



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

October 29, 2007

Mr. Charles A. Howland
President
Warwick Mills, Inc.
P.O. Box 409
New Ipswich, NH 03071

**CERTIFIED MAIL (7006 0810 0003 2418 5478)
RETURN RECEIPT REQUESTED**

**NOTICE OF FINDINGS
(Sta.S)**

Dear Mr. Howland:

The purpose of this Notice of Findings (“NOF”) is to inform Warwick Mills, Inc. (“Warwick”) of the findings of the Department of Environmental Services, Air Resources Division (“DES”), based upon discussions with you, site observations, and information received from you regarding Warwick’s manufacturing process, and to provide you with an opportunity to submit information regarding unresolved compliance issues.

Warwick owns and operates a facility at 301 Turnpike Road in New Ipswich (“the Facility”) where it manufactures custom high performance composites for the military, aerospace, and recreational industries. Warwick’s manufacturing process includes the coating of woven fabric and metal and is performed in one of two vertical path coaters. Warwick uses various coating materials, including aqueous-based products, urethanes, and products that contain Volatile Organic Compounds (“VOCs”) and Hazardous Air Pollutants (“HAPs”). On September 16, 2005, DES issued Temporary Permit TP-BP-0699 (“the Temporary Permit”) to Warwick for a solvent-based fabric coating process. Warwick began operating the solvent-based fabric coating process in January 2006.

DES understands that Warwick also operates one or two other coating machines to apply aqueous-based coatings to substrates which are not covered by the Temporary Permit. In past discussions, you have also referenced a “calendar process” and a “polymer or urethane coating process” which are also not covered in the Temporary Permit. However, DES can not evaluate the regulatory requirements applicable to these processes without further information from Warwick.

In addition to the coating processes, Warwick operates two Cleaver Brooks boilers that burn No. 6 fuel oil to provide heat and process steam to the Facility and are permitted under State Permit to Operate FP-S-0060 (“the Permit”).

Based on a review of Warwick’s annual emission report for calendar year 2006, received by DES on April 12, 2007, additional emission information submitted by Warwick on June 8 and 11, 2007, and on observations made by DES during a visit to the Facility on June 19, 2007, Warwick emitted 11 tons of VOCs in December 2006 and 11 tons of HAPs in February 2007 for the preceding 12-month periods, respectively (see Table 1).

Table 1.0 - VOC/HAP Emissions (January 2006 - May 2007)
 Warwick Mills Inc.

Month	Lb VOC / month	Rolling 12 month VOC (tpy)	Rolling 12 month HAP (tpy)	Rolling 12-month Toluene (tpy)	Rolling 12 month Xylene (tpy)
January 2006	35	0.017			
February 2006	27	0.031			
March 2006	371	0.22			
April 2006	15	0.22			
May 2006	not reported				
Jan-May 2006	425	0.44	0.20	0.17	0.034
June 2006	1,494	1.2	0.91	0.76	0.15
July 2006	2,355	2.4	2.0	1.7	0.34
August 2006	1,993	3.4	2.9	2.4	0.48
September 2006	3,859	5.3	4.6	3.9	0.78
October 2006	3,228	6.9	6.2	5.1	1.0
November 2006	4,356	9.1	8.2	6.8	1.4
December 2006	4,019	11	10	8.3	1.7
January 2007	3,095	13	11	9.5	1.8
February 2007	3,514	14	13	11	2.0
March 2007	4,417	16	15	13	2.3
April 2007	3,695	18	17	14	2.5
May 2007	3,258	19	18	15	2.7

Based on this information, Warwick has violated the following NH Administrative Rules Env-A 100 *et seq.*, NH Rules Governing the Control of Air Pollution, and federal air pollution regulations. This list is not all inclusive, but includes the major violations that DES has identified to date:

1. Condition IV, *Emission Limitations*, of the Temporary Permit limits annual VOC emissions from all fabric coating processes to less than 10 tons per year (“tpy”) and limits HAP emissions to less than 10 tpy of any single HAP and less than 25 tpy of all HAPs. “[T]py” is defined in the Temporary Permit as “tons per consecutive 12-month period.” As noted in Table 1, Warwick’s VOC emissions for calendar year 2006 were greater than 10 tpy. In addition, Warwick emitted more than 10 tpy of toluene, a HAP, for the 12-month period ending in February 2007.
2. Condition V, *VOC RACT Requirements*, of the Temporary Permit limits actual VOC emissions from the fabric coating processes to less than 10 tpy in order to exempt Warwick from the VOC Reasonably Available Control Technology (“RACT”) requirements of Env-A 1204.10, *Applicability Criteria and Compliance Standards for Coating of Paper, Fabric, Film and Foil Substrates*. As noted in Table 1, Warwick’s actual VOC emissions were 11 tons in December 2006. Therefore, Warwick became subject to Env-A 1204.10 in December 2006.

3. Env-A 1204.10 requires a source to limit the VOC content of the coating material to 0.35 kg VOC/liter of coating (2.9 lb VOC/gal), as applied, excluding water and exempt compounds. As an alternative, Env-A 1204.10 allows a source to implement add-on control techniques or a bubble, and comply with the solids-based emission rate limit calculated using the procedures of Env-A 1204.04(d). Warwick's fabric coating material exceeds the 2.9 lb VOC/gal limit. In addition, Warwick has not operated an add-on control technique to meet the solids-based emission rate limit reference above since it became subject to the rule in December 2006. Warwick is currently in the process of modifying its two boilers as a potential means to control future VOC/HAP emissions to meet this emission limit.
4. New Source Performance Standard 40 CFR 60 Subpart TT, *Metal Coil Surface Coating*, requires a source whose metal coil coating operation commenced after the applicability deadline of January 5, 1981, to comply with the standard. Warwick's metal coil coating operation commenced in January 2006, after the applicability deadline, and is, therefore, subject to 40 CFR Part 60 Subpart TT. Env-A 607.01(q) requires any stationary source, area source, or device subject to the new source performance standards contained in 40 CFR 60 to obtain a temporary permit prior to the construction or installation of the source or the device. Warwick did not obtain a temporary permit prior to the construction or installation of the metal coil coating operation. On June 22, 2007, Warwick submitted a comprehensive permit application that included the fabric coating and metal coil coating processes, the operation of the two boilers, and planned use of the boilers as an emission control device.
5. 40 CFR 60 Subpart TT provides that an owner or operator subject to this subpart shall not cause to be discharged to the atmosphere more than:
 - 0.28 kg VOC/l of coating solids (2.37 lb VOC/gal) applied for each calendar month for each affected facility that does not use an emission device(s); or
 - 0.14 kg VOC/l of coating solids (1.17 lb VOC/gal) applied for each calendar month for each affected facility that continuously uses an emission control device(s) operated at the most recently demonstrated overall efficiency; or
 - 10 percent of the VOC's applied for each calendar month (90 percent reduction) for each affected facility that continuously uses an emission control device(s) operated at the most recently demonstrated overall efficiency; or
 - a value between 0.14 (or a 90-percent reduction) and 0.28 kg VOC/L of coating solids applied for each calendar month for each affected facility that intermittently uses an emission control device operated at the most recently demonstrated overall efficiency.
6. Warwick's metal coil coating operation has not met any of the above referenced emission rates since the process commenced in January 2006. As mentioned previously, Warwick is currently in the process of modifying its two boilers to be used as a potential means to control future VOC/HAP emissions and meet one of these emission limits.

7. Env-A 1204.14, *Applicability Criteria and Compliance Standards for Coating of Metal Coil*, applies to a source whose metal coil coating operations have a combined theoretical potential to emit ("TPE") which equals or exceeds 10 tons of VOCs during any consecutive 12-month period after December 1989. Warwick's TPE from the metal coil coating process is greater than 10 tpy, so the metal coil coating process is, therefore, subject to the VOC RACT requirements of Env-A 1204.14. Env-A 607.01(x) requires any stationary source or device subject to the rules governing RACT as contained in Env-A 1200 to obtain a temporary permit prior to the construction or installation of the source or the device. Warwick did not obtain a temporary permit prior to the construction or installation of the metal coil coating operation in accordance with Env-A 607.01(x). As mentioned above, Warwick has since submitted a comprehensive permit application to DES for a temporary permit that includes the metal coil coating process.
8. Env-A 1204.14 requires a source that is subject to that Part and operates a process that applies a coating onto a metal coil substrate to be limited at all times to an emission rate of 0.31 kg VOC/l (2.6 lb VOC/gal) of coating, as applied, excluding water and exempt compounds. As an alternative, Env-A 1204.14(c) requires implementing add-on control techniques or a bubble, and complying with the solids-based emission rate limit calculated using the procedures of Env-A 1204.04(d). Warwick's metal coil coating operation does not meet the emission rate set forth in Env-A 1204.14 or the alternative method for complying with the emission rate set forth in Env-A 1204.14(c). As previously stated, Warwick's plan to use the boilers as a means to control VOC/HAP emissions is intended to result in compliance with one of these emission rates.
9. Env-A 101.168(b)(1)(a) defines a major source as, among other things, any stationary source that emits or has the potential to emit 10 tpy or more of any HAP which has been listed pursuant to Section 112(b) of the federal Clean Air Act. Toluene is a HAP listed in Section 112(b). Warwick's potential to emit and actual emissions of toluene from its solvent-based fabric coating process are greater than 10 tpy. Warwick was limited to less than 10 tpy of any single HAP emission in the Temporary Permit. Warwick's actual rolling 12-month toluene emissions for the 12-month period ending in February 2007 were greater than 10 tpy. Therefore, Warwick became a major source of HAP emissions in February 2007. Env-A 609.01(a)(3) requires the owner or operator of any stationary source, area source or device subject to a standard or other requirement under section 112 of the Clean Air Act to obtain a title V operating permit in lieu of a state permit to operate as specified under Env-A 608. Warwick has not obtained a Title V Operating Permit in accordance with Env-A 609.01(a)(3). On June 22, 2007, Warwick submitted a comprehensive permit application for a Temporary Permit.
10. The National Emission Standards for Hazardous Air Pollutants ("NESHAP") for Printing, Coating, and Dyeing of Fabrics and Other Textiles, codified at 40 CFR 63 Subpart OOOO ("Subpart OOOO"), apply to fabric and textile coating and printing operations that are major sources of HAPs. In February 2007, when Warwick became a major source of

HAPs, it also became subject to the requirements set forth in Subpart OOOO. Subpart OOOO defines emission limits for HAPs based on a list of industry subcategories. The emission limit required for the Coating and Printing Operations subcategory is 0.08 kg HAP/liter of solids (0.67 lb/gal of solids). The HAP content of Warwick's fabric coating products exceeds the emission limit of 0.67 lb/gal of solids.

11. Subpart OOOO provides six options for a source to comply with the emission limit, including: 1) compliant material option; 2) emission rate without add-on controls; 3) emission rate with add-on controls; 4) organic HAP overall control efficiency option; 5) oxidizer outlet organic HAP concentration limit; or 6) equivalent emission rate option. Warwick has not controlled its HAP emissions by any of these referenced six methods since it became subject to the subpart in February 2007. Warwick is currently in the process of modifying its two boilers as a means to control future VOC/HAP emissions which is intended to result in compliance with the emission limit of 0.67 lb/gal of solids.
12. The NESHAP for Metal Coil Coating, codified at 40 CFR Part 63 Subpart SSSS ("Subpart SSSS"), applies to metal coil coating operations that are major sources of HAPs. In February 2007, when Warwick became a major source of HAPs it also became subject to Subpart SSSS. Subpart SSSS requires Warwick to limit its organic HAP emissions to one of the following levels: 1) no more than 2% of the organic HAP applied during each month during the 12-month compliance period (98% reduction); 2) no more than 0.046 kg of organic HAP/liter coating solids (0.38 lb/gallon of coating solids) applied during each 12-month compliance period; or 3) 20 parts per million by volume on a dry basis when an oxidizer is used in combination with a capture system that achieves 100% capture. Warwick has not limited its organic HAP emissions from the metal coil coating process to any of the three levels since February 2007 when it became subject to the standard. As previously stated, Warwick's planned use of the boilers as a means to control VOC/HAP emissions is intended to result in compliance with the first referenced emission rate.
13. Env-A 607.01 (w) requires any stationary source, area source, or device to obtain a temporary permit when a permit is required by the Maximum Achievable Control Technology ("MACT") standard(s) for source categories as found in 40 CFR 63. Since Warwick is a major source of HAPs, it is, therefore, required to obtain a Title V permit. Warwick has not obtained a temporary or Title V permit as required by the above referenced MACT standards.
14. Env-A 1400, *Regulated Toxic Air Pollutants*, requires the owner or operator of any device that emits a Regulated toxic Air Pollutant ("RTAP") to determine compliance with certain ambient air limits set forth in Env-A 1450, *Table Containing the List Naming All Regulated Toxic Air Pollutants*. On August 20, 2007, Warwick provided DES a draft RTAP compliance demonstration for calendar year 2006. Based on a review of this demonstration and on a review of the MSDSs provided by Warwick on August 6, 2007 (attached in Table 2 of the Summary of Findings) for coating products used at the facility, it is not clear if all the products used at Warwick containing RTAPs were evaluated and whether some of the

products included in the demonstration are actually being used at the facility. A number of questions arose during DES' review of the RTAP demonstration. These are set forth in the attached Summary of Findings table.

DES requests that the Warwick provide a written response to this NOF **within thirty (30) days** of issuance. The specific items to be addressed in the written response are set forth in the attached Summary of Findings. DES will evaluate Warwick's response and determine the extent of the violations and the appropriate enforcement action that is warranted. Please be advised that DES has not completed its review and, therefore, this letter does not guarantee compliance with items not otherwise noted or preclude an enforcement action to address any matters noted herein or to be determined. In addition, Warwick should provide any information it believes DES should consider in determining appropriate further action. Further, if Warwick believes that any of the violations listed are erroneous, please submit information that supports Warwick's position.

DES looks forward to working with Warwick to resolve this matter expeditiously and recognizes the efforts that have been made to modify the boilers for use as a means to control future VOC and HAP emissions. A current copy of the Air Resources Division rules can be obtained from the DES website at www.des.nh.gov/rules/air.htm, or by contacting the Public Information Center at (603) 271-2975. If you have any questions regarding these findings, please contact Tara E. Olson, Compliance Bureau at (603) 271-4625.

Sincerely,



Pamela G. Monroe
Compliance Bureau Administrator
Air Resources Division

PGM/teo

Attachments: Summary of Findings
List of MSDS received by DES on August 6, 2007

cc: R. Kurowski, EPA Region 1
G. Hamel, NHDES Legal Unit
G. Lawrence, Chairman, New Ipswich Board of Selectman
Public Information Officer, DES PIP Office
AFS #3301100129

SUMMARY OF FINDINGS

Warwick Mills Inc.	AFS #3301100129	Date: October 2, 2007
<p>Requirement(s) Cited</p> <p>1. Env-A 607.01, <i>Specific Applicability for Temporary Permits</i>, requires the owner of a new or modified stationary source, area source, or device specified in 607.01 (a) - (ab) obtain a temporary permit.</p>	<p>Description of Finding</p> <p>DES can not evaluate whether the aqueous-based coating, calendar coating, and/or the polymer coating processes, referenced in past discussions with Warwick personnel, require a temporary permit or are subject to other regulations without further information.</p> <p>DES requests that Warwick provide a detailed description of these processes. The description should include the following:</p> <ul style="list-style-type: none"> • A description of each process, including maximum production rate; • A description of the specific substrates coated; • Material Data Sheets for the specific coating and other raw materials used; • The amount of coating and other raw materials used on a monthly basis; • Name and type of equipment used; • Date of installation/modification of equipment; and • Exhaust location and configuration. 	
<p>2. Env-A 1204.10, <i>Applicability Criteria and Compliance Standards for Coating of Paper, Fabric, Film and Foil Substrates</i>, and Env-A 1204.14, <i>Applicability Criteria and Compliance Standards for Coating of Metal Coil</i>, require a source to limit the VOC content of the fabric coating material to 2.9 lb VOC/gal of coating and limit the VOC content of the metal coil coating material to 2.6 lb VOC/gal of coating, as applied, excluding water and exempt compounds or implement add-on control techniques and comply with the solids-based emission limit.</p>	<p>Warwick's fabric coating material exceeds the 2.9 lb VOC/gal of coating limit. Warwick's metal coil coating material exceeds the 2.6 lb VOC/gal of coating limit. In addition, Warwick has not operated add-on control techniques to meet either of the solids-based emission limits.</p> <p>Warwick provided VOC and HAP emission information in the annual emission report. The calculated emissions appear to be based on the amount of individual solvents used per vest produced. Based on the information provided, DES can not assess to what extent Warwick does not meet the 2.9 lb VOC/gal of coating or the 2.6 lb VOC/gal of coating limits. Warwick provided MSDSs for raw materials used in its processes on August 6, 2007, however, DES can not identify which raw material is used as a coating and in which coating process it is applied. Please provide the following information for all the coatings used in the fabric coating and metal coil coating processes:</p> <ul style="list-style-type: none"> • Names of all coatings used in the fabric coating process; • Names of all coatings used in the metal coating process; • VOC content of the each coating material; and • Amounts of the coating(s) used in each process on a monthly 	

	basis from January 2006 - May 2007.
3. 40 CFR 60 Subpart TT, <i>Metal Coil Surface Coating</i> , requires that an owner or operator subject to this subpart limit its emissions to 2.37 lb VOC/gal of coating solids applied for each calendar month.	<p>Warwick's metal coil coating operation has exceeded the 2.37 lb VOC/gal of coating solids emission limit since the process began in January 2006.</p> <p>Similar to the findings presented above, DES can not assess to what extent Warwick does not meet the 2.37 lb VOC/gal of coating solids. Please provide the information requested in item 2 above.</p>
4. 40 CFR 63 Subpart OOOO, <i>Printing, Coating, and Dyeing of Fabrics and Other Textiles</i> , requires a source to limit its HAP content of the fabric coating material to 0.67 lb HAP/gal of coating solids or implement one of six different compliance methods to meet the emission limit.	<p>Warwick's fabric coating process has exceeded the 0.67 lb HAP/gal of coating solids emission limit and Warwick has not implemented any other means to meet the emission limit since February 2007 when it became subject to the standard. If not already included in the information requested in item 2 above, please provide the following information:</p> <ul style="list-style-type: none"> • HAP content of each fabric coating material; and • Amount of the coating(s) containing HAPs used in the fabric coating process on a monthly basis from January 2006-May 2007.
5. 40 CFR Part 63 Subpart SSSS, <i>Metal Coil Coating</i> , requires Warwick to limit its organic HAP emissions by one of the following three methods: 98% reduction on a monthly basis; 0.38 lb HAP/gal of coating solids; or to 20 parts per million by volume on a dry basis when an oxidizer is used in combination with a capture system that achieves 100% capture	<p>Warwick's metal coil coating process has exceeded the required emission limit methods since February 2007 when it became subject to the standard. If not already included in the information required in item 2 above, please provide the following information:</p> <ul style="list-style-type: none"> • HAP content of each metal coil coating material; and • amount of the coating(s) containing HAPs used in the metal coil coating process on a monthly basis from January 2006-May 2007.

6. Env-A 1400, *Regulated Toxic Air Pollutants*, requires an owner or operator of any device that emits an RTAP to determine compliance with ambient air limits set forth in Env-A 1450, *Table Containing the List Naming All Regulated Toxic Air Pollutants*.

DES can not evaluate Warwick's compliance with Env-A 1400 based on the information provided to date. Please provide a complete and accurate RTAP demonstration, including answers to the questions below. Please provide all supporting information used by Warwick to complete the RTAP demonstration. A list of MSDSs already provided to DES by Warwick is included in the following attachment and do not need to be resubmitted.

- MSDS labeled Q25050D-0227 (Chemlok 250) was provided, however, it is not listed in the Names or ID column of the RTAP demonstration. DES understands that this material is used in the metal coil coating process. Please provide the amount of this material used on a daily and annual basis.
- The RTAP demonstration lists ethyl acetate (Q205030D-0395), however, material use information is not provided for ethyl acetate. If this chemical is used, please provide the amount of ethyl acetate used on a daily and annual basis.
- Methanol (Q25030D-0061) and phenol (Q25030D-0033) are listed in the chemical column, however, they do not appear on the MSDSs provided for these materials. Please advise DES on how to evaluate these chemicals and provide MSDSs, if necessary.
- The MSDS for Q25030D-0169 lists toluene, xylene, and ethyl benzene as RTAPs. Xylene is the only chemical listed in the RTAP demonstration related to this MSDS. Please clarify whether the use amount provided for xylene applies also to toluene, as well as ethyl benzene
- MSDSs Q25030D-0092 and Q25030D-0323 each contain the RTAPs methyl pyrrolidone, ethylene glycol, and triethylamine. Of these three RTAPs, a use rate is provided only for methyl pyrrolidone. Please provide clarification of the material use rates for ethylene glycol and triethylamine.
- It is unclear if or how Warwick accounted for its proprietary coating materials used at the Facility in the RTAP demonstration. Please explain how these materials were accounted for in the RTAP demonstration.

Table 2 - List of MSDS provided by Warwick on August 6, 2007

ID	Product Name
Q25030D-0108A	8139aB Dough
Q25030D-002	Carbon Black
	Neoprene Cement
	Chemlok 205 Primer
Q25030D-0091 rev A	Self-Leveling Silicone Adh
Q25030D-0068 rev A	Thermogrip
Q25030D-0073 rev A	K2000 Cement
Q25050D-0395	
Q25030D-0005 rev A	Hycar 2679 Emulsion
Q25050D-0017 rev B	Methyl Ethyl Ketone
Q2503D-0022 rev A	Silcaride C-6
Q25030D-0033 rev A	520 Dilutable Water Repellent Emulsion
Q25030D-0061 rev A	477 Resin
Q25030D-0086 rev A	Zonyl 8412 Fabric Protector
Q25030D-088 rev A	Polywet A
Q2505D-0121 rev A	Toluene
Q2505D-0169 rev A	Shell Xylene
Q25050D-0227 rev A	Chemlok 250
Q25050D-0289	Toluene
	Tetrahydrofuran
Q25030D-0001 rev B	Performax TF1057
Q25030D-0092 rev A	WF-41-035
Q25050D-037 rev A	Aerosol OT-75 Surfactant
Q25050D-0323 rev A	Ru-41-347
Mixes	
	Neoprene cement at 15% solids
	Solvent based TPU#3 adhesive 1197
	Solvent based TPU#3 adhesive 1198
	Coating 1163
	Chemlok 205@20% solids