Housatonic River is tributary to Long Island Sound, the EPA is requiring total nitrogen monitoring for all facilities discharging to the Housatonic River in Massachusetts. The development of nitrogen loadings of all tributaries to the Sound will be part of the Agency's approach to establish a nitrogen control strategy. To this end, the permit will continue to require monthly reporting of effluent nitrogen loadings from the facility.

pH: The pH range of 6.0 - 9.0 s.u. of the existing permit remains the same. It had been

determined that the Housatonic River has sufficient buffering capacity so that the stream biota will not be affected.

Aluminum: The current permit has an average monthly limit of 2.2 mg/l for aluminum The chronic water quality criteria for aluminum is 87 ug/l. With a slightly reduced dilution factor of 23 as previously discussed, the revised water quality limit would be (0.087 mg/l * 23) or 2.0 mg/l. Laurel Mill has completed material and substantial additions to its treatment facility. Even at the more stringent limit, data from the monitoring reports demonstrates no reasonable potential to exceed the Water Quality Standard. However, because concerns regarding aluminum in the Housatonic River still remain, the draft permit includes a monthly reporting requirement for aluminum. If additional assessments indicate high levels of aluminum in the Housatonic River, future permits may require more stringent aluminum limits.

Total Residual Chlorine: The application indicated the presence of chlorine in the Mill's discharge. However, based upon discussions with the permittee, it appears that the value in the application represents total halogens and the level of chlorine, itself, is not known. Consequently, the draft permit includes a requirement for the reporting of Total Residual Chlorine. Future permits will include total residual chlorine limits, if necessary.

Whole Effluent Toxicity: Whole effluent toxicity testing is conducted to assess whether certain effluents are discharged in a combination which produces a toxic amount of pollutants in a receiving water. Toxicity testing is used in conjunction with pollutant specific control procedures to control the discharge of toxic pollutants.

Sections 402(a)(2) and 308(a) of the Clean Water Act provide EPA and the States the legal basis for establishing toxicity testing requirements and toxicity-based permit limits in NPDES permits. Section 308 specifically describes biological monitoring methods as techniques which may be used to carried out the objectives of the Act. Under certain narrative State water quality standards and Sections 301, 303, and 402 of the Clean Water Act, EPA and the States may establish toxicity-based limits to implement the narrative "no toxics in toxic amounts".

The regulation at 40 CFR Part122.44(d)(ii) states, "When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution...(including) the sensitivity of the species to toxicity testing..." The EPA and DEP believe that the complexity of the wastewater from this discharge is such that toxicity testing and limitations are required to evaluate and address any water quality impacts.

The permit limit for acute toxicity is 100% in order to ensure that there are no effects to organisms immediately downstream of the discharge where complete mixing may not occur. The permittee has also requested a reduction in the frequency of toxicity tests. Based upon the results, the whole effluent toxicity testing will only require quarterly testing of the daphnid, Ceriodaphnia dubia., the more sensitive species.

PCBs**:** As previously mentioned**,** the river segment receiving the MW Custom Papers, LLC - Laurel Mill's discharge has elevated PCB levels. The permit application indicates the PCB levels in the effluent are below the detection limit according to current EPA approved method 608. It is unlikely that the Mill's discharge is the cause of the elevated PCB levels in the Housatonic River. If EPA approves a method which provides for a lower detection limit, future permits may contain limits for PCBs depending upon the results of such tests.

V. State Certification Requirements

EPA may not issue a permit unless the Massachusetts Department of Environmental Protection (MA DEP) certifies that the effluent limitations included in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The MA DEP has reviewed the draft permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR §124.53 and expects the draft permit will be certified.

VI. Comment Period and Procedures the Final Decision

All persons, including applicants, who believe any condition of the permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period to the U.S. Environmental Protection Agency, NPDES Permit Unit (CMP), One Congress Street-Suite 1100, Boston, Massachusetts 02114-2023. Any person prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues to be raised in the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after the public hearing, if held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and to each person who has submitted written comments or requested notice.

VII. EPA Contact

Additional information concerning the draft permit may be obtained between the hours of 9am-5pm, Monday through Friday from:

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